BOARD AGENDA FACT SHEET

CLERK USE ONLY
BOS ACTION
#_____

Planning & Development Services Dept.
Department /Agency

February 15, 2022
Requested Board Date

1. Request:

Board Approval	XX	**Information Only/Presentation**	
Other (specify) _____		**Schedule Hearing Time: 11:00 A.M**	XX

2. Requested Action: *Type requested action below*

The Planning & Development Services Department respectfully requests that the Board of Supervisors conduct a public hearing to consider Appeal #21-0003 of the November 18, 2021, Planning Commission's decision of approval for the Heber 1 Geothermal Repower Project (Conditional Use Permit #19-0028), as submitted by the Heber Geothermal Company:

1. Consider Approval or Denial of Appeal #21-0003;
2. Consider Approval or Denial of the followings:
   a. Finding of Fact for Categorical Exemption
   b. Mitigated Negative Declaration
   c. De Minimus Finding
   d. Conditional Use Permit #19-0028

3. Cost $ 0 **Source:** N/A

4. If approval of Contract, reviewed/approved by County Counsel on: N/A

By: *N/A* **Action Request: #** N/A
Assigned by County Counsel's Office

1. If approval of position allocation change, approved by Human Resources on: N/A

By: N/A

2. Electronic copy submittal date: 02/01/2022 **By:** *Rosa A. Soto, Office Supervisor*

Department Head/Agency Representative

INSTRUCTIONS: ***Back-up must be submitted 11 BUSINESS days prior to requested date. Back-up submitted must contain an Original and 6 copies. Copies must be submitted double sided and three (3) hole punched. Back-up must be submitted in a PDF format to cobstaff@co.imperial.ca.us.***

CEO/CLERK USE ONLY:

DATE STAMP

BOARD DATE: _____

Action _____ **Filing** _____

Consent _____ **Presentation** _____

Hearing _____ **CEO Approval** _____

Other (specify) _____

_____ _____
CEO ***Date***

Imperial County Planning & Development Services
Planning / Building

Jim Minnick
DIRECTOR

TO: Board of Supervisors February 1, 2022

FROM: Jim Minnick, Director of Planning & Development Services M/O_____

SUBJECT: Public hearing to consider Appeal #21-0003 of the November 18, 2021, Planning Commission decision of approval Heber 1 Geothermal Repower Project (Conditional Use Permit #19-0028) to allow for facilities upgrades.

Dear Board Members:

REQUESTED ACTION:

The Planning & Development Services Department respectfully requests that the Board of Supervisors conduct a public hearing to consider Appeal #21-0003 of the November 18, 2021, Planning Commission's decision of approval for the Heber 1 Geothermal Repower Project (Conditional Use Permit #19-0028), as submitted by the Heber Geothermal Company:

1. Consider Approval or Denial of Appeal #21-0003;
2. Consider Approval or Denial of the followings:
   a. Finding of Fact for Categorical Exemption
   b. Mitigated Negative Declaration
   c. De Minimus Finding
   d. Conditional Use Permit #19-0028

BACKGROUND:

This project is located at the existing Heber Geothermal Plant with Assessor's Parcel Numbers 054-250-036-000 & 054-250-035-000 with a parcel area of 20 acres and 8 acres, respectively. The town of Heber is approximately 3,500 feet to the northwest of the Heber 1 Geothermal Plant and the City of Calexico limits are located south of the proposed project site. A cattle feedlot is located to the north of the project site and the Southern Pacific right of way is located west. The property is legally described as a Portion of the East half of Tract 45, Township 16 South, Range 14 East, SBB&MAPN 054-250-035 &036-000. (See Attachment "A" Site Vicinity Map).

The proposed project includes the replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit (I3LU) and an integrated two-level unit (ITLU) and the installation of ancillary equipment. The purpose of the repower project is to improve efficiency of the operations and increase the net and gross generation to 52 megawatts (net), 78.2 (gross) as initially requested under Conditional Use Permit #15-0013. The proposed project also proposes to extend the permitted life of Heber 1 to 30 years (2021-2051).

The Permittee has previously constructed and operated these approved CUP facilities in compliance with the County's General Plan, Renewable Energy & Transmission Element, Land Use Ordinance, and CUP 15-0013 and with all other applicable local, state, and federal laws, ordinances, regulations and standards.

Land Use Analysis:

The project site is zoned A-2-G per Zoning Map #12. The proposed application is consistent with the Imperial County General Plan's Specific Plan designation, and the Imperial County's Land Use Ordinance. In addition, the adoption of the CEQA Initial Study for this project would be consistent with applicable County and State ordinances and regulations.

The project site designation is "Heber Specific Plan area", according to the County's General Plan Land Use Map. The proposed project does not conflict with the County's General Plan, and can be found consistent with the Heber Specific Plan Element's Implementation Programs, Policies, Goals and Objectives.

In a letter dated November 24, 2021, Adams Broadwell Joseph & Cardozo, filed an appeal on behalf of Citizens for Responsible Industry ("CITIZENS") on the November 18, 2021 Planning Commission's approval of the Conditional Use Permit for the Heber 1 Geothermal Repower Project ("CUP #19-0028"). The Heber 1 project is proposed by Heber Geothermal Company, a wholly owned subsidiary of ORMAT Nevada, Inc. ("Applicant").

Staff will attempt to answer any questions you may have. Thank you.

Attachment A	Vicinity Map
Attachment B	Appeal letter
Attachment C	Findings of Fact
Attachment D	CEQA Resolution
Attachment E	CUP19-0028 Resolution
Attachment F	CUP and Conditions of Approval
Attachment G	Response to Comments
Attachment H	PC & EEC Package

cc: Benjamin I. Salorio, County Executive Officer
Erik Havens, County Counsel
Jim Minnick, Director of ICPDS
Michael Abraham, AICP Assistant Director of ICPDS
David Black, Planner IV
CUP19-0028 APN 054 250-036

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Attachment A

LOCATION MAP

SITE MAP

PROJECT LOCATION MAP



IMPERIAL COUNTY CALIFORNIA

HEBER 1 REPOWER PROJECT - ORMAT NEVADA INC.
CONDITIONAL USE PERMIT #19-0028
INITIAL STUDY #19-0033
APN 054-250-035 & 036-000

- HIGHWAYS
- PARCELS
- CITYLIMIT
- PROJECT LOCATION

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Attachment B
APPEAL LETTER

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
601 GATEWAY BOULEVARD, SUITE 1000
SOUTH SAN FRANCISCO, CA 94080-7037

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SACRAMENTO, CA 95814-4721
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KEVIN T. CARMICHAEL
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JAVIER J. CASTRO
THOMAS A. ENSLOW
KELILAH D. FEDERMAN
ANDREW J. GRAF
TANYA A. GULESSERIAN
KENDRA D. HARTMANN*
DARIEN K. KEY
RACHAEL E. KOSS
AIDAN P. MARSHALL
TARA C. RENGIFO

Of Counsel
MARC D. JOSEPH
DANIEL L. CARDOZO

**Not admitted in California. Licensed in Colorado.*

November 24, 2021

VIA EMAIL, HAND DELIVERY, AND OVERNIGHT MAIL

Jim Minnick
Director of Planning and Development Services
Planning Division
Imperial County
801 Main Street
El Centro, CA 92243
Email: JimMinnick@co.imperial.ca.us

RECEIVED
NOV 29 2021
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

VIA EMAIL ONLY

David Black, Planner
Email: DavidBlack@co.imperial.ca.us

Re: Appeal of Planning Commission's Approval of Conditional Use Permit No. 19-0028 for the Heber 1 Geothermal Repower Project

Dear Mr. Minnick, Mr. Black:

We are writing on behalf of Citizens for Responsible Industry ("Citizens"), including Imperial County residents Jaime Cuevas, Dalila and Efrain Guzman, Eric Jones, and Citizens' other members, to appeal the November 18, 2021 decision of the Imperial County Planning Commission to approve the Conditional Use Permit ("CUP") #19-0028 for the Heber 1 Geothermal Repower Project ("Project"), proposed by Heber Field Company, a subsidiary of Ormat Nevada Inc., ("Applicant"), and all related Project approvals, including the Commission's adoption of an Initial Study and Mitigated Negative Declaration ("IS/MND"), determination that the Project is

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exempt from environmental review under the California Environmental Quality Act ("CEQA")[1] pursuant to categorical exemptions, and all related findings.

As a result of potentially significant environmental effects which the County concluded require mitigation, the County initially prepared an IS/MND for the Project pursuant to CEQA.[2] Following circulation of the IS/MND for public comment and without any changes being made to the proposed Project, the resolutions submitted to the Planning Commission proposed a new set of findings that the Project is now categorically exempt from CEQA review under the Existing Facilities, Replacement/Reconstruction categorical exemption, and the commonsense exemption.[3] At the November 18, 2021 hearing, the Commission adopted these mutually exclusive CEQA findings – concluding, on the one hand, that the Project had significant impacts requiring mitigation, and adopting the IS/MND, and finding, on the other hand, that the Project would not result in any significant impacts and qualified for a categorical exemption and the common sense exemption. These findings were not supported by law or the evidence in the record, and were made over Citizens' objections.

Citizens submitted comments supported by extensive expert reports at multiple stages of CEQA review for this Project, including during the public review and comment period for the IS/MND, and in anticipation of its consideration by the Planning Commission.[4] Citizens' comments on the IS/MND provided substantial evidence supporting a fair argument that the Project may have significant impacts on air quality from construction and operational emissions, health risk, and more severe impacts on biological resources, hazardous materials, geology/soils, and cumulative impacts than described in the IS/MND. Citizens asked the County to prepare an EIR to accurately disclose and mitigate these impacts.

Citizens' comments to the Planning Commission explained that the County's responses to comments on the IS/MND were inadequate, than an EIR is still

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[1] Imperial County, *Mitigated Negative Declaration for Heber 1 Geothermal Repower Project CUP No. 19-0028* (February 2021) (hereinafter "MND").
[2] Imperial County, *Mitigated Negative Declaration for Heber 1 Geothermal Repower Project CUP No. 19-0028* (February 2021) (hereinafter "MND").
[3] *See* 14 C.C.R. §§ 15031, 15032, 15061.
[4] Letter to Jim Minnick, Planning Director, and Mariela Moran, Planner II, from Kendra Hartmann, Counsel for Citizens, dated May 10, 2021 (Exhibit A) (hereinafter "Citizens' MND Comments"); Letter to Planning Commission from Tara Messing, Counsel for Citizens, dated November 16, 2021 (Exhibit B) (hereinafter "Citizens' Comments to PC").

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required, that the County cannot rely on mitigated exemptions from CEQA, and that no CEQA exemptions apply to the Project due to its numerous significant, unmitigated impacts. The Planning Commission failed to meaningfully respond to Citizens' comments, and approved the Project despite the legal and factual deficiencies in the record.

Citizens respectfully request that the Board of Supervisors ("Board") uphold this appeal, rescind the Planning Commission's approval of the Project and adoption of inadequate CEQA documents, and remand the Project to Staff to prepare a legally adequate EIR. We reserve the right to supplement this appeal at later hearings and proceedings on this Project.[5]

I. PROJECT DESCRIPTION

The existing Heber 1 Geothermal Energy Complex, located within the Heber Specific Plan Area at 875 Pitzer Road, Heber, California, was initially constructed in 1985 pursuant to CUP #9-80 and most recently pursuant to CUP #15-0013, which was approved by the Planning Commission on September 9, 2015, by the Board of Supervisors on November 10, 2015, and recorded on November 30, 2015.[6] The Applicant is now proposing a fifteen (15) year renewal for the existing facilities' operations.[7] Additionally, to repower the plant to 52 megawatts (net) and 78.2 megawatts (gross), the proposed CUP would permit the replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit ("I3LU") and an Integrated two-level unit ("ITLU") as well as the installation of ancillary equipment.[8] The I3LU would include three 10-bay air coolers and one 14-bay air cooler for cooling ORMAT Energy Converters ("OECs") Units 1 and 2, and would also require the installation of two additional isopentane storage tanks, which would be 10,000 gallons each, and a new Vapor Recovery Mechanical Unit ("VRMU").[9] For the ITLU, the Project would convert OEC Units

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[5] Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* ("*Bakersfield*") (2004) 124 Cal. App. 4th 1184, 1199-1203; *see Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

[6] County of Imperial, *Staff Report* at 1, 2 (hereinafter "Staff Report"); Staff Report, Attachment F at 4.

[7] County of Imperial, *Planning Commission Agenda* at 4 (November 18, 2021). Note that the Staff Report's Project Description is inconsistent and states that the Project "proposed to extend the permitted life of Heber 1 to 30 years (2021-2051)." Staff Report at 1.

[8] Staff Report at 1.

[9] *Id.*

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11 and 13 to an ITLU, and the existing cooling tower and VRMU would be used for OEC Units 11 and 13.[10] Additional modifications to OEC Units 11 and 13 would include replacement of some of the brine heat exchangers, replacement of the existing generator and one turbine, and replacement of a portion of the piping system and pumps.[11]

The Applicant also proposes to modify the permitted water intake from 1,800-acre feet ("AF") of irrigation water to 2,300-AF of irrigation water.[12] On November 18, 2019, the Imperial Irrigation District issued an Amendment No. 1 to the Amended and Restated Water Supply Agreement to supply an additional 500-AF of water per year in addition to the 1,800-AF that was in the agreement, for a total of 2,300-AF per year.[13]

II. NAME OF APPELLANTS AND CONTACT INFORMATION

This appeal is being filed on behalf of Citizens, including Imperial County residents Jaime Cuevas, Dalila and Efrain Guzman, and Eric Jones.

All notices and correspondence concerning this appeal should be sent directly to Tara Rengifo on behalf of all appellants, as follows:

Tara C. Rengifo
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
Tel: (650) 589-1660
Fax: (650) 589-5062
Email: trengifo@adamsbroadwell.com

Contact information for individual appellants is provided below for compliance with County Code requirements only. Individuals should be contacted through Mrs. Rengifo of Adams Broadwell Joseph & Cardozo:

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[10] *Id.* at 2.
[11] *Id.*
[12] *Id.*
[13] *Id.*

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Jaime Cuevas
57 W. Maple Ave
Heber, CA 92249
Telephone: (442) 236-8684

Dalila and Efrain Guzman
P.O. BOX 14
Heber, CA 92249
Telephone: (760) 235-0902
(760) 235-0902

The address and phone number of appellant California Unions for Reliable Energy ("CURE") is provided below for compliance with County Code requirements only. CURE should be contacted through Mrs. Rengifo of Adams Broadwell Joseph & Cardozo:

California Unions for Reliable Energy
c/o Robert Balgenorth, Chair
1225 8th Street, Suite 375
Sacramento, CA 95814
Telephone: (916) 443-3302

Citizens is a coalition of labor organizations with members who may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The coalition includes the above-named residents, along with other members and organizations, including CURE and its local affiliates, and the affiliates' members who live, recreate, work, and raise families in Imperial County and in communities near the Project site. Thus, Citizens, its participating organizations, and their members stand to be directly affected by the Project's impacts.

Since its founding in 1997, CURE has been committed to building a strong economy and healthier environment and it works to construct, operate, and maintain conventional and renewable energy power plants and other industrial facilities throughout California. CURE supports the development of clean, renewable energy technology, including geothermal power generation, where properly analyzed and carefully planned to minimize impacts on public health and the environment. Geothermal projects should avoid adverse impacts to natural resources and public health and should take all feasible steps to ensure that

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unavoidable impacts are mitigated to the maximum extent feasible. Only by maintaining the highest standards can energy development truly be sustainable.

The individual members of Citizens, and the members of its affiliated labor organizations, would be directly affected by the Project and may also work constructing the Project itself. They would therefore be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal stake in protecting the Project area from unnecessary, adverse environmental and public health and safety impacts.

Citizens support and encourage the sustainable development of California's energy and natural resources and have an interest in enforcing environmental laws that encourage sustainable development and a safe working environment. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making it less desirable for businesses to locate and people to live and recreate in the County. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduces future employment opportunities.

Finally, the organizational members of Citizens and the individuals who have joined this appeal are concerned with projects that can result in serious environmental harm without providing countervailing economic benefits. CEQA provides a balancing process whereby economic benefits are weighed against significant impacts to the environment.

III. REASONS FOR APPEAL

Citizens appeals the Planning Commission's approval of the Project on several grounds, as set forth in Citizens' prior comment letters to the County regarding the Project.[14]

First, the necessary finding that the Project is a conditionally permitted use within the A-2 zone is unsupported by substantial evidence.[15] The decision to approve CUP # 19-0028 must be supported by the findings enumerated in Section

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[14] Citizens' written comments on the IS/MND and to the Planning Commission are attached hereto and incorporated by reference.

[15] *See* County of Imperial, Code of Ordinances § 90508.02.

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90203.09 of the County's Code of Ordinances.[16] To support these finding, the Staff Report explains that "pursuant to Land Use Ordinance section 90508.02, electrical generation facilities are permitted with approval of a CUP for 'electrical generation plants (*less than 50 mw*),'" and thus "the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations."[17] To the contrary, the evidence in the IS/MND and Staff Report clearly establish that this Project would increase "the plant's generating capacities of *52-megawatt (MW) net, and 78.2 MW gross, ...*"[18] Since the Project's generating capacity—both net and gross—exceeds the permitted use specified under Section 90508.02, subsection (y), the Project is not a permitted use on lands zoned A-2 even with the approval of a CUP.[19] The findings required by Section 90203.09 cannot be made and the CUP must be denied.

Second, substantial evidence set forth in the expert reports attached to Citizens' comments support a fair argument that the Project would have significant impacts on air quality from construction and operational emissions, health risk, and more severe impacts on biological resources, hazardous materials, and cumulative impacts than described in the MND.[20] The Commission should not have approved CUP #19-0028 until an Environmental Impact Report ("EIR") was prepared that adequately analyzes the Project's direct, indirect and cumulative impacts, and incorporates all feasible mitigation measures to minimize these impacts to the greatest extent feasible.

Third, the Project is not exempt from CEQA for several reasons. Mitigated categorical exemptions are expressly prohibited under CEQA.[21] Here, substantial

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[16] *Id.* at § 90203.09.
[17] Staff Report, Attachment B at 2. (emphasis added)
[18] Staff Report, Attachment F at 1. (emphasis added) Moreover, it must also be noted that the CEC has the exclusive authority to certify all thermal power plants (50 megawatts [MW] and greater) and related facilities proposed for construction in California. *See* California Energy Commission, available at: https://www.energy.ca.gov/.
[19] Section 90508.03 explicitly establishes that "[a]ll other uses not expressly permitted by Section 90508.01 or 90508.02 are prohibited." Moreover, a Project's inconsistencies with local plans and policies also constitute significant impacts under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4; *see also, County of El Dorado v. Dept. of Transp.* (2005) 133 Cal.App.4th 1376.
[20] *See* attached expert reports to Citizens' MND Comments and Citizens' Comments to PC.
[21] *Salmon Pro. & Watershed Network v. County of Marin ("SPAWN")*(2004) 125 Cal.App.4th at 1102; *Azusa Land Recl. Co. v. Main San Gabriel Basin Watermaster* (1997) 52 Cal. App.4th 1165, 1198-1201.

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evidence in the record demonstrates that the Project would have potentially significant impacts that require mitigation, both by the County's own admission in the IS/MND and based on substantial evidence presented by Citizens' experts.[22] The Project has not been modified to eliminate these significant effects. Moreover, the Commission's new characterization of the Project's mitigation measures as "voluntary" is unsupported by the record, contrary to the definition of mitigation measures under CEQA Guidelines Section 15370, and contradicted by the County's and Citizens' own evidence. Therefore, the Planning Commission's decision was improperly based on the finding that the Project is categorically exempt while also adopting the IS/MND and its Mitigation, Monitoring and Reporting Program ("MMRP"). The Project cannot be both exempt from CEQA and require mitigation pursuant to CEQA.

For a categorical exemption to be applicable, a lead agency must provide "substantial evidence to support [their] finding that the Project will not have a significant effect."[23] To the contrary here, the County's own evidence in the IS/MND and substantial evidence presented by Citizens' experts establish an adequate showing that the Project would have potentially significant impacts that require mitigation.

Even if the Project would not have significant impacts, the categorical exemptions are facially inconsistent with the Project and are thus inapplicable. The Project proposes to decommission and replace several essential components of the facility with new technology that utilizes new processes.[24] The Class 1 and Class 2 categorical exemptions, which exempt a new facility that replaces or reconstructs an existing facility with substantially the same purpose and capacity, are limited to projects proposing to streamline the replacement of analogous utility systems, a like-for-like replacement, where the environmental impacts of the same type of project have been previously analyzed under CEQA.[25] Here, the proposed Project is different from the existing Heber 1 facility and would result in new and different significant environmental and public health impacts that were not analyzed in the facility's original environmental review document, as explained more fully below. The County's overly broad application of these exemptions controverts the long line

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[22] MND at 39; Citizens' MND Comments; Citizen's Comments to PC.
[23] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.
[24] MND at 10-12.
[25] *See* 14 C.C.R. §§ 15031, 15032.

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of CEQA cases mandating that categorical exemptions be "construed narrowly" in order to afford the "fullest possible environmental protection...."[26]

Additionally, exceptions to the exemptions are applicable because (a) substantial evidence shows that there is a reasonable possibility that cumulative impacts of successive projects of the same type in the same place over time will be significant, and (b) substantial evidence demonstrates that the Project would have a significant effect on human health and the environment due to unusual circumstances.[27] As such, these exceptions render any categorical exemptions to CEQA review inapplicable.

Finally, the County's use of the Errata to the IS/MND is entirely improper under CEQA Guidelines Section 15073.5, subsection (c). The Errata purports to reduce all of the previously identified significant impacts to less than significant levels and changes the previously identified mitigation measures to Conditions of Approval, without adequate support.[28] These changes are a far cry from minor or insignificant modifications and no changes to the Project occurred to warrant the use of an Errata. The County's intent in using the Errata in such an improper manner is clear—to evade its earlier findings that the Project would have significant impacts requiring mitigation. The County's actions thus violate the specific procedures outlined in CEQA and for these reasons, the IS/MND and Errata should not have been adopted.

For the foregoing reasons, we respectfully request that the Board overturn the Planning Commission's approval of the Project, including approval of CUP # 19-0028, as well as approval of any CEQA exemption and/or certification of the IS/MND and require that an EIR be prepared for the Project in which all impacts are fully disclosed and mitigated, and released for the statutorily mandated public review and comment period.

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[26] *County of Amador v. El Dorado County Water Agency*, 76 Cal. App. 4th 931, 943; 966 (1999); *see also Azusa Land Reclamation Co. v. Main San Gabriel Basin Watermaster*, 52 Cal. App. 4th 1165, 1193 (1997); *see also County of Amador v. El Dorado County Water Agency*, 76 Cal. App. 4th 931, 966 (1999); *see also Dehne v. County of Santa Clara, supra,* 115 Cal. App. 3d 827, 842 (1981).
[27] 14 CCR § 15300.2(b), (c).
[28] *See* Staff Report, Attachment E.
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IV. LEGAL BACKGROUND

"CEQA and the regulations implementing it 'embody California's strong public policy of protecting the environment.'"[29] CEQA is designed to inform decision-makers and the public about the potential, significant environmental effects of a project.[30] "CEQA's fundamental goal [is] fostering informed decision-making."[31] "The purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind."[32]

The implementation of CEQA is a multistep process that begins with whether the proposed activity is subject to CEQA at all.[33] Next, assuming CEQA applies, the agency must determine whether the activity qualifies for a CE.[34] If the project is exempt, the agency need not proceed with environmental review.[35] Alternatively, if no exemptions are applicable, the agency must undertake environmental review of the activity, which begins with an initial study to determine whether the project may have a significant effect on the environment.[36] A negative declaration may be prepared "if there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment."[37] A *mitigated* negative declaration is required if the initial study identifies potentially significant environmental effects but (1) those effects can be fully mitigated by changes in the project and (2) the project applicant agrees to incorporate those changes.[38] Because "[t]he adoption of a negative declaration...has a terminal effect on the environmental review process" by allowing the agency to dispense with the duty to prepare an EIR, negative declarations, as well as mitigated negative declarations, are allowed only in cases where there is not even a "fair argument" that the project will have a significant environmental effect.[39]

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[29] *Save the Agoura Cornell Knoll*, 46 Cal. App. 5th at 673.
[30] 14 C.C.R. § 15002(a)(1).
[31] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 402.
[32] *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283.
[33] *See* Pub. Res. Code § 21065.
[34] 14 C.C.R. § 15061.
[35] *Id.*
[36] *Id.* at § 15063.
[37] *Id.* at § 15063(b)(2).
[38] *Id.* at § 15070(b)(1)-(2).
[39] *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440; Pub. Res. Code §§ 21064, 21100.

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An EIR is necessary for any discretionary project that may have a significant adverse effect on the environment.[40] "At the heart of CEQA is the requirement that public agencies prepare an EIR for any project that may have a significant effect on the environment."[41] A negative declaration is improper, and an EIR must be prepared, whenever it can be fairly argued on the basis of substantial evidence that the project may have a significant environmental impact.[42] A "significant effect on the environment" is defined as "a substantial, or potentially substantial, adverse change in the environment."[43] Substantial evidence, for purposes of the fair argument standard, includes "fact, a reasonable assumption predicated upon fact, or *expert opinion* supported by fact."[44]

A. An Agency's Decision to Rely on a Mitigated Negative Declaration under CEQA is Reviewed for Abuse of Discretion under the Fair Argument Standard

Under the fair argument standard, a reviewing court's function is to determine if substantial evidence supports the agency's conclusion as to whether there is a fair argument that the proposed project might have a significant environmental impact.[45] "Stated another way, if the [reviewing] court perceives substantial evidence that the project might have such an impact, but the agency failed to secure preparation of the required EIR, the agency's action is to be set aside because the agency abused its discretion by failing to proceed 'in a manner required by law.'"[46] If substantial evidence demonstrates that the proposed project might have a significant impact, evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a mitigated negative declaration.[47] Neither the lead agency nor a court may "weigh" conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.[48] "The fair argument standard thus creates a low threshold for requiring

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[40] Pub. Res. Code § 21151(a).
[41] *Friends of College of San Mateo Gardens v. San Mateo County Community College Dist.* (2016) 1 Cal.5th 937, 944 (internal citations and quotations omitted).
[42] *Id.* at 957.
[43] Pub. Res. Code § 21068; 14 C.C.R. § 15382; *County Sanitation Dist. No. 2 v. County of Kern* (2005) 127 Cal.App.4th 1544, 1581.
[44] Pub. Res. Code § 21080(e)(1) (emphasis added); *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 331.
[45] *Id.*
[46] *Save the Agoura Cornell Knoll,* 46 Cal. App. 5th at 675–76.
[47] *Id.*
[48] *Id.* at *13.

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an EIR, reflecting the legislative preference for resolving doubts in favor of environmental review."[49]

Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[50] In short, when "expert opinions clash, an EIR should be done."[51] "It is the function of an EIR, not a negative declaration, to resolve conflicting claims, based on substantial evidence, as to the environmental effects of a project."[52] Where substantial evidence is presented, "evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a negative declaration, because it could be 'fairly argued' that the project might have a significant environmental impact."[53]

The fair argument test requires the preparation of an EIR whenever "there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial."[54]

B. Categorical Exemptions are for Projects Determined to Not Have a Significant Effect on the Environment, but These Exemptions are Subject to Exceptions

CEQA identifies certain classes of projects which are exempt from the provisions of CEQA.[55] Categorical exemptions apply to certain classes of activities that generally do not have a significant effect on the environment.[56] "Where the specific issue is whether the lead agency correctly determined a project fell within a categorical exemption, [a court] must first determine as a matter of law the scope of the exemption and then determine if substantial evidence supports the agency's

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[49] *Id.* at 4.
[50] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935 (Court concluded that expert opinion supported by facts may qualify as substantial evidence supporting a fair argument even if not based on specific observations as to the site under review); *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[51] *Pocket Protectors*, 124 Cal.App.4th at 928; *Sierra Club*, 6 Cal.App.4th at 1317–1318.
[52] *Id.* at 935.
[53] *Sundstrom*, 202 Cal.App.3d at 310 (citation omitted).
[54] 14 C.C.R. § 15063(b)(1).
[55] Pub. Res. Code § 21084(a); 14 CCR §§ 15300, 15354.
[56] *Id.*

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factual finding that the project fell within the exemption."[57] CEQA exemptions are to be narrowly construed and "[e]xemption categories are not to be expanded beyond the reasonable scope of their statutory language."[58] Erroneous reliance by a lead agency on a categorical exemption constitutes a prejudicial abuse of discretion and a violation of CEQA.[59]

If an agency meets its burden to demonstrate that the project is within a categorically exempt class, the burden shifts to the party challenging the categorical exemption to show that the project is not exempt due to an exception pursuant to CEQA Guidelines Section 15300.2.[60] One such exception is that a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to "unusual circumstances,"[61] or where there is a reasonable possibility that the activity will have a significant effect on the environment, including (1) when "the cumulative impact of successive projects of the same type in the same place, over time is significant."[62]

V. AN APPEAL OF THE PLANNING COMMISSION'S DECISION TO APPROVE CUP #19-0028 IS WARRANTED DUE TO FACTS, CONDITIONS, INFORMATION, ERRORS, AND OTHER SPECIFICS

Pursuant to Section 90104.05 of the Imperial County Municipal Code, the following facts, conditions, information, errors, and other specifics clearly warrant an appeal.[63] For these reasons, we respectfully request that the Board overturn the Planning Commission's approval of the Project, including approval of CUP # 19-0028, as well as approval of any CEQA exemption and/or certification of the IS/MND and require that an EIR be prepared for the Project in which all impacts are fully disclosed and mitigated, and released for the statutorily mandated public review and comment period.

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[57] *California Farm Bureau Fed'n v. California Wildlife Conservation Bd.* (2006) 143 Cal. App. 4th 173, 185.
[58] *Mountain Lion Found. v. Fish & Game Com.* (1997) 16 Cal.4th 105, 125; *McQueen*, 2 Cal.App.3d at 1148.
[59] *Azusa*, 52 Cal.App.4th at 1192.
[60] *California Farm Bureau Fed'n,* 143 Cal. App. 4th at 186
[61] 14 C.C.R. § 15300.2(c).
[62] *Id.* at 15300.2(b).
[63] County of Imperial, Municipal Code § 90104.05(B)(4)(e).
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A. The Project is Not a Conditionally Permitted Use in the A-2 Zone and Therefore the Findings Pursuant to Section 90203.09 Cannot be Made

The Project requires approval of CUP # 19-0028, which may be approved or conditionally approved only if it makes all of the findings enumerated in Section 90203.09 of the County's Code of Ordinances.[64] These findings include that the Project's "proposed use is consistent with the goals and policies of the adopted county general plan," and the "proposed use is consistent with the purpose of the zone or sub-zone within which the use will be located."[65] To support these findings, the Resolution for CEQA Findings in the Staff Report explains that "Section 90508.02 of the County Land Use Ordinance identify the permitted conditional uses within the A-2-G-Heber SPA Zone designation. Uses identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the Imperial County Planning Commission. ... Therefore, pursuant to Land Use Ordinance section 90508.02, electrical generation facilities are permitted with approval of a CUP for 'electrical generation plants (*less than 50 mw*).' The Commission finds that the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations."[66] Section 90508.03 makes clear that "[a]ll other uses not expressly permitted by Section 90508.01 or 90508.02 are prohibited."[67]

Both the IS/MND and Staff Report clearly establish that this Project is to increase "the plant's generating capacities of *52-megawatt (MW) net, and 78.2 MW gross*, ..."[68] The Project's generating capacity—whether net or gross—exceeds the permitted use specified under Section 90508.02, subsection (y), and thus the Project is not a permitted use on lands zoned A-2 even with the approval of a CUP.[69] The Planning Commission lacked substantial evidence to make the findings required by Section 90203.09 and must not approve the CUP.

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[64] County of Imperial, Code of Ordinances § 90203.09.
[65] *Id.* at § 90203.09(A).
[66] Staff Report, Attachment B at 2. (emphasis added)
[67] County of Imperial, Code of Ordinances § 90508.03.
[68] Staff Report, Attachment F at 1. (emphasis added) Moreover, it must also be noted that the CEC has the exclusive authority to certify all thermal power plants (50 megawatts [MW] and greater) and related facilities proposed for construction in California. *See* California Energy Commission, available at: https://www.energy.ca.gov/.
[69] A Project's inconsistencies with local plans and policies also constitute significant impacts under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4; *see also, County of El Dorado v. Dept. of Transp.* (2005) 133 Cal.App.4th 1376.

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B. Substantial Evidence Supports a Fair Argument that an EIR is Required

As explained in our May 10, 2021 comments on the IS/MND and our November 16, 2021 comments on the Staff Report to the Planning Commission, as well as in the accompanying comments of Dr. Phyllis Fox and Dr. Shawn Smallwood, there is substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, hazards, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[70] Our prior comments explained that an IS/MND is inadequate for the Project, and that the County must prepare an environmental impact report ("EIR") to disclose and mitigate these impacts.

The Staff Report presented to the Planning Commission failed to respond to the majority of our comments on the IS/MND, nor to the substantial evidence we provided.[71] With no new analysis and ignoring the substantial evidence provided by Citizens' experts, the Staff Report concluded that the Project will result in less than significant impacts "[w]ith the implementation of the VEPFs, …."[72] The County lacks substantial evidence to conclude that the Project will not have significant impacts, and substantial evidence supports a fair argument that an EIR is required for the Project.

1. The Project May Result in Significant Impacts to Biological Resources That Would Require the Implementation of Mitigation Measures

In his comments, Dr. Smallwood concluded that the Project will have significant, unmitigated impacts on several species, which the IS/MND, coupled with the Errata, failed to disclose and mitigate.[73] An EIR must be prepared to fully disclose and mitigate these impacts.

The IS/MND and Errata severely underestimated the Project's impacts to biological resources, including special-status species, because the analysis uses

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[70] *See* Citizens' Comments on MND; Citizens' Comments to Planning Commission.
[71] *See* Citizens' Comments to Planning Commission.
[72] *See* Errata to the MND. Staff Report, Attachment E at 8, 15.
[73] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

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inadequate methods to observe the existing environmental setting and describe the Project site's baseline with respect to the occurrence of biological resources. Due to underestimations of these occurrences and the resulting impacts to species, the County also proposed inadequate mitigation measures—now identified as Conditions of Approval—to reduce those impacts.

Dr. Smallwood commented on the inadequate baseline in the IS/MND, which relied on improper methods for determining the occurrence of special-status species at the Project site.[74] Specifically, Dr. Smallwood detailed many issues with the site-specific survey.[75] The County responded to these comments by claiming Dr. Smallwood "speculate[d] on the efficacy of surveys that are used by professionals in this profession."[76] The County's response, however, missed the point. Dr. Smallwood explained that while "[a] reconnaissance-level survey would be useful for recommending which detection surveys to perform and when to perform them... reconnaissance-level surveys need to be performed during the time of year and time of day that makes sense for detecting particular species. Here, the survey was performed in the middle of a July afternoon in Imperial Valley, which does not allow for a representative picture of the site. High temperatures and other conditions during this time of year and time of day are unlikely to present an accurate view of the species present on the Project site."[77] His comments are based on his years of planning and conducting wildlife surveys.[78] He has "studied the efficacy of wildlife surveys and [has] done so throughout [his] career since 1985, as evidenced by many of [his] papers in peer-reviewed scientific journals."[79] Based on his experience and expertise, Dr. Smallwood concluded that the on-site wildlife surveys conducted to inform the Project's impacts on biological resources were "severely deficient."[80] Moreover, the County's response failed to demonstrate the efficacy of these surveys.

In response to Dr. Smallwood's comments regarding the Project's potentially significant impacts on biological resources, the County claimed that the site is a developed industrial complex with no existing habitat is inconsistent with its own

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[74] *Id.*
[75] *Id.*
[76] Staff Report, Attachment F at 27.
[77] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 5 (November 15, 2021).
[78] *Id.* at 6.
[79] *Id.*
[80] *Id.* at 5.

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evidence and findings.[81] Dr. Smallwood, however, found no support for this contention in the record and to the contrary, explained that "the consulting biologist who visited the site documented 10 species of wildlife there, which confirmed the site provides habitat."[82] Nine of these species are protected by the Migratory Bird Treaty Act ("MBTA").[83] Moreover, based on his own professional expertise, Dr. Smallwood explained that "industrial sites are used as habitat by species of wildlife."[84] Examples include "wildlife [using] asphalt pads used to cover leaked plutonium (Smallwood 1996, Smallwood et al. 1998)," and "birds nesting on and within built structures on industrial facilities."[85] Dr. Smallwood also discussed that "[t]he County's premise [] neglects the aerosphere portion of the project as habitat of many species of wildlife," known as "aeroecology," which has been studied in Kunz et al. 2008, Davy et al. 2017, and Diehl et al. 2017.[86] Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[87]

Additionally, Dr. Smallwood's review of both eBird and iNaturalist resulted in the identification of 56 special-status species of vertebrate wildlife present near the Project site or with ranges that overlap the site.[88] The detection records from eBird and iNaturalist provide substantial evidence supporting a fair argument that there are numerous special-status in the direct vicinity of the Project site which the County failed to detect. These species may be adversely impacted by the Project, requiring mitigation. The conflicting data from the County's surveys and these credible wildlife databases create a fair argument requiring preparation of an EIR to disclose and mitigate the Project's impacts on all special-status species that may be impacted by the Project.[89] Mr. Smallwood's comments also demonstrate that the County failed to make a reasonable effort to describe existing conditions for

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[81] Staff Report, Attachment F at 27; Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 1 (November 15, 2021).
[82] *Id.*
[83] *Id.* at 5.
[84] *Id.* at 1.
[85] *Id.*
[86] *Id.* at 1-2.
[87] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935; *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[88] *Id.*
[89] *Pocket Protectors*, 124 Cal.App.4th at 935 (where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR); *Sierra Club*, 6 Cal.App.4th at 1317–1318; CEQA Guidelines § 15064(f)(5).

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biological resources at the Project site, leading to inaccurate conclusions regarding the Project's impacts upon sensitive species, as well as inadequate mitigation measures.

The County also minimized the significant impacts on biological resources identified in Dr. Smallwood's comments by claiming that the Project does not propose any changes to the site or facilities that would affect wildlife.[90] The County's response was not based in fact. Dr. Smallwood identified several project changes that the County fails to consider or analyze in its response, including "at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks."[91] Given these specific changes, Dr. Smallwood concluded that these new structures would pose new collision hazards to wildlife for the subsequent 30 years of operations that could result in significant impacts on numerous species.[92]

Furthermore, the County stated that the Project would not cause significant impacts to avian species on the basis that "due to the industrialized nature of the site, avian species are likely to avoid the site."[93] In response, Dr. Smallwood explained that "[o]nce structures are built into a bird species' airspace, that species' collision risk with those structures does not depend on what existed at the site before."[94] In his experience working on wind energy repowering projects over the past fifteen years, he has seen no difference in fatality rates between new turbines built onto green fields versus those built exactly where the old turbines used to operate."[95] Based on his experience and studies, Dr. Smallwood supports his comparison by explaining that "[c]ollision risk applies to birds flying through the airspace that exists at the time of the flight, and not what existed there last year."[96]

As the IS/MND's estimations of impacts to biological resources were inadequate, so too were the mitigation measures—now erroneously labelled Conditions of Approval—which the County previously admitted were required to

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[90] Staff Report, Attachment F at 28.
[91] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (November 15, 2021).
[92] *Id.*
[93] Staff Report, Attachment G at 28.
[94] *Id.*
[95] *Id.*
[96] *Id.*

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reduce those impacts to less than significant levels. Dr. Smallwood's previous comments recommended additional measures that, in addition to those proposed in the MND, would have much greater effect at minimizing the fatalities and habitat destruction to special-status species at the Project site.[97] These recommendations went unaddressed by the County, and are hereby referenced and incorporated.

In response, the County cited the measures identified in the IS/MND, which are now to be incorporated into the Project's conditions of approval rather than an MMRP.[98] Renaming the mitigation measures did not improve their efficacy. While Dr. Smallwood concurred with the implementation of these measures, he determined that the measures are not adequate to fully mitigate the Project's significant impacts.[99] COA BIO-3, for example, is inconsistent with CDFW guidance that does not recommend preconstruction surveys without first conducting detection surveys.[100] Dr. Smallwood concluded that the other measures are "take-minimization measures, but would not prevent impacts."[101]

The failure to minimize the fatalities and habitat destruction to special-status species at the Project site with adequate mitigation measures further confirms that a fair argument exists that the Project will have significant impacts on wildlife and habitat.

2. The Project May Result in Significant Impacts to Air Quality That Would Require the Implementation of Mitigation Measures

In Dr. Fox's comments, she concluded that the Project would have significant, unmitigated impacts on air quality during construction activities and for the decades of operation, which the IS/MND, coupled with the Errata, failed to disclose and mitigate.[102] An EIR must be prepared to fully disclose and mitigate these impacts.

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[97] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 8-10 (May 10, 2021).
[98] Staff Report, Attachment F at 31.
[99] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 13 (November 15, 2021).
[100] *Id.*
[101] *Id.*
[102] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

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The County failed to respond directly and fully to many of Dr. Fox's comments, further demonstrating that the record still contains substantial evidence supporting a fair argument that the Project would have significant impacts, and that the County lacks substantial evidence to conclude otherwise.[103] For example, Dr. Fox's conclusion that the Project would result in significant and unmitigated impacts to air quality from the Project's construction-related PM10 emissions remains unrebutted in the record.[104] Dr. Fox conducted an analysis of construction fugitive dust PM10 emissions using AP-42, Section 13.2.3.[105] In response to the County's comments regarding the use of this emissions factor, Dr. Fox explains that she properly utilized AP-42, Section 13.2.3 given the express language in the Introduction to AP-42.[106]

Moreover, the emission factor utilized by Dr. Fox "...is most applicable to construction operations with: (1) medium activity level, (2) moderate silt contents, and (3) semiarid climate."[107] These conditions are present at the site, according to Dr. Fox.[108]

She explained that "Section 13.2.3.3 also 'strongly recommends' that the construction process be broken down into component operations and emission factors specific to each use. The IS/MND did not contain any information to allow this approach. The [Staff] Report also does not contain any of this information."[109] Based on the foregoing, Dr. Fox calculated "unmitigated PM10 emissions of 319 lbs/day compared to a significance threshold of 150 lbs/day."[110] This is a significant PM10 impact which requires mitigation.[111] However, Dr. Fox determined that the

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[103] Fox Comments at 1.
[104] *Id.* at 2-6.
[105] *Id.* at 2.
[106] *Id.* at 3.
[107] *Id.* at 4.
[108] *Id.*
[109] *Id.*
[110] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (May 10, 2021). It must be noted that the Imperial County Air Pollution Control District ("ICAPCD") considers PM10 to be of substantial concern. ICAPCD, *CEQA Guidelines* at 12 (December 12, 2017).
[111] *Comtys. for a Better Env't v. Cal. Resources Agency* (2002) 103 Cal.App.4th 98, 110-111 (when impact exceeds CEQA significance threshold, agency must disclose in the EIR that the impact is significant); *Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 960; *CBE v. SCAQMD*, 48 Cal.4th at 327 (impact is significant because exceeds "established significance threshold for NOx ... constitute[ing] substantial evidence supporting a fair argument for a significant adverse impact").

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four conditions of approval identified in the Staff Report would be insufficient to fully mitigate the significant impacts from construction PM10 emissions.[112] She recommended "requiring that all ICAPCD standard fugitive dust PM10 control measures, as well as discretionary mitigation measures for fugitive PM10 control, must be implemented."[113]

Dr. Fox also identified significant and unmitigated impacts from the Project's NOx emissions during construction activities.[114] The Staff Report, in response, includes a new air quality modeling analysis in "Appendix N," which Dr. Fox identified as entirely deficient analysis for three main reasons.[115] First, Appendix N assumed a lot acreage of 2.3 acres, which is not supported by other evidence that describes the disturbed area as 7.67 acres.[116] Second the CalEEMod input indicates zero acres of grading even though the construction equipment for the Project includes a 187 hp grader, thus confirming that more than zero acres will be graded.[117] Lastly, the analysis improperly omitted off-site emissions in its calculations of mitigated and unmitigated NOx emissions.[118] Dr. Fox calculated the NOx emissions using the correct disturbed acreage of 7.67 acres and determines that the NOx emissions would be 201 lbs/day, which is double the significance threshold.[119] Although Dr. Fox acknowledged that these emissions could possibly be mitigated by requiring the use of all Tier 4 construction equipment, only the use of Tier 3 engines "when commercially available" is required by the Project conditions and if not, then Tier 2 engines are permitted.[120] Dr. Fox provided substantial evidence demonstrating that these lower engine tiers will not reduce the Project's significant impacts to less than significant levels.

Dr. Fox also provided extensive comments about the risks to worker health from valley fever during the life of the Project, noting that Imperial County is endemic for valley fever.[121] The County responded that "Imperial County is not

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[112] Fox Comments at 7-8.
[113] *Id.*
[114] *Id.* at 8.
[115] *Id.* at 9.
[116] *Id.*
[117] *Id.*
[118] *Id.*
[119] *Id.* at 10.
[120] Staff Report, Attachment E at 3.
[121] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 33 (May 10, 2021).

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highly endemic for Valley Fever..."[122] To the contrary, Dr. Fox provided evidence that the site is in an endemic area, and that the Project's soil-disturbing activities would have the potential to put receptors at risk.[123] Despite evidence from the California Department of Public Health, case studies, and other published literature that support Dr. Fox's conclusion that "conventional construction mitigation measures required by Imperial County CEQA guidance are not adequate to control Valley Fever spores raised during Project construction," the Staff Report set forth the conclusory assertion that the Applicant's "voluntary" mitigation measures were sufficient.[124] A fair argument can thus be made that the impacts on public health from Valley Fever may be significant and are unmitigated. Under the fair argument standard, a disagreement among experts also necessitates preparation of an EIR.[125]

For the foregoing reasons, a fair argument exists that the Project will have significant impacts on air quality and public health which require the County to prepare an EIR.

3. The Project May Result in Significant Impacts to from Hazard Risks That Would Require the Implementation of Mitigation Measures

The IS/MND determined that the impacts from hazards would be potentially significant unless mitigated. According to Dr. Fox's analysis, the IS/MND failed to accurately disclose the severity of the Project's hazards impacts because the IS/MND failed to evaluate a worst-case accident. She explained that "a [boiling liquid expanding vapor explosion ("BLEVE")] is the worst-case release scenario for very flammable materials such as isopentane because it combines both the mechanical effects of an explosion and the thermal effects of a fire."[126] The Staff Report failed to meaningfully respond to this comment and lacked the requisite

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[122] Staff Report, Appendix G at 22.
[123] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 34-35 (May 10, 2021).
[124] Staff Report, Appendix G at 22.
[125] *Pocket Protectors,* 124 Cal.App.4th at 935; *Sierra Club,* 6 Cal.App.4th at 1317–1318; CEQA Guidelines § 15064(f)(5).
[126] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 41-42 (May 10, 2021); Fox Comments at 12.

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BLEVE analysis. An EIR must be prepared to fully disclose and mitigate these significant impacts.

Additionally, the County responded to Dr. Fox's comments regarding impacts from hazards by asserting that the Project's Hazards Analysis "complies with the regulatory standard for assessing a catastrophic event...," citing 40 C.F.R. §§ 68.20-68.42.[127] Dr. Fox disagreed on the grounds that a BLEVE is reasonably expected to occur in the Project's location given that "[a]mbient temperatures at the Project site routinely exceed isopentane's boiling point from March through October."[128] Dr. Fox explained that "on-site workers would be the most exposed population and would be within the zone of significant impact."[129] Furthermore, she found that exposed parties within 0.3 miles of an isopentane tank experiencing a BLEVE would suffer from second degree burns yet the nearest off-site sensitive receptors are not identified.[130]

The Staff Report failed to meaningfully respond to these comments and lacked any evidence supporting the County's unsupported conclusion that the Project would not result in significant impacts from a BLEVE. The evidence presented by Dr. Fox is inadequately contested by the County in its Responses to Comments and "to the extent there was a conflict in the evidence, 'neither the lead agency nor a court may 'weigh' conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.'"[131] Thus, a fair argument can be made that there are potentially significant impacts from hazards associated with the Project, requiring an EIR.

C. The Project is Not Categorically Exempt from CEQA Due to Potentially Significant Impacts Requiring Mitigation

Categorical exemptions are based on a finding that a class or category of projects does not have a significant effect on the environment.[132] An agency's finding that a particular proposed project comes within one of the exempt classes essentially includes an implied finding that the project has no significant effect on

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[127] Staff Report, Appendix G at 23.
[128] Fox Comments at 12-13.
[129] *Id.* at 13.
[130] *Id.*
[131] *Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal. App. 5th 665, 689, *reh'g denied* (Apr. 10, 2020), *review denied* (June 24, 2020).
[132] Pub. Res. Code §§ 21083, 21084; 14 C.C.R. § 15354.

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the environment.[133] A lead agency must provide "substantial evidence to support [their] finding that the Project will not have a significant effect."[134] Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency.[135] Additionally, an agency may not rely on a categorical exemption if mitigation measures would be necessary to reduce potentially significant effects to less than significant levels.[136]

Here, none of the exemptions claimed by the County—Class 1, Class 2, or the "common sense" exemption—apply to the Project because the Project has significant impacts which require mitigation. As set forth in the IS/MND, the County's significance determinations and mitigation measures to reduce the impacts to less than significant levels establish that the Project has the potential to result in impacts significant enough to warrant mitigation. Thus, by the County's own conclusions, and further supported by the comment letters submitted by Dr. Fox and Dr. Smallwood, no exemptions apply to the Project.

1. The County Lacks Substantial Evidence to Support a Finding That the Project Will Not Have a Significant Effect

As explained above, "[o]nly those projects having no significant effect on the environment are categorically exempt from CEQA review. An activity that may have a significant effect on the environment cannot be categorically exempt."[137] Exemption determinations must be supported by substantial evidence in the record demonstrating that the exempt project will have no significant environmental effects.

The "fair argument" standard is virtually the opposite of the typical deferential standard accorded to agencies when they have prepared an EIR. As a matter of law, "substantial evidence includes . . . expert opinion."[138] The CEQA Guidelines demand that where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the

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[133] *Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 116.
[134] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.
[135] 14 C.C.R. § 15384.
[136] *SPAWN,* 125 Cal.App.4th at 1102; *Azusa Land Recl. Co.,* 52 Cal. App.4th at 1198-1201.
[137] *Id.* at 1107; Pub. Res. Code §§ 21080(b)(9), 21084(a).
[138] Pub. Res. Code § 21080(e)(1); 14 C.C.R. § 15064(f)(5).

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environmental effects to be significant and prepare an EIR.[139] The courts have also held that substantial evidence includes facts and lay opinion, including eyewitness testimony, of potentially significant impacts such as impacts on aesthetics and the environmental consequences of economic and social changes caused by a project.[140]

As explained above and detailed in Citizens' previous comments on this Project, there is substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, hazards, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[141]

Moreover, by the County's own admission, the IS/MND made the following determinations of significance, in relevant part: (1) the Project "has the potential to result in significant or substantial adverse effects on humans. However, the Proposed Project would implement MM-FIRE-1 through MM-FIRE-7 to reduce any potentially significant impacts to hazard and hazardous materials.";[142] (2) the Project "has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, and/or reduce the number or restrict the range of a rare or endangered plant or animal. However, the Proposed Project would implement MM-BIO-1 through MM-BIO-4 to reduce any potentially significant impacts to biological resources.";[143] and (3) the combination of the Project when evaluated with other projects causing related impacts may result in a cumulatively significant impact.[144] Taken together, the County lacks substantial evidence to support a finding that the Project will not have a significant effect and thus the Project is not exempt from CEQA review.

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[139] *Id.*; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App. 4th 903, 935.
[140] *Id.* at 929; *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1603-04.
[141] *See* Citizens' Comments on MND; Citizens' Comments to Planning Commission.
[142] *Id.*
[143] *Id.*
[144] Staff Report at 3. As detailed in previously submitted comments dated May 10, 2021, although the MND's Mandatory Findings of Significance acknowledge that cumulatively considerable impacts of the Project and related nearby projects are significant and require mitigation, the failure to (1) identify the relevant projects and their cumulative impacts; and (2) suggest feasible mitigation measures is a clear violation of CEQA's requirements to evaluate and discuss cumulative impacts.

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2. The Project is Not Exempt from CEQA Because Mitigated Categorical Exemptions are Prohibited under CEQA

An agency may not rely on a categorical exemption if to do so would require the imposition of mitigation measures to reduce potentially significant effects to less than significant levels.[145] Under the Guidelines, "mitigation" includes: "(a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation. (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment. (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. (e) Compensating for the impact by replacing or providing substitute resources or environments."[146]

The measures set forth in the IS/MND and MMRP fall squarely within the definition of mitigation under CEQA Guidelines Section 15370. Incorporating mandatory language like "shall," the mitigation measures are intended to reduce the risk of upset or accidents by requiring components like automatic fire suppression equipment, automatic fire detection systems, and containment area(s) for product and water run-off (MM FIRE-1 through MM FIRE-7).[147] The measures also minimize impacts to biological resources like the burrowing owl, western mastiff bat, and nesting birds (MM BIO-1 through MM BIO-4).[148] These measures were designed to reduce the potentially significant environmental impacts that would otherwise result from the Project, as disclosed in the IS/MND and supported by evidence set forth in the expert reports by Dr. Fox and Dr. Smallwood.[149] Moreover, the County's own preparation of an IS/MND—which, by definition, must include mitigation measures to reduce a project's significant, adverse impacts—is an admission that the Project will result in impacts significant enough to warrant mitigation. Thus, based on the County's own conclusions, no categorical exemption applies to the Project.

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[145] *SPAWN,* 125 Cal.App.4th at 1102; *Azusa Land Recl. Co.,* 52 Cal. App.4th at 1198-1201.
[146] 14 C.C.R. § 15370.
[147] MND at 21, 27.
[148] *Id.*
[149] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

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"If a project may have a significant effect on the environment, CEQA review must occur, and *only then* are mitigation measures relevant."[150] As established by the courts, "there are sound reasons for precluding reliance upon mitigation measures at the preliminary stage of determining eligibility for a categorical exemption. Regulatory guidelines dealing with the environmental review process under CEQA 'contain elaborate standards–as well as significant procedural requirements–for determining whether *proposed* mitigation will adequately protect the environment and hence make an EIR unnecessary; in sharp contrast, the Guidelines governing preliminary review do not contain any requirements that expressly deal with the evaluation of mitigation measures.'"[151] The courts employ a de novo standard of review when evaluating whether an agency has employed the correct procedures to "'scrupulously enforc[e] all legislatively mandated CEQA requirements,'" meaning "the agency has no discretion,...."[152]

In preparing the IS/MND and MMRP, the County initially made an attempt to comply with the procedural and substantive requirements of the CEQA statue and CEQA Guidelines, as well as the County's own rules for implementing CEQA.[153] Nevertheless, at the Applicant's request, the County drastically changed course in ultimately finding the Project to be categorically exempt from CEQA.[154] In accordance with this decision, the Errata to the MND purports to change each and every mitigation measure to conditions "voluntarily adopted" by the Applicant.[155] The measures, however, are not truly "voluntary." The Staff Report concludes the measures are "legally enforceable" and the Errata to the MND describes the measures as "preventative and protective measures" that are "embodied as [Conditions of Approval]" to be "monitored and enforced."[156] As mandatory Conditions of Approval, these measures qualify as mitigation measures within the meaning of CEQA.

The court's analysis and decision in *SPAWN* is instructive here. There, the county determined that the proposed construction of a home was categorically exempt from CEQA under a categorical exemption for single-family homes, even

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[150] *SPAWN*, 125 Cal.App.4th at 1108. (emphasis added).
[151] *Id.*
[152] *Sierra Club v. Cty. of Fresno* (2018) 6 Cal. 5th 502, 512.
[153] *See, e.g.,* County of Imperial, *CEQA Regulations; Guidelines for the Implementation of CEQA* (April 2017).
[154] Staff Report at 4; Staff Report, Attachment F at 3.
[155] Staff Report, Attachment E at 2.
[156] *Id.*; Staff Report, Attachment G at 17.

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though the home was adjacent to a protected anadromous fish stream and within a stream conservation area which the county conceded was of "critical concern."[157] In nevertheless finding that there was no reasonable possibility of significant environmental impacts, the county supported its exemption determination "on 'dozens of conditions that [were] applied to enhance mitigations and reduce to a minimum the possibility of any adverse environmental impacts.'"[158] The court set aside the county's approval of the project, reasoning that "[r]eliance upon mitigation measures (whether included in the application or later adopted) involves an evaluative process of assessing those mitigation measures and weighing them against potential environmental impacts, and that process must be conducted under established CEQA standards and procedures for EIRs or negative declarations."[159] The *SPAWN* court set forth the proposition that "whether a project may impact a designated environmental resource must be made without reference to or reliance upon any proposed mitigation measures."[160]

Likewise here, the County's improper attempt to find the Project exempt from CEQA review with the inclusion of enforceable mitigation measures is contrary to law and deprives the public of its statutory rights to participate and comment on the sufficiency of the mitigation measures proposed to be applied to the Project.

D. The Categorical Exemptions are Facially Inapplicable to the Project

In analyzing whether the lead agency correctly determined a project to be categorically exemption, the courts first determine the scope of the exemption and "then determine if substantial evidence supports the agency's factual finding that the project fell within the exemption."[161] CEQA exemptions are to be narrowly construed.[162] Erroneous reliance by a lead agency on a categorical exemption constitutes a prejudicial abuse of discretion and a violation of CEQA.[163]

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[157] *SPAWN,* 125 Cal.App.4th at 1106.
[158] *Id.* at 1107.
[159] *Id.*
[160] *Id.*
[161] *California Farm Bureau Fed'n v. California Wildlife Conservation Bd.* (2006) 143 Cal. App. 4th 173, 185.
[162] *Mountain Lion Found. v. Fish & Game Com.* (1997) 16 Cal.4th 105, 125; *McQueen,* 2 Cal.App.3d at 1148.
[163] *Azusa,* 52 Cal.App.4th at 1192.

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None of the exemptions claimed by the County—Class 1, Class 2, or the "common sense" exemption—apply to the Project. As explained in more detail below, both Dr. Fox, Dr. Smallwood provided substantial evidence supporting a fair argument that the Project will result in significant impacts on the environment. The County, meanwhile, failed to provide substantial evidence showing that the Project will not result in significant impacts, as required to support an exemption. The Project, therefore, fails to qualify for any available exemption.

1. The Project is not Categorically Exempt Under Class 1 Because the Proposal Involves Substantially More Than an Insignificant Expansion of Uses

Section 15301 of the CEQA Guidelines provides an exemption for the "operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use."[164] The key, as identified in the provision, is whether the activity involves negligible or no expansion of use.[165]

The existing facilities exemption on its face does not apply to this Project because this Project cannot be characterized as a negligible modification to a previously analyzed project.[166] Rather, the Project involves the installation of two new OECs, i.e., OEC 1 and OEC 2, which would jointly function as an I3LU that would use an entirely different process for cooling motive fluid, i.e., air cooling rather than water cooling.[167] These new OECs would also require the installation of a new VRMU and two new isopentane storage tanks (10,000 gallons each) on the site—doubling the number of tanks from two to four.[168] With the addition of the two new isopentane storage tanks, the isopentane volume is estimated to increase from 96,8000 gallons under permitted conditions to 240,100 gallons.[169] Moreover, the IS/MND estimated that isopentane emissions would increase by 48.0 lbs/day due to the two new OEC units and now the Staff Report estimates that the change in

[164] 14 C.C.R. §§ 1537015301.
[165] *Id.*
[166] *See, e.g., Communities for a Better Env't,* 48 Cal. 4th at 326.
[167] MND at 10.
[168] *Id.*
[169] Staff Report, Attachment F at 10.

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isopentane emission volume would be as significant as 65.7 lbs/day.[170] Finally, the Project proposes to repower the plant to its "nameplate" output capacity of 52 megawatts (net) and 78.2 megawatts (gross).[171] The County therefore acknowledged that the Project will result in an expansion of existing use, and there is no evidence in the record that the existing facility formerly operated at its nameplate capacity, rending the Class 1 exemption inapplicable.

The Project would also reconfigure and convert OEC 11 and OEC 13 into an ITLU along with additional modifications.[172] Finally, due to changes to the existing facilities, the Project requires an additional 500 AF of water *annually*.[173] Based on the foregoing, at the outset of the CEQA implementation process, the County properly classified the Project as a non-exempt new project, proceeded forward with CEQA review, and issued an IS/MND, which concluded that the Project would have significant impacts that could be mitigated to less than significant levels.

The Staff Report's Findings of Fact erroneously claimed that the Project is categorically exempt on the basis that it will not result in an expansion of the facility's current use, describing the Project as a "'like-for-like' replacement...."[174] The Findings improperly relied on factually inaccurate claims and omitted key Project components to reach the desired conclusion. First, the analysis in the Staff Report did not address the significant *increase* in isopentane emissions from the Project to approximately 99.0 lbs/day, which is less than a tenth below permitted conditions.[175] Moreover, the comments prepared by Dr. Fox dated May 10, 2021, provided evidence that isopentane emissions were underestimated in the IS/MND and are likely to increase significantly more than disclosed.[176]

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[170] *Id.* at 12. Note that the Staff Report discloses that isopentane emissions under proposed conditions would be 99.0 lbs/day and emissions under actual emissions are 33.3 lbs/day. However, the Report incorrectly calculates the change to be 48.0 lbs/day when in fact the change would be 65.7 lbs/day. This discrepancy is due to the fact that the Staff Report significantly increased the Project's proposed conditions for isopentane emissions from 81.3 lbs/day to 99.0 lbs/day, which is less than a tenth below permitted conditions.
[171] Staff Report at 1; MND at 2.
[172] MND at 10.
[173] *Id.* at 12.
[174] Staff Report, Attachment F at 8; 18.
[175] *Id.* at 12.
[176] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).

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Rather than addressing the increase in isopentane emissions, the Staff Report focuses on the emissions of NOx, S02, H2S, and Benzene, claiming that these emissions "would be completely eliminated."[177] To the contrary, however substantial evidence demonstrates that the Project's NOx emissions during construction would be significant and unmitigated. In her report, Dr. Fox identified many deficiencies with the Project's severely underestimated construction NOx emissions, and conducted an independent analysis that determined these emissions would actually contribute around 201 lbs/day, which is more than double the significance threshold of 100 lbs/day.[178] In failing to require that the Project utilize Tier 4 construction equipment, these emissions remain unmitigated.[179]

Second, the Findings are misleading in claiming that "no additional physical expansion of facilities at the Project site would occur as a result of the Project."[180] This statement is patently incorrect. The Project proposes to add two new OECs, i.e., OEC 1 and OEC 2, a new VRMU, and two new isopentane storage tanks (10,000 gallons each), doubling the total number of tanks on-site from two to four, and increasing overall facility output.[181] The Findings are thus unsupported by the evidence set forth in the Project Description.

Finally, the Findings state that "[t]he Project neither uses a new technology nor utilizes new processes, as the Heber 1 power plant already utilizes OECs to generate electricity."[182] To the contrary, the I3LU would use an entirely different process for cooling motive fluid, i.e., air cooling rather than water cooling.[183] Additionally, the Project would require an additional 500 AF per year of irrigation water because the "*original* operational process utilized flashes of geothermal brine to make steam," but "*[c]hanges* to these existing facilities will no longer generate the extra water needed for the cooling towers," thus necessitating additional water consumption.[184] The Project's additional water consumption, including the impacts of increased consumption in a County which lacks adequate water supply for all

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[177] Staff Report, Attachment F at 17.
[178] Dr. Phyllis Fox, PhD, PE, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 9-10 (November 16, 2021).
[179] *Id.* at 10.
[180] Staff Report, Attachment F at 17.
[181] MND at 2, 10.
[182] Staff Report, Attachment F at 17.
[183] MND at 10.
[184] *Id.* at 12.

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existing industrial and agricultural uses, is more than a "minor alteration" to the existing facility and was not analyzed in the facility's original CEQA document.

For the foregoing reasons, the proposed expansion of existing uses by the Project is significantly more than "negligible or no expansion" and thus the Project is not categorically exempt from CEQA. An EIR is required for the Project.

2. The Project is not Categorically Exempt Under Class 2

Section 15302 of the CEQA Guidelines provides an exemption from CEQA for the "replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced," including the "[r]eplacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity."[185] Public agencies utilizing such exemptions must support their determination with substantial evidence.[186] A project may therefore be exempted from CEQA if the Lead Agency shows through substantial evidence that it is replacing an existing facility with substantially the same *purpose* and *capacity*.

This Project involves the installation of a new OEC 1 with a design capacity of 19.85 MW, a new OEC 2 with a design capacity of 17.25 MW, two new 10,000-gallon isopentane storage tanks—doubling the number of tanks on site and increasing the volume from 96,8000 gallons under permitted conditions to 240,100 gallons, a new VRMU as well as additional new ancillary components within the existing Heber 1 Geothermal Energy Complex.[187] Nevertheless, the Staff Report again claims that the proposed new facilities would be a "'like-for-like' replacement...."[188] The Project, however, would involve the construction of new and highly technical equipment that involves different technologies and processes as well as environmental impacts.[189] Namely, isopentane emissions, the number of isopentane tanks, and the volume of isopentane have all increased.[190] Moreover, due to equipment modifications and changes, the Project would require additional

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[185] 14 C.C.R. § 15302(c).
[186] Pub. Res. Code § 21168.5.
[187] MND at 11.
[188] Staff Report, Attachment F at 21.
[189] MND at 11-12.
[190] *Id.* at 8, 10.

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irrigation water to be supplied annually.[191] The Project, therefore, involves far more than a "replacement or reconstruction" of existing structures and is not exempt from CEQA review.

3. The Project is not Exempt Under the "Common Sense" Exemption

CEQA provides for a "common sense" exemption, which applies to a project if it can be determined with certainty that there is "no possibility" that the project "may have a significant effect on the environment."[192] "If legitimate questions can be raised about whether the project might have a significant impact and there is any dispute about the possibility of such an impact, the agency cannot find with certainty that a project is exempt."[193] The exemption must "be reserved for those 'obviously exempt' projects, 'where its absolute and precise language clearly applies.'"[194]

The County's obligation to produce substantial evidence supporting its exemption decision is particularly important where the record shows, as it does here, that the Project will have significant environmental impacts. The Staff Report, in concluding that the commonsense exemption applies, states that its analysis of Project impacts "methodically demonstrates that the Project will not create any significant environmental effects, primarily because all construction and installation will occur on the existing site, which has been fully planned, permitted, and developed."[195] The County wrongly asserts that the existing site has been "fully planned, permitted, and developed." As stated in the CEQA Findings, "[t]he purpose of the Project is to decommission the dual-flash steam turbine generator, install two new ORMAT Energy Converters (OECs), reconfigure two existing OECs, install ancillary equipment including a vapor recovery maintenance unit, and install upgrades to replace aging equipment, including two new 10,000-gallon isopentane storage tanks, *subject to approval of a CUP from the County*."[196] Approval of the

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[191] *Id.* at 12.
[192] 14 C.C.R. § 15061(b)(3).
[193] *Davidon Homes v. City of San Jose* (1997) 54 Cal. App. 4th 106, 117, *as modified on denial of reh'g* (Apr. 29, 1997).
[194] *Id.*
[195] Staff Report, Attachment F at 22.
[196] Staff Report, Attachment B at 3.

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CUP is required in order for the Project to go forward and thus the existing site has not been fully permitted.[197]

Moreover, the Staff Report alleged that "[o]ther potential areas of impact not necessarily related to the physical land—such as noise, geologic hazards, biological resources, and air emissions—are shown to not approach or exceed any applicable thresholds of significance."[198] The reports by Dr. Smallwood and Dr. Fox presented substantial evidence that the Project may have significant impacts. Thus, the County cannot conclude with any certainty that there is no possibility the Project will cause no significant environmental impacts.

As detailed in their respective expert reports, Dr. Fox and Dr. Smallwood identified many potentially significant impacts, supported by substantial evidence, to which the County insufficiently addressed in its Responses to Comments. For example, in response to Dr. Smallwood's comments regarding potentially significant impacts to special-status species, the Staff Report claims that the Project site "is completely void of any suitable habitat for either special-status plant species or wildfire, including avian species."[199] In response, Dr. Smallwood reiterates that "[t]his assertion was readily refuted by the project's consultant who documented 10 species of wildlife at the site even though the survey was performed mid-day in July – a time date least likely to detect wildlife."[200]

Furthermore, the County improperly dismissed Dr. Smallwood's previous comments regarding the Project's significant collision-mortality impacts to wildlife on the grounds that "the new structure will be located on the same site as the structure replaced...."[201] In response, Dr. Smallwood identified many of the Project's new structures, including "at least 1,820 m of security fence and 925 m of electric

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[197] It must also be noted that the very requirement for a CUP indicates the possibility of a potentially significant impact. *See* County of Imperial, Code of Ordinances, § 90203.09, 90508.01.
[198] Staff Report, Attachment F at 22.
[199] *Id.* at 34-35. "Readers of an EIR should not be required to 'ferret out an unreferenced discussion in [related material].... The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project. '[I]nformation 'scattered here and there in EIR appendices,' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis....'" *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal. 5th 918, 941, *citing to Vineyard*, 40 Cal.4th at 442.
[200] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 8 (November 15, 2021).
[201] *Id.* at 20.

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distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks," which he finds "would pose new collision hazards to wildlife for the subsequent 30 years of operation."[202] Based on his expertise, Dr. Smallwood explains that "[t]he County's response to [his] comments neither acknowledge these project changes, nor addresses the significant impacts on species that could result."[203]

With regards to significant impacts on air quality, Dr. Fox's analysis demonstrates that Project construction activities will emit PM10 and NOx emissions in excess of the significance thresholds, thus creating significant and unmitigated impacts.[204]

Both Dr. Fox and Dr. Smallwood are highly skilled and qualified technical experts with extensive experience in their fields.[205] Their conclusions are supported by well-documented, credible evidence. Their opinions therefore constitute substantial evidence within the meaning of the law.[206] The Commission's conclusions otherwise were supported only by instances of unsubstantiated opinion or conjecture.[207]

E. The Project Falls Within the Exceptions to Categorical Exemptions

Even if an agency meets its burden to demonstrate that the project is within a categorically exempt class, a project is not exempt if an exception to the exemption is applicable pursuant to CEQA Guidelines Section 15300.2.[208] Here, an exception to

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[202] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (November 15, 2021).
[203] *Id.*
[204] Dr. Phyllis Fox, PhD, PE, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 2-10 (November 16, 2021).
[205] *See* Curriculum Vitae for Dr. Fox and Curriculum Vitae for Dr. Smallwood attached to Citizens' Comments.
[206] 14 C.C.R. § 15384(b) ("Substantial evidence" includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts); *Architectural Heritage v. County of Monterey* (2004) 122 Cal.App.4th 1095, 1117-18 (expert's opinion is "credible" if it constitutes "fact-based observations by people apparently qualified to speak to the question [at issue.] That testimony constitutes substantial evidence, because it consists of "facts, reasonable assumptions, and expert opinion supported by facts.").
[207] *See* Staff Report, Appendix F at 46.
[208] *California Farm Bureau Fed'n,* 143 Cal. App. 4th at 186

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the exemption is applicable because there is a reasonable possibility that the Project will have a significant effect on the environment due to the Project's cumulative impacts,[209] and there is a reasonable possibility that the activity will have a significant effect on the environment due to "unusual circumstances."[210]

1. The Project May Have Significant Cumulative Impacts When Considered with Other Nearby Geothermal Power Projects

Categorical exemptions are inapplicable when the "cumulative impact of successive projects of the same type in the same place, over time is significant."[211] Cumulative impacts can result from individually minor but collectively significant impacts from projects taking place over a period of time.[212]

Despite concluding that cumulative impacts would be potentially significant in the IS/MND Mandatory Findings of Significance, the County subsequently determined that the Project would not result in a cumulatively significant impact in part "[b]ecause the Project contemplates replacing the site's currently outdated dual flash turbine with more modernized equipment-thereby resulting in an increase in renewable energy production and a reduction in air emissions...."[213] The County's reasoning is flawed. The Project proposes substantially more than a simple replacement of like-for-like equipment and processes given that the Project involves the construction and operation of two new OEC units, the installation of two additional isopentane storage tanks, a new VRMU, and due to the new processes utilized by the Project, an additional 500 AF per year of irrigation water is required for the Project.[214] Furthermore, based on the evidence provided in Dr. Fox's comments, the County also failed to adequately support its finding that the Project would result in a reduction in air emissions.[215] To the contrary, the Project's construction emissions of PM10 and NOx would be significant, and since "the Project will significantly increase the amount of isopentane in the OEC units, ..., the maintenance, purging and fugitive emissions should also increase by about a

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[209] *Id.* at 15300.2(b).
[210] *Id.* at § 15300.2(c).
[211] *Id.* at § 15300.2(b).
[212] *Id.* at § 15355.
[213] MND at 39; Staff Report, Attachment F at 24.
[214] *Id.* at 10-12.
[215] *Id.*; Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 6-14, 21-23 (May 10, 2021).

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factor of 2.5, resulting in significant ROG emissions" during Project operations.[216] The County thus has not provided support for its claim that the Project would not result in a cumulatively significant impact.

Moreover, the County states that "no projects occur in relatively close proximity to the Heber 1 site (including the Heber 2 project, located approximately 1 mile away)."[217] Factors to consider when determining whether to include a related project in a cumulative impacts analysis include environmental resources impacted, location, and project type.[218] Heber 2, for example, is a very similar geothermal project proposed by the same applicant located a mere mile away and yet is improperly identified as outside of the Heber 1 Area of Potential Effect.[219] Both projects involve facilities similar in size with overlapping construction schedules and thus overlapping impacts from construction emissions.[220] The projects also are likely to result in many of the same adverse environmental impacts.[221] For example, our comments on the Heber 2 project supported the conclusion that construction emissions from that project are also likely significant.[222] Since construction of these two projects may very well overlap, already-significant emissions impacts will be substantially worse. Additionally, both projects will increase the release of isopentane, an ozone precursor, into the atmosphere.[223] Dr. Fox concluded in her comments that the emissions of isopentane from Heber 1 and Heber 2 far exceed ICAPCD's significance threshold for ROG —an undeniably significant and

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[216] *Id.*
[217] Staff Report, Attachment F at 24.
[218] 14 C.C.R. § 15130(b)(2).
[219] *See* Heber 2 Mitigated Negative Declaration.
[220] *Id.*; *See also* MND.
[221] *See, e.g., Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project*, (SCH: 2020069002; CUP No. 19-0017) (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021).
[222] *Id.* at 23-27.
[223] Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 26 (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).

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cumulatively considerable impact.[224] Thus, the Heber 1 and Heber 2 projects would result in cumulatively significant impacts that the County failed to consider.[225]

Heber 2 is not the only project that must be considered in a cumulative impacts analysis. In its 2020 Annual Report, as well as in SEC filings, Ormat indicates that its growth plans include the repair and enhancement of existing wells and drilling of new wells.[226,227] The drilling and operation of new wells constitute additional cumulative project(s) that will result in air emissions that must be considered with those of the Project in a cumulative air quality analysis.

Given the proximity of a remarkably similar project that is part of the same Ormat geothermal complex, the County's contention that the Project will not contribute to cumulatively considerable impacts is dubious and completely unsupported. The exception makes the CEs inapplicable to this Project.

2. The Project May Have Significant Effects on the Environment due to Unusual Circumstances

CEQA Guidelines state that a categorical exemption "shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances."[228] The Supreme Court in *Berkeley Hillside Preservation v. City of Berkeley* clarified the meaning of the CEQA Guidelines language and the applicable standards of review, and set forth two tests to determine whether the unusual circumstances exception

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[224] ICAPCD, *CEQA Guidelines, Table 1* at 11; Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 35 (Feb. 22, 2021). Dr. Fox explains in her comments that when errors made in estimating isopentane emissions from Heber 2 are corrected, her calculations show an increase in emissions by 505 lb/day. The Heber 1 MND estimates that the Project will result in an increase in isopentane emissions of 48 lb/day. Cumulatively, the two projects will result in an increase of 553 lb/day, well over the ICAPCD threshold of 137 lb/day.

[225] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

[226] Ormat, *2020 Annual Report* at 64.

[227] U.S. SEC, *Form 10-K, Ormat Technologies, Inc.* (December 31, 2020), available at: https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/17c5fd2c-ee2c-431e-a993-fc6cd4626a05.pdf.

[228] 14 C.F.R. § 15003.2(c).

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applies.[229] "One may identify 'evidence that the project will have a significant effect on the environment.' Alternatively, one may show evidence (1) the project is unusual because it 'has some feature that distinguishes it from others in the exempt class, such as its size or location;' and (2) there is 'a reasonable possibility of a significant effect due to that unusual circumstance.'"[230]

As to the first test, the County's determinations set forth in the IS/MND provide concrete evidence to demonstrate that the Project *will* have significant effects on the environment. The County's conclusions are further supported by the expert reports previously submitted by Dr. Fox and Dr. Smallwood.[231] The IS/MND concludes that the Project would result in significant adverse impacts and incorporates several mitigation measures to reduce the Project's significant impacts.[232] The IS/MND's determinations of significance, in relevant part, include substantial adverse effects on humans that may be reduced by implementing MM-FIRE-1 through MM-FIRE-7, significant impacts to biological resources requiring implementation of implement MM-BIO-1 through MM-BIO-4, and cumulatively significant impacts.[233] The mitigation measures were designed to reduce the Project's potentially significant environmental impacts that would otherwise result from the Project. Thus, there is evidence that the Project *will* have a significant effect on the environment.

In the alternative, the Project also presents circumstances that are unusual for projects in the exempt classes, which are comprised of classes of projects that involve the continued operation of existing facility with a negligible expansion of use and/or replacement structures.[234] The Supreme Court in *Berkeley Hillside Pres.*

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[229] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105.
[230] *Protect Tustin Ranch v. City of Tustin* (2021) 2021 WL 4962754, at *5.
[231] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[232] *See* MND at 39.
[233] *Id.*
[234] The County concludes in the Staff Report that "[u]nder the 'Class 1' exemption, the Project constitutes an '[e]xisting facility[y] of both inventory and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services[.]' (CEQA Guidelines,§ 15301, subd. (b).) Under the 'Class 2' exemption, the Project constitutes a 'commercial structure with a new structure of substantially the same size, purpose, and capacity' and an 'existing utility system[] and/or facilit[y] involving negligible or no expansion of capacity.' (CEQA Guidelines, § 15302, subds. (b)-(c).)" Staff Report, Attachment F at 25.

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clearly established that "[a] party invoking the exception may establish an unusual circumstance without evidence of an environmental effect, by showing that the project has some feature that distinguishes it from others in the *exempt class*, such as its size or location."[235]

Here, the Project proposes to construct and operate new structures as well as implement new processes to increase the net and gross generation of the existing geothermal power facility.[236] Although the Project is sited within the County's Geothermal Overlay Zone and other geothermal operations exist in the area, the Project is nevertheless unusual for purposes of CEQA Guidelines Section 15003.2.[237] According to the U.S. Department of Energy, the combined capacity of the Imperial Valley Geothermal Resource Area is approximately 327 net megawatts.[238] Since the Project proposes to increase the net generation of the plant to 52MW, the Project would comprise nearly sixteen percent of the total capacity for the entire Geothermal Overlay Area in the County.[239] By way of comparison, the recent Heber 2 proposal refurbished the Heber 2 unit to its permitted net generation capacity of 33MW, which is 19MW less than this Project.[240] Moreover, unlike some of the other geothermal projects in the County's Geothermal Overlay Zone, this Project site, which is located in one of the most seismically active regions in the U.S.,[241] is surrounded by three cities—the City of Calexico with a population of approximately 40,000, the City of El Centro with a population of around 44,000, and the City of Imperial with a population of around 17,400.[242] The IS/MND concedes that the Project site is "subject to potential ground shaking due to nearby faults."[243] Though the County asserts that risk of seismic activity does not pose significant risks at the

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[235] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105. (emphasis added)
[236] MND at 10, 23.
[237] Staff Report, Attachment F at 25.
[238] U.S. Department of Energy, *Imperial Valley Geothermal Area,* available at: https://www.energy.gov/eere/geothermal/imperial-valley-geothermal-area.
[239] *Id.*; MND at 10.
[240] Imperial County, *Initial Study and Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 11.
[241] *Id.* at 23.
[242] Imperial County, *Imperial County Geothermal Projects,* available at: https://www.icpds.com/assets/planning/energy-maps/imperial-county-geothermal-09-15-2017.pdf; U.S. Census Bureau (2019).
[243] *Id.* at 23.

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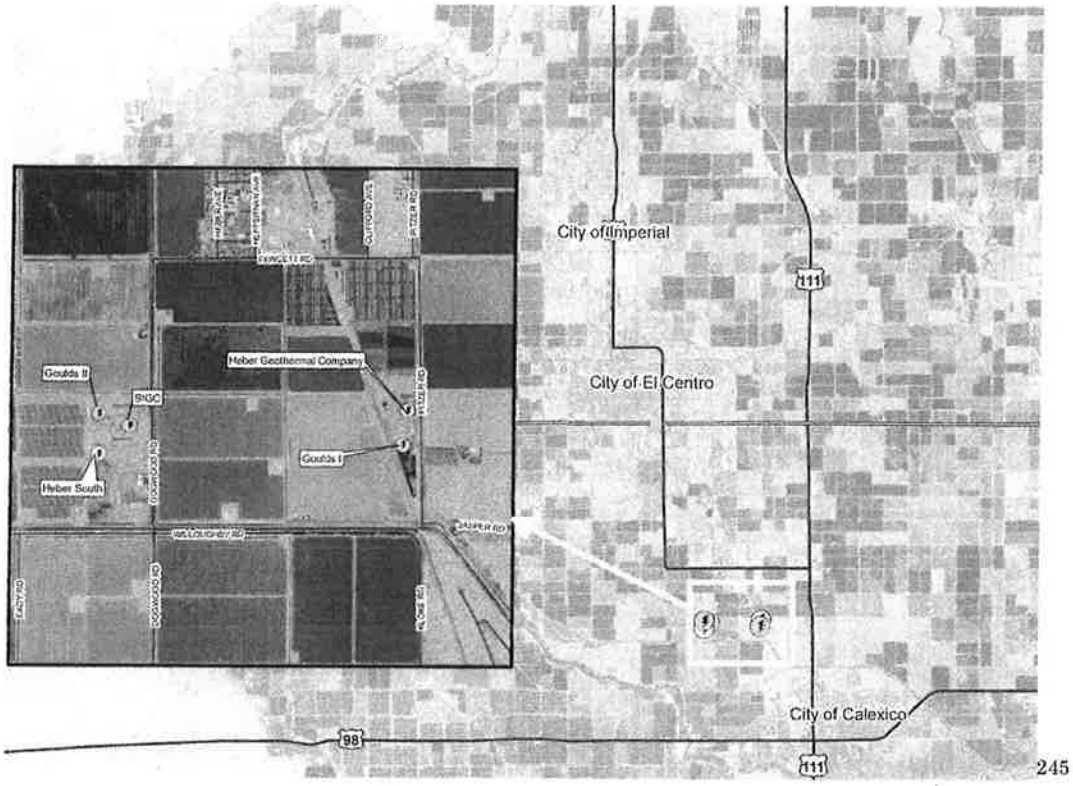
Project site, a "swarm of earthquakes" hit Imperial County on June 5, 2021, some felt as far away as Los Angeles.[244]



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Finally, this Project involves storage and handling of isopentane, a highly volatile liquid which can readily boil and evaporate on a warm day, making assessment and mitigation of potential accidents involving isopentane extremely important. It is for this reason that Dr. Fox recommended evaluating the most extreme and dangerous scenarios in the hazards analysis, including the potential consequences of a boiling liquid expanding vapor explosion ("BLEVE"), a reasonably foreseeable worst-case scenario that combines both the mechanical effects of an explosion and the thermal effects of a fire.[246]

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[244] Los Angeles Times, *Earthquake: Swarm of tremblors, including magnitude 5.2 quake, hits Imperial County* (June 5, 2021), available at: https://www.latimes.com/california/story/2021-06-05/earthquake-hits-imperial-county?utm_id=30582&sfmc_id=1628513.
[245] *Id.*
[246] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 47-52 (May 10, 2021).
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Given an adequate demonstration of unusual circumstances, the next question identified in *Berkeley Hillside Pres.* is whether there is a fair argument of a reasonable possibility of a significant environmental effect.[247] As demonstrated herein, in our previously submitted comments on the IS/MND, and in the expert comments by Dr. Phyllis Fox and Dr. Smallwood, which are hereby incorporated by reference, we have provided substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[248] Our conclusions are further supported by the significance determinations for this Project originally set forth in the IS/MND. For the foregoing reasons, there is a reasonable possibility that the Project will have a significant effect on the environment due to unusual circumstances such that an exception to the claimed categorical exemptions apply.

F. CEQA Prohibits the Use of an Errata to Substantially Alter the Significance Determinations in the IS/MND

The CEQA Guidelines authorize the use of an errata, in relevant part, if (1) new revisions to the project are added in response to comments on the project's identified effects, which are not new and avoidable significant effects; (2) measures or conditions of approval that are added after circulation of the negative declaration that are not required by CEQA, do not create significant environmental effects, and not necessary to mitigate an avoidable significant effect; and (3) situations where new information is added to the negative declaration that merely clarifies, amplifies, or makes insignificant modifications to the negative declaration.[249] Here, the County improperly uses these CEQA's procedures to issue an "Errata" to the IS/MND which is intended to supplant the evidence in the IS/MND with new evidence that purportedly reduces all of the previously-identified significant impacts to less than significant levels and changes the previously-identified mitigation measures to Conditions of Approval without adequate support.[250] These changes are a far cry from minor or insignificant modifications. The Errata

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[247] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105.
[248] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[249] 14 C.C.R. § 15073.5(c)(2)-(4).
[250] *See* Staff Report, Attachment E.

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essentially strikes the IS/MND's entire impact analysis and guts the conclusions originally set forth in the IS/MND. This approach is not authorized by CEQA.

The County's revised analysis and conclusions in the Errata are also unsupported. For example, Dr. Smallwood disagrees with the Errata's conclusion that the impacts on biological resources are now less than significant.[251] To the contrary, he finds that the Project would have significant impacts to birds from collision-mortality due to the Project's additional structures erected in the airspace.[252] He also notes in his comments that "[t]he errata claims that no sensitive bird species occur at the project site, but this claim neglects the 10 species documented at the site by Chambers Group (2019:App. D), 9 of which are protected by the Migratory Bird Treaty Act."[253]

Moreover, no changes to the Project have occurred to warrant the use of an Errata. Prior to circulating the IS/MND in 2019, there were Project-related changes, but none since.[254] The use of an Errata here is thus improper since the County's intent is clearly to evade its earlier findings that the Project would have significant impacts requiring mitigation. The County cannot use this Errata to proceed forward with its unfounded conclusion that the Project is categorically exempt from CEQA. The County's actions violate the specific procedures outlined in CEQA.

VI. PRIOR EFFORTS MADE TO ARRIVE AT ACCEPTABLE SOLUTION

Citizens previously raised each of these objections in its letters to the Imperial County Planning Director dated May 10, 2021 and November 16, 2021. The May 10, 2021 letter was submitted during the public comment period on the IS/MND. That letter was followed by the November 16, 2021 letter submitted to the Planning Director and Planning Commission ahead of its consideration of the CUP application. All have been accompanied by numerous supporting documents and expert declarations, including the comments of air quality expert Dr. Fox and biologist Dr. Smallwood.

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[251] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 13 (November 15, 2021).
[252] *Id.*
[253] *Id.*
[254] Staff Report, Attachment G at 14.

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A copy of each letter and accompanying exhibits are attached to this letter. Citizens' representative also attended the Planning Commission hearing and submitted oral comments via Zoom.

VII. ACTION BEING REQUESTED

We respectfully request that the Board overturn the Planning Commission's approval of the Project, including approval of CUP # 19-0028, as well as approval of any CEQA exemption and/or certification of the IS/MND and require that an EIR be prepared for the Project in which all impacts are fully disclosed and mitigated, and released for the statutorily mandated public review and comment period.

Thank you for your consideration of this appeal.

Sincerely,

Christina M. Caro
Tara C. Rengifo

TCR:acp

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Attachment C

FINDING OF FACT

CALIFORNIA ENVIRONMENTAL QUALITY ACT
FINDINGS OF FACT
FOR THE HEBER 1 GEOTHERMAL REPOWER PROJECT
PROJECT (SCH NO. 2021020267)

1.0 INTRODUCTION

The following Findings are made for the proposed Heber 1 Geothermal Repower Project (the "Project") (application for CUP #19-0028).

On March 6, 2020, the Imperial County Planning and Development (ICPDS) Department received an application for the Heber 1 Geothermal Repower Project, submitted by Heber Field Company, a subsidiary of Ormat Nevada Inc. (hereafter referred to as "Ormat" or the "Applicant"). The Project is comprised of: (1) the renewal of the Conditional Use Permit for the existing Heber 1 Geothermal Energy Complex (Heber 1 Complex); and (2) the issuance of CUP #19-0028, which will combine, amend, and supersede the previously approved CUP (#15-0013), to replace equipment and repower the existing Heber 1 unit, and extend the permitted life to 15 years. The Project will provide for the shutdown of the dual-flash steam turbine generator, installation of two new ORMAT Energy Converters (OECs) ("OEC 1" and "OEC 2"), reconfiguration of the two existing OECs ("OEC 11" and "OEC 13"), installation of ancillary equipment including a vapor recovery maintenance unit, and upgrades to replace aging equipment including two new isopentane storage tanks. The two new OEC units (OEC 1 and OEC 2) will function as an Ormat Integrated Three-Level Unit (I3LU) and will cool the motive fluid with air, rather than water. The existing OECs (OEC 11 and OEC 13) will collectively function as an Integrated Two-Level Unit (ITLU) and will use the existing cooling tower.

The Project does not require new production or injection wells and use of the geothermal resource will not increase. The proposed upgrades are expected to be better suited to the current and expected future conditions of the geothermal resource than the steam turbine generator, thereby improving operational efficiency and restoring net and gross generation levels to permitted levels. Specifically, the upgrades will restore the plant's generating capacities of 52-megawatt (MW) net, and 78.2 MW gross, as initially permitted by CUP #15-0013.

The Applicant also proposes modifying the facility's permitted water intake from 1,800 acre-feet of irrigation water to the existing allowable water intake of 2,300 acre-feet of irrigation water, as previously authorized by the Imperial Irrigation District (IID). Previous operations utilized flashes of geothermal brine to generate steam. The ensuing water condensation was then used in the wet cooling tower. Because changes to these existing facilities will no longer generate the requisite water condensation needed for the cooling towers, the Applicant seeks to modify the facility's permitted water intake.

All proposed facilities contemplated by the Project are located entirely within the existing 24.90-acre Heber 1 footprint, located at 895 Pitzer Road, Heber, CA, 92249, in unincorporated Imperial County on Assessor's Parcel Numbers (APN) 054-250-035 and 054-250-036. Reconstruction and replacement

activities will occur within approximately 7.67 acres of the existing disturbed site. The Project site is in an area previously filled and developed and has been utilized as an active operational geothermal energy production facility. The parcels are zoned A-2-G-SPA (General Agriculture [A-2]; Geothermal Overlay Zone [G]; Heber Specific Plan Area [SPA]). The legal description is a portion of the East half of Tract 45, Township 16 South, Range 14 East SBB&M.

1.1 Purpose of CEQA Findings & Terminology

The California Environmental Quality Act ("CEQA") (Public Resources Code, §§ 21000 et. seq.) prescribes how governmental decisions will be made whenever an agency undertakes, approves, or funds a project. Under CEQA, an agency uses "a multistep decision tree." (*Union of Medical Marijuana Patients, Inc. v. City of San Diego* (2019) 7 Cal.5th 1171, 1185 (*Medical Marijuana Patients*); see also CEQA Guidelines, § 15002, subd. (k).)[1] Once an activity is determined to be a project, the next question is whether the project is exempt from environmental review. (CEQA Guidelines, §§ 15002, subd. (k)(1), 15061, subd. (a).) If an agency concludes a particular project is exempt, it may file a notice of exemption, citing legal and factual support for its conclusion. (Pub. Resources Code, § 21152, subd. (b); CEQA Guidelines, § 15062, subd. (a).) If the project is discretionary and does not qualify for an exemption, the agency must conduct environmental review consistent with the CEQA statute and CEQA Guidelines. (*Medical Marijuana Patients*, *supra*, 7 Cal.5th at p. 1186.)

In the initial phase of the CEQA process, the lead agency generally conducts an initial study ("IS") to assess the proposed project's potential environmental impacts. (CEQA Guidelines, §§ 15002, subd. (k)(2), 15063, subd. (a).) If, after completing the IS, the agency determines there is no substantial evidence that the project may significantly affect the environment, the agency prepares a negative declaration ("ND"), which completes the CEQA process. (Pub. Resources Code, § 21080, subd. (c)(1); CEQA Guidelines, §§ 15002, subd. (k)(2), 15063, subd. (b)(2), 15070, subd. (a).) If the IS reveals potentially significant environmental effects, but the project applicant agrees to changes that would avoid or mitigate them, the agency prepares a mitigated negative declaration ("MND"), which also completes the CEQA process. (Pub. Resources Code, § 21080, subd. (c)(2); CEQA Guidelines, § 15070, subd. (b).) Finally, if the IS reveals substantial evidence that the project may have a significant environmental impact and an MND is inappropriate, the agency must prepare and certify an environmental impact report ("EIR") before approving the project. (§ 21080, subd. (d); CEQA Guidelines, §§ 15002, subd. (k)(3), 15063, subd. (b)(1); *Medical Marijuana Patients*, *supra*, 7 Cal.5th at p. 1187.)

1.2 Environmental Review Process

Pursuant to the County of Imperial Guidelines for Implementing CEQA, the County of Imperial Board of Supervisors, Planning Commission and/or Planning Director is designated the Lead Agency, in accordance with Section 15050 of the CEQA Guidelines.

On December 17, 2019, Ormat submitted an application to the County of Imperial Planning & Development Services Department (ICPDSD) to amend CUP #15-0013 for the Heber 1 geothermal facility

[1] The CEQA Guidelines are codified at California Code of Regulations, Title 14, Chapter 3, Section 15000, et. seq.

in Imperial County, CA. The amendment proposed a Repower Project, which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility. The Project also included installation of new equipment, including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Following public comments and based on close coordination with the County of Imperial, Ormat decided to reduce the number of 10,000-gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. The CUP application and accompanying CEQA documentation were updated in December 2020 to reflect these changes, including improvements to the Project's Hazard Assessment (revised in November 2020).

On February 11, 2021, the Imperial County Environmental Evaluation Committee (EEC) held a duly-noticed public hearing to consider the Heber 1 Repower Project. The EEC decided to prepare, and the County of Imperial subsequently issued, a Notice of Intent to adopt a Mitigated Negative Declaration (NOI) and distributed a Draft Initial Study/Mitigated Negative Declaration (IS/MND) to public agencies and the general public. In accordance with Public Resources Code Section 21091 and CEQA Guidelines Section 15073, a 30-day public review period for the Draft IS/MND was provided from February 12, 2021, to March 15, 2021. The comment period was extended twice, first to April 14, 2021, and then to May 10, 2021, in response to stakeholder comments and to accommodate the review process. The IS/MND was prepared in conformance with the CEQA, Section 15070 of the CEQA Guidelines, and the County of Imperial Guidelines for Implementing CEQA.

Between February 16, 2021 and May 10, 2021, the County received six (6) comment letters on the IS/MND—five of which were from agencies, and one of which was from the public—specifically, the law firm Adams, Broadwell, Joseph & Cardozo (ABJ&C) on behalf of their client Citizens for Responsible Industry (CRI). The County worked with the Applicant to prepare responses to all comments received. In response to comments on the Project's IS/MND, the County revised portions of the IS/MND to provide further clarification and detail and incorporate voluntary measures/conditions of approval proposed by the Applicant. Appendix N, an Air Emissions Memorandum, was also prepared to clarify the analysis regarding construction emissions and to set forth the results of construction emissions modelling for both criteria pollutants and greenhouse gas emissions (GHGs).

Following circulation of the IS/MND, the Applicant requested the County find the Project exempt from CEQA. After reviewing the entire record, the County determined that, as a modification to an existing facility with replacement or reconstruction, the Project qualified for Class 1 and Class 2 Categorical Exemptions under CEQA, and that there were no exceptions to the exemption. The County also determined that, although the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense), the County would use its discretion to also adopt the IS/MND as further evidence to the Project is fully evaluated under CEQA.

Along these lines and with no potential for significant environmental impacts, the IS/MND's previously labeled "mitigation measures" are no longer required. Nevertheless, the County incorporated these measures into the Project description as "Voluntary Environmental Protection Features" (VEPFs). Some VEPFs are Best Management Practice (BMPs) or Project design features (PDFs). The VEPFs are

fundamentally preventive and protective measures. They reflect the recommendations of stakeholders, including the Applicant, the County Staff, and the public, and are also drawn from measures implemented by other, similarly situated approved projects. The VEPFs also serve to confirm generally applicable regulations that would apply to the Project that further reduce an already less-than-significant impact and in many cases improve environmental conditions when compared with the baseline conditions.

Ormat requested that the VEPFs be included as conditions of approval (COAs) in the Conditional Use Permit (CUP). As the Applicant, Ormat voluntarily adopted these conditions as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are constitute further evidence that there is no substantial evidence presented of a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced. Therefore, in its August 2021 Responses to Comments, the County re-labelled any "mitigation measures" ("MM-") as "conditions of approval" ("COA-") to avoid or eliminate any potential confusion.

The County Planning Commission subsequently held a duly-noticed public hearing on November 18, 2021 to consider approval of the Project, Notice of Exemption, IS/MND, and the Findings of Fact in support thereof. On November 16, 2021, the County received one (1) comment letter from ABJ&C on behalf of CRI regarding the Planning Commission's intent to approve the Project as categorically exempt under CEQA, adopt the IS/MND, and Findings in support thereof. On November 18, 2021, the Planning Commission held the public hearing on the Project, during which it verbally addressed the comments raised CRI's November 16 comment letter. After taking public testimony and responding to comments, the County Planning Commission recommended adoption of a Notice of Exemption and approval of the Findings of Fact that the Project is categorically exempt from CEQA, and the IS/MND to ensure the Project is fully evaluated under CEQA.

On November 24, 2021, the County received one (1) comment letter from ABJ&C on behalf of CRI. The letter appeals the Planning Commission's decision of approval, including the filing of the Notice of Exemption, certification of the IS/MND, and adoption of the Findings of Fact in support thereof. The County has provided detailed responses to the specific contentions raised in CRI's November 18 and November 24, 2021 letters in the attached appendix. (See, Responses to Comments ["RTC"], Dec. 2021, attached hereto).

For these foregoing reasons along with those set forth herein, the County makes these Findings pursuant to CEQA. The Findings set forth below support the County's conclusion that the Project is categorically exempt from CEQA. In the alternative, and out of an abundance of caution, the County also sets forth Findings to support its conclusion that the Project is subject to approval pursuant to the terms and conditions of the IS/MND. The County also finds that, based on the record as a whole, the comments submitted by CRI and conclusions reached by consultants retained by CRI employ assumptions or facts that are erroneous and not credible. For these reasons, the County finds that these comments do not provide substantial evidence supporting a fair argument that the Project may have a significant effect on the environment.

2.0 PROJECT BACKGROUND & DESCRIPTION

Heber Field Company, a subsidiary of Ormat Nevada Inc. (Ormat). owns and operates the Heber 1 Facility (Heber 1), which was originally constructed as a 47 MW (net) dual flash facility in 1985 under CUP #9-80. In 2004, CUP #9-80 was amended to allow for the addition of three Ormat Energy Converters (OECs), alongside a four-cell cooling tower called "Gould 1." Gould 1 initially generated 8-12 MW from the residual heat from brine exiting Heber 1's dual flash power plan (i.e., a "bottoming unit"). This brought the nominal generating capacity of the Heber 1 Complex to 52 MW. By letter dated August 19, 2015, the California Energy Commission (CEC) concluded that this increase to the facility's net generating capacity fell below the requisite threshold that would otherwise require CEC licensing. (See RTC A-71, B-11.) Two new cells were later added to the existing 5-cell cooling tower at Heber 1 to increase efficiency and reduce the need for Imperial Irrigation District (IID) canal water for the new tower at Gould 1, which was built in 2006. In 2017, OEC 14 began operating onsite, pursuant to CUP #15-0013.

The Heber 1 Repower Project (the Project) proposes to upgrade existing Heber 1 operations through a series of reconstruction and replacements of project structures with new, more efficient technology that result in no expansion of the existing use. The 52 MW (net) generating capacity of the power plant will remain unchanged, does not require new production or injection wells, and use of the geothermal resource will not increase.

In this process, the Project will shut down the dual-flash steam turbine generator and install two new OECs (OEC 1 and OEC 2), reconfigure two of the existing OECs (OEC 11 and OEC 13), install ancillary equipment including a vapor recovery maintenance unit and two (2) 10,000-gallon isopentane tanks. OEC 1 and 2, combined, would function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling, rather than water cooling, for the motive fluid. OEC 11 and OEC 13, combined, would function as an Integrated Two-Level Unit (ITLU), and will use the existing cooling tower.

On November 18, 2019, the Imperial Irrigation District (IID) issued "Amendment No. 1" to the Amended and Restated Water Supply Agreement (WSA) held between it and Ormat for the Heber 1 facility. The Amendment authorizes IID to supply an additional 500 acre-feet of irrigation water per year to the facility, in addition to the 1,800 acre-feet of irrigation water previously allowed under the original WSA, thereby bringing the total permitted amount to 2,300 acre-feet of irrigation water per year. Because CUP #15-0013 permits Ormat to use up to a total of 1,800 acre-feet of irrigation water per year pursuant to the original WSA, Ormat seeks to modify the CUP to account for the increase in allowable water usage under Amendment No. 1 to the WSA. Previous operations utilized flashes of geothermal brine to generate steam. The ensuing water condensation was then used in the wet cooling tower. Because changes to these existing facilities will no longer generate the requisite water condensation needed for the cooling towers, the Applicant seeks to modify the facility's permitted water intake.

2.1 Project Purpose and Objectives

The primary objective of the Project is to upgrade outdated facilities, restore the generation capacity of the Heber 1 Complex to the permitted net generation amount (78.2 gross MW, operating at an average

of 52 net MW), and perform all facility retrofits within the existing fence line of the Heber 1 facility in a manner that leads to a reduction in air emissions.

The Project would assist the County with creating local employment and increase the tax base.

California currently has several initiatives, policies, and programs that set clean energy goals. In Senate Bill No. 100 (SB 100), also referred to as the "100% Clean Energy Act of 2018," the State Legislature declared that various agencies should plan for "100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045." The Project is a critical component to achieving 100% renewable energy utilization and would directly support the State's 100% renewable energy resource goal and milestones by:

- Displacing fossil fuel consumption within the state.
- Adding new, non-emitting, baseload renewable electrical generating facilities to the grid.
- Reducing air pollution, particularly criteria pollutant emissions and toxic air contaminants, in the state.
- Meeting the state's climate change goals by reducing emissions of greenhouse gases associated with electrical generation.
- Promoting stable retail rates for electric service.
- Meeting the state's need for a diversified and balanced energy generation portfolio.
- Meeting the state's resource adequacy requirements.
- Contributing to the safe and reliable operation of the electrical grid, including providing predictable electrical supply, voltage support, lower line losses, and congestion relief.
- Implementing the state's transmission and land use planning activities related to development of eligible renewable energy resources.

Furthermore, the recent Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026) before the California Public Utilities Commission (D.20-05-003), filed on May 21, 2021, proposes that at least 1,000 MW of geothermal resources be required as part of the State's procurement portfolio by no later than 2025.

2.2 Project Description

To achieve the Project's primary objective, the Project proposes replacing the facility's current steam turbine and bottoming units with Ormat-Integrated Three-Level Unit (I3LU) and Integrated Two-Level Unit (ITLU). The I3LU and the ITLU would generate 51.3 MW gross, and 36.2 MW net. The I3LU configuration would modify existing and add new air-cooled Ormat Energy Converters (OECs), which are explained in greater detail below:

- "OEC 1" and "OEC 2" would be installed as the new air-cooled units to function as a single I3LU. The new OECs will require installation of two (2) additional 10,000-gallon isopentane storage tanks onsite, and installation of a new Vapor Recovery Mechanical Unit (VRMU).

- OEC 1: OEC 1 is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 1 also includes a generator, vaporizer, air-cooled condensers, and preheaters and recuperators. OEC 1 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 1 is 19.85 MW and is approximately 22 feet high.
- OEC 2: OEC 2 is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 2 also includes a generator, vaporizer, air-cooled condensers, and preheaters. OEC 2 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 2 is 17.25 MW and is approximately 22 feet high.
- VRMU: A new VRMU will be used for purging and maintenance operations for OEC 1 and OEC 2. Vapor from the OECs is passed through a knock-out drum and condenser, which collect the majority of isopentane and other condensable gases. Condensed isopentane is returned to the MF system, while remaining gases are passed through an activated carbon *absorption* filter, which removes the remaining isopentane vapor and other organics. The overall isopentane vapor recovery efficiency for the VRMU exceeds 99%. The new VRMU is intended to primarily serve the two units, but all OEC units, tanks, and air coolers are interconnected. Therefore, the VRMU may be used with any of the existing units when appropriate and based on current operations.
- Isopentane Tanks: To support OEC 1 and OEC 2, two (2) new above-ground storage tanks for additional isopentane supply would be installed. Each tank has a capacity to hold 10,000 gallons of isopentane. The new tanks will be sited near the new OECs. Isopentane gases from the tanks are captured and vented to the VRMU.

- "OEC 11" and "OEC 13" are currently onsite and will be converted to an ITLU. The existing cooling tower and VRMU will be used for OEC 11 and OEC 13. Other modifications include replacement of: existing brine heat exchangers, the existing generator and one turbine, and a portion of the piping system and pumps. The existing cooling water system and VRMU will not be modified.
  - OEC-11 ITLU: OEC 11 is a two-turbine bottoming unit that includes a generator, vaporizer, preheater, and condenser. The existing integrated purging units are no longer used, and purging is accomplished using the existing VRMU. With the proposed upgrades, OEC 11 will become an ITLU and be renamed OEC-11 ITLU. The upgrades include the replacement of one turbine with a new, larger unit, plus new associated vessels. OEC 11 will incorporate the condensers that are currently part of OEC 13. The gross output of the new OEC-11 ITLU will be 14.5 MW with a height of approximately 22 feet.
  - OEC 13: OEC 13 currently contains condensers that will be incorporated into OEC-11 ITLU. The rest of OEC 13 will be decommissioned.

- VRMU: Ormat will continue to operate its existing VRMU to primarily service OEC-11 ITLU and can use it with the OECs 1 and 2, and air coolers, if appropriate based on current conditions.
- Isopentane Tanks: The modifications to OEC-11 ITLU does not require the addition of isopentane tanks. The site currently relies on two existing storage tanks at the Heber 1 facility.

Project construction and replacement efforts will occur over approximately six months on approximately 3.24 acres (141,292 square feet) of the site's existing 24.9-acre (1,085,595 square feet) site disturbance in a previously-filled and developed area.

The Project also seeks to update the CUP to align with Amendment No. 1 to its Water Supply Agreement with Imperial Irrigation District (IID), which authorizes the Heber 1 facility to use up to 2,300 acre-feet of irrigation water per year as described above.

2.3 Project Location

The Project Site is entirely within the existing Heber 1 facility, which is located at 895 Pizer Road, Heber CA, on APNs 054-250-035 and 054-250-036. The site is approximately 24.9 acres (1,085,595 square feet). Within that footprint, reconstruction and replacement efforts will occur on approximately 3.24 acres (141,292 square feet) of the existing site disturbance in a previously filled and developed area. The site is bound by Pitzer Road to the east, East Jasper Road to the south, a Union Pacific right-of-way to the west, and a parcel to the north. The surrounding land uses and zoning are General Agriculture and Heavy Agriculture and currently contain active agricultural operations. The Project site serves as an operational geothermal plant and is therefore considered heavily developed and filled, and largely void of any vegetation, habitat, or waterbodies.

The Project site is zoned as A-2-G-SPA, for General Agriculture (A-2), Geothermal Overlay Zone (G), and in the Heber Specific Plan Area (SPA). The Project Site is entirely within an Imperial County Geothermal Overlay Zone, which is intended "to allow for commercial, residential, industrial, renewable energy and other employment-oriented development in a mixed use orientation." (Land Use Element of the Imperial County General Plan, 2015.) "Major Geothermal Projects" in the overlay zone are permitted through the CUP process, as was the original Heber 1 facility. (See Imperial County Code, § 90508.02.)Like the Geothermal Overlay Zone, the Heber SPA is intended "to allow for commercial, residential, industrial, renewable energy and other employment-oriented development in a mixed-use orientation." (Land Use Element of the Imperial County General Plan, 2015.) The proposed Project conforms to the standards and goals set forth in the Imperial County General Plan and the Renewable Energy and Transmission Element of County of Imperial General Plan (2015). Because prior modifications to the Heber 1 Complex, coupled with those proposed in the underlying Project, do not result in any increase in net electric generating capacity, let alone a net 50 MW increase in the electric generating capacity of the existing plant, staff has concluded, consistent with the 2015 determination of the California Energy Commission (CEC), that the Project does not fall under the CEC's licensing jurisdiction. (See Imperial County Code, § 90508.02, subd. (y); Pub. Resources Code, § 25123.)

There are currently three retention basins onsite. As part of a separate and discrete action approved by the Regional Water Quality Control Board (RWQCB), two of the three retention basins are no longer necessary and are being drained. The Project will modify the stormwater retention basins to accommodate placement of the new equipment, while meeting the requirements for a 100-year storm, consistent with the RWQCB's approval. As the modifications to the retention basins have already been approved, the retention basins are considered filled, developed land for construction.

3.0 ENVIRONMENTAL SETTING AND BASELINE CONDITIONS SUMMARY

The existing Heber 1 flash plant was built in 1985 with a net generating capacity of 47 MW. The Gould 1 OEC was built in 2006, which resulted in an additional 8 to 12 MW of generating capacity and introduced the use of isopentane onsite. OEC 14 started operating onsite in 2017. ICPDS issued conditional use permits for all three of these iterations, with CUP #15-0013 being the most recent. The current site of the Heber 1 facility, and underlying Repower Project, is located in an "A-2" zone under the County's Zoning Code. Uses allowed in the A-2 Zone may only be permitted with a conditional use permit. (Imperial County Code, § 90508.02.) Consistent with the CEC's exclusive jurisdiction over new generation projects 50 MWs or greater and modifications to existing facilities that result in a net increase of generating capacity of 50 MW or greater (Public Resources Code Section 25500), allowable uses include electrical generation plants of less than 50 net MW as defined in applicable law. (*Id.* at subd. (y).) The County thus retains jurisdiction and permitting authority over existing electrical generation plants of less than 50 net MW and any modifications to existing power plants like Heber 1 that result in a 50 MW or less increase in electrical generating capacity.

The purpose of the Heber 1 Repower Project is to improve operational efficiency, replace aging equipment, and restore the net and gross generating capacity to preexisting permitted levels. Under CUP #15-0013, the plant is permitted at 52 MW of net generating capacity. The Applicant does not propose to change the permitted net generation, and the Project's proposed improvements will not require new production, injection wells, or increased use of the geothermal resource. Rather, due to the age of the existing OECs and degradation of the generating equipment that has occurred over time, the Applicant proposes to decommission one OEC and install two new OECs that are more efficient. Each of the Project's OECs is customized for the specific site and designed in response to several factors such as the available geothermal resource, transmission capacity, flow velocities, and chemical characteristics of the geothermal brine at the specific location. The Applicant anticipates that while the net capacity will remain about 52 MW, the average net generation from the geothermal powerplant will be approximately 44 MW.

Because the Repower Project will not result in a 50 MW net increase in generational capacity to the existing facility, the County finds that the CEC does not possess licensing jurisdiction over the proposed modifications. This decision is supported by the CEC's concurrence, as noted by letter to Ormat on August 19, 2015. (See RTC A-71, B-11.) CEC staff reiterated that the prior modifications to the Heber 1 facility—which increased capacity by 8-12 MW, thereby bringing the plant's net capacity to 52 MW—did not fall under the CEC's licensing jurisdiction. (See RTC A-71, B-11.) Because the underlying Repower Project will not change the plant's permitted net generating capacity as it was approved in 2015, the CEC does not possess licensing jurisdiction over this Project. (See *Dep't of Water & Power, City of Los Angeles v. Energy Res. Conservation & Dev. Comm'n* (1991) 2 Cal.App.4th 206, 221 [the term "increase"

as used in the statute that gives the CEC jurisdiction over any alteration, modification, or replacement of equipment that results in an "increase" of 50 MW or more, refers to the "net increase" in a power plant's total generating capacity – in deciding whether there has been the requisite 50 MW increase as a result of new units incorporated, the CEC must consider decreases in capacity due to deactivation of other plant units].)

Neither the new OECs nor storage tanks will result in a change—expansion or otherwise–of the existing use of the Heber 1 geothermal power plant. The Heber 1 Complex will generate net capacity of approximately 52 MW as a geothermal power plant, albeit one that generates renewable energy in a more efficient, safe, and reliable manner than before.

The County finds that utilizing the Heber 1 Complex's current average net generating capacity[2] of 11 annual MW as an environmental baseline to evaluate potential environmental impacts from the Project is not meaningful or appropriate. Generation amounts fluctuate due to physical factors such as ambient conditions, external factors like grid system needs, outages caused by loss of transmission lines, maintenance needs, and other factors beyond the reasonable control of the powerplant. In addition, it is not representative of the Project's historical operations or impacts given the equipment degradation that has occurred. The overall performance of the existing equipment has declined over time and new equipment will be more efficient. The primary objective of the Project as noted above is to recapture the expected, gradual loss of capacity that occurs over time. In fact, recapturing the lost capacity of the Project utilizing the same renewable geothermal resource will result in environmental benefits and assist the County and State in meeting clean energy goals, which is an objective of the Project. Moreover, limiting the facility to its current average annual hourly net generating capacity would result in less renewable base load energy on the California grid. Therefore, utilizing the Heber 1 Complex's current average net generating capacity of 11 MW would also be misleading, as it would not account for the loss of renewable energy on the California grid, and the likely corresponding increase in non-renewable energy that would make up for this loss and its environmental impacts.

In restoring the generation capacity of the Heber 1 Complex to the permitted net generation amount (52 MW, operating at an average of 44 MW), the Project will assist the State and County in meeting clean energy goals. California currently has several initiatives, policies, and programs that set clean energy goals. In Senate Bill No. 100 (SB 100), also referred to as the "100% Clean Energy Act of 2018," the State Legislature declared that various agencies should plan for "100 percent of total retail sales of

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[2] "Generating capacity" describes the maximum output of electricity that a generating unit is capable of producing under specified conditions, such as manufacturer ratings and testing conditions. For power plants, generating capacity is also sometimes described in terms of "gross" versus "net" generating capacity. "Gross generating capacity" represents the amount of electricity produced under specified, standardized testing conditions, without consideration of any auxiliary loads. "Auxiliary loads," sometimes called "parasitic loads," are on-site electrical power requirements from pollution control devices, water pumps, control instruments, and other equipment needed to support the generation of electricity. "Net generating capacity" represents the difference between the gross generating capacity and auxiliary loads.

electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045." The Project is a critical component to achieving 100% renewable energy utilization, and would directly support the State's 100% renewable energy resource goal and milestones as set forth in the Project Objectives by:

- Displacing fossil fuel consumption within the state.
- Adding new, non-emitting baseload renewable electrical generating facilities to the grid
- Reducing air pollution, particularly criteria pollutant emissions and toxic air contaminants, in the state.
- Meeting the state's climate change goals by reducing emissions of greenhouse gases associated with electrical generation.
- Promoting stable retail rates for electric service.
- Meeting the state's need for a diversified and balanced energy generation portfolio.
- Meeting the state's resource adequacy requirements.
- Contributing to the safe and reliable operation of the electrical grid, including providing predictable electrical supply, voltage support, lower line losses, and congestion relief.
- Implementing the state's transmission and land use planning activities related to development of eligible renewable energy resources.

Table 1 – Current, Permitted, and Proposed Conditions for the Heber 1 Repower Project

FACTOR	CURRENT CONDITIONS	PERMITTED CONDITIONS	PROPOSED CONDITIONS
Net Generating Capacity (Megawatts)*	44 MW	52 MW	52 MW
Gross Generating Capacity (Megawatts)*	54.5 MW	78.2 MW	78.2 MW
Project Site (Acres)	24.9 acres	24.9 acres	24.9 acres
Isopentane Volume (Gallons)	96,800 gal.	96,800 gal.	240,100 gal.
Number of 10,000-Gallon Isopentane Storage Tanks Onsite	2	2	4
Irrigated Water Use (Acre-Feet/Year)	Up to 1,800 AFY	Up to 1,800 AFY	Up to 2,300 AFY

**Reflects combined capacity of Heber 1 and Gould units*

3.1 Air Quality Setting

The Heber 1 facility operates under Imperial County Air Pollution Control District (ICAPCD) Permit to Operate (PTO) #1641B-5. The facility features and proposed project components that contribute to the

air quality setting in baseline include the dual-flash steam turbine generator, which generates a gross maximum output of 52 MW and four OECs, which generate a gross combined output rating of 30 MW. Net output for the facility is currently less than 50 MW. The steam turbine generator includes a Regenerative Thermal Oxidizer (RTO) and Caustic Scrubber emission control devices. Ancillary equipment for the facility includes cooling towers, an evacuation skid/vapor recovery maintenance unit (VRMU), motive fluid (MF) isopentane storage tanks, and a diesel engine for emergency use. (Air Quality Analysis, Air Sciences, Inc., Dec. 15, 2020, p. 1.) The facility is a synthetic minor source of air pollution and operates in compliance with all applicable air quality requirements and its PTO. Implementing the Project as proposed would allow the Heber 1 Facility to maintain the same purpose and capacity, but to do so with more efficient technology. As a result, air quality emissions will decrease and, in some cases, eliminate emissions from criteria pollutants all together. (See Table 2, below).

Greenhouse Gas Emissions

Table 2, below, provides the current permitted emission limits, actual and potential emissions, and proposed updated emissions limits for the Heber 1 Complex criteria pollutants. In addition to isopentane emissions (explained below), there are particular emissions from the cooling towers, as well as NO_x, SO_2, benzene, and H_2S emissions from the steam turbine generator, all of which would be eliminated. There is a facility-wide annual benzene emission limit of 1.24 tons per year. Emissions from the emergency diesel generator are not explicitly limited in the ATC, however, the engine is limited to 40 hours per year for maintenance and testing purposes.

The proposed changes to the Heber 1 facility will not affect greenhouse gas (GHG) emissions from operations, which are generated by emergency diesel engines. The existing and proposed geothermal power generating units do not burn fuel and do not emit GHGs. After the proposed development, estimated emissions for the facility will remain below current permitted emissions limits. Furthermore, air emissions of other pollutants will decrease due to the decommissioning of the steam turbine generator and associated units, including the Regenerative Thermal Oxidizer (RTO), condensate line, and two cooling towers. The County further notes that that the Project will displace fossil fuel consumption within the state by providing clean renewable energy to the State energy grid and customers.

Isopentane Emissions

The proposed Project would shut down the dual-flash steam turbine generator, install two new OECs, and reconfigure two of the existing OECs at the Heber 1 site. The OECs generate power by utilizing geothermal energy (e.g. heat) to vaporize liquid isopentane, which is the motive fluid that powers the turbines to create electricity. The primary air pollutant from these units is isopentane, which is a volatile organic compound ("VOC"). Isopentane emissions occur due to maintenance, purging, and fugitive leaks. During maintenance, the unit is shut down and the isopentane is evacuated before the system is opened for the necessary work to be performed. To evacuate the system, the liquid isopentane is transferred to storage tanks, and the remaining vapors are passed through the VRMU. The overall recovery rate of isopentane during evacuation is greater than 99%. However, trace quantities of vapors as well as liquid collected at low points in the system where the liquid cannot be completely drained can result in VOC emissions when the unit is opened to the atmosphere. Purging is the process by which impurities are removed from the isopentane closed circuit. Contamination of the isopentane causes operating efficiency losses, so purging is performed on a regular basis. Vapors are passed through the VRMU and

the isopentane is collected and returned to the system while other gases are removed. Fugitive losses of isopentane can occur due to failing seals, valves, flanges, etc.

With the retirement of the steam flash units, the emissions of NO_x, SO_2, H_2S, and Benzene would be completely eliminated. Isopentane emissions are a subset of the facility-wide VOC emissions. Current isopentane emissions at the facility are approximately 33.3 lbs/day, and the modeled future emissions with the new facilities are estimated to be 81.3 lbs/day. Under the existing Permit to Operate (PTO), the facility is authorized to emit up to 99.6 lbs/day of isopentane. The expected change in isopentane emissions with the new facilities would increase by approximately 48.0 lbs/day; however, as explained in Table 2, overall facility-wide VOC emissions would be reduced, -27.5 lbs/day, and remain below the current authorized release amount. Therefore, the proposed Project would not conflict with, or obstruct the implementation of the Imperial County Air Pollution Control District (ICAPCD) air quality plan.

Table 2 – Current (Actual), Permitted, and Proposed Emissions Limits for Heber 1 Facility Criteria Pollutants

EMISSION TYPE	EMISSIONS SOURCE	ACTUAL CONDITIONS	PERMITTED CONDITIONS	PROPOSED CONDITIONS	CHANGE
VOCs	*Facility-Wide*	127.2 lbs/day	194.2 lbs/day	99.7 lbs/day	-27.5 lbs/day
↳ Isopentane Emissions (subset of facility-wide VOCs)	*OECs; Storage Tanks*	33.3 lbs/day	99.6 lbs/day	99.0 lbs/day*	+48.0 lbs/day
PM_{10}	*Cooling Towers*	4.36 lbs/day	4.36 lbs/day	3.72 lbs/day	-0.64 lbs/day
NO_x	*Steam Turbine Generator/RTO (Normal Operation)*	11.66 lbs/day	11.66 lbs/day	0.00 lbs/day	-11.66 lbs/day
SO_2	*Steam Turbine Generator/RTO (Normal Operation)*	5.03 lbs/day	5.03 lbs/day	0.00 lbs/day	-5.03 lbs/day
CO	*Emergency Diesel Engine*	1.9 lbs/day	1.9 lbs/day	1.9 lbs/day	0 lbs/day

**Though this reflects the proposed permitted condition, potential emissions are projected to be less, at approximately 81.3 lbs/day* (IS/MND, Feb. 2021, p. 18.)
Source: Air Quality Analysis Summary for the ORMAT Heber 1 Re-Power Project, Air Sciences, December 15, 2020.

Table 3 – Criteria Pollutant Construction Emissions

EMISSION TYPE	CONSTRUCTION EMISSIONS	ICAPCD THRESHOLD	EXCEED THRESHOLD?
VOCs/ROG	57.95 lbs/day	100 lbs/day	**NO**
PM_{10}	7.03 lbs/day	75 lbs/day	**NO**
$PM_{2.5}$	75.13 lbs/day	150 lbs/day	**NO**

EMISSION TYPE	CONSTRUCTION EMISSIONS	ICAPCD THRESHOLD	EXCEED THRESHOLD?
NO_x	9.83 lbs/day	---	---
SO_x	0.12 lbs/day	---	---
CO	48.76 lbs/day	550 lbs/day	**NO**
Source: Supplemental Construction Air Quality Modelling Memorandum, Vista Environmental, July 23, 2021.			

3.2 Biological Setting

The proposed Project is located entirely within the existing Heber 1 power plant area, and all proposed facilities would be located within the existing fence line and permit area. As an active energy generation facility, the Project site is highly developed with existing buildings and infrastructure. The proposed development would occur to the southern portion of the existing facility. The site is immediately surrounded by agricultural operations and a Union Pacific Railroad track. The Main Canal and the Daffodil Canal—both of which are cement-lined—are located to the south and east. A few isolated residences with associated landscaping and ornamental vegetation occur primarily south and west of the existing site.

A comprehensive record search was performed for biological resources, vegetation, special status species, and critical habitat to identify the potential biological resources that occupy the Project site and surrounding area. (Biological Technical Report for the Heber 1 Repower Project, p. 7 ("Bio Report").) A habitat is considered "suitable" for a species when it contains all resources needed for a given activity in sufficient quantity (e.g., food when foraging, nest sites when breeding). After a review of the records, a qualified biologist performed a biological reconnaissance-level survey over the parcel containing the proposed Project features (Survey Area). (Bio Report, pp. 19–23.) Impacts to habitat were calculated for all proposed Project features and anticipated work areas combined (Project Area). (Bio Report, p. 7.) The survey found that the Heber 1 facility is currently developed for power production uses, is completely devoid of any vegetation, and is completely graded and covered by soil and gravel. Although 10 wildlife species were observed on the Project site during the survey, a qualified biologist determined that the site is void of the resources needed to support long-term presence of wildlife, including avian species. The sighting of a species during a site survey, particularly avian species, does not in and of itself indicate the presence of habitat. Avian species in particularly could be sighted and documented flying overhead without ever being present on the site. As such, evaluation of the conditions on the site was conducted in concert with species sighting during the survey. Thus, the determination was made that no suitable habitat exists onsite. These efforts were recorded and memorialized with site photographs. (See Appendix A to the CUP Application). The County finds that this serves as the baseline biological condition.

The proposed Project is not anticipated to impact any sensitive or native habitat. All impacts are anticipated to occur to previously developed areas and site operations following the completion of the proposed Project would be substantially similar to current operations. Therefore, because baseline conditions would remain the same, impacts are not anticipated to be significant. (Bio Report, p. 24.)

3.3 Paleontological Setting

The proposed Project is located entirely within the existing Heber 1 power plant area, and all proposed facilities would be located within the existing fence line and permit area. As an active energy generation facility, the Project site is highly developed with existing buildings and infrastructure. The depth of excavation anticipated for Project construction will be limited to previously disturbed soils.

The Initial Study observed that the Heber 1 project site fell within the Lake Cahuilla historic footprint. Lake Cahuilla was a former freshwater lake that periodically occupied a major portion of the Salton basin approximately 37,000 to 240 years ago, depositing sediments throughout the Imperial and Coachella Valleys. Generally, Lake Cahuilla sediments consist of a layered sequence of both freshwater lacustrine (lake) and fluvial (river/stream) deposits. Throughout Imperial County, Lake Cahuilla sediments have yielded well-preserved remains of freshwater clams and snails and sparse remains of freshwater fish. The paleontological resources of the Lake Cahuilla Beds are considered significant; thus, these deposits are assigned a high paleontological potential. (Paleontological Memorandum, Chambers Group, September 10, 2021, p. 1.) This area extends to the Heber 1 Project site.

Although the Heber 1 site is located within the footprint, the Project and related construction will not occur within native soils in the Lake Cahuilla Beds. As with the neighboring Heber 2 facility, which is also located within the historic footprint, the sites have been completely disturbed during previous development. Further, because the depth of excavation for Heber 1 will be limited to previously disturbed soils, ground disturbance at Heber 1 will not occur within the Lake Cahuilla Beds. Therefore, the paleontological setting will remain unchanged from, along with no significant impacts to, the baseline.

4.0 CATEGORICAL EXEMPTION FINDINGS

Sections 15300–15332 of Article 19 ("Categorical Exemptions") to the State CEQA Guidelines list classes of projects which "have been determined to not have a significant effect on the environment and which are categorically exempt from the provisions of CEQA," as required by Public Resources Code section 21084. (CEQA Guidelines, § 15300.) These categorical exemptions are assumed to "'not have significant impacts'" by virtue of fitting within the "class of [exempt] projects." (*Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1104–1105 (*Berkeley Hillside*); CEQA Guidelines, § 15002, subd. (a)(1); Pub. Resources Code, § 21003, subd. (b).)

The County has prepared an IS/MND for the Project. However, in preparing the CEQA Findings for the Project, the County has concurrently determined that the Project is also categorically exempt under CEQA. The County bases this conclusion on three separate grounds, each of which independently suffices to establish that the Project is exempt from CEQA review. First, the Project approvals are exempt under the "existing facilities" (i.e., "Class 1") categorical exemption set forth under Guidelines section 15301. The Project is exempt as an "existing facility" because it involves negligible or no expansion of an existing use. (Finding 4.1.) Second, the Project approvals are exempt under the "replacement or reconstruction of existing structures or facilities" (i.e., "Class 2") categorical exemption set forth under Guidelines section 15302. (Finding 4.2.) The Project qualifies for this exemption because it entails replacing and removing existing structures, reconstructing new structures on the same site as those replaced, and will serve substantially the same purpose and capacity. Third, the Project approvals

are exempt under the "common sense" exemption pursuant to Guidelines section 15061, subdivision (b)(3). The Project fits within the "common sense" exemption because it can be determined with certainty that the Project will not have significant environmental effects. (Finding 4.3.) Finally, the County finds that no exceptions exist that would preclude categorically exempting the Project from CEQA review. (Finding 4.4.)

This section provides an analysis demonstrating that the Project meets the conditions for a Class 1, Class 2, and "common sense" Categorical Exemption, and that none of the possible exceptions to a Categorical Exemption listed in Guidelines section 15300.2 are applicable to this Project. The language of each condition of each categorical exemption and possible exception is shown in italics under their respective headings, which are followed by the Project analysis for each condition and exception.

4.1 Class 1 Categorical Exemption: Existing Facilities (CEQA Guidelines, § 15301)

The Project does not require new production or injection wells, and the Heber 1 facility's utilization of the geothermal resource will not increase. There will be no change to the geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. The Project will merely replace and remove existing generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect). There are no changes proposed to the permitted net generating capacity of the Heber 1 facility, the use of geothermal resources for electricity generation, the existing facility's interconnection facilities or transmission or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease, stay below permitted authorized release amounts, and in some cases, be eliminated entirely.

Conditions of the Class 1 Categorical Exemption

The Project qualifies as a "Class 1 – Existing Facilities" Categorical Exemption under CEQA, as set forth in Section 15301 of the CEQA Guidelines. "Class 1" categorically exempts projects including:

> *[O]peration, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use.*

Relevant examples of the types of projects listed in the Section 15301 that fall within the exception, particularly as related to the Project include, but are not limited to:

> *(a) Interior or exterior alterations involving such things as interior partitions, plumbing, and electrical conveyances;*
>
> *(b) Existing facilities of both investor and publicly owned utilities used to provide electric power, natural gas, sewerage, or other public utility services;*

(d) Restoration or rehabilitation of deteriorated or damaged structures, facilities, or mechanical equipment to meet current standards of public health and safety, unless it is determined that the damage was substantial and resulted from an environmental hazard such as earthquake, landslide, or flood;

(e) Additions to existing structures provided that the addition will not result in an increase of more than:

(1) 50 percent of the floor area of the structures before the addition, or 2,500 square feet, whichever is less; or

(2) 10,000 square feet if:

(A) The project is in an area where all public services and facilities are available to allow for maximum development permissible in the General Plan and

(B) The area in which the project is located is not environmentally sensitive.

Exemption Determination: *The Project involves operation, repair, maintenance, permitting and minor alteration of existing private structures, facilities, mechanical equipment, and topographical features, involving negligible or no expansion of existing use.*

Existing Use

Heber 1 was constructed and is operated in compliance with the County's General Plan, Renewable Energy & Transmission Element, Land Use Ordinance, CUPs (#9-80, #04-0024, #06-006, #15-0013), and with all other local, state, and federal laws, ordinances, regulations, and standards.

Existing facilities at the Heber 1 site include the entirety of the 52 MW (net) Heber 1 Complex. The individual facilities that comprise this Complex include: (i) the one (1) Heber 1 geothermal dual flash facility; (ii) the four (4) OECS (OECs 11, 12, 13, and 14 [i.e., "Gould 1"]; (iii) the two (2) motive fluid (isopentane) 10,000-gallon tanks; (iv) the existing Vapor Recovery Maintenance Unit (VRMU); (v) the existing water cooling system (including tower, pumps, condensers, piping, etc.); (vi) and the existing substation.

The existing use of the Heber 1 facility is the utilization of geothermal resources of the Heber Known Geothermal Resource Area (KGRA) to generate electrical power. Developed and operated exclusively by Ormat, the use of OECs allows for maximum sustainability by reinjecting 100% of the geothermal fluid. Specifically, the fluid is extracted from an underground reservoir and flows from the wellhead through pipelines to heat exchangers in the OEC that are based on an Organic Rankine Cycle. Inside the heat exchangers, the geothermal fluid heats and vaporizes a secondary, organic working fluid with a low boiling point—in this case, isopentane, a fluid that Ormat has operated in its OECs for more than 25 years. The organic vapors drive the turbine and then are condensed in a condenser, which is cooled by either air or water. The turbine rotates the generator and then the condensed fluid is recycled back into

the heat exchangers by a pump, completing the cycle in a closed system. The cooled geothermal fluid is re-injected into the reservoir.

The County finds that these existing operations set the baseline for determining whether the Project will involve "negligible or no expansion" of these uses.

Effect of Project on Existing Use

The Project will include the installation of two (2) new water-cooled ORMAT OECs, which will collectively operate as an IT3U, installation of ancillary equipment including a new VRMU and two (2) 10,000-gallon isopentane tanks, the combination of two older OECs (OEC 11 and 13) into a two-level unit (OEC-11 ITLU), and the decommissioning and removal of the existing dual-flash steam turbine generator, along with requisite connective piping and pump installation. The purpose of the repower Project is to improve efficiency of Heber 1's operations and installation of tanks that facilitate safe and reliable operation and maintenance of the facility. The 52 MW (net) generating capacity of the power plant will remain unchanged from that permitted by the existing CUP #15-0013. The Project also proposes to extend the permitted life of Heber 1 to 15 years (2021-2036).

The Project will not result in an expansion of use, as the Heber 1 facility will remain a net 52 MW geothermal power plant after the replacement of the old flash units with new OEC units. The Project also does not require new production or injection wells, and the utilization of the geothermal resource will not increase. There will be no change to the geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. All proposed facilities would be developed within the existing Heber 1 footprint and fence line. Project construction will disturb approximately 7.67 acres of the 24.90-acre Project site. The area of disturbance is comprised of 6.03 acres that are already disturbed/developed and 1.64 acres of bare ground. Installation of the new equipment will occur on approximately 3.24 acres of the disturbance site. This relatively small percentage of disturbed area demonstrates that the proposed alterations are minor in comparison to the existing facilities and, therefore, represent only a negligible physical expansion of such structures.

The Project also calls for the removal of the facility's current steam turbine generator. The turbine has become less effective as the temperature of the geothermal resource has decreased over time, therefore, the new and updated units will operate by a different process and will be better than the turbine at the currently lower-temperature of geothermal fluid. This, in turn, will improve the efficiency of operations, and bring the net and gross generating capacity outputs up to the authorized nameplate outputs of 52 MW (net) and 78.2 MW (gross). The Project, therefore, will not increase output or expand the existing facility beyond the current footprint.

The key consideration is whether the Project will expand the current "existing use." Here, the Project will not. The existing use of the Heber 1 facility is the utilization of geothermal resources of the Heber KGRA to generate electrical power. The purpose of the repower Project is to improve efficiency of Heber 1's operations and installation of tanks that facilitate safe and reliable operation and maintenance of the facility. The 52 MW (net) generating capacity of the power plant will remain unchanged from Conditional Use Permit #15-0013. The Project also does not require new production or injection wells, and the utilization of the geothermal resource will not increase. There will be no change to the

geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. The Project neither uses a new technology nor utilizes new processes, as the Heber 1 power plant already utilizes OECs to generate electricity. Finally, the commercial activities at the Heber 1 Complex will continue as they have since 1985, and no additional physical expansion of facilities at the Project site would occur as a result of the Project.

Similarly, and as demonstrated in Table 2 above (Section 3.1), with the retirement of the steam flash units, the emissions of NO_x, SO_2, H_2S, and Benzene would be completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment, including two cooling towers. These figures are significantly less than the existing emissions profile of the Heber 1 facility and well under the authorized release amount, thereby resulting in a beneficial effect on air quality.

There also will be no expansion of reasonably foreseeable environmental impacts due to unusual circumstances or any other exception to reliance on the categorical exemptions. (See Section 4.4.) All proposed development would occur within the fence line of the existing Heber 1 site and not increase the footprint of the energy facility. There are no habitable structures as part of the Project, and the Project does not involve substantial changes in facility operations. Thus, there are no risks associated with any geologic hazards, and the Project would not introduce new populations to potential geological hazards onsite.

Similarly, due to its fully developed and industrial nature, the site is void of habitats or sensitive species; therefore, the Project will not adversely impact biological resources. Construction activities and facility operations would be performed in line with the Imperial County Air Pollution Control District (ICAPCD) permit requirements as well as the County's General Plan. The final Project would be consistent with the General Plan because it is located within the Geothermal Energy Overlay Zone allowing for major geothermal projects. The Project conforms to Imperial County Code section 90508.02(y) and is not subject to the jurisdiction of the CEC because the Project is neither a new power plant that is greater than 50 MW nor a modification to an existing power plant that increases the net generating capacity by 50+ MW. Environmental impacts will not be expanded beyond those associated with the existing use or those previously analyzed in prior CEQA documents and the Project would not introduce a use that is disallowed within the Project site's land use designation or zone. (See Section 3.0.)

The Findings presented in Section 4.4 demonstrate that the Project would result in no potentially significant environmental impacts and that there would be no new significant, or substantially more severe, environmental effects than those existing under baseline conditions. For these reasons, the Project qualifies for the Class 1 "existing facilities" exemption.

Conclusion

The proposed facility upgrades and replacements contemplated by the Project will be negligible and none of the geothermal energy production activities or operations performed within the facility will be substantively expanded. The Project will merely replace aging generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a

beneficial effect). There are no changes proposed to the net generating capacity, the use of geothermal resources for electricity generation, the existing facility's interconnection facilities or transmission or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease. For these reasons, the proposed improvements, including replacement and decommissioning, will be a "like-for-like" replacement because they will utilize some of the same technology and will not result in foreseeable significant environmental effects beyond those associated with the existing uses or due to unusual circumstances. Substantial evidence shows that there would be an overall decrease in environmental effects, particularly with respect to air quality emissions when compared with baseline conditions.

Finally, consistent with the requirements of a Class 1 exemption, the Project site is located entirely within an existing, privately-owned geothermal power generating facility and no substantive changes to the existing environment are proposed. The Project reflects a minor alteration (replacement) of old facilities/mechanical equipment with new facilities/equipment. Implementation of the Project would not expand the current use of the Heber 1 site, as the Project does not propose to expand the utilization of the geothermal resource and will not change the 52 MW net generating capacity of the facility. As a result, and because no exceptions apply that would render the exemption unusable, the Project "falls squarely" within the terms of this exemption and is reasonable to use here. (*Bloom v. McGurk* (1994) 26 Cal.App.4th 1307, 1312 [a project that "falls squarely within the [] language of the Class 1 categorical exemption" may use the exemption]; see Section 4.4.) Therefore, the Project is categorically exempt from CEQA review under CEQA Guidelines section 15301.

4.2 Class 2 Categorical Exemption: Replacement or Reconstruction (CEQA Guidelines, § 15302)

Neither the Project's new OECs and storage tanks that will replace the existing flash units nor the reconfigured OECs storage tanks will result in a change—expansion or otherwise–of the existing use of the Heber 1 geothermal power plant to generate renewable energy. Instead, Heber 1 will remain at a net generating capacity of approximately 52 MW and will continue to operate as a geothermal power plant. In doing so, the proposed replacements and updates will allow the plant to generate renewable energy in a more efficient, safe, and reliable manner than before.

Conditions of the Class 2 Categorical Exemption

The Project qualifies for the "Class 2 – Replacement and Reconstruction" Categorical Exemption under CEQA, as set forth in Section 15302 of the CEQA Guidelines. "Class 2" categorically exempts projects including, in relevant part:

> *[The] replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced, including but not limited to:*
>
> *(b) Replacement of a commercial structure with a new structure of substantially the same size, purpose, and capacity.*

(c) Replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity.

Exemption Determination: *The Project involves replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.*

Existing Use

Heber 1 was constructed and is operated in compliance with the County's General Plan, Renewable Energy & Transmission Element, Land Use Ordinance, CUPs (#9-80, #04-0024, #06-006, #15-0013), and with all other local, state, and federal laws, ordinances, regulations, and standards.

Existing facilities at the Heber 1 site include the entirety of the 52 MW (net) Heber 1 Complex. The individual facilities that comprise this Complex include: (i) the one (1) Heber 1 geothermal dual flash facility; (ii) the four (4) OECS (OECs 11, 12, 13, and 14 [i.e., "Gould 1"]; (iii) the two (2) motive fluid (isopentane) 10,000-gallon tanks; (iv) the existing Vapor Recovery Maintenance Unit (VRMU); (v) the existing water cooling system (including tower, pumps, condensers, piping, etc.); (vi) and the existing substation.

The existing use of the Heber 1 facility is the utilization of geothermal resources of the Heber Known Geothermal Resource Area (KGRA) to generate electrical power. Developed and operated exclusively by Ormat, the use of OECs allows for maximum sustainability by reinjecting 100% of the geothermal fluid. Specifically, the fluid is extracted from an underground reservoir and flows from the wellhead through pipelines to heat exchangers in the OEC based on an Organic Rankine Cycle. Inside the heat exchangers, the geothermal fluid heats and vaporizes a secondary, organic working fluid with a low boiling point—in this case, isopentane, a fluid that Ormat has operated in its OECs for more than 25 years. The organic vapors drive the turbine and then are condensed in a condenser, which is cooled by either air or water. The turbine rotates the generator and then the condensed fluid is recycled back into the heat exchangers by a pump, completing the cycle in a closed system. The cooled geothermal fluid is re-injected into the reservoir.

The County finds this is the appropriate baseline for determining whether the Project will involve "negligible or no expansion" of capacity.

Effect of Project on Existing Use

The Project will include the replacement and reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity. And while this is a strong indicator that the Class 2 categorical exemption applies, the determining factor is ultimately whether there is "negligible or no expansion of capacity."

Here, the proposed Project will not expand the Heber 1 Facility's current permitted net generating capacity of 52 MW. The Project will shut down the dual-flash steam turbine generator and replace it with two new OECs (OEC 1 and OEC 2). OEC 1 and 2 combined would function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling rather than water cooling for the motive fluid. The Project will also reconfigure two of the existing OECs (OEC 11 and OEC 13), that, when combined, would

function as an Integrated Two-Level Unit (ITLU) and will use the existing cooling tower. The Project will also install ancillary equipment including a vapor recovery maintenance unit (VRMU) and two (2) 10,000-gallon isopentane tanks. Most of the time the tanks will be empty and be used when the OECs are evacuated during maintenance.

The reconstruction and replacement will occur within approximately 3.24 acres of the total 7.67-acre site disturbance area, which occurs entirely within the current 24.9-acre site and in an area previously filled and developed. As such, there will be no change to the size of the Project site. As noted above, all proposed Project activities would occur within the existing fence line of the Heber 1 Complex for the sole purpose of continuing geothermal energy generation operations. Proposed Project activities would not entail any expansion in size or change of use. The Project is intended only to restore efficiency of operations and bring net and gross generation up to current authorized levels.

In sum, the replacement of the old dual flash system with new and more efficient OEC units is effectively a "like-for-like" replacement that uses the same technology and processes as those of the existing OECs at the Heber 1 facility. The Project will provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource. There are no changes proposed to the net generating capacity, the use of geothermal resources for electricity generation, or the existing facility's interconnection facilities or transmission or distribution systems from the geothermal powerplant.

As explained in greater detail in Section 4.1 above, the Project will also not result in new or adverse potentially significant environmental effects. For example, some operational emissions from the geothermal power plant will decrease or be omitted entirely, while keeping other emissions (i.e., VOC emissions from isopentane) well below their permitted authorized release amount. In addition, the Project will not result in a change to the existing water intake or supply system. However, because changes to the facilities will not generate the extra water needed for the cooling towers, the Project will utilize the amount of irrigation water—2,300 acre-feet/year—that was authorized pursuant to Amendment No. 1 to the WSA with IID. Therefore, the Project will not increase or consume more irrigated water than previously analyzed and authorized by the WSA.

There would also be no expansion of reasonably foreseeable environmental impacts due to unusual circumstances or any other exception to this categorical exemption. (See Section 4.4.) All proposed development would occur within the fence line of the existing Heber 1 Complex and would not increase the footprint of the energy facility. There are no habitable structures as part of the Project, and the Project does not involve substantial changes in facility operations. Thus, there are no risks associated with any geologic hazards, and the Project would not introduce new populations to potential geological hazards onsite. Similarly, due to its fully developed and industrial nature, the site is void of habitats or sensitive species; therefore, the Project will not adversely impact biological resources. Construction activities and facility operations would be performed in line with the Imperial County Air Pollution Control District (ICAPCD) permit requirements as well as the County's General Plan. The final Project would be consistent with the General Plan because it is located within the Geothermal Energy Overlay Zone allowing for major geothermal projects. For these reasons, the Project conforms to Imperial County Code section 90508.02(y) and is not subject to the jurisdiction of the CEC because the Project is neither a new power plant that is greater than 50 MW nor a modification to an existing power plant that increases the net generating capacity by 50+ MW. Accordingly, environmental impacts will not be

expanded beyond those associated with the existing use or those previously analyzed in prior CEQA documents, and the Project would not introduce a use that is disallowed within the Project site's land use designation or zone. (See Section 3.0.)

The Findings presented in Sections 3.0 and 4.4 demonstrate that the Project would result in no potentially significant environmental impacts and that there would be no new significant, or substantially more severe, environmental effects than those existing under baseline conditions. For these reasons, the Project qualifies for the Class 2 exemption.

Conclusion

The proposed facility upgrades and reconstruction contemplated by the Project will be negligible and none of the geothermal energy production activities or operations performed within the facility will be substantively expanded. The Project will merely replace aging generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect). There are no changes proposed to the net generating capacity, the use of geothermal resources for electricity generation, or the existing facility's interconnection facilities or transmission or distribution systems from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease. For these reasons, the proposed improvements, including replacement and decommissioning, will be a "like-for-like" replacement because they will utilize some of the same technology and will not result in foreseeable significant environmental effects beyond those associated with the existing uses or due to unusual circumstances. Substantial evidence shows that there would be an overall decrease in environmental effects, particularly with respect to air quality emissions when compared with baseline conditions. In turn, there are no unusual circumstances or other exceptions that exist that would preclude application of the Class 2 categorical exemption to the Project. As a result, the Project "falls squarely" within the terms of this exemption and is reasonable to use here. (*Bloom v. McGurk*, *supra*, 26 Cal.App.4th at p. 1312.) Therefore, the Project is exempt from CEQA review under the "Class 2" exemption set forth in CEQA Guidelines section 15032.

4.3 Common Sense Exemption (CEQA Guidelines, § 15061, subd. (b)(3))

The "common sense" CEQA exemption applies to projects where it can be determined with certainty that the project would not yield significant environmental effects. (CEQA Guidelines, § 15061, subd. (b)(3).) The exemption provides, in relevant part, that a project is exempt from CEQA if:

> *(3) The activity is covered by the commonsense exemption that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.*

"Certainty" exists when there is "no possibility that [the] physical changes [of the Project] might amount to significant environmental effects." (*Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 118; see Section 3.0.).

Here, the physical changes proposed by the Project include decommissioning the dual-flash steam turbine that was originally constructed in 1985, installing two new water-cooled ORMAT OECs (OECs 1

and 2), which will operate as an I3LU to replace the dual flash steam turbine, reconfiguring OECs 11 and OEC 13 into a combined ITLU, and installing ancillary equipment including two 10,000-gallon isopentane storage tanks and a VRMU. These physical changes are assessed in the CUP application by utilizing the criteria in the Environmental Checklist of CEQA Appendix G. This analysis methodically demonstrates that the Project will not create any significant environmental effects, primarily because all construction and installation will occur on the existing site, which has been fully planned, permitted, and developed.

Other potential areas of impact not necessarily related to the physical land—such as noise, geologic hazards, biological resources, and air emissions—are shown to not approach or exceed any applicable thresholds of significance. This is, in part, due to the fully developed nature of the Project site as an existing geothermal energy complex. As to noise impacts, the facility has never received a noise complaint, the Project is within the "normally acceptable" range established by the County, and the Project is not anticipated to increase noise emissions from the existing plant.

As to geologic hazards, the Project proposes upgrades to an existing geothermal facility and does not involve substantial changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards onsite.

As to biological resources, a review of the records and a reconnaissance-level biological survey confirmed that the Project Site is completely void of any suitable habitat and sensitive species. Therefore, because the site does not contain suitable habitat and no sensitive species occur on the site in the baseline condition, substantial evidence indicates that there are no significant effects that the Project could have on biological resources.

As to air quality impacts, the Project "would *improve* [] physical conditions." (*CREED-21 v. City of San Diego* (2015) 234 Cal.App.4th 488, 512, emphasis added.) Specifically, the retirement of the steam flash units will completely eliminate the emissions of NO_x, SO_2, H_2S, and Benzene. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. Furthermore, the improvements inherent in the new equipment will reduce facility-wide VOC emissions, while keeping permitted isopentane emissions below the authorized release amount. As operational emissions are below both permitted and CEQA significance threshold levels, impacts are less than significant.

For these reasons, the Project "could have no significant effect on the environment within the meaning of CEQA" and is thereby "exempt from CEQA pursuant to the commonsense exemption (i.e., Guidelines, § 15061, subd. (b)(3))." (*Ibid.*) Therefore, the Project is exempt from CEQA review under the common-sense exemption.

4.4 Exceptions to Categorical Exemptions (CEQA Guidelines, § 15300.2)

Although projects that are categorically exempt "typically do not have significant impacts," the exemptions are not absolute and may be negated if an exception exists. (*Berkeley Hillside*, *supra*, 60 Cal.4th at pp. 1104–1105.) CEQA Guidelines section 15300.2 sets forth exceptions that preclude application of a categorical exemption. Section 15300.2, in relevant part, sets forth the following exceptions:

(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

As discussed in detail below, substantial evidence demonstrates that these exceptions do not apply, and thus, do not preclude application of the categorical exemptions to the Project.

Exception to Exemptions Findings:

Condition (b): Cumulative Impacts. The cumulative impact of successive projects of the same type in the same place, over time, is significant.

An environmental impact is considered "cumulative" if it has the potential to combine with similar impacts of other comparable, successive projects, within the same place, to become collectively significant. (See CEQA Guidelines, § 15355.) A project must "'make some contribution to the impact; otherwise it cannot be characterized as a cumulative impact of that project.'" (*N. Coast Rivers Alliance v. Westlands Water Dist.* (2014) 227 Cal.App.4th 832, 874 [quoting *Sierra Club v. W. Side Irrigation Dist.* (2005) 128 Cal.App.4th 690, 700, in support of finding against applicability of the cumulative impact exception].) Cumulative impacts do not exist where a project has "zero impact...then the cumulative effect of adding [projects] together would remain zero." (*Id.* at p. 875.)

Because the Project contemplates replacing the site's currently outdated dual flash turbine with more modernized equipment—thereby resulting in an increase in renewable energy production and a reduction in air emissions—the Project will not result in significant environmental impacts. The IS identified the geographic scope of the cumulative area analyzed as the extent of potential off-site impacts. The resources with the potential to have off-site impacts include air, biological resources, geologic (paleontological) resources, human health, and traffic. Considering that the Project will improve air quality by eliminating criteria air emissions and keeping isopentane emissions below their current permitted authorized release amount, a significant adverse cumulative effect to ambient air quality in Imperial County (or beyond) would not occur and the proposed Project would not conflict with or

obstruct the implementation ICAPCD's air quality plan. In other words, because the Project will result in lower overall emissions than current baseline conditions, the adverse impact could not be considered significant when combined with another project's direct emissions.

A project review of all reasonably foreseeable future projects was performed by Imperial County, and no projects occur in relatively close proximity to the Heber 1 site (including the Heber 2 project, located approximately 1 mile away). There is no potential for an adverse significant cumulative impact in specific reference to the Heber 1 Project. As discussed above, potential cumulative impacts would be limited to those resources with the potential to have an off-site effect. For air quality, Heber 1 would improve overall air quality by removing criteria pollutants in their entirety, while keeping VOC (isopentane) emissions below the current authorized release amount, thereby representing a beneficial impact; and, therefore, could not contribute to a significant cumulative impact. Traffic impacts would be limited to localized delivery of heavy equipment and facilities and would not have overlapping traffic effects with Heber 1. Noise impacts for Heber 1 would be similar to baseline conditions and would not have overlapping noise fields with Heber 1. Geologic impacts would be similar to baseline conditions and would not have overlapping effects because the site is developed and would not introduce any seismic or geological hazards, or populations to new geological conditions. Biological resource impacts would be similar to baseline conditions, composed of fully developed site, void of habitat, and inhospitable to special status species. Therefore, the Heber 1 Project would not result in significant cumulative impacts with Heber 2.

The County thus finds that because there are no other projects occurring or proposed to occur in the Heber 1 Area of Potential Effect (where impacts would coincide with the effects from another past, present, or reasonably foreseeable future action), and because the Project would yield environmentally beneficial effects with respect to lowered emissions, no significant cumulative effects would occur as a result of the Project. Therefore, this exception to a categorical exemption does not apply.

Condition (c): Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

A categorical exemption may not be used where there is evidence of both: (1) an "unusual circumstance"; and (2) a causal connection between this circumstance and "a reasonable possibility of a significant environmental effect." (*Berkeley Hillside*, *supra*, 60 Cal.4th at p. 1105.) An unusual circumstance exists when the facts show that "the project has some feature that distinguishes it from others in the exempt class, such as its size or location." (*Id.* at pp. 1105, 1114.) If the lead agency determines by "substantial evidence" that an unusual circumstance exists, then it must also determine that a fair argument could be made that these unusual circumstances create "a reasonable possibility of a significant environmental effect." (*Id.* at p. 1114.)

> *Condition (c)(1): Unusual Circumstances. Does the Project have some feature that distinguishes it from others in the exempt class, such as its size or location?*

Under the "Class 1" exemption, the Project constitutes an "[e]xisting facility[y] of both inventory and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services[.]" (CEQA Guidelines, § 15301, subd. (b).) Under the "Class 2" exemption, the Project

constitutes a "commercial structure with a new structure of substantially the same size, purpose, and capacity" and an "existing utility system[] and/or facilit[y] involving negligible or no expansion of capacity." (CEQA Guidelines, § 15302, subds. (b)–(c).) For these reasons, there is nothing about the Project's location or size that distinguishes it from other utilities or commercial structures.

The Project site is zoned as A-2-G-SPA, for General Agriculture (A-2), Geothermal Overlay Zone (G), and in the Heber Specific Plan Area (SPA). The Project site is entirely within the Imperial County Geothermal Overlay Zone. "Major Geothermal Projects" in the overlay zone are permitted through the CUP process, as was the original Heber 1 facility. The Heber SPA is intended "to allow for commercial, residential, industrial, renewable energy, and other employment-oriented developed in a mixed used orientation." Therefore, the Project is consistent with the General Plan because it is located within the geothermal energy overlay zone allowing for major geothermal projects and the Imperial County General/Zoning Plan allows for "Major Geothermal" projects on the Project site. The Project will be developed within an existing power plant, will not increase the footprint of the energy facility, and the proposed facilities would blend in with the existing energy facilities. Construction activities and facility operations would be performed in line with the elements of the County's General Plan (Land Use; Housing; Circulation and Scenic Highways; Noise; Seismic and Public Safety; Conservation and Open Space; Agricultural; Geothermal and Transmission; and Water). Moreover, the Project conforms to Imperial County Code section 90508.02(y) and is not subject to the jurisdiction of the CEC because the Project is neither a new power plant that is greater than 50 MW nor a modification to an existing power plant that increases the net generating capacity by 50+ MW.

Several geothermal operations exist in the vicinity, including an existing system at the Project site. These systems, like the one proposed, are sized to accommodate the respective needs of their operations. "'The presence of comparable facilities in the [County] adequately supports [an] implied finding that there [are] no 'unusual circumstances' precluding a categorical exemption.'" (*Walters v. City of Redondo Beach* (2016) 1 Cal.App.5th 809, 821, quoting *Bloom v. McGurk*, *supra*, 26 Cal.App.4th at p. 1316.) Here, in addition to the existing geothermal operations on the Project site, the Project joins several other nearby geothermal facilities, including the North Brawley Geothermal Power Plant (operated by Ormat) in the city of Brawley; the GEM and Ormesa facilities in Holtville; and the Salton Sea, Del Ranch, J.J. Elmore, J.M. Leathers, Vulcan, CE Turbo LLC, and John L Featherstone (formerly Hudson Ranch) facilities in Calipatria. (Imperial County Planning Department, Imperial County Geothermal Energy Maps[3]; see also Sections 3.0, 4.1.)

The County further finds that the Project's geographic location is neither unusual in nature nor susceptible to potential seismic impacts. The Heber 1 site is located within the Imperial County Geothermal Development Area and the plant area is zoned for major geothermal energy development, per the County General Plan. The plant to be repowered is located in an appropriate geographical location, with the closest residences located approximately 2/3 mile away. Significantly, geothermal energy facilities are typically sited in seismically active areas to access faults/fissures to reach a geothermal resource, and all wells and facilities are designed to account for this inherent seismic activity. As such, the County finds that it is wholly appropriate and common practice (i.e., not unusual) to site a geothermal plant in a seismically active area. Furthermore, potential earthquake damage

[3] Available at: www.icpds.com/assets/planning/energy-maps/imperial-county-geothermal-09-15-2017.pdf.

contemplates an environmental effect on the Project, rather than the Project's potential effect on the environment, as contemplated under CEQA. The County further finds that the Project's storage and handling of isopentane is not an unusual circumstance. Energy generation of all kinds, fossil-fuel and renewable alike, rely on machines, moving parts, and chemicals/fluids, and geothermal energy generation is no exception. It is industry practice to maintain, update, and replace the machines and equipment that run as a baseload renewable energy resource. This Project removes outdated facilities, replaces in-kind old equipment with new equipment (i.e., OECs), and improves the efficiency of the plant's isopentane management.

Therefore, based on its review of the entire record, the County finds that no unusual circumstances exist.

> *Condition (c)(2): Reasonable Possibility of a Significant Environmental Effect. Can a fair argument be made that an unusual circumstance causes "a reasonable possibility of a significant environmental effect"?*

Because it is determined that no unusual circumstance exists, this second prong need not be established, as the test for "unusual circumstances" is conjunctive. (*Respect Life S. San Francisco v. City of S. San Francisco* (2017) 15 Cal.App.5th 449, 458.) Nevertheless, as set forth above, the Project would not cause any significant environmental effects.

Conclusion Regarding Unusual Circumstances

No unusual circumstances exist for the Project, and the Project would not result in any significant environmental effects. As a result, there is no "reasonable possibility" that a "significant environmental effect" could be caused by an unusual circumstance. Therefore, this exception does not apply.

Condition (d): Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.

There are no scenic vistas or highways present on or in the vicinity of the Project site. The Project would be developed within an existing power plant, on previously-filled developed lands with no scenic characteristics (i.e., the site lacks vegetation, topography, or buildings), and no State scenic highway exists in the vicinity of the Project site. Because the Project will be developed within an existing power plant, the proposed facilities would blend in with the existing energy facilities and would render no noticeable changes to the current Heber 1 site/plant to travelers in the vicinity. Because the Imperial County General/Zoning Plan allows for "Major Geothermal" projects on the Project site, and, considering the existing onsite power plant, the Project would not impact the visual character of the site or its surroundings. Thus, this exception does not apply.

Condition (e): Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

The Project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the Government Code, and therefore, would not create a significant hazard to the public or environment. Thus, this exception does not apply.

Condition (f): Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

The Project site does not contain historical resources. A Phase I Cultural Resources Survey for the Proposed Project was prepared by Chambers Group, Inc. (Chambers Group) in September 2019. A record search with the South Coast Information Center (SCIC) for the Proposed Project determined a total of 22 cultural resource studies have been conducted within one-half mile of the Proposed Project area, with 12 studies located inside the Proposed Project area. The previous surveys identified by the SCIC occurred between 11 and 43 years ago. The earliest studies were associated with proposed geothermal testing in the Heber region. The records search identified one previously recorded cultural resource, a historic site, within one-half mile of the Proposed Project area, which is not located within the Proposed Project area. Chambers Group performed a reconnaissance level survey and identified no historic or prehistoric resources as part of the Proposed Project. The survey found that the Project area is completely disturbed and highly developed, including asphalt driveways and parking areas, piping systems, steam systems, a substation and administration buildings. No historic or prehistoric resources were identified as a result of the survey, indicating the low likelihood of encountering previously unrecorded resources.

Furthermore, there are no buildings or structures present on the Project site, such that the Project will not yield any impacts to historical resources. To this end, considering that the Project site was completely disturbed when the Heber 1 Complex was constructed in 1985, the probability of encountering an unforeseen/buried resource or remains is very low. Preexisting mitigation and the proposed conditions of approval would ensure a less-than-significant impact in the unlikely event that any resources are inadvertently uncovered during construction. Therefore, because the Project is anticipated to result in no or less than significant effects to historical resources, this exception does not apply.

5.0 IS/MND FINDINGS OF FACT

The County adopts the following CEQA Findings of Fact for its approval of the IS/MND. Although such Findings are not required because the Project approvals are exempt from CEQA, the County nevertheless adopts them out of an abundance of caution. (See, e.g., *CalBeach Advocates v. City of Solana Beach* (2002) 103 Cal.App.4th 529, 541 [specific findings not required to support lead agency's exemption determination]; *San Lorenzo Valley Community Advocates for Responsible Education v. San Lorenzo Valley Unified Schl. Dist.* (2006) 139 Cal.App.4th 1356, 1385 ["there is no requirement that [an] agency put its exemption decision in writing"]; see also Findings 4.1–4.4.) In the event it is determined that the Project approvals are not exempt from CEQA, the County finds that it would still approve the Project pursuant to the IS/MND prepared for the Project and based upon the Findings set forth below. The County's decision to adopt these Findings, in the alternative, does not constitute the adoption of a "mitigated Categorical Exemption." To this end, the County's imposition of, and the Applicant's compliance with, the Voluntary Environmental Protection Features (VEPFs) set forth below (or "conditions of approval" to the CUP application) does not disqualify the Project from relying on the Categorical Exemptions described above.

Findings

The requirements under CEQA have been complied with. While the Project is exempt from CEQA, an IS/MND was prepared for the Project and circulated for public review. An MND is appropriate because the County, as lead agency, has determined that Project revisions made by, or agreed to by the Applicant would avoid any potential impacts to the point where no significant impact on the environment would occur. As explained in the detailed findings below, there is no substantial evidence in light of the whole record that the Project, as revised, may have a significant effect on the environment. When compared to baseline conditions, the IS/MND's conclusion regarding the Applicant's proposed VEPFs is not necessary because those proposed measures address impacts that are already less than significant, and in most cases, would result in improvements compared with baseline conditions. Moreover, these measures do not authorize a "mitigated Categorical Exemption." Rather, the VEPFs either require compliance with generally applicable statutes and regulations, or are voluntary measures agreed to by the Applicant that would further reduce an already less-than-significant impact, and/or result in improved conditions when compared to the baseline. While the County may occasionally refer to them as "mitigation measures," the measures are equivalent to, and likewise considered "Best Management Practices" (BMPs) or "Project Design Features" (PDFs). The VEPFs are incorporated into the CUP as "Conditions of Approval" (COAs). Ultimately, the semantics of these measures bear no weight on their function: they are fundamentally preventative/protective measures and BMPs that the Applicant has voluntarily accepted as part of the Project description.

For these reasons, the County further finds that imposing these measures as COAs to the CUP does not disqualify the Project from the Categorical Exemptions set forth above. The County notes that it is common practice to add such conditions as late as the final approval hearing, particularly when requested by the applicant. This is particularly relevant where, as here, the measures rely on generally applicable regulations to conclude an environmental impact will not be significant and therefore does not require mitigation. (See, e.g., *San Francisco Beautiful v. City & County of San Francisco* (2014) 226 Cal.App.4th 1012, 1032–1033 [agency may rely on compliance with generally applicable regulations to conclude environmental impact will not be significant and therefore not require mitigation]; *Protect Telegraph Hill v. City & County of San Francisco* (2017) 16 Cal.App.5th 261, 267–2769 [conditions imposed on a project endorsed by an agency "do not constitute mitigation, where the record shows those conditions were not the basis for the agency's conclusion that the project qualified for a categorical exemption"]; *Wollmer v. City of Berkeley* (2011) 193 Cal.App.4th 1329, 1353 [condition of approval to improve traffic was part of project design and never a proposed mitigation measure; condition represented a "positive effort between developers and a municipality to improve the project for the benefit of the community" rather than an "evasion of CEQA"].)

The VEPFs and Findings set forth below reflect the recommendations of stakeholders, including the Applicant, the County Staff, and the public, and are also drawn from measures implemented by other, similarly situated approved projects. The VEPFs also serve to confirm generally applicable regulations that would apply to the Project that further reduce an already less-than-significant impact and in many cases improve environmental conditions when compared with the baseline conditions. The VEPFs are not designed to reduce potentially significant impacts to less-than-significant levels—they are part of the Project's design to address the facility's ongoing operations. This is appropriate and permissible under CEQA. (See, e.g., *Citizens for Environmental Responsibility v. State ex rel. 14th Dist. Ag. Assn.* (2015) 242 Cal.App.4th 555, 568–572 [mitigation and monitoring program was part of project's "normal

operations" and therefore did not preclude application of categorical exemption]; *Berkeley Hills Watershed Coalition v. City of Berkeley* (2019) 31 Cal.App.5th 880, 893, fn. 9, citing *Berkeley Hillside Preservation v. City of Berkeley* (2015) 241 Cal.App.4th 943, 961 [measures developed to comply with building codes or to address "common and typical concerns" during construction do not preclude exemption].)

5.1 Air Quality

Finding No. AQ-A

Impact: Potential impacts from fugitive vapor loss of volatile organic compounds (VOC) resulting from the increased amount of isopentane stored onsite.

Finding: The upgraded equipment that the Project will install will increase the total amount of isopentane stored onsite, which, in turn, may result in an annual increase in VOC emissions. However, the anticipated increase in emissions would remain below the current release amount authorized by the facility's Permit to Operate (PTO) that was issued by the Imperial County Air Pollution Control District (ICAPCD). Because the Project will not conflict with or obstruct the ICAPCD air quality plan, the Project will not result in significant impacts to air quality.

Facts Supporting the Findings

Future VOC emissions from isopentane/motive-fluid were estimated based on actual emissions from the facility for the most recent two-year period of normal operation. Isopentane emissions are related to the size of the system, so emissions were estimated by scaling the previous actual emissions according to the change in isopentane volume at the facility. The existing four OECs have a combined volume of 96,800 gallons, and the two isopentane storage tanks have a combined capacity of 20,000 gallons. After the proposed development, the combined volume of the existing and new OECs will be 240,100 gallons, and the total facility isopentane volume including the isopentane tanks will be 280,100 gallons.

Isopentane emissions were estimated based on several factors, as follows: (i) maintenance and purging emissions were estimated based on the worst-case quarterly emissions for maintenance and purging from two years of on-site data, resulting in emission rates that were scaled based on the ratio of the future OEC volume to the existing OEC volume; and (ii) fugitive emissions were estimated based on the worst-case quarterly emission rate over the two year-period, scaled based on the total system capacity of the system including isopentane tanks.

This emission estimation method is a reasonable conservative estimate (i.e., overestimation) of future emissions. The new units will benefit from improvements in the design and technology that have occurred during the years since the existing OECs were constructed. These improvements will reduce fugitive leaks as well as emissions during isopentane evacuation for maintenance, but are not accounted for in the emission estimate. Additionally, these new units are expected to have lower emissions because the units they are replacing have higher maintenance requirements due to their age.

Table 4 – OEC Isopentane Emissions – Historical and Potential Future Emissions

Facility Total Isopentane Emissions	Pounds Emitted Per Day (lb/day)	Tons Emitted Per Year (tons/year)
Historical Actual Emissions (Q4 2016 – Q3 2018)	33.3	6.1
Estimated Potential Emissions	81.3	14.8
Estimated Emissions Increase	**48.0**	**8.7**
ICAPD Permit (PTO) Emissions Limits	**Maximum Permitted Pounds Emitted Per Day (lb/day)**	
Current Permit Emissions Limit	99.6	
Proposed Emissions Permit Limit	99.0	
Estimated Emissions Permit Limit Decrease	**-0.6**	

Source: IS/MND, Appendix G, Air Sciences Inc. – Air Quality Analysis Summary for the Ormat Heber 1 Repower Project (Dec. 15, 2020), p. 6

As explained and shown in Table 4 above, the estimated emissions for the facility after the proposed development—which are reasonably conservative—will remain below the current permitted emission limits. As explained above, the estimated emissions are reasonable conservative.

Through the improved efficiency of the new OECs, the Project would result in an overall reduction of other air pollutants due to the decommissioning of the steam turbine generator and associated units, including the RTO, condensate line, and two cooling towers. Specifically, these upgrades will eliminate emissions of NOx, SO2, H2S, and Benzene entirely. While the Project will continue to use and emit isopentane, isopentane emissions will still be within permitted limits. This, coupled with the complete elimination of other criteria air pollutants, supports the finding that the Project will result in an improvement to air quality in the Imperial Valley by eliminating criteria emissions in their entirety and reducing facility-wide VOC emissions (while keeping isopentane emissions below the current authorized release amount); therefore, potential impacts are beneficial and less than significant.

The County further finds that the air quality protection measures previously implemented by ORMAT will limit air emissions at the Heber 1 facility. With respect to isopentane and related VOC emissions, these measures include, but are not limited to:

- A water truck is used on site to control fugitive dust emissions
- A five mile per hour speed limit at the site further reduces dust emissions
- During windy conditions, additional watering is conducted to minimize wind-blown fugitive dust
- Equipment is operated according to best practices and maintained according to design specifications
- The OECs are inspected for leaks using specialized leak detection equipment during every shift, and leaks are repaired quickly

- Any breakdown resulting in air emissions is reported to ICAPCD and corrected promptly (within 24 hours when possible)
- The VRMU is tested annually to confirm proper function and high isopentane recovery rates.

(IS/MND, Appendix G, Air Sciences Inc. – Air Quality Analysis Summary for the Ormat Heber 1 Repower Project (Dec. 15, 2020), p. 7.)

Finding No. AQ-B

Impact: Potential impacts during construction from $PM_{2.5}$ and PM_{10} in a non-attainment zone.

Finding: The Project will not result in potential impacts during construction from $PM_{2.5}$ and PM_{10} in a non-attainment zone. Further, voluntary mitigation measures have been proposed, and will be required for the Project, which will further reduce $PM_{2.5}$ and PM_{10} during construction.

Facts Supporting the Findings

The Heber 1 facility/site is within a non-attainment zone for PM_{10}/$PM_{2.5}$ and ozone. A construction emissions model was run to estimate potential emissions, and the estimates were provided as Appendix N to the IS/MND's responses to comments. These estimates were generated in accordance with ICAPCD protocols and conservative inputs were used for project equipment and operations. The results are well-substantiated and discussed in the IS/MND.

Based on the conservative modeling, construction of the Project is estimated to emit 75.13 lbs/day of PM_{10} and 9.83 lbs/day of $PM_{2.5}$ over the 6-month construction phase. These temporary emissions are well below the 150 lbs/day threshold established by the Imperial County Air Pollution Control District (ICAPCD; PM_{10} Plan and $PM_{2.5}$ Plan, 2018) and are, therefore, considered less than significant.

Moreover, the Project must comply with the ICAPCD Regulation VIII (Fugitive Dust Control), the Imperial County 2018 PM_{10} Plan, and the Imperial County 2018 PM2.5 Plan. In addition, to further minimize the already less-than-significant PM and fugitive dust emissions from construction, the Applicant has voluntarily proposed the following COA:

COA-AQ-1: The Applicant shall obtain a modified Permit to Operate from the Imperial County Air Pollution Control District (ICAPCD). All Project construction activities shall comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules and the following VEPFs:

- Project equipment and worker vehicles shall be turned off when not in use and not left idling for more than 5 minutes to minimize unnecessary emissions.
- Water shall be applied to the development site during site preparation and construction to control fugitive dust.
- Earth moving work shall be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads/areas will be restricted to 10 mph to control fugitive dust.

- During windy conditions, barriers will be constructed and/or additional watering conducted to minimize wind-blown fugitive dust.
- Vehicle access would be restricted to the disturbance area via signage/fencing.
- Project construction equipment will utilize Tier 3 engines when commercially available. If a Tier 3 engine is not certified for a particular piece of equipment or not commercially available, then the equipment shall be either equipped with a Tier 2 engine or equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NO_x) and diesel particulate matter (DPM) to no more than Tier 2 levels.

These measures are incorporated into the Conditions of Approval for the Project as Condition of Approval (COA)-AQ-1. In addition, COA-AQ-1 requires that the Applicant comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules and that the Applicant obtain a modified Permit to Operate from the ICAPCD, which will further ensure that potential air quality emissions from the Project are less than significant. As noted above, the construction emissions are substantially below ICAPCD construction emissions thresholds before considering reductions for these measures. As documented in the IS/MND, while less-than-significant temporary construction emissions would occur to develop the proposed facilities, the overall operational air emissions will decrease because of the project. Therefore, the Project would improve air quality in the Imperial Valley. From an overall air quality perspective, the Project is beneficial.

Additional Findings Regarding Comments on Air Quality Impacts:

The law firm of Adams Joseph Broadwell and Cardozo (ABJ&C) submitted comments on behalf of their client, CRI/CURE, including comments from their retained expert, Dr. Fox with respect to air quality emissions, related to the methodology by which the above estimates were calculated. Dr. Fox suggests using the EPA emission factor for Heavy Construction Operations from the fifth edition of EPA's *Compilation of Air Pollution Emission Factors*, or "AP-42." However, Dr. Fox failed to acknowledge that AP-42 states in its Introduction that "emission factors in AP-42 are neither EPA-recommended emission limits (e.g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e.g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance" (EPA 1995).

Additionally, the Heavy Construction Operations Section of AP-42 reports that "only 1 set of field studies has been performed that attempts to relate the emissions from construction directly to an emission factor" and "at least 2 features limit its usefulness for specific construction sites. First, the conservative nature of the emission factor may result in too high an estimate for PM-10 to be of much use for a specific site under consideration. Second, the equation provides neither information about which particular construction activities have the greatest emission potential nor guidance for developing an effective dust control plan." (EPA 1995.) Thus, the heavy construction emissions factor is not

recommended by the EPA for emission regulation compliance determinations, including PM10 compliance during construction, because of the limitations and lack of field testing associated with the emissions factor.

In response to previous comments regarding construction emissions, Appendix N to the CUP application (Air Emissions Memorandum) was prepared to clarify the analysis regarding construction emissions. Appendix N sets forth the results of the modelling of construction emissions for criterial pollutants and GHG using CalEEMOD and confirms that there are no significant effects and the Project will not cause or contribute to an exceedance of any applicable air quality standards. As observed, construction emissions for criteria pollutants and GHG emissions are less than significant, well below applicable regulatory significance thresholds.

Moreover, as part of the plan to move toward attainment of these ambient air quality standards, Imperial County adopted the 2009 PM10 State Implementation Plan (SIP), the 2009 Ozone Air Quality Attainment Plan (AQAP) along with the 2009 Reasonably Available Control Technology (RACT) SIP and the 2013 SIP for the 2006 24-Hr PM2.5 moderate nonattainment area. To implement these plans, the ICAPCD has adopted rules, regulations, and requirements to limit and reduce emissions of these air pollutants and their precursors. To comply with these ICAPCD rules, the Project has filed for and will obtain approval of an Authority to Construct (ATC). The Project will comply with the ICAPCD ATC and conditions of approval.

Dr. Fox's comments also offer a list of suggested "mitigation measures." However, mitigation is only required where there is a potentially significant effect. Heber 1 is an existing, operating facility, unlike the Casa Diablo project Dr. Fox uses as an analogy. The current Heber 1 facility is a minor source of air pollution and operates in compliance with all applicable air quality requirements and its permit to operate (PTO #1641B-5) from the ICAPCD. As detailed in the Air Quality Analysis Summary, the Project would lead to a reduction in emissions for all permitted pollutants and, in some cases, the complete elimination of certain permitted pollutants. CRI/CURE's comments focus on isopentane, a VOC. But Dr. Fox's comments fail to recognize that total permitted VOC emissions of 99.6 lbs/day are below the ICAPCD's 137 lbs/day CEQA significance thresholds for emissions of ROG/VOC. Moreover, as set forth in Table 4, the improvements inherent in the Project's new equipment are anticipated to reduce the total number of permitted pounds of isopentane emitted per day by 0.6 lbs/day, while decreasing overall facility-wide (non-isopentane) VOC emissions. Therefore, VOC emissions would remain below the current authorized release amount, such that the Project would not conflict with, or obstruct the implementation of ICAPCD's air quality plan. (See Appendix B of the ATC permit application.) Moreover, with the retirement of the steam flash units, the emissions of NO_x, SO_2, H_2S, and Benzene are completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. As operational emissions are below both permitted and CEQA significance threshold levels, impacts are less than significant and thus the "mitigation" measures are not required.

Dr. Fox's conclusion that soil-disturbing activities at the Project site have a "heightened risk" to put receptors at risk based solely on the assertion that "Imperial County is endemic for Valley Fever" is not substantiated by any facts. As explained by the U.S. Centers for Disease Control and Prevention (CDC), "endemic areas" for Valley Fever are approximate areas where the fungus causing Valley Fever is either known or suspected to occur, and the CDC considers the entire southwest United States as a potential

zone. In this case, it is highly unlikely Valley Fever is present on the Project site, given the low incidence rates in Imperial County and the lack of any documented cases at the existing Heber 1 site. Based on the low incidence rates in Imperial County and lack of documented cases at the existing Heber 1 site, the evidence supports that the potential risks from Valley Fever to workers and the public are less than significant even with the VEPFs. While not necessary to mitigate potential impacts to less than significant, the Applicant has also confirmed that the following conditions would be included as part of its construction BMPs: conducting Valley Fever awareness training for workers; providing respirators to workers when requested, including necessary training; use of closed-cab earth-moving vehicles equipped with HEPA-filtered air systems; employee testing for Valley Fever as needed; and conducting earth-moving activities downwind of workers when possible. These conditions will further reduce the potential risk to workers from Valley Fever.

The County has reviewed recent recommendations from the CA Department of Public Health – Occupational Health Branch and the Division of Occupational Safety and Health of the Department of Industrial Relations (Cal/OSHA) to limit risk from Valley Fever and compared them to the measures required for this Project. The measures required to comply with ICAPCD Regulation VIII and proposed by the applicant are consistent with those recommended to limit risk to Valley Fever. For example, Cal/OSHA recommends the adoption of site plans and work practices that reduce worker exposure. Measures include minimizing the area of soil disturbed; use of water or other soil stabilizer to reduce airborne dust; stabilizing all spoils piles by tarping or other methods; and cleaning tools, equipment, and vehicles before transporting offsite. Because there is no evidence of Valley Fever on the Project site and a lack of documented cases during more than 20 years of operations, the County concludes the potential impacts from Valley Fever are less than significant. The County further concludes that the Applicant's proposed voluntary mitigation measures and compliance with ICAPCD Rule VIII will further reduce any possible risks from Valley Fever.

5.2 Biological Resources

Finding No. BIO-A

Impact: Potential impacts to sensitive species and/or habitat, as established by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

Finding: There is no credible evidence in the record that the Project could result in impacts to sensitive species and/or habitat. Voluntary conditions of approval have been proposed, and will be required for, the Project which will ensure that any possible impacts to sensitive species are less than significant.

Facts Supporting the Finding(s)

The record demonstrates that the site of the Heber 1 facility is currently developed for power production uses, is completely devoid of any vegetation, and is completely graded and covered by soil and gravel. (Appendix B, *Biological Technical Report*, p. 9.)

The record also demonstrates that the Project site was properly investigated for the potential presence of sensitive species and habitat. A comprehensive record search was performed for biological resources,

vegetation, special status species, and critical habitat to identify the biological resources that occupy the project site and surrounding area. (*Biological Technical Report*, pp. 21–23.) All databases used in this research (e.g., IPac, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site. After a review of the records, a qualified biologist performed a reconnaissance-level survey of the Project site. (*Ibid.*) The biologist determined that the site is completely void of any suitable habitat for either special-status plant species or wildlife, including avian species. The biologist further determined that no wildlife or traces of wildlife, including nesting birds, were observed. (*Ibid.*) These efforts were recorded and memorialized with site photographs (Appendix A to the CUP Application).

Comments on the IS/MND submitted by ABJ&C on behalf of CRI and its expert Dr. Smallwood questioned the accuracy of the surveys and database searches. As documented through verifiable database research and a site-specific survey (as provided in Appendix B of the CUP), the site does not contain suitable habitat and no sensitive species occur on the site in the baseline condition. Moreover, preconstruction surveys of the Project site would be conducted prior to construction to verify the absence of any special status species. Dr. Smallwood's criticism of the on-site surveys speculates on the efficacy of surveys that are used by professional biologists.

To this end, all databases used in the Project's Biological Technical Report (e.g., CNPSEI, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site. By contrast, eBird is a publicly-sourced, privately managed database, allowing both novice and expert birders to contribute; therefore, the accuracy of the database cannot be considered reliable and in fact is not relied upon by professionals. The eBird findings provided by Dr. Smallwood are similarly not credible. Significantly, no field data is provided to support these findings. Neither eBird nor iNaturalist are accredited and each are populated by unconfirmable observations, and therefore not credible as a technical source. In contrast, the Bio Report's analysis followed the appropriate protocol for assessing potentially present sensitive species and is not required to expand its consideration of non-governmental technical sources, nor speak with local "experts" The California Natural Diversity Database (CNDDB) and other peer-reviewed databases used by the Project carry the substantial credibility that the California Department of Fish & Wildlife affords the CNDDB process. The baseline condition is the existing Heber 1 operations, and there is no evidence in the record, and certainly no evidence offered by CRI, of any such risks being realized.

CRI's comments also asserted the Project may have impacts on avian species. As observed in the CUP Project description, no new transmission lines (or solar facilities, as volunteered in the comment letter) or changes to existing Heber 1 substation are proposed; therefore, baseline conditions would remain the same and the Project would not cause any significant impacts to avian species. Further, due to the industrialized nature of the site, avian species are likely to avoid the site. In accordance with measure COA-BIO-2 (set forth below), if construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31), a nesting bird survey will be conducted prior to the start of construction or vegetation clearing activities. If active nests are found, an appropriate nest buffer will be established by a qualified biologist until the nest fledges or fails naturally.

Finally, CRI's comments state that the Project's "aerosphere" should have been incorporated into the Bio analysis. The comment cites to no laws, regulations, or statutes requiring the type of "aeroecology"-specific analysis the commenter purports to require of the County. No such authorities exist, and if they

did, they would apply to every building, structure, and development, not just geothermal powerplants. The suggestion of the absence of evidence is not evidence. Substantively, and as stated in the Biological Technical Report, all wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded during the reconnaissance-level survey. These methods fully capture the occurrence of volant species in the airspace just above the ground at the Project site

As noted in the Biological Technical Report, the site is an operational energy generation station, and devoid of native vegetation and suitable habitat. These findings are substantiated by the site-specific due diligence and in-person site reconnaissance performed by a professional biologist. Even though no burrowing owls were present on the existing industrial site, it is standard practice to implement precautionary measures, like pre-construction surveys and worker education. As these measures are adopted as part of the CUP decision, they are enforceable and effective. Moreover, while not required to address the already less-than significant potential impacts to biological resources, the Applicant has proposed COA-BIO-3 (set forth below) in response to comments submitted, which will be incorporated into the Project's conditions of approval.

Based on the foregoing facts, the IS/MND, and all the evidence in the record, County finds there is no credible evidence in the record that the Project could result in impacts to sensitive species and/or habitat. The County further finds the following voluntary conditions of approval proposed by the applicant and included in the IS/MND as well as the Project's Conditions of Approval, will further ensure that any possible impacts to biological resources during construction and operation will be less than significant.

COA-BIO-1: Prior to any construction activities commencing on site, contractors shall attend a Worker Environmental Awareness Program (WEAP) regarding sensitive biological resources potentially occurring within the Biological Survey Area (BSA). A person knowledgeable about the biology of the covered species shall present the program. At a minimum, the program shall cover the distribution of special-status species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, the penalties for violation of state and federal laws, reporting requirements, project mitigation measures, and measures to implement in the event that this species is found during construction. A fact sheet containing this information shall also be prepared and distributed. The program shall be presented to all members of the construction crew prior to the start of project construction activities. New employees shall receive formal, approved training prior to working onsite. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all protection measures. These forms shall be made available to CDFW upon request.

COA-BIO-2: Protection of nesting birds would be required in compliance with the MBTA and to avoid impacts to nesting birds. To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to February 1). If this avoidance schedule is not feasible, the alternative is to carry out the clearing of vegetation associated with

construction under the supervision of a qualified biologist. This shall entail a pre-construction nesting bird survey conducted by a qualified biologist within 14 days prior to initiating ground disturbance activities. The survey shall consist of full coverage of the proposed disturbance limits and a 500-foot buffer. The buffer shall be determined by the biologist and will take into account the species nesting in the area and the habitat present. If no active nests are found, no additional measures are required. If "occupied" nests are found, the nest locations shall be mapped by the biologist, utilizing GPS equipment. The nesting bird species shall be documented and, to the degree feasible, the nesting stage (e.g., incubation of eggs, feeding of young, near fledging). The biologist shall establish a no disturbance buffer around each active nest. The buffer will be determined by the biologist based on the species present and surrounding habitat. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume.

COA-BIO-3: In accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012), a preconstruction take avoidance survey shall be conducted (CDFW 2012). If the burrowing owl is absent, then no actions are required. If present, the following measures shall be implemented. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, then disturbance impacts shall be minimized through the use of buffer zones, visual screens, or other measures in accordance with CDFW (2012).

Occupied burrows shall be avoided during the breeding period from February 1 through August 31. (CDFW 2012.) "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy within the last 3 years. Occupied burrows shall also be avoided during the nonbreeding season.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. (CDFW 2012.)

Measures for permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat is required such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the burrowing owl life history information provided in Staff Report on Burrowing Owl Mitigation. (CDFW 2012.) Coordination with CDFW may be necessary for the development of site-specific avoidance and measures in the unlikely event that burrowing owls are present.

COA-BIO-4: Pre-construction surveys shall be performed to determine either the presence of special status species or sensitive biological resources within 14 days prior to initiating ground disturbance activities. In addition, before any modifications to existing buildings, a focused bat survey will be performed for western mastiff bat.

COA-BIO-5: If pre-construction surveys determine either the presence of special status species or sensitive biological resources, a construction monitor will be required during construction activities that could impact any species that are identified in the surveys. If required, construction monitoring shall be conducted by a qualified biologist. The biologist shall be given authority to execute the following functions:

- Establish construction exclusion zones and make recommendations for implementing erosion control measures in temporary impact.
- Ensure all construction activities stay within the staked construction zone and do not go beyond the limits of disturbance.
- Minimize trimming/removal of vegetation to within the Project impact area.
- Restrict non-essential equipment to the existing roadways and/or disturbed areas to avoid disturbance to existing adjacent native vegetation.
- Install and maintain appropriate erosion/sediment control measures, as needed, throughout the duration of work activities.

During construction, biological monitors shall inspect and verify field conditions, as needed, to ensure that wildlife and vegetation are not harmed. The biological monitor shall coordinate with the construction supervisor and construction crew and shall have the authority to stop any activity that has the potential to affect special-status species or remove vegetation not specified in this area.

Finding No. BIO-B

Impact: Potential impacts to riparian habitat or any other sensitive natural community identified in any applicable or relevant plan/policy/program/regulation, as established by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

Finding: The Project will not substantially affect riparian habitat or any other sensitive natural community identified in any applicable or relevant plan/policy/program/regulation, as established by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. No riparian or sensitive communities are present on the site. Voluntary mitigation measures have been proposed by the Applicant and will be required for the Project, which will ensure that any possible impacts to sensitive species are less than significant.

Facts Supporting the Finding(s)

The Project site is within a working power plant setting and is maintained as such. As documented in the site photographs (Appendix A to the CUP Application) and the Biological Technical Report (Appendix B to the CUP Application), no riparian or sensitive communities are present on the site.

Based on the foregoing facts, the IS/MND, and all the evidence in the record, the County finds there is no credible evidence in the record that the Project could result in impacts to riparian habitat or any other sensitive natural community identified in any applicable or relevant plan, policy, program, regulation, as established by the California Department of Fish and Wildlife and the U.S. Fish and

Wildlife Service. However, similar to Finding BR-A above, while there is no credible evidence of burrowing owl (a potential sensitive natural community) or any other sensitive species inhabiting the site, voluntary conditions COA-BIO-1–4 proposed by the Applicant and included in the IS/MND as well as the Project's Conditions of Approval, will further ensure that any possible impacts to sensitive natural communities during construction and operation will be less than significant.

Finding No. BIO-D

Impact: Potential impacts to species' ability to use native nursery areas or movement across natural areas.

Finding: The Project will not substantially impede wildlife species' ability to use native nursery areas or movement across natural areas. Further, voluntary conditions of approval have been proposed, and will be required for, the Project which will ensure that any possible impacts to wildlife species' ability to use native nursery areas are less than significant.

Facts Supporting the Finding(s)

As an active power generation facility, the entire Heber 1 Geothermal facility is fenced for security with chain link fencing, and the Project does not propose any developments beyond the existing Heber 1 fence line. Therefore, the baseline conditions would not change as result of the Project, and the Project would not introduce any new restrictions to wildlife access, movement, or use to/of natural areas. Further, the Project site is devoid of vegetation and water, and is not considered suitable habitat for wildlife, as documented in the site photographs (Appendix A to the CUP Application) and Biological Technical Report (Appendix B of CUP Application).

Based on the foregoing facts, the IS/MND, and all the evidence in the record, County finds there is no credible evidence in the record that the Project could impact species' ability to use native nursery areas or movement across natural areas. However, similar to Findings BIO-A, BIO-B, BIO-C above, voluntary conditions (COA-BIO-1–4) proposed by the applicant and included in the IS/MND as well as the Project's Conditions of Approval, will ensure that any possible impacts to species' ability to use native nursery areas or movement across natural areas during construction and operation will be less than significant.

5.3 Geological & Paleontological Resources

Finding No. PAL-A

Impact: Potential impacts to the geologic unit, or substantial adverse effects, including risk of loss, injury or death involving fault rupture, seismic shaking, and/or ground-failure/liquefaction.

Finding: No changes to the baseline utilization, injection, or pressure regime are proposed and the Project would not alter the existing geology and hydrogeology at the Project site. The Project will not alter existing geology and hydrogeology. The Project will not result in significant impacts to the geologic unit resulting in subsidence. Further, voluntary measures have been proposed and incorporated into the IS/MND and CUP as Conditions of Approval, which will ensure that any possible impacts involving fault rupture, seismic

shaking, and/or ground-failure/liquefaction or impacts to the geologic unit will be less than significant.

Facts Supporting the Finding(s)

The Project proposes upgrades to an existing geothermal facility and does not involve substantial changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards onsite. Site preparation for the installation of the proposed facilities will include leveling the ground surface, excavation, backfill and soil compaction. The Project will comply with current California Building Code Standards that will prevent exacerbation of any existing geologic hazards. In addition, PDFs have been incorporated into the IS/MND project description which will be included in the Proposed Project's grading plan. In summary, the Project does not propose any changes from construction or operations that would result in potential geologic hazards when compared with baseline conditions.

Finding No. PAL-B

Impact: Potential impacts from Project-related ground disturbances and excavation to paleontologically resources and geologic units, such as the Lake Cahuilla Beds.

Finding: The depth of excavation for the Project would be limited to previously disturbed soils and will not occur within native soils in the Lake Cahuilla Beds. The paleontological footprint area of the Lake Cahuilla Beds extends to the Heber 1 and Heber 2 project sites, both of which have been completely disturbed. Further, voluntary measures have been proposed and incorporated into the IS/MND and CUP as Conditions of Approval, which will ensure that protection and prevention of potential impacts to paleontological resources.

Facts Supporting the Finding(s)

When the Initial Study (IS) for the Project was drafted, it was unknown whether the depth of excavation for the Project would be limited to previously disturbed soils. For this reason, the best management practice to conduct monitoring of ground disturbance within the Lake Cahuilla Beds (and outside of previously disturbed fill) was written as a measure for ease and for inclusion in the Mitigation Monitoring and Reporting Program (MMRP). It has now been determined that the depth of excavation for the Project will be limited to previously disturbed soils and will not occur within native soils in the Lake Cahuilla Beds.

Lake Cahuilla was a former freshwater lake that periodically occupied a major portion of the Salton basin approximately 37,000 to 240 years ago, depositing sediments throughout the Imperial and Coachella Valleys (Figure 1, attached). Generally, Lake Cahuilla sediments consist of a layered sequence of both freshwater lacustrine (lake) and fluvial (river/stream) deposits. Throughout Imperial County, Lake Cahuilla sediments have yielded well-preserved remains of freshwater clams and snails and sparse remains of freshwater fish. The paleontological resources of the Lake Cahuilla Beds are considered significant; thus, these deposits are assigned a high paleontological potential. This area extends throughout the Imperial Valley, including both the Heber 1 and Heber 2 project sites.

To this end, there is no material difference between the conditions at Heber 1 and Heber 2 with regard to paleontological resources. Both are located within the historic footprint of Lake Cahuilla and both Project sites have been completely disturbed during previous development. Further, because the depth of excavation for Heber 1 will be limited to previously disturbed soils, ground disturbance at Heber 1 will not occur within the Lake Cahuilla Beds. As a result, there is no substantial evidence of any potential significant effects. Mitigation is therefore not required to reduce potential impacts to paleontological resources.

Although there is no substantial evidence of any potential significant effects to paleontological resources, as explained in Finding PAL-A, the Applicant has voluntarily proposed measures COA-PAL-1 through 6 as best management practices and protection and preventative measures, which will be included in the IS/MND as well as the Project's Conditions of Approval:

COA-PAL-1: All project-related ground disturbances that could potentially impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis.

COA-PAL-2: A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring Plan for the proposed Project, which would include the identification of any undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan will also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the Applicant and the lead agency.

COA-PAL-3: At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.

COA-PAL-4: Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).

COA-PAL-5: Any recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the San Diego Natural History Museum (SDNHM).

COA-PAL-6: The qualified paleontologist will prepare a final monitoring report to be filed with the Applicant, the lead agency, and the repository.

5.4 Hazards & Hazardous Resources

Finding No. HAZ-A

Impact: Potential impacts to public safety from a catastrophic accident.

Finding: The Project will not result in potential impacts to public safety from a catastrophic accident when compared with baseline conditions. Further, voluntary measures have been proposed, and will be incorporated as Conditions of Approval to the CUP, which will result in beneficial impacts to public safety when compared with baseline conditions.

Facts Supporting the Finding(s)

Ormat has operated OECs utilizing isopentane within the Imperial Valley for more than 25 years without a single incident related to isopentane. Specifically, use of isopentane at four separate facilities has resulted in over 60 cumulative operating years, when all facilities within the Imperial Valley are combined. Doing so is a direct result from the development and implementation of monitoring and protective measures to ensure proper operation of Ormat's facilities, including Heber 1, which has operated with the use of isopentane for over 15 years (i.e., since the introduction of the Gould 1 OEC in 2006). For these reasons, the focus on safety was foremost during the development of the proposed Project. Ormat engaged in early and frequent coordination with staff from Imperial County Planning and Development Services and Imperial County Fire Department. This coordination resulted in the reduction of proposed new tanks from six to two. Additionally, and at the request of the County, the Project will implement concrete containment areas to prevent the spreading of isopentane in the unlikely event of an incident as well as a blast wall in between the existing tanks.

The Hazard Assessment (HA) prepared for the CUP Amendment Application (Appendix H of CUP Application) and IS/MND complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program Guidance for Chemical Accidental Release Prevention (40 CFR §§ 68.20–68.42).[4] The HA assesses the appropriate catastrophic scenario of cascading tank failures/upsets, as supported and approved by Imperial County Fire Department. The analyzed scenario, developed in close consultation with the Imperial County Fire Department, is above-and-beyond the EPA standard for assessing only a single vessel failure, exceeding all applicable regulatory requirements. The HA assesses the entire tank system present in the Heber 1 Complex (four tanks total, with two new tanks and two existing tanks). The Project's analysis of a release from a single isopentane storage tank is representative of the worst-case scenario. The OECs are not considered in the Project's HA because the equipment is comprised of isolated compartments (i.e., heat exchangers, condensers, feed pumps, etc.) monitored and maintained with individual control measures to prevent failure of one compartment from effecting the OEC as a whole. Control measures within each individual OEC include gas detectors, flame detectors, and a fire suppression system. The process is also monitored by the operator, who

[4] Consistent with the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis" published guidance, BLEVEs are generally considered unlikely events and were therefore, consistent with EPA guidance, not considered a probable event for the Offsite Consequence Analysis performed in the HA.

providing the ability to detect an isopentane leak, and added protection in the event thereof. For these reasons, the worst-case analysis remains the explosion of one 10,000-gallon isopentane tank onsite.

The results of the HA demonstrated that the limited impacts from the Project would not impact any sensitive receptors. Furthermore, the explosion area of either of the new vessels will not reach any of the existing vessels, nor each other. The only overlap would be for the existing tanks 3 and 4, which are currently permitted by the County. However, as discussed above, the Applicant proposes the voluntary measure of installing a blast wall between existing tanks 3 and 4 to minimize the potential for a cascading failure, thus reducing the potential for impacts as compared to the existing baseline conditions. The additional storage capacity also increases safety and efficiency for plant maintenance by providing additional tank storage options through additional "tankage" for the volume of isopentane on site.

In addition to these design features and voluntary measures, the cessation of the use of Benzene will also further reduce the potential for hazards as compared to the existing conditions. These reductions, combined with the voluntary protective measures set forth below within the new isopentane storage tanks, represent a continuation of the use of isopentane onsite with reduced potential for impacts compared to the existing baselines and thus will not result in any new, significant impacts:

COA-FIRE-1: A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment will be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

COA-FIRE-2: Concrete containment areas for isopentane storage tanks, including a blast wall between currently operational isopentane tanks shall be installed. To minimize the potential for a cascading failure event of the proposed isopentane tanks and to limit potential impacts within the existing Heber 1 Complex fence line, the proposed isopentane tanks shall be located as set forth in Figure 2 to the Hazards Assessment. Diking and impoundment of the proposed isopentane tanks shall be installed to minimize the magnitude and extent of a tank failure

COA-FIRE-3: All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. Each tank will be equipped with two flame detectors and one gas detector (for a total of 4 flame detectors and 2 gas detectors for the two tanks). In the case of an isopentane leak, the gas detector(s) will detect it immediately and send a notification to the operator at the control room (manned 24/7) in order to mobilize fixing the leak. In case of a fire, the flame detector(s) will detect it and immediately start the automatic fire suppression system. In case of a fire, there will also be a horn and strobe system that will turn on automatically to alert the plant employees. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

COA-FIRE-4: An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

COA-FIRE-5: Fire department access roads and gates shall be in accordance with the current adopted Fire Code and the facility will maintain a Knox Box for access on site.

COA-FIRE-6: Compliance with all required sections of the Fire Code.

COA-FIRE-7: For the isopentane tanks, the Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

The County finds that comments suggesting that the Project's Hazards Assessment (HA) consider a "boiling liquid expanding vapor explosion" (BLEVE) do not constitute substantial evidence of a significant impact to hazards. Consistent with the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis" published guidance, BLEVEs are generally considered unlikely events. Therefore, consistent with EPA guidance, BLEVEs were not considered a probable event for the Offsite Consequence Analysis performed in the HA. The Project's analysis of a release from a single isopentane storage tank is representative of the worst-case scenario due to control measures associated with the OECs. Further, the Project's HA complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program guidance for Chemical Accidental Release Prevention. (See 40 C.F.R. §§ 68.20-68.42.) Moreover, the Applicant is in coordination with the Imperial County Fire Department regarding the Project. The County Fire Department has provided guidance regarding onsite safety, and a fire engineer will review and issue a stamped drawing to the County Fire Department before Project operations begin.

5.5 CUMULATIVE EFFECTS & MANDATORY FINDINGS OF SIGNIFICANCE

Finding No. MFOS

CUMULATIVE EFFECTS

Impact: The Project's cumulative effects with existing or reasonably foreseeable future projects, including the retrofit and replacement of equipment at the Heber 2 geothermal plant.

Class: Class II – Less Than Significant Impact

Finding: The Project will not result in significant cumulative effects with existing or reasonably foreseeable future projects, including the retrofit and replacement of equipment at the Heber 2 geothermal plant.

Facts Supporting the Finding(s)

The IS/MND identifies the geographic scope of the cumulative area of analysis as the extent of potential off-site impacts, including air, noise, human health, and traffic. Section 3 of the IS/MND outlines the "Mandatory Findings of Significance," as required by CEQA. As Section 3 explains, the CEQA "baseline" for the Project includes the existing operation of the Heber 1 Facility. The geographic scope of the

cumulative area of analysis considers whether cumulative effects for this Project would be limited to off-site Project impacts that coincide with effects from another past, present, or reasonably foreseeable future action. This area of overlap is referred to as the "Area of Potential Effect," and is specific to each resource area as defined by the analysis in the IS. The extent of these impacts is discussed in each resource's respective section in the IS/MND and, as observed, none would result in a significant impact. In order to have a cumulative effect, there would need to be another project that generates the effect that would be additive to the Project's effects. Imperial County performed a project review of all reasonably foreseeable future projects, and no projects occur in relative close proximity to the Heber 1 Complex or Heber 1 Area of Potential Effect (including the Heber 2 project located approximately 1 mile away). Therefore, no significant cumulative effects would occur as result of the Project.

CRI/CURE's comments contend that the Project may yield cumulative air quality and traffic impacts. As the County's response explains, traffic impacts would be limited to localized delivery of heavy equipment and facilities and would not have overlapping traffic effects with Heber 2. Air and noise impacts for Heber 1 would be similar to baseline conditions. Permitted VOC emission limits of 99.7 lbs/day are below the ICAPCD's 137 lbs/day CEQA significance threshold for emissions of ROG/VOC. With the improvements inherent in new equipment, isopentane emissions will remain below the permitted authorized release amount. (See Appendix B of the ATC permit application.) The Proposed Project also would not have overlapping noise fields with Heber 2. Therefore, the Proposed Project would not result in significant cumulative impacts with Heber 2.

Finding No. USS

Impact: The Project's potential impacts to water supply.

Finding: The Project will not have significant impact on water supplies.

Facts Supporting the Finding(s)

The Project does not propose any new wells or any changes to the baseline utilization, injection, or pressure regime at the Heber 1 facility. Therefore, the Project would not alter the existing geology and hydrogeology and not impact any groundwater aquifers or surface waters. Further, and as explained above, the Imperial Irrigation District has already approved an Amendment to the existing water rights contract between the parties. The Project will not require additional water to operate beyond that considered in the amended water rights contract, and no additional amendments to the Heber 1 facility's water rights are required to accommodate the Project. Therefore, the Project will not serve as a significant new source of water consumption and will not impact any water management plans.

6.0 FINDING RELATING TO CREDIBILITY OF CRI/CURE'S COMMENTS AND COMMENTS FROM CRI/CURE'S PURPORTED EXPERTS

The County finds that CRI/CURE's comments (submitted through their attorneys at ABJ&C), including those of its purported experts, regarding the Project's IS/MND do not provide substantial evidence supporting a conclusion that the Project may have a significant effect on the environment. In particular, and as described in further detail below and based on the County's review of the entire record, the County finds that ABJ&C's comments relating to the Project Description as well as the Project's potential

impacts on air quality, hazards, biological resources, geological resources, and cumulative impacts are not credible, and comprised of argument, speculation, unsubstantiated opinion, and information that is clearly inaccurate or erroneous.

Given the existing level of development at the Heber 1 facility, which has been in operation since 1985, coupled with Project revisions that have been accepted by the Applicant to ensure that any potential impacts are less than significant, the County finds that there is no substantial evidence in light of the whole record before it that the Project, as revised, may have a significant effect on the environment. In fact, and as detailed above, the County finds the Project will actually result in improvements to air quality and further reduce risks to the public from hazardous materials when compared with baseline conditions. As detailed above, the County responded to all issues raised in comments on the IS/MND, including in some cases through Project revisions or VEPFs, which were incorporated to assure the public that any possible environmental impacts were addressed.

Under Public Resources Code section 21082.2, the question is not whether any credible evidence supports a fair argument, but whether substantial evidence, in light of the whole record, supports a fair argument. Importantly, evidence that, if viewed in isolation, might seem to give rise to a "fair argument" may ultimately prove insubstantial after all if other information in the record shows that the "evidence" is merely speculation or unsubstantiated opinion, or is inaccurate or misleading. (*Friends of "B" Street v. City of Hayward* (1980) 106 Cal.App.3d 988, 1000-1003.) Speculative possibilities do not constitute substantial evidence, and pure speculation with no evidentiary support cannot trigger environmental review requirements. (*Citizens' Com. to Save Our Village v. City of Claremont* (1995) 37 Cal.App.4th 1157, 1171; see also *Assn. for Protection of Environmental Values in Ukiah v. City of Ukiah* (1991) 2 Cal.App.4th 720, 735-736 [to meet fair argument burden, "project opponents must produce some evidence, other than their unsubstantiated opinions, that a project will produce a particular adverse effect"].) While the fair argument standard may be low, it is not so low as to be non-existent as ABJ&C suggest. As the Court of Appeal observed in *Apartment Association of Greater L.A. v. City of L.A.* (2001) 90 Cal.App.4th 1162:

> *We do not believe an expert's opinion which says nothing more than "it is reasonable to assume" that something "potentially . . . may occur" constitutes . . . substantial evidence . . . "Substantial evidence" is defined in the CEQA guidelines to include "expert opinion supported by facts." It does not include "[a]rgument, speculation, unsubstantiated opinion or narrative."*

(*Id.* at p. 1176; see also *Brentwood Assn. for No Drilling, Inc. v. City of L.A.* (1982) 134 Cal.App.3d 491, 504 [testimony "unsupported by the facts from which it is derived" is not "substantial evidence"]; *Bowman v. City of Berkeley* (2004) 122 Cal.App.4th 572, 583 [County has "discretion to discount [expert's] credibility"]; *Leonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1348–1349 ["administrative agency is entitled to believe or disbelieve even uncontradicted testimony by a biased or otherwise incredible witness"]; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928–929 ["the lead agency has discretion to determine whether evidence offered by the citizens claiming a fair argument exists meets CEQA's definition of 'substantial evidence"... "mere argument, speculation, and unsubstantiated opinion, even expert opinion, is not substantial evidence for a fair argument"]; Pub. Resources Code, § 21082.2, subd. (c).)

Based on the foregoing, the County expressly finds that the comments submitted by CRI/CURE through ABJ&C and its purported experts are not credible, and comprised of argument, speculation, and unsubstantiated opinion, and thus do not give rise to a "fair argument" that the Project could result in any potential adverse environmental impacts.

7.0 RECIRCULATION FINDINGS

Legal Background

Though not mandated or required by CEQA, the County nevertheless finds that substantial evidence supports its determination that there is no new information that would require recirculation of the MND or preparation of a subsequent or supplemental EIR for the Heber 1 Project. (See *Citizens for a Megaplex-Free Alameda v. City of Alameda* (2007) 149 Cal.App.4th 91, 114–115 (*Megaplex-Free Alameda*), original emphasis ["CEQA does *not* require that findings be adopted when an agency determined that a subsequent EIR [or MND] is not required. An implied finding that a further EIR is not required under Public Resources Code § 21166 is sufficient as long as it is supported by substantial evidence"].)

Public Resources Code section 21166 prescribes when a lead agency must prepare and/or recirculate a subsequent or supplemental EIR or MND for a project. (Pub. Resources Code, § 21166; *American Canyon Community United for Responsible Growth v. City of American Canyon* (2006) 145 Cal.App.4th 1062, 1071–1072 [although section 21166 "speaks only in terms of the EIR, CEQA Guidelines apply section 21166 to project changes following an agency's adoption of a negative declaration or a mitigated negative declaration"].) As elaborated by CEQA Guidelines section 15162 (which was promulgated pursuant to section 21166), after the lead agency certifies an EIR or adopts a MND for a project, no subsequent EIR or MND shall be prepared for the project unless the lead agency determines, based on substantial evidence, that one or more of the following conditions exist:

> *(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant environmental effects;*
>
> *(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or*
>
> *(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:*
>
> *(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;*
> *(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;*

(C) *Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or*

(D) *Mitigation measures or alternatives which are considerably different than those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.*

(CEQA Guidelines, § 15162, subd. (a); see *Benton v. Bd. of Supervisors* (1991) 226 Cal.App.3d 1467, 1482–1483 (*Benton*).) To this end, if changes to a project or its circumstances occur, or new information becomes available after the lead agency adopts a negative declaration, the agency must prepare a subsequent EIR if required under the conditions set forth above. Otherwise, the agency must determine whether it should prepare a subsequent negative declaration, an addendum, or no further documentation. (CEQA Guidelines, § 15162, subd. (b).)

Similarly, where the lead agency has prepared a negative declaration (thereby signifying that a project would not a have a significant effect on the environment), recirculation is only required when the document is substantially revised after public notice of its availability but prior to its adoption. (Pub. Resources Code, § 21080, subd. (c).; CEQA Guidelines, § 15073.5, subd. (a).) A "substantial revision" of a negative declaration means: (1) a new, avoidable significant effect is identified and mitigation measures or project revisions must be added in order to reduce the effect to insignificance; or (2) the lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less-than-significant levels, such that new measures or revisions are required. (CEQA Guidelines, § 15073.5, subd. (b).) However, recirculation is not required when:

(1) *Mitigation measures are replaced with equal or effective measures;*

(2) *New project revisions are added in response to written or verbal comments on the project's effects identified in the proposed negative declaration which are not new avoidable significant effects;*

(3) *Measures or conditions of project approval are added after circulation of the negative declaration, which are not required by CEQA, which do not create new significant environmental effects and are not necessary to mitigate an avoidable significant effect;*

(4) *New information is added to the negative declaration that merely clarifies, amplifies, or makes insignificant modifications to the negative declaration.*

(CEQA Guidelines, § 15073.5, subd. (c).)

For these reasons, "recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR [or MND]." (*Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1993) 6 Cal.4th 1112, 1129–1130 (*Laurel Heights II*); see also *id.* at p. 1132 [the Legislative intent of section 21092.1 and 21166 is not to "promote endless rounds of revision and recirculation of EIRs. Recirculation was intended to be an exception, rather than the general rule"].) Therefore, the test for considering whether recirculation is required is "whether the

record as a whole contains substantial evidence to support a determination that the changes in the [P]roject were not so 'substantial' as to require 'major' modifications to the EIR [or MND]." (*Bowman v. City of Petaluma* (1986) 185 Cal.App.3d 1065, 1075 (*Bowman*).) In determining that issue, all reasonable doubts are resolved in favor of the County's decision. (*Megaplex-Free Alameda*, *supra*, 149 Cal.App.4th at p. 112.)

Findings

The County finds that none of the factors set forth in CEQA Guidelines, sections 15162 and 15073.5, exist with respect to the Heber 1 Project. As explained in Section 3.0, *supra*, the County finds, based on substantial evidence in the record, that the Project is exempt from CEQA because its proposed modifications to the existing Heber 1 facility will not yield significant environmental effects, and instead, will improve baseline conditions—particularly as to air quality and hazards. (See Section 3.0, *supra*.) In making this finding, the County further concludes that there is no significant new information that has been presented—either in CRI's comments or elsewhere—that suggests the Project will have significant impacts on the environment, thereby mandating preparation of an environmental impact report. (Pub. Resources Code, § 21166, subd. (c); CEQA Guidelines, § 15162, subd. (a)(3); see also Section 6.0, *supra*.)

Moreover, the County finds that its incorporation of the Applicant's voluntary conditions of approval and VEPFs will ensure that all potential impacts—including those raised by CRI/CURE—will be avoided entirely, or mitigated to less-than-significant levels. (See *Benton*, *supra*, 226 Cal.App.3d at pp. 1482–1483 [by adopting a mitigated negative declaration, county board of supervisors "impliedly agreed" with appellant's conclusion that impacts could be mitigated, such that an EIR was not necessary]; accord *Megaplex-Free Alameda*, *supra*, 149 Cal.App.4th at pp. 114–115.) The County similarly finds that the incorporation of these conditions does not substantially change the Project in a manner that would necessitate "major revisions" to the MND. (See, e.g., *Bowman*, *supra*, 185 Cal.App.3d at p. 1081.)

As explained above, these voluntary conditions are incorporated out of an abundance of caution, despite the County's finding that the Project will not yield significant environmental impacts. That the County concurrently adopts these measures to further improve baseline conditions does not "substantially change" the Project. (See *Bowman*, *supra*, at p. 1080, original emphasis [substantial evidence supported City's finding that project would not have a significant noise impact, particularly where traffic impacts "would actually be *improved* under one of the mitigating measures" financed by the applicant].) Rather, the voluntary measures and conditions of approvals were added in response to comments after the MND was circulated. As the County previously explained, the measures are not required by CEQA because the County concluded that they are not necessary to mitigate an avoidable significant impact. (See CEQA Guidelines, § 15073.5, subd. (c)(3); see also *El Dorado County Taxpayers for Quality Growth v. County of El Dorado* (2004) 122 Cal.App.4th 1591, 1602–1604 [reclamation measure added after approval of negative declaration "was simply an added bonus" that would project's overall air quality impacts, and thus, "did not trigger negative declaration recirculation"].)

For these reasons, the County concludes, based on all available substantial evidence in the record, that recirculation is not required because there is no significant or new information of substantial importance that the Project will yield significant environmental impacts.

— END —

ATTACHMENT D
CEQA RESOLUTIONS (APPROVAL OR DENIAL OF APPEAL)

RESOLUTION NO.

A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF IMPERIAL, CALIFORNIA, FOR THE APPROVAL OF APPEAL #21-0003 AND DENIAL FOR ADOPTING THE NOTICE OF EXEMPTION (NOE) & "INITIAL STUDY/MND" OF THE PLANNING COMMISSION'S NOVEMBER 18, 2021 DECISION OF APPROVAL OF CONDITIONAL USE PERMIT #19-0028 (HEBER 1 GEOTHERMAL REPOWER PROJECT).

WHEREAS, on February 11, 2021, a public noticed Environmental Evaluation Committee Hearing heard to discuss and review the Mitigated Negative Declaration (MND) & Initial Study (IS) SCH #2021020267; and

WHEREAS, the Environmental Evaluation Committee recommended to the Planning Commission of the County of Imperial to adopt the Mitigated Negative Declaration for Conditional Use Permit #19-0028;

WHEREAS, the IS/ND was revised to incorporate changes to the Project and voluntary mitigation measures proposed by the Applicant to address comments. An IS/MND that incorporated the changes to the Project and voluntary mitigation measures was circulated for agency review and public comment from February 12, 2021 thru May 10, 2021; and

WHEREAS, following circulation of the IS/MND, the County determined that as a modification to an existing facility with replacement or reconstruction, the Project qualified for Class 1 and Class 2 Categorical Exemptions under the California Environmental Quality Act (Pub. Resources Code §§ 21000 et seq. [CEQA]; Cal. Code Regs, tit. 14, §§ 15000 et seq. [CEQA Guidelines]) and that there were no exceptions to the exemption.

WHEREAS, a IS/MND and CEQA Findings of Fact were prepared in accordance with the requirements of the California Environmental Quality Act, State Guidelines, and the County's "Rules and Regulations to Implement CEQA, as Amended"; and

WHEREAS, the Board of Supervisors reviewed the Planning Commission of the County of Imperial decision on February 15, 2021 to adopt the findings for approval for the categorically exempt from CEQA and adopt the IS/MND.

WHEREAS, the Board of Supervisors reviewed the Planning Commission's decision to adopt the findings of fact on the categorical exemption from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense); and

WHEREAS, the Board of Supervisors of the County of Imperial has been designated with the responsibility of adoptions, certifications;

NOW, THEREFORE, the Board of Supervisors of the County of Imperial **DOES HEREBY RESOLVE** as follows:

The Board of Supervisors has reviewed Appeal # 21-0003 and makes the Findings for the approval of Appeal #21-0003 and denial of the Planning Commission approval of CUP #19-0028.

The Board of Supervisors finds and determines that the:

1. That the recital set forth herein are true, correct, and valid; and,
2. The County fails to make Findings pursuant to CEQA. The Findings set forth below support the approval of Appeal #21-0003 that the County's conclusion fails to find that the Project is categorically exempt from CEQA and fails to meet the requirements of CEQA. The MND underestimates many of the project's potential impacts and fails to support its conclusions with substantial evidence.

NOW, THEREFORE, based on the above findings, the County of Imperial Board of Supervisors **DOES HEREBY APPROVE APPEAL # 21-0003** and deny the Planning Commission's approval of the Class 1 and Class 2 Categorical Exemptions under the California Environmental Quality Act (Pub. Resources Code §§ 21000 et seq. [CEQA]; Cal. Code Regs. tit. 14, §§ 15000 et seq. [CEQA Guidelines]) and that there were no exceptions to the exemption and adoption of IS/MND for Conditional Use Permit #19-0028.

PASSED, ADOPTED AND APPROVED by the Board of Supervisors of the County of Imperial this 15th day of February 2022.

ATTEST:

Clerk of the Board of Supervisors

Jesus Eduardo Escobar, Chairman
Board of Supervisors, County of Imperial

RESOLUTION NO.

A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF IMPERIAL, CALIFORNIA, FOR THE DENIAL OF APPEAL #21-0003 AND ADOPTING THE NOTICE OF EXEMPTION (NOE) & "INITIAL STUDY/MND" OF THE PLANNING COMMISSION'S NOVEMBER 18, 2021 DECISION OF APPROVAL OF CONDITIONAL USE PERMIT #19-0028 (HEBER 1 GEOTHERMAL REPOWER PROJECT).

WHEREAS, on February 11, 2021 a public noticed Environmental Evaluation Committee Hearing heard to discuss and review the Mitigated Negative Declaration (MND) & Initial Study (IS) SCH #2021020267; and

WHEREAS, the Environmental Evaluation Committee recommended to the Planning Commission of the County of Imperial to adopt the Mitigated Negative Declaration for Conditional Use Permit #19-0028;

WHEREAS, the IS/ND was revised to incorporate changes to the Project and voluntary mitigation measures proposed by the Applicant to address comments. An IS/MND that incorporated the changes to the Project and voluntary mitigation measures was circulated for agency review and public comment from February 12, 2021 thru May 10, 2021; and

WHEREAS, following circulation of the IS/MND, the County determined that as a modification to an existing facility with replacement or reconstruction, the Project qualified for Class 1 and Class 2 Categorical Exemptions under the California Environmental Quality Act (Pub. Resources Code §§ 21000 et seq. [CEQA]; Cal. Code Regs, tit. 14, §§ 15000 et seq. [CEQA Guidelines]) and that there were no exceptions to the exemption.

WHEREAS, though the County has determined that the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense), the County has used its discretion to also prepare and adopt the IS/MND to ensure the changes to the Project are fully evaluated.

WHEREAS, a IS/MND and CEQA Findings of Fact were prepared in accordance with the requirements of the California Environmental Quality Act, State Guidelines, and the County's "Rules and Regulations to Implement CEQA, as Amended"; and

WHEREAS, the Board of Supervisors reviewed the Planning Commission of the County of Imperial decision on February 15, 2022 to adopt the findings for approval for the categorically exempt from CEQA and adopt the IS/MND.

WHEREAS, the Board of Supervisors reviewed the Planning Commission's decision to adopt the findings of fact on the categorical exemption from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense), and the County's discretion to also prepare and adopt the IS/MND.

WHEREAS, the Board of Supervisors of the County of Imperial has been designated with the responsibility of adoptions and certifications;

NOW, THEREFORE, the Board of Supervisors of the County of Imperial **DOES HEREBY RESOLVE** as follows:

The Board of Supervisors has reviewed the Findings for the denial of Appeal #21-0003 on CUP #19-0028. The Board of Supervisors finds and determines that the:

1. That the recital set forth herein are true, correct, and valid; and,
2. The County makes these Findings pursuant to CEQA. The Findings set forth below support the County's conclusion that the Project is categorically exempt from CEQA. In the alternative, and out of an abundance of caution, the County also sets forth Findings to support its conclusion that the Project is subject to approval pursuant to the terms and conditions of the IS/MND; and,

NOW, THEREFORE, based on the above findings, the County of Imperial Board of Supervisors **DOES HEREBY DENY APPEAL # 21-0003** and approve of the Planning Commission's approval of the Class 1 and Class 2 Categorical Exemptions under the California Environmental Quality Act (Pub. Resources Code §§ 21000 et seq. [CEQA]; Cal. Code Regs. tit. 14, §§ 15000 et seq. [CEQA Guidelines]) and that there were no exceptions to the exemption and adoption of IS/MND for Conditional Use Permit #19-0028.

PASSED, ADOPTED AND APPROVED by the Board of Supervisors of the County of Imperial this 15th day of February 2022.

ATTEST:

Clerk of the Board of Supervisors	**Jesus Eduardo Escobar**, Chairman Board of Supervisors, County of Imperial

ATTACHMENT E

CUP 19-0028 RESOLUTIONS (APPROVAL OR DENIAL OF APPEAL)

RESOLUTION NO.

RESOLUTION OF THE BOARD OF SUPERVISORS OF IMPERIAL COUNTY FOR APPROVAL OF APPEAL #21-0003 AND DENIAL OF CONDITIONAL USE PERMIT (CUP) #19-0028 FOR THE HEBER 1 GEOTHERMAL REPOWER PROJECT.

WHEREAS, Heber Geothermal Co. has requested the approval of Conditional Use Permit #19-0028 for the continued operations of currently operational Heber I Complex geothermal facilities along with the required construction for the upgrade on the existing Heber I Geothermal facility operation; and,

WHEREAS, the Board of Supervisors of the County of Imperial has reviewed and scheduled a public hearing to approve of Appeal #21-0003 and deny approval of CUP #19-0028; and,

WHEREAS, public notice of said application has been given, and the Board of Supervisors has considered the approval of Appeal #21-0003 and reviewed evidence presented by the Imperial County Planning and Development Services Department and has heard, received and considered all oral and written protests, objections and evidence presented by interested parties at a public hearing held with respect to this item on February 15, 2022; and

WHEREAS, timely notice of the February 15, 2022 Board of Supervisors hearing was given by publication in the Imperial Valley Press, a newspaper of general circulation, as well as by mailing to residents within one-half mile radius of the project and provided for review on the Department's website, www.icpds.com; and

WHEREFORE, the Board of Supervisors of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Board of Supervisors has reviewed the project, findings and conditions and heard all arguments on Appeal #21-0003 prior to consideration for approval of this Appeal #21-0003 and denial of CUP #19-0028 and the County's consideration has been noticed in compliance with law.

SECTION 2. The following Findings by the County Board of Supervisors are hereby confirmed for approval of Appeal #21-0003 on February 15, 2022, as follows:

- **A.** The project fails to meet the requirements of CEQA.
- **B.** The MND underestimates many of the project's potential impacts and fails to support its conclusions with substantial evidence.
- **C.** Substantial evidence supports a fair argument that the Project will result in potentially significant impacts, which the MND fails to disclose and mitigate.

NOW, THEREFORE, based on the above findings, the County of Imperial Board of Supervisors **DOES HEREBY APPROVE** of Appeal #21-0003 and deny CUP #19-0028.

PASSED, ADOPTED AND APPROVED by the Board of Supervisors of the County of Imperial this February 15, 2022.

ATTEST:

Clerk of the Board of Supervisors

Jesus Eduardo Escobar, Chairman
Board of Supervisors, County of Imperial

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RESOLUTION NO.

RESOLUTION OF THE BOARD OF SUPERVISORS OF IMPERIAL COUNTY FOR DENIAL OF APPEAL #21-0003 AND APPROVAL OF CONDITIONAL USE PERMIT (CUP) #19-0028 FOR THE HEBER 1 GEOTHERMAL REPOWER PROJECT.

WHEREAS, Heber Geothermal Co. has requested the approval of Conditional Use Permit #19-0028 for the continued operations of currently operational Heber I Complex geothermal facilities along with the required construction for the upgrade on the existing Heber I Geothermal facility operation; and,

WHEREAS, the Board of Supervisors with the responsibility of CEQA determinations, and adoptions and certifications of CEQA documents at a publically noticed hearing on February 15, 2022 determine this project is categorically exempt in accordance with section 15301, 15303 of the requirements of the California Environmental Quality Act, the State Guidelines, and the County's "Rules and Regulations to Implement CEQA as Amended" with Findings; and

WHEREAS, a Mitigation Negative Declaration and CEQA Findings have been prepared in accordance with the requirements of the California Environmental Quality Act, the State Guidelines, and the County's "Rules and Regulations to Implement CEQA, as Amended";

WHEREAS, the Board of Supervisors of the County of Imperial has reviewed and scheduled a public hearing for Appeal #21-0003 to deny appeal and approve CUP #19-0028, the above permit on the APN's 054-250-035 & 036-000, located south of Heber along Pitzer Road; and,

WHEREAS, public notice of said application has been given, and the Board of Supervisors has considered the denial of Appeal #21-0003 and the approval of CUP #19-0028 by the Planning Commission at a regularly and publically scheduled hearing on November 18, 2021 and reviewed evidence presented by the Imperial County Planning and Development Services Department and has heard, received and considered all oral and written protests, objections and evidence presented by interested parties at a public hearing held with respect to this item on February 15, 2022; and

WHEREAS, timely notice of the February 15, 2022 Board of Supervisors hearing was given by publication in the Imperial Valley Press, a newspaper of general circulation, as well as by mailing to residents within one-half mile radius of the project and provided for review on the Department's website, www.icpds.com; and

WHEREFORE, the Board of Supervisors of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Board of Supervisors has reviewed the project, findings and conditions and heard all arguments on Appeal #21-0003 of the Planning Commission's approval of

Conditional Use Permit #19-0028 prior to consideration for denial of this Appeal #21-0003 and the County's consideration has been noticed in compliance with law.

SECTION 2. That the project complies with the requirements of the Imperial County Code and is in accordance with State Planning and Zoning law, therefore, the following Findings by the County Board of Supervisors are hereby confirmed for denial of Appeal #21-0003 on February 15, 2022, and made pursuant to Imperial County Code § 90203.09 as follows:

A. The proposed use is consistent with goals and policies of the adopted County General Plan. (Imperial County Code § 90203.09.A)

The General Plan designates the subject site as "Heber Specific Plan Area" and Section 90508.02 of the County Land Use Ordinance identify the permitted conditional uses within the A-2-G-Heber SPA Zone designation. Uses identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the Imperial County Planning Commission. Additionally, an analysis of the project's consistency with the General Plan goals and objectives relevant to the project is provided in the MND and or NOE and the project is considered consistent with the applicable policies of the County's General Plan.

The Board of Supervisors has also examined the relevant, applicable portions of the Imperial County General Plan's, *Land Use Element* and the *Geothermal/Alternative Energy & Transmission Element* and has determined that the *Land Use Element* provides that the evaluation and approval of non-agricultural uses on lands designated agriculture will occur through the implementation of zoning and the conditional use permit (CUP) review process. Further, the Land Use Compatibility Matrix in the ICGP provides that industrial uses are permissible on lands zoned A-2-G and A-2-G-SPA with a CUP.

Therefore, pursuant to Land Use Ordinance, Section 90508.02, electrical generation facilities are permitted with approval of a Conditional Use Permit for "Electrical generation plants (less than 50 mw)."

The County finds that the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations.

The proposed upgrades on project is expected to utilize 50-60 workers for excavation and construction of the upgrades to Heber 1 and that project will provide economic growth to the region and economic benefit to the County and Goal 2 of the Land Use Element states that the County should "[d]iversify employment and economic opportunities in the County", and the project shall create jobs and other economic opportunities in the County at a time of high County unemployment.

B. The proposed use is consistent with the purpose of the zone or sub-zone within which the use will be used. (Imperial County Code § 90203.09.B)

The proposed project includes the replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit (I3LU) and an

Integrated two-level unit (ITLU) and the installation of ancillary equipment. The purpose of the repower project is to improve efficiency of the operations and increase the net and gross generation to 52MW (net), 78.2 (gross) as initially requested under Conditional Use Permit #15-0013. The proposed project also proposes to extend the permitted life of Heber 1 to 30 years (2021-2051).

C. The proposed use is listed as a use within the zone or sub-zone or is found to be similar to a listed conditional use according to the procedures of Section 90203.00. (Imperial County Code § 90203.09.C)

The geothermal uses are allowed uses in the A-2 G General Agriculture/Geothermal Overlay zone with an approved Conditional Use Permit according to the County's Land Use Ordinance, Section 90508.02.

D. The proposed use meets the minimum requirements of this Title applicable to the use and complies with all applicable laws, ordinances and regulation of the County of Imperial and the State of California. (Imperial County Code § 90203.09.D)

The project complies with the minimum requirements of this Title by, among other things, obtaining a CUP, complying with the California Environmental Quality Act, and participating in the public review and hearing process. Development standards have been established for the Project pursuant to these processes as well as the conditions of approval imposed on this CUP. The Conditions of Approval will further insure that the project complies with all applicable regulations of the County of Imperial and the State of California. Therefore, the proposed project will meet the minimum requirements of the Land Use Ordinance, Section 90203.00.

E. The proposed use will not be detrimental to the health, safety, and welfare of the public or to the property and residents in the vicinity. (Imperial County Code § 90203.09.E)

The updating of the existing geothermal facilities appear to not be or in near proximity to very large residential areas and is surrounded by agricultural uses and south of the town site of Heber. The proposed CUP (#19-0028) does not be appear to be detrimental to the health, safety, and welfare of the public or to the property and residents in the vicinity. The proposed updates for the Heber 1 facility is unlikely to result in nuisance-related impacts, such as noise, glare, or access disruptions that could otherwise conflict with adjacent uses. Noise associated with operation and maintenance would also meet the County's noise ordinance requirements at the project property lines. Finally, the Permittee has agreed to conditions of approval that support and promote the protection of the health, safety, and welfare of the County's citizens and property, and ensures that the County will not be negatively impacted environmentally or fiscally.

F. The proposed use does not violate any other law or ordinance. (Imperial County Code § 90203.09.F)

The proposed project will be subject to the Conditional Use Permit and current Federal, State and Local regulations. State Planning and Zoning Law (Cal. Govt. Code §§ 65000-

66035) establishes minimum statewide standards for the regulation of local land use through planning and zoning. The County regulates local land use via Title 9 of the Imperial County Code. As found above, the proposed project is conditioned to be consistent with Imperial County, Land Use Ordinance and therefore complies with both State and local laws and ordinance. The County is aware of no other laws or ordinances that might be implicated by the Project, and thus the finds that the proposed use does not violate any other law or ordinance. The proposed project will be subject to the Conditional Use Permit and current Federal, State and local regulations.

G. The proposed use is not granting a special privilege. (Imperial County Code § 90203.09.G)

The proposed updating of the Heber 1 Complex Project is a permitted use subject to approval of a Conditional Use Permit under Land Use Ordinance, Section 92508.02 *et. seq.* and will not grant a special privilege.

NOW, THEREFORE, based on the above findings, the County of Imperial Board of Supervisors **DOES HEREBY APPROVE** Class 1 and Class 2 Categorical Exemptions under the California Environmental Quality Act (Pub. Resources Code §§ 21000 et seq. [CEQA]; Cal. Code Regs., tit. 14, §§ 15000 et seq. [CEQA Guidelines]) and that there were no exceptions to the exemption and **DOES HEREBY ADOPT** the IS/MND for Conditional Use Permit #19-0028 **and deny the appeal #21-0003.**

PASSED, ADOPTED AND APPROVED by the Board of Supervisors of the County of Imperial this 15 day of February 2022.

ATTEST:

_____ _____

Clerk of the Board of Supervisors

Jesus Eduardo Escobar, Chairman
Board of Supervisors, County of Imperial

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ATTACHMENT F
CUP AND CONDITIONS OF APPROVAL

AGREEMENT FOR
CONDITIONAL USE PERMIT #19-0028
ORMAT NEVADA INC./HEBER 1 GEOTHERMAL COMPANY
(by the Planning Commission on November 18, 2021)

This Agreement is made and entered into on this ___ day of _____, 2021, by and between ORMAT Nevada, Inc. dba Heber Geothermal Company, hereinafter referred to as Permittee, and the COUNTY OF IMPERIAL, a political subdivision of the State of California, (hereinafter referred to as "COUNTY").

RECITALS

WHEREAS, Permittee is the owner, lessee or successor-in-interest in certain land in Imperial County located south of State Highway 86, east of Dogwood Road, north of Willoughby Road, and southeast of the townsite of Heber, California, described as a portion of the East half of Tract 45, APN 054-250-036-000 & 054-250-035-000, 20 & 8 acres respectively, Township 16 South, Range 14 East, SBB&M; and,

WHEREAS, Permittee has applied to the County of Imperial for a Conditional Use Permit #19-0028 ("Project") for the following expansion project which supercedes the previous CUP #15-0013;

GENERALCONDITIONS:

The "GENERAL CONDITIONS" are shown by the letter "G". These conditions are conditions that are either routinely and commonly included in all Conditional Use Permits as "standardized conditions and/or are conditions that the Imperial County Planning Commission has established as a requirement on all CUP's for consistent application and enforcement. The Permittee is hereby advised that the General Conditions are as applicable as the SITE SPECIFIC conditions.

G-1 GENERAL LAW:

The Permittee shall comply with all local, state and/or federal laws, rules, regulations, ordinances, and/or standards as they may pertain to the Project whether specified herein or not.

G-2 PERMITS/LICENSES:

The Permittee shall obtain any and all local, state and/or federal permits, licenses, and/or other approvals for the construction and/or operation of the Project. This

shall include, but not be limited to, local requirements for Health, Building, Sanitation, ICAPCD, Public Works, County Sheriff, Fire/Office of Emergency Services, Regional Water Quality Control Board, California Geologic Energy Management Division (CalGEM), among others. Permittee shall likewise comply with all such permit requirements and shall submit a copy of such additional permit and/or licenses to the Planning & Development Services Department within 30 days of receipt, as deemed necessary.

G-3 RECORDATION:

This permit shall not be effective until it is recorded at the Imperial County Recorders Office and payment of the recordation fee shall be the responsibility of the Permittee. If the Permittee fails to pay the recordation fee within six (6) months from the date of approval, this permit shall be deemed null and void. The Planning & Development Services Department will submit the executed CUP to the County Recorder's office for recordation purposes.

G-4 CONDITION PRIORITY:

The Project shall be constructed and operated as described in the Conditional Use Permit application, and as specified in these conditions.

G-5 INDEMNIFICATION:

As a condition of this permit, Permittee agrees to defend, indemnify, hold harmless, and release the County, its agents, officers, attorneys, and employees from any claim, action, or proceeding brought against any of them, the purpose of which is to attack, set aside, void, or annul the permit or adoption of the environmental document which accompanies it. This indemnification obligation shall include, but not be limited to, damages, costs, expenses, attorneys fees, or expert witness fees that may be asserted by any person or entity, including the Permittee, arising out of or in connection with the approval of this permit, whether there is concurrent, passive or active negligence on the part of the County, its agents, officers, attorneys, or employees. This indemnification shall include Permittee's actions involved in construction, operation or abandonment of the permitted activities.

G-6 INSURANCE:

The Permittee shall secure and maintain liability in tort and property damage, insurance at a minimum of $1,000,000 or proof of financial responsibility to protect persons or property from injury or damage caused in any way by construction and/or operation of the permitted facilities. The Permittee shall require that proper Workers' Compensation insurance cover all laborers working on such facilities, e.g. during construction and maintenance, as required by the State of California. The Permittee shall also secure liability insurance and such other insurance as may be required by the State and/or Federal Law. Evidence of such insurance shall be provided to the County prior to commencement of any activities authorized by this permit, e.g. a Certificate of Insurance is to be provided to the Planning & Development Services Department by the insurance carrier and said insurance and

certificate shall be kept current for the life of the permitted project. Certificate(s) of insurance shall be sent directly to the Planning & Development Services Department by the insurance carrier and shall name the Department as a recipient of both renewal and cancellation notices.

G-7 INSPECTION AND RIGHT OF ENTRY:

The County reserves the right to enter the premises to make appropriate inspection(s) and to determine if the condition(s) of this permit are complied with. The owner or operator shall allow authorized County representative(s) access upon the presentation of credentials and other documents as may be required by law to:

(a) Enter at reasonable times upon the owner's or operator's premises where the permitted facilities are is located, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment, or operations regulated or required under the permit, and,

G-8 SEVERABILITY:

Should any condition(s) of this permit be determined by a Court or other agency with proper jurisdiction to be invalid for any reason, such determination shall not invalidate the remaining provision(s) of this permit.

G-9 PROVISION TO RUN WITH THE LAND/PROJECT:

The provisions of this project are to run with the land/project and shall bind the current and future owner(s), successor(s) of interest, assignee(s) and/or transferee(s) of said project. Permittee shall not without prior notification to the Planning & Development Services Department assign, sell or transfer, or grant control of project or any right or privilege therein. The Permittee shall provide a minimum of sixty (60) days written notice prior to such proposed transfer becoming effective. The permitted use identified herein is limited for use upon the permitted properties described herein and may not be transferred.

G-10 TIME LIMIT:

Unless otherwise specified within the specific conditions, this permit shall be limited to a maximum of thirty (30) years from the recordation of the CUP. The CUP may be extended for an additional ten (10) year period by the appropriate County entity (either the Planning Director, the Planning Commission or the Board of Supervisors as set forth in the applicable Imperial County Ordinances) upon a finding that the Project is in compliance with all conditions of the CUP as stated herein and any applicable Land Use regulation of the County of Imperial. If an extension is necessary, the Permittee shall file a written extension request with the Planning

Director at least sixty (60) days prior to the expiration date of the permit. Such an extension request shall include the appropriate extension fee. Nothing stated or implied within this permit shall constitute a guarantee that an extension will be granted. An extension may not be granted if the Project is in violation of any one or all of the conditions or if there is a history of non-compliance with the permit conditions.

G-11 COST:

The Permittee shall pay any and all amounts determined by the County Planning & Development Services Department to defray any and all cost(s) for the review of reports, field investigations, monitoring, and other activities directly related to the enforcement/monitoring for compliance of this Conditional Use Permit, County Ordinance or any other applicable law as provided in the Land Use Ordinance, Section 90901.03 et. seq, General Planning fees. All County Departments, directly involved in the monitoring/enforcement of this project may bill Permittee under this provision, however said billing shall only be through and with the approval of the Planning & Development Services Department.

G-12 REPORTS/INFORMATION:

If requested by the Planning Director, Permittee shall provide any such documentation/report as necessary to ascertain compliance with the Conditional Use Permit. The format, content and supporting documentation shall be as required by the Planning Director.

G-13 DEFINITIONS:

In the event of a dispute the meaning(s) or the intent of any word(s), phrase(s) and/or conditions or sections herein shall be determined by the Planning Commission of the County of Imperial. Their determination shall be final unless an appeal is made to the Board of Supervisors within the required time, i.e. ten (10) calendar days, pursuant to the Land Use Ordinance, Title 9, Division 1, Chapter 4, Section 90104.05, Appeal from Decision.

G-14 MINOR AMENDMENTS:

The Planning Director may approve minor modifications to the Permit to accommodate minor changes or modifications to the design, construction, and/or operation of the Project provided said changes are necessary for the project to meet other laws, regulations, codes, or conditions of the CUP and provided further, that such changes will not result in any additional environmental impacts.

G-15 SPECIFICITY:

The issuance of this permit does not authorizes the Permittee to construct or operate the Project in violation of any state, federal, local law nor beyond the specified boundaries of the project as shown the application/project description/permit, nor shall this permit allow any accessory or ancillary use not

specified herein. This permit does not provide any prescriptive right or use to the Permittee for future addition and or modifications to the Project.

G-16 NON-COMPLIANCE (ENFORCEMENT & TERMINATION):

Should the Permittee violate any condition herein, the County shall give notice of such violation. If Permittee does not act to correct the identified violation, and after having given reasonable notice and opportunity, e.g. typically at least thirty (30) days, the County may revoke the permit.

(a) If the Planning Commission finds and determines that the Permittee or successor-in-interest has not complied with the terms and conditions of the CUP, or cannot comply with the terms and conditions of the CUP, or the Planning Commission determines that the permitted activities constitute a public nuisance, the Planning Director shall provide Permittee with notice and a reasonable opportunity to comply with the enforcement or abatement order.

(b) If after receipt of the order (1) Permittee fails to comply, and/or (2) Permittee cannot comply with the conditions set forth in the CUP, then the matter shall be referred to the Planning Commission for permit modification suspension, or termination, or to the appropriate prosecuting authority.

G-17 GENERAL WELFARE:

All construction, drilling, testing, and operations shall be conducted with consistency with all laws, conditions, adopted County policies, plans and the application so that the project will be in harmony with the area and not conflict with the public health, safety, comfort, convenience, and general welfare.

G-18 PERMITS OF OTHER AGENCIES INCORPORATED:

Permits granted by other governmental agencies in connection with the Project are incorporated herein by reference. The County reserves the right to apply conditions of those permits, as the County deems appropriate; provided however, that enforcement of a permit granted by another governmental agency shall require concurrence by the respective agency. Permittee shall provide to the County, on request, copies and amendments of all such permits.

G-19 HEALTH HAZARD:

If the County Health Officer determines that a significant health hazard exists to the public, the Health Officer may require appropriate measures and the Permittee shall implement such measures to mitigate the health hazard. If the hazard to the public is determined to be imminent, such measures may be imposed immediately and may include temporary suspension of permitted activities, the measures imposed by the County Health Officer shall not prohibit the Permittee from requesting a special Planning Commission meeting, provided Permittee bears all related costs.

G-20 EMPLOYMENT:

The Permittee shall use to the maximum extent possible local labor from Imperial County for both construction and operation of said project. Permittee shall give priority to the extent allowed by law to applicants from Imperial County. This provision shall apply to all levels of employment at the site from Senior Management, Technical to Laborer (collectively the work force). At a minimum, Permittee shall seek to secure 50% of the work force from Imperial County residents (County residents being defined as anyone who has resided within the County for at least 120 days). In the event Permittee is unable to meet this requirement due to lack of qualified applicants, a comprehensive report shall be provided to the Planning & Development Services Department. Said report shall include the description of position(s), the number and origin of all applicants, the reasons that Permittee cannot comply. In the event compliance cannot be attained, this matter shall be brought to the Planning Commission for direction and/or modification.

G-21 APPROVALS AND CONDITIONS SUBSEQUENT TO GRANTING PERMIT:

Permittee acceptance of this permit shall be deemed to constitute agreement with the terms and conditions contained herein. Where a requirement is imposed in this permit that Permittee conduct a monitoring program, and where the County has reserved the right to impose or modify conditions with which the Permittee must comply based on data obtained therefrom, or where Permittee is required to prepare specific plans for County approval and disagreement arises, the Permittee, operator and/or agent, the Planning Director or other affected party, to be determined by the Planning Director, may request that a hearing be conducted before the Planning Commission whereby they may state the requirements which will implement the applicable conditions as intended herein. Upon receipt of a request, the Planning Commission shall conduct a hearing and make a written determination. The Planning Commission may request support and advice from a technical advisory committee. Failure to take any action shall constitute endorsement of staff's determination.

SITE SPECIFIC CONDITIONS:

The "SPECIFIC CONDITIONS" are shown by the letter **"S"**. These conditions are conditions "site specific" to this Conditional Use Permit. The Permittee is advised that the Specific Conditions are as applicable as the other types of conditions within this Conditional Use Permit that are incorporated herein by reference and whether included hereinafter or not!

S-1 AUTHORIZED SCOPE OF ACTIVITIES:

The Permittee has constructed and operated the following facilities in compliance with the County's General Plan, 2015 Geothermal/Alternative & Transmission Element, Land Use Ordinance, and former CUP #15-0013, and all other applicable local, state, and federal laws, ordinances, regulations and standards:

(a) The Heber Geothermal Company (Heber 1), originally 47 MW (net) geothermal power plant, consisting of flash tanks, a turbine-generator, a condenser, a cooling tower, an electrical substation, rock muffler, and related tanks, pits, pumps, piping, ponds, and related ancillary equipment;

(b) A control room, office, maintenance shop and other facilities located at the power plant site;

(c) Construct, operate and maintain three (3) Ormat Energy Converter (OEC) Units, each consisting of vaporizers, turbines, condensers, preheaters, pumps and piping; two (2) OEC Units with generators to generate additional electrical energy and one (1) OEC Unit to power a brine injection pump; with associated ancillary equipment, motive fluid storage facilities, motive fluid vapor recovery system and four-cell cooling tower with associated pumps, piping and electrical equipment;

(d) Connect the three (3) OEC Units to the Heber 1 geothermal power plant brine injection piping and electrical transmission equipment and the new cooling tower to the Heber 1 plant ancillary systems;

(e) Construct, connect, operate and maintain two (2) additional cells to the existing Heber 1 geothermal power plant 5-cell cooling tower;

(f) A production island containing eleven (11) wells;

(g) Piping from the wells to the power plant and from the plant to the injection islands;

(h) An injection island containing eight (8) wells and additional injection island containing two (2) wells;

(i) Pumps, tanks, valves, controls, flow monitoring, and other necessary appurtenances to the above wells and pipelines;

(j) Construct and maintain the proposed injection pipeline from Heber Geothermal Company (Heber 1) geothermal power plant to the Second Imperial Geothermal Company (Heber 2) injection facilities;

(k) Operation of pumps, valves, and other control mechanisms, associated with the pipeline, flow monitoring and other necessary appurtenances to the above.

The proposed repower project will be constructed, operated and maintained as follows:

(a) Repowering to 52 MW (net) the existing Heber 1 geothermal plant will include replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit (I3LU) and an Integrated two-level unit (ITLU);

Ormat Integrated three-level unit (I3LU)
I3LU configuration would include three (3) 10-bay air coolers and one (1) 14-bay air cooler for cooling OEC Units 1 and 2, also requiring installation of two additional isopentane storage tanks (10,000 gallons each) and a new Vapor Recovery Mechanical Unit (VRMU);

Integrated two-level unit (ITLU)
OEC Unit 11 and OEC Unit 13 will be converted to an ITLU and the existing cooling tower and VRMU will be used for OEC Unit 11 and OEC Unit 13; additional modifications to OEC Unit 11 and OEC Unit 13 include replacement of some of the brine heat exchangers, replacement of the existing generator and one turbine, and replacement of a portion of the piping system and pumps. No modifications are planned to the existing cooling water system (tower, pumps, condensers, piping, etc.) and VRMU;

The proposed repower project does not include alterations to existing units OEC 14 and OEC 12;

Existing substation will be used without changes.

(b) Except as specifically authorized in this permit to complete the above activities, supplemental activities which require additional major equipment or facilities will require separate permits. The County, in issuing this permit, in no way assures or otherwise vests any right, with respect to the issuance of a permit(s) for any supplemental activities and Permittee shall also comply with all applicable geothermal standards in the Land Use Ordinance.

S-2 AIR QUALITY AND DUST EMISSIONS:

The Permittee shall comply with the Imperial County Air Pollution Control District's (ICAPCD) Regulation VIII, fugitive dust control. The primary pollutant controlled by this regulation is PM10, "fugitive dust". In addition, the Permittee shall obtain an Authority to Construct (ATC) prior to any construction and submit an application

amending their Permit to Operate (PTO) prior to the operation of any new or modified equipment as required by Rule 207, New and Modified Source Review.

The amendment to the existing CUP and planned equipment modifications will require that the applicant contact Mr. Jesus Ramirez, Permitting & Engineering Division Manager, to discuss modifications to their current permit. The applicant should contact Mr. Emmanuel Sanchez, Enforcement Division Manager, to discuss the possible need for a Construction Dust Control Plan. Additionally, the applicant must notify the Air District 10 days prior to the start of any construction activities.

Should NOx emissions exceed the threshold of significance as found in the Imperial County CEQA Air Quality Handbook the proponent may propose an off-site measure in the form of a project to "off-set" the net excess emissions or abide by Policy 5 which allows for the payment of in-lieu fees.*

S-3 ARCHAEOLOGICAL, CULTURAL & PALEONTOLOGICAL RESOURCES:

The Permittee shall monitor the construction of expansion equipment and if any unusual specimens of bone, stone, or ceramic are discovered during construction of the permitted facilities, all construction affecting the discovery site, shall cease until a qualified archaeologist retained by the Permittee and approved by the County, reviews the specimens. The recommendations of the archaeologist shall be complied with prior to resuming construction.

S-4 BRINE CHEMISTRY:

Permittee shall conduct brine chemistry tests which shall include but not be limited to analysis for hydrogen sulfide, mercury, arsenic, fluoride, boron, ammonia, strontium, iron, zinc, barium, lithium, lead, copper, and chromium. The results of such tests shall be provided by the County upon request. To the extent information contained in test results are proprietary, such information shall not be released to the public.

S-5 CONFORMITY:

The expansion project shall be designed, constructed, and operated in substantial conformance with the application.

S-6 CONSTRUCTION STANDARDS:

The expansion facilities shall be built in accordance with the County Building Code requirement applicable to "Seismic Design D". All structures and facilities shall be designed in accordance with the publication entitled "Recommended Lateral Force Requirements and Commentary by the Structural Engineers Association of California". The structural components of the permitted facilities shall be reviewed by the Building Official/Planning Director. Building permits shall be procured for the Project from the County prior to commencement of any construction.

S-7 EMERGENCY RESPONSE PLAN:

The existing Emergency Response Plan shall be maintained covering possible emergencies, e.g. blow-outs, major fluid spills, impacts due to earthquakes, and other emergencies. At all times, there shall be at least one employee "on call", i.e., available to respond to an emergency by reaching the facility within a short period of time, with the responsibility of coordinating all emergency response measures. The Emergency Coordinator shall be thoroughly familiar with all aspects of the Emergency Response Plan and have the authority to commit the resources needed to carry out the contingency plan. Adequate personnel and equipment shall be available to respond to emergencies and to insure compliance with the conditions of the permit, to include appropriate first aid provisions during project construction and operation with appropriate first aid training for project employees. The existing Hazardous Materials Business Plan submitted to the County Environmental Health Services Division, Health Department, shall be maintained by the Permittee and any applicable amendments provided as deemed necessary for this project.

S-8 GEOTECHNICAL:

Geotechnical investigations of soil characteristics affecting the expanded facilities shall be conducted by qualified people at the permittee's expense. The report therefrom shall be made available to the County on request.

S-9 GEOLOGIC HAZARDS:

No structure meant to be, or which actually is, regularly, habitually, or primarily, occupied by humans shall be placed across the trace of an active fault. Further, no such structure shall be placed within fifty (50) feet of the trace of an active fault, nor anywhere within a seismic special studies zone, unless a geologic report, satisfactory to the State Geologist, is prepared and shows that no undue hazard would be created by construction or placement of the structure.

S-10 NOISE:

Control measures shall include, but are not limited to, the following:

(a) Diesel equipment used for drilling within 1,000 feet of any residence shall have hospital-type mufflers. Well venting and testing at these wells shall be accompanied by the use of an effective muffling device or "silencer".

(b) Heavy truck traffic, well site preparation, and pipe stacking shall be limited to the hours of 7:00 a.m. and 7:00 p.m. for any wells within 1,000 feet of any residence.

(c) Hydroblasters used in descaling operations when used within 1,000 feet of a residence shall be limited to the hours of 7:00 a.m. to 7:00 p.m.

(d) The Permittee may propose and the Planning Director may approve modification of the above measures.

S-11 PROJECT DESIGN:

The following shall be followed in project design:

(a) All expansion loops in fluid lines shall be horizontal except where requested in writing by the owners of surface rights within five hundred (500) feet of a proposed expansion loop, or where design constraints require otherwise.

(b) Marking and lighting of drill rigs and permanent facilities shall be maintained in accordance with Federal Aviation Administration regulations.

(c) On-site parking shall be provided for all employees, customers, clients, and visitors. All facility roads and parking areas shall be constructed and surfaced to County standards.

(d) Shrubs, trees and ground cover shall be planted and maintained to compliment the appearance of the project, in accordance with a landscaping plan approved by the Planning Director.

(e) Permittee shall submit architectural and landscaping plans, as required herein, for all facilities to be constructed as part of the project to the Planning Director, and shall receive the approval of said Director prior to the commencement of construction. The Director shall not unreasonably withhold approval of said plans.

(f) All lights shall be directed or shield to confine any direct rays to the site, and shall be muted to the maximum extent consistent with safety and operational necessity.

(g) The location of power pole lines adjacent to County roads shall be reviewed and approved by the Public Works Department prior to construction/installation of the power poles.

(h) The Planning Director may authorize minor relocation of the well sites, lines, and other minor adjustments to insure that the final facilities comply with the conditions of this permit and those required by other governmental agencies.

S-12 PROTECTION OF WILDLIFE:

Measures approved by the Planning Director shall be employed to discourage or prevent wildlife and avian entry into brine ponds. Well cellars shall be designed to prevent wildlife entry and entrapment. Pipelines shall be constructed so as not to become a barrier to wildlife movement.

S-13 REPORTING:

The Permittee shall furnish to the County, within a reasonable time, any relevant reports/information which the County requires for monitoring purposes to determine whether cause exists for revoking this permit, or to determine compliance with this

permit, i.e. relevant reports are those defined within this Permit or requested by the County. The Permittee shall submit all required reports to the Planning Director, County Planning & Development Services Department, 801 Main Street, El Centro, CA 92243.

S-14 SUBSIDENCE:

Permittee shall participate in the County's subsidence detection program and, in connection therewith, submit a plan for Department of Public Works (ICPWD) approval, showing the proposed locations of benchmarks. Monuments shall connect with the County's geothermal subsidence detection network. Benchmarks installed shall conform to County standards. Surveying shall be performed to National Geodetic Survey (NGS) standards and all field surveying shall conform to such standards.

Permittee shall evaluate whether or not the recent abnormally high annual subsidence measurements may be continuing, or whether they may be the result of some mechanism not associated with geothermal operations and shall:

(a) Review the results of the precision level survey of the Heber subsidence monitoring network;

(b) Install and level as part of this survey, a few additional subsidence monuments in the areas of greatest subsidence (near the intersection of Dogwood Road and Willoughby Road) at locations selected in consultation with ICPWD and CalGEM.

(c) Within approximately six (6) months of this survey, a follow-up with another survey of the entire Heber subsidence monitoring network, including these new monuments;

(d) Prepare and submit to ICPBD, ICPWD, and CalGEM, a specific plan for additional monitoring and the development of potential measures to mitigate (if determined necessary), the subsidence to uplift in the Heber geothermal field area which may be attributable to Project operations to include:

- Re-surveying at least the core sections of the Heber subsidence monitoring network every six (6) months;
- Continuing to re-survey the entire Heber subsidence monitoring network annually;
- Implementing a program to monitor selected key land surface features (such as major bridges and canal structures) for evidence of changes due to subsidence or uplift; and,
- Conducting geothermal reservoir modeling to evaluate what specific changes in the operation of the geothermal wellfield could be undertaken to alter the geothermal reservoir pressure distribution with the objective of reducing the rate of geothermal subsidence and/or uplift in the areas of greatest challenge.

(e) Monitor results of future surveys as per item (d) and, based on those results, develop a long term plan for submittal to ICPBD, ICDPW, and CalGEM to reduce, or reverse if possible, any uplift in the Heber injection areas or any subsidence in the Heber production areas;

(f) Construct and operate, as soon as all the required permits and approvals have been obtained, the proposed expansion project.

S-15 INDUCED SEISMICITY:

Permittee shall participate in the County's seismic monitoring program, and in connection therewith, submit a plan for Public Works Department approval, and shall implement the plan as approved. If evidence of detrimental seismicity induced by project operations is indicated, changes in operations, including possible cessation of operations, may be ordered by the Department of Public Works after consultation with the California Geologic Energy Management Division (CalGEM) and Permittee.

S-16 SYSTEM SHUT DOWN AND SITE ABANDONMENT:

The Permittee shall prepare and implement a plan for when the operation of the permitted facilities herein authorized has ceased, that all HGC facilities shall be dismantled, and the land involved be made compatible with the surrounding uses, or as requested by the landowner and as agreed to by the County Planning Director. A Bond, or other acceptable surety, or other forms of security acceptable to Imperial County, in the amount of **$657,110,** in addition to any amount set by CalGEM, shall be filed with the County that guarantees restoration of the land to its condition prior to the injection pipeline development. Upon completion of such site restoration, the Bond or other surety shall be released by the County.

S-17 REINJECTION:

Fluids equivalent to 86% of produced fluids by mass, and on an annual basis, shall be injected back into the reservoir subject to the requirements of CalGEM and information obtained from any monitoring programs and other sources.

If significant subsidence, loss of reservoir pressure, or other detriments attributable to this project occur, or substantial evidence of other undesirable changes in operations is revealed, corrective measures or changes may be ordered by the County. Corrective measures may be included, but are not limited to, a modified injection rate or altered injection depth, re-leveling of affected areas, or reduction or total cessation of geothermal activities.

S-18 SPILLS AND RUNOFF:

The plant site shall be designed and constructed to prevent spills from endangering adjacent properties and waterways, and to prevent runoff from any source being channeled or directed in an unnatural way so as to cause erosion, siltation, or other detriments. A system of pressure and flow sensing devices and regular inspection

of all lines, capable of detecting leaks and spills, shall be instituted and maintained. Blowout prevention equipment shall be used in accordance with the requirements of CalGEM.

S-19 MAINTENANCE OF WATER QUALITY:

A water quality monitoring program, acceptable to the Regional Water Quality Control Board (RWQCB) shall be instituted and maintained. If injection fluids intrude on shallow ground waters, a modification of the injection program may be ordered by the County in consultation with RWQCB and the Permittee. Any needed sumps and holding ponds shall be constructed and maintained so that permeability does not exceed 1 X 10-6 cm/sec.

S-20 TRAFFIC SAFETY:

The Permittee shall obtain all encroachment permits and consider traffic safety in transporting equipment and materials to the permitted facilities to include temporary signs warning motorists on adjacent roadways and flagmen shall be used when equipment is being brought to and from the Project site.

(a) The Permittee shall coordinate the movement of any required oversize loads on County roads with the DPW, on State Highways with CALTRANS as well as the El Centro CHP office and such transportation of oversized equipment should be minimized as much as possible.

(b) The Permittee shall be required to obtain any necessary rights-of-way on property under the lease and control of the Permittee and to provide any necessary road work as deemed necessary by the DPW.

(c) The Permittee shall coordinate with DPW for their requested dedication of rights-of-way needed for Pitzer Road for the consideration of existing and any future road needs.

(d) The Permittee shall file for an encroachment permit for any work or proposed work in the affected County road rights-of-way.

(e) The Permittee shall coordinate the maintenance of unpaved roads used for construction activities and obtain approvals from the County Department of Public Works.

(f) A Traffic Control Plan is to be submitted to Caltrans District 11, including the interchange at SR-111 / E. Jasper Road, at least 30 days prior to the start of any construction. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during closures, including routes and signage. Potential impacts to the highway facilities (SR-111 and SR-86) and traveling public from detour, demolition and other construction activities should be discussed and addressed before work begins. If the turbine engine that is transported is oversized, larger than the lane width on the highway, per se, then there may need to be an Caltrans encroachment permit required. Such permit would need to be filed locally

at the Caltrans District 11 office in San Diego. The transportation permit to haul heavy weight/loads can be obtained in Sacramento over the phone at our HQ office.

The following mitigation measures were submitted by the County Public Works Department letter, dated June 25, 2015, and revised as of August 17th as follows:

Mitigation Measures:

1. The applicant shall furnish a Drainage and Grading Plan/Study to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. The Study/Plan shall be submitted to the Department of Public Works for review and approval. The applicant shall implement the approved plan. Employment of the appropriate Best Management Practices (BMP's) shall be included. (Per Imperial County Code of Ordinances, Chapter 12.10.020 B).
2. An encroachment permit shall be secured from the Department of Public Works for any and all new, altered or unauthorized existing driveway(s) to access the properties through surrounding County roads. As a minimum, a Commercial-type Driveway shall be constructed. (Per Imperial County Code of Ordinances, Chapter 12.10.020 B).
3. The applicant for Encroachment Permits in County Roads and Right-of-Way is responsible for researching, protecting, and preserving survey monuments per the Professional Land Surveyor's Act (8771 (b)). This shall include a copy referenced survey map and tie card(s) (if applicable) for all monuments that may be impacted.
4. The applicant for grading plans and/or improvement plans is responsible for researching, protecting and preserving survey monuments per the Professional Land Surveyor's Act (8771 (b)). This shall include a copy of the referenced survey map and tie card(s) (if applicable) for all monuments that may be impacted by the project whether if are on-site or off-site.
   INFORMATIVE:
5. All solid and hazardous waste shall be disposed of in approved solid waste disposal sites in accordance with existing County, State and Federal regulations **(Per Imperial County Code of Ordinances, Chapter 8.72).**
6. All on-site traffic area shall be hard surfaced to provide all weather access for fire protection vehicles. The surfacing shall meet the Department of Public Works and Fire/OES Standards as well as those of the Air Pollution Control District (APCD) **(Per Imperial County Code of ordinances, Chapter 12.10.020 A).**
7. The project may require a National Pollutant Discharge Elimination System (NPDES) permit and Notice of Intent (NOI) from the Regional Water Quality Control Board (RWQCB) prior county approval of on-site grading plan **(40 CFR 122.28)**.

S-21 WATER COURSE CROSSINGS:

The Permittee shall provide one or more of the following techniques to decrease the potential for spills on or near Imperial Irrigation District water courses, e.g. surface water canals and/or drains, as follows:

(a) Pipes shall be constructed of industrial standard designation of "extra heavy" with a thickness of at least 50% greater than that used for other sections of pipe.

(b) An automatic injection pump shut off and check valve system to immediately stop fluid flow shall be installed on the injection pipeline.

(c) Design of facilities shall protect surface and groundwater, e.g. handling of on-site drainage shall not adversely affect adjacent properties.

(d) Other spill prevention measures approved by the County shall be implemented.

S-22 WASTE DISPOSAL:

The Permittee shall insure that any discharged wastes, liquid or solid, shall be disposed of in compliance with all appropriate local, state, and federal regulations, in effect or subsequently duly-enacted, i.e. discharge of wastes into surface water shall meet all requirements of the Regional Water Quality Control Board, e.g. National Pollution Discharge Elimination System permit restrictions, and solid wastes shall be disposed of in an approved solid waste disposal site in accordance with County regulations.

S-23 ODORS:

All harmful or noxious emissions and odors shall be controlled to insure that quantities of air contaminants released as a result of the facility operations do not exceed State standards, or constitute a public nuisance.

S-24 WATER USAGE:

The Permittee may use up to a total of 2,300 acre feet of irrigation water per year for thirty (30) years from Imperial Irrigation District. Any extension beyond this period must be agreed to in writing by the Imperial Irrigation District. If the amount of water available to Imperial County is reduced by the Central Arizona project, the right to the irrigation water for this permit granted herein may be terminated. Permittee shall diligently pursue the development of alternate sources to replace the use of irrigation water.

S-25 FIRE PROTECTION

(a) A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment to be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire

suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

(b) Isopentane leak or fire will require a large scale evacuation area and create a large scale hazardous material incident with a large operational zone. To minimize potential extremely dangerous condition to firefighters and hazardous material teams. Additional equipment may be required to adequately protect the first responders, staff and citizens in an emergency incident. This condition shall be discussed among the applicant and Imperial County Fire Chief prior to issuance of the permit for the project.

(c) All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

(d) An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

(e) Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

(f) Compliance with all required sections of the fire code.

(g) Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.***

S-25 IMPERIAL IRRIGATION DISTRICT

(a) For electrical service for the proposed project, the applicant should be advise to contact Joel Lopez, IID Customer Project Development Planner, at (760) 482-3444 or email Mr. Lopez at jflopez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the IID website https://www.iid.com/home/showdocument?id=12923, the applicant will be require to submit a complete set of approved plan (including CAD files), project schedule, estimated in-service date, one-line diagram of facility, electrical loads, panel size, voltage, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs an mitigation measures related to providing electrical service to the project.

(b) IID facilities that may be impacted include the Daffofil Canal (the project site is located adjacent to and west of the Daffodil Canal), Daffodil Lateral 1 and Dogwood Canal. However, it appears that the expansion project will not affect IID's canals or laterals. If this should occur, the applicant will be required to contact IID Water Department Engineering Services section prior

to final project design. IID Water Dept. ESS can be contacted at (760) 339-9265 for further information.

(c) The applicant may not use IID's canal or drain banks to access the project site. Any abandonment of easements or facilities will be approved by IID based on systems (irrigation, drainage, power, etc.) needs.

(d) Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions are available at the district website http://www.iid.com/departments/real-estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

(e) In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.

(f) Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but it is not limited to electrical utility substations, electrical transmission and distribution lines, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. **Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.**

S-26 IMPERIAL COUNTY DIVISION OF ENVIRONMENTAL HEALTH

(a) Any potential discharge of any processed water, the applicant must contact the Water Regional Board.

(b) As per the Isopentane above ground tanks, the applicant must contact the Department of Toxic Substances Control to be regulated by the Imperial County Certified Unified Program Agency (CUPA).*****

S-27 IMPERIAL COUNTY CERTIFIED UNIFIED PROGRAM AGENCY (CUPA)

When this retrofit is completed they need to update their CERS information if there are any changes in Hazardous Materials, ASTs with petroleum, USTs, or CalARP thresholds, and they need to notify the DTSC Imperial CUPA at that time.

S-28 MITIGATION MONITORING AND REPORTING PROGRAM

Adhere to all Mitigation Measures as described in the Mitigation Monitoring and Reporting Program (MM&RP) SCH# 2021020267.

S-29 PARTICIPATION IN GEOTHERMAL COMMITTEE:

Permittee shall participate in the "Geothermal Industrial Committee" formed by the County.

S-30 CALGEM

Applicant shall provide an authorization letter for the proposed project from California Geologic Energy Management Division (CalGEM).

S-31 ACCEPTANCE:

Acceptance of this permit shall be deemed to constitute agreement by Permittee with all terms and conditions herein contained.

* Air Pollution Control District comment letter dated January 17, 2020.
** Caltrans comment letter dated January 28, 2020 and email dated January 30, 2020.
*** Imperial County Fire Department comment letter dated January 14, 2021.
**** Imperial Irrigation District comment letter dated January 23, 2020.
***** Imperial County Environmental Health Department comment letter dated May 27, 2020.
****** Imperial County Certified Unified Program Agency comment email dated January 9, 2020.

NOW THEREFORE, County hereby issues the Conditional Use Permit #19-0028 and Permittee hereby accepts such upon the terms and conditions set forth herein.

IN WITNESS THEREOF, the parties hereto have executed this Agreement the day and year first written.

PERMITTEE

Connie Stechman
VP Finance, ORMAT Nevada, Inc

Date

COUNTY OF IMPERIAL, a political subdivision of the STATE OF CALIFORNIA

James A. Minnick
Planning Director
Planning & Development Services
Department

Date

PERMITTEE NOTARIZATION

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 _____} S.S.

On_____ before me, _____ a Notary Public in and for said County and State, personally appeared _____, who proved to 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_____

_____

_____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document._____

Title or Type of Document_____
Number of Pages_____ Date of Document_____
Signer(s) Other Than Named Above_____

Dated_____

COUNTY NOTARIZATION

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 IMPERIAL} S.S.

On_____ before me, _____ a Notary Public in and for said County and State, personally appeared _____, 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_____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document_____
Number of Pages_____ Date of Document_____
Signer(s) Other Than Named Above_____

Attachment G
Response to Comments

RESPONSE TO COMMENTS FOR THE HEBER 1 GEOTHERMAL REPOWER PROJECT IMPERIAL COUNTY, CALIFORNIA

Prepared for:

COUNTY OF IMPERIAL
801 Main Street
El Centro, CA 92243

Prepared by:

CHAMBERS GROUP, INC.
9620 Chesapeake Drive, Suite 202
San Diego, CA 92123

December 2021

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SECTION 1.0 – INTRODUCTION

On December 17, 2019, Ormat Nevada Inc. / Heber Geothermal Company (Applicant or Ormat) submitted an application to the County of Imperial Planning & Development Services Department (ICPDSD) to amend CUP #15-0013 for the Heber 1 Geothermal Repower Project (Heber 1 or the "Project") facility in Imperial County, CA. The amendment proposed a repower project, which would take the existing dual-flash steam turbine generator out of service and install two new ORMAT Energy Converter (OEC) geothermal power generation units to enhance performance of the facility. The Project also included installation of new equipment, including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Following public comments and based on close coordination with the County of Imperial, Ormat decided to reduce the number of 10,000-gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. The CUP application and accompanying CEQA documentation were updated in December 2020 to reflect these changes, including improvements to the Project's Hazard Assessment (revised in November 2020).

On February 11, 2021, the Imperial County Environmental Evaluation Committee (EEC) held a duly noticed public hearing to consider the Heber 1 Geothermal Repower Project. The EEC decided to prepare, and the County of Imperial subsequently issued, a Notice of Intent to adopt a Mitigated Negative Declaration (NOI) and distributed a Draft Initial Study/Mitigated Negative Declaration (IS/MND) to public agencies and the general public. In accordance with Public Resources Code Section 21091 and CEQA Guidelines Section 15073, a 30-day public review period for the Draft IS/MND was provided from February 12, 2021 to March 15, 2021. The comment period was extended twice, first to April 14, 2021, and then to May 10, 2021, in response to stakeholder comments to accommodate further the review process. The IS/MND was prepared in conformance with CEQA, Section 15070 of the CEQA Guidelines, and the County of Imperial Guidelines for Implementing CEQA.

Between February 16, 2021 and May 10, 2021, the County received six (6) comment letters on the IS/MND—five of which were from agencies, and one of which was from the public. The County worked with Applicant to prepare responses to all comments received. In response to comments on the Project's IS/MND, the County revised portions of the IS/MND to provide further clarification and detail and to incorporate voluntary measures/conditions of approval proposed by the Applicant. Appendix N, an Air Emissions Memorandum, was also prepared to clarify the analysis regarding construction emissions and to set forth the results of construction emissions modelling for both criteria pollutants and greenhouse gas emissions (GHGs).

Following circulation of the IS/MND, the Applicant requested the County find the Project is exempt from CEQA. After reviewing the entire record, the County determined that, as a modification to an existing facility with replacement or reconstruction, the Project qualified for Class 1 and Class 2 Categorical Exemptions under CEQA, and that there were no exceptions to the exemption. Though the County has determined that the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense), the County has used its discretion to also adopt the IS/MND as further evidence of the Project's full evaluation under CEQA.

On November 16, 2021, the County received an additional comment letter. After addressing those verbally during the hearing, the County Planning Commission recommended adoption of a Notice of Exemption and approval of the Findings of Fact that the Project is categorically exempt from CEQA on November 18, 2021. The County received one comment letter appealing the Planning Commission's

decision of approval, dated November 24, 2021. Comments raised in the November 16, 2021 (Letter A) and November 24, 2021 (Letter B) letters are addressed herein. Each letter was authored by the same party.

SECTION 2.0 – RESPONSE TO COMMENTS

The following comments were received from the following agencies and organizations.

Comment Letter	Commenting Agency or Organization	Date of Comment
A	Adams Broadwell Joseph & Cardozo PC, Attorneys at Law	November 16, 2021
B	Adams Broadwell Joseph & Cardozo PC, Attorneys at Law	November 24, 2021

LETTERS A AND B
Adams Broadwell Joseph & Cardozo PC, Attorneys at Law
Letter A: November 16, 2021
Letter B: November 24, 2021

A-1, B-1, B-3 The comment identifies the commenter as Adams Broadwell Joseph & Cardozo (ABJ&C) on behalf of Citizens for Responsible Industry (Citizens) (ABJ&C and Citizens are collectively referred to herein as "commenter") and characterizes the commenter's understandings of the previous documentation and decisions by the Planning Commission regarding the Heber 1 Geothermal Repower Project. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-2, B-2 The comment summarizes the activities proposed as part of the Heber 1 Geothermal Repower Project. The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-3, B-4 The comment characterizes the commenter's understandings of the previous documentation, conclusions, and decisions by the Environmental Evaluation Committee (EEC) regarding the Heber 1 Geothermal Repower Project. The comment additionally summarizes previous comment letters submitted by ABJ&C on behalf of Citizens. The comment opines that the County's Staff Report provides deficient responses to previous comments. As this comment offers legal opinions and does not offer specific concerns regarding the Project's environmental review and approval, the comment is noted and no further response is necessary.

A-4, B-6, B-8 The comment offers the commenter's opinions on the County Planning Commission's decision to declare the project Categorically Exempt from CEQA and approve the CUP application. The comment offers a legal opinion and does not offer specific concerns regarding the Project's environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-5, B-6, B-27 The comment argues that the Project is not exempt from CEQA due to the Project's perceived mitigation, significant impacts, what the commenter calls "facial inconsistencies," and triggered exceptions to the exemptions. The comment offers a legal opinion and does not provide any specific concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-6 The comment states that the County does not adequately respond to or present substantial evidence refuting the fair argument that the Project will result in significant adverse impacts to air quality, public health and safety, hazards, biological resources, and cumulative impacts. The County responded to all comments regarding this fair argument in the August 2021 response to comments document, and responds again here. The comment offers a legal opinion and does not provide any specific concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-7 The comment identifies Dr. Fox and Dr. Smallwood and their relationship to the commenter. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

The consultants that commenter uses have no stated or discernible expertise in geothermal power plant operations or development, as evidenced by their resumes and Curriculum Vitae (CVs) provided with the comment letters.

For example, Dr. Fox's resume has over 250 entries, demonstrating that the overwhelming majority of her experience (approximately 90%) has been on behalf of project opponents: Plaintiffs, Petitioners, and Intervenors. Dr. Fox's resume does not demonstrate any expertise in geothermal energy production or geothermal power plant operations, nor do Dr. Fox's comments demonstrate an understanding of geothermal energy production, the use of isopentane as a motive fluid, or the potential emissions sources from an existing geothermal facility. Dr. Fox's stated experience is in the oil, gas, foundries, manufacturing, wind energy and solar energy fields, which are fundamentally different from a geothermal power plant. Geothermal power plants do not have combustion emissions and limited GHG emissions such that geothermal is exempted from and thus not subject to California's Cap and Trade Program. Dr. Fox's resume does not show any relevant experience working on projects similar to the Heber 1 facility. Instead, Dr. Fox relies strictly on extrapolation from other projects, mainly solar and wind projects, to draw hypothetical parallels to this Project. However, these projects are not analogous to the current Project before the County, due to both differences in ecological/atmospheric settings and scope of project activities. Dr. Fox's comments demonstrate a fundamental lack of understanding of the proposed Project activities, Project site's environmental characteristics, geothermal energy production, and OECs and systems, which results ultimately in an analysis that is supported by conjecture, guesses, and incorrect statements.

Similarly, the CV/resume and materials of commenter's ecologist, Dr. Smallwood, demonstrates no relevant experience or knowledge of the existing Heber 1 facility site, facility operations, or scope of Project activities. Dr. Smallwood relies on speculation drawn from different sites. Of the nearly 200 entries on Dr. Smallwood's CV, there is no discernible work for any project proponents or agencies reviewing project applications. His CV demonstrates that the overwhelming majority (if not all) of his experience has been on behalf of project opponents: Plaintiffs, Petitioners, and Intervenors. Dr. Smallwood's experience is also in the oil, gas, manufacturing, wind energy, and large-scale solar projects, which are fundamentally different from and in competition with geothermal power plant. There is no demonstration of any expertise in geothermal energy. His CV does not show any relevant experience working on projects of any kind in Imperial County. His CV references, among other things, that he opposed one project for UC Merced, opposed revised federal regulations, including "permit shield protection provisions," and opposed legalization of ferret ownership.

As discussed herein, based on the record as a whole and considering the lack of substantial evidence by qualified and credible experts, CURE's comments are not "facts,

reasonable assumptions predicated upon facts, and expert opinion supported by facts." (14 CCR 15064(e)(2); see also 14 CCR 15384 (a).)

A-8 The comment identifies the commenter's "statement of interest." Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

Applicant notes that it shares Citizens'/CURE's[1] support of clean, renewable energy technology, which is why it has been engaged in the production of renewable energy from geothermal resources at the Heber 1 site since the 1980s. The Project offers both local and state-wide benefits. Locally, implementing the Project assists the County in promoting its role as California's leading producer of renewable energy and continues to offer local green jobs. Further, the Project provides economic advantages to the County including property tax revenue, sales tax revenue, and employment opportunities. Additionally, the Project supports the County in achieving the goals and objectives in the Renewable Energy and Transmission Element of the local General Plan.

At the state level, the Project assists the State of California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006 (AB 32). AB 32 requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill (SB) 32, which requires that statewide GHG emissions are reduced to at least 40 percent (%) below the statewide GHG emissions limit by 2030. Further, the Project supports California's aggressive Renewables Portfolio Standard (RPS) Program consistent with the timeline established by SB 100, enacted in September 2018. SB 100 increases RPS in 2030 from 50% to 60% and establishes a goal of 100% RPS by 2045.

The recent Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026) before the California Public Utilities Commission (D.20-05-003), filed on May 21, 2021, proposes that at least 1,000 MW of geothermal resources be required as part of the State's procurement portfolio by no later than 2025. As a geothermal facility, the Project is in direct alignment with this goal.

A-9, B-9 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-10 This comment provides the commenter's view of certain provisions of existing law, including categorical exemptions from CEQA and exceptions to the exemptions. Otherwise, the comment offers a legal opinion and does not provide any specific

[1] The comment identifies California Unions for Reliable Energy (CURE) as a member organization of Citizens.

comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-11, B-12 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. The commenters' legal arguments are noted and addressed below.

The comment generally references the "fair argument rule" under CEQA, but it does not cite to any specific IS/MND sections or analyses it claims are at issue. As the appellant party seeking to overturn the Planning Commission's decision, Citizens/CURE has the burden of showing that there is substantial evidence supporting a fair argument that the Project may result in a significant effect. While substantial evidence can include both expert and lay opinion, CEQA requires that such opinion be supported by substantial evidence. Argument, speculation, unsubstantiated opinion or narrative, and evidence that is clearly inaccurate or erroneous does not constitute "substantial evidence." (Pub. Resources Code § 21080(e); see also 14 C.C.R. § 15064(e)(2) ("Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.").) "Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency." (14 C.C.R. § 15384(a).)

Substantively, the proposed Project site is entirely within the existing and permitted boundary of existing facilities. The site is entirely void of any vegetation, habitat, and waterbodies. The purpose of the Project is to repower the existing Heber 1 geothermal facilities by replacing aging OECs with state-of-the-art OECs that run more efficiently and emit fewer emissions and installing two new isopentane tanks to support maintenance and operations. No facilities are proposed outside of the existing facility's fence line. Due to the Project's limited nature within the bounds of an existing power plant, there is no potential for significant adverse impacts. Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-12,B-10,B-25 This comment provides the commenter's view of certain provisions of existing law regarding categorical exemptions from CEQA. The comment also asserts that none of the exemptions claimed by the County apply to the Project because the Project has significant impacts, which were indicated in the previous IS/MND.

Although an IS/MND was previously circulated for the Project, the County determined that the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense) following further review. Measures identified in the IS/MND were incorporated into the Project description as Voluntary Environmental Protection Features (VEPFs). Some VEPFs are Best Management Practices (BMPs) or project design features

(PDFs). The VEPFs are fundamentally preventive and protective measures. They reflect the recommendations of stakeholders, including the Applicant, the County Staff, and the public, and are also drawn from measures implemented by other, similarly situated approved projects. The VEPFs also serve to confirm generally applicable regulations that would apply to the Project that further reduce an already less-than-significant impact and in many cases improve environmental conditions when compared with the baseline conditions.

The Applicant requested that the VEPFs be included as conditions of approval (COAs) in the Conditional Use Permit (CUP). The Applicant voluntarily adopted these conditions as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence presented of a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

The IS/MND refers to these measures as mitigation measures using the label "MM-"; however, given that there is no substantial evidence of any significant effects, and consistent with the Applicant's request for the County to include these measures as COAs and to eliminate any confusion, the August 2021 Response to Comments re-labels the measures conditions of approval as "COA-". Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-13 This comment provides the commenter's view of certain provisions of existing law regarding the definition of "mitigation". Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-14, B-26 The comment provides the commenter's view of the 2004 California Court of Appeal case *Salmon Protection & Watershed Network v. County of Marin ("SPAWN")* (2004) 125 Cal. App. 4th 1098. In *SPAWN*, the trial court issued a writ of mandate commanding Marin County of Marin to set aside its approval of a house within a riparian area. (*Id.* at 1102.) The trial court found, and the appellate court affirmed, that the County erred in relying upon mitigation measures to grant a categorical exemption from CEQA because only those projects having no significant effect on the environment are categorically exempt from CEQA review. (See *id.*)

Although an IS/MND was previously circulated for the Project, the County determined that the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301, 15302, and 15061. Unlike the *SPAWN* case, there are no significant adverse impacts associated with the Heber 1 Project and, as a result, there are no required mitigation measures. The proposed Project site is entirely within the existing and permitted boundary of existing facilities. The site is entirely void of any vegetation, habitat, and waterbodies. The purpose of the Project is to repower the existing Heber 1 geothermal facilities by replacing aging OECs with state-of-the-art OECs that run more efficiently and emit fewer emissions and installing two new isopentane tanks to support

maintenance and operations. No facilities are proposed outside of the existing facility's fence line. Due to the Project's limited nature, there is no potential for significant adverse impacts.

With no potential for significant adverse impacts, what were previously labeled as "mitigation measures" are not required. However, the Applicant requested that VEPFs be included as COAs in the CUP as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence presented of a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced. Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-15, B-13 Following further review of the Project, the County determined that there are no significant adverse impacts associated with the Heber 1 Project. The proposed Project site is entirely within the existing and permitted boundary of existing facilities. The site is entirely void of any vegetation, habitat, and waterbodies. The purpose of the Project is to repower the existing Heber 1 geothermal facilities by replacing aging OECs with state-of-the-art OECs that run more efficiently and emit fewer VOC emissions and installing two new isopentane tanks to support maintenance and operations. No facilities are proposed outside of the existing facility's fence line. Due to the Project's limited nature, there is no potential for significant adverse impacts.

With no potential for significant adverse impacts, what were previously labeled as "mitigation measures" are not required. However, the Applicant requested that VEPFs be included as COAs in the CUP as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence supporting a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced. Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-16 Under CEQA, mitigation measures are only required for significant adverse impacts. Following further review of the Project, the County determined that there are no significant adverse impacts associated with the Heber 1 Project. The proposed Project site is entirely within the existing and permitted boundary of existing facilities. The site is entirely void of any vegetation, habitat, and waterbodies. The purpose of the Project is to repower the existing Heber 1 geothermal facilities by replacing aging OECs with state-of-the-art OECs that run more efficiently and emit fewer emissions and installing two new isopentane tanks to support maintenance and operations. No facilities are proposed outside of the existing facility's fence line. Due to the Project's limited nature, there is no potential for significant adverse impacts. Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental

review and approval; therefore, the comment is noted and no further response is necessary.

A-17, B-18 The Project would not result in significant adverse impacts; thus, the Applicant requested that VEPFs be included as COAs in the CUP as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence supporting a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

A-18, B-24 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment offers a legal opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-19, B-28 The Project does not require new production or injection wells, and the Heber 1 facility's utilization of the geothermal resource will not increase. There will be no change to the geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. The Project will merely replace and remove existing generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect). There are no changes proposed to the existing facility's net generating capacity, use of geothermal resources for electricity generation, interconnection facilities, transmission or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease, stay below current levels, and in some cases, be eliminated entirely.

A-20, B-29 This comment asserts that findings in the County's Findings of Fact are erroneous, particularly mentioning that the isopentane emissions from the Project would significantly increase. The current Heber 1 facility is a synthetic minor source of air pollution and operates in compliance with all applicable air quality requirements and its permit to operate (PTO #1641B-5) from the ICAPCD. As detailed in the Project's Air Quality Analysis Summary, the Project would lead to a reduction in emissions for all pollutants and in some cases, the complete elimination of certain pollutants. With the replacement equipment associated with the repowering, expected actual isopentane emissions would be lower than current permitted isopentane emissions. (See Appendix B of the ATC permit application.)

Moreover, with the retirement of the steam flash units, the emissions of NOx, SO2, H2S, and Benzene are completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. With the retirement of the steam flash units, the emissions of NO_x, SO_2, H_2S, and Benzene would be completely eliminated. Isopentane emissions are a subset of the facility-wide VOC emissions. Current isopentane emissions at the facility are approximately 33.3 lbs/day, and the modeled future emissions with the new facilities are

estimated to be 81.3 lbs/day. Under the existing Permit to Operate (PTO), the facility is authorized to emit up to 99.6 lbs/day of isopentane. The expected change in isopentane emissions with the new facilities would increase by approximately 48.0 lbs/day; however, as explained in Table 2, overall facility-wide VOC emissions would be reduced, -27.5 lbs/day, and remain below the current authorized release amount. Therefore, the proposed Project would not conflict with, or obstruct the implementation of the Imperial County Air Pollution Control District (ICAPCD) air quality plan.

A-21, B-30 The Staff Report's assertion that NOx, SO_2, H_2S, and Benzene emissions would be completely eliminated is in the context of operational emissions after completion of construction. As seen in Table 3 of the Staff Report, short-term construction emissions for the Project were calculated to be 9.83 lbs/day of NOx and 0.12 lbs/day of SOx. The Imperial County Air Pollution Control District (ICAPCD) does not impose thresholds on NOx or SOx emissions. No Benzene nor H_2S emissions would result from Project construction. All other emissions related to construction fall well within ICAPCD thresholds.

A-22, B-31 The proposed facility repowering and like-kind replacements contemplated by the Project will be entirely within the footprint of an existing, privately-owned geothermal power generating facility. The Project will merely replace aging generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect).

A-23, B-32 Although the Project's I3LU would use a different cooling process than previously used onsite, there are no changes proposed to the existing facility's net generating capacity, use of geothermal resources for electricity generation, interconnection facilities, transmission or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease as a result of the Repower Project. For these reasons, the repowering, including technology replacement, will be "like-for-like" because they will utilize technology currently existing onsite and will not result in foreseeable significant environmental effects beyond those associated with the existing uses.

Additionally, on November 18, 2019, the Imperial Irrigation District (IID) issued "Amendment No. 1" to the Amended and Restated Water Supply Agreement (WSA) held between it and Ormat for the Heber 1 facility. The Amendment authorizes IID to supply an additional 500 acre-feet of irrigation water per year to the facility, in addition to the 1,800 acre-feet of irrigation water previously allowed under the original WSA, thereby bringing the total permitted amount to 2,300 acre-feet of irrigation water per year. Because CUP #15-0013 permits Ormat to use up to a total of 1,800 acre-feet of irrigation water per year pursuant to the original WSA, Ormat seeks to modify the CUP to account for the increase in allowable water usage under Amendment No. 1 to the WSA. Previous operations utilized flashes of geothermal brine to generate steam. The ensuing water condensation was then used in the wet cooling tower. Because changes to these existing facilities will no longer generate the requisite water condensation needed for the cooling towers, the Applicant seeks to modify the facility's permitted water intake. This comment asserts that the County "lacks adequate water supply for all existing industrial and

agricultural uses"; however, if this were true, IID, the lead agency responsible for water management, would not have authorized Amendment No. 1. The Project is simply a retail customer taking water from the water wholesale provider.

A-24, B-33 The existing use of the Heber 1 facility is the utilization of geothermal resources of the Heber Known Geothermal Resource Area (KGRA) to generate electrical power. Developed and operated exclusively by Ormat, the use of OECs allows for maximum sustainability by reinjecting 100% of the geothermal fluid. Specifically, the fluid is extracted from an underground reservoir and flows from the wellhead through pipelines to heat exchangers in the OEC based on an Organic Rankine Cycle. Inside the heat exchangers, the geothermal fluid heats and vaporizes a secondary organic working fluid with a low boiling point—in this case, isopentane, a fluid that Ormat has operated in its OECs for more than 25 years. The organic vapors drive the turbine and then are condensed in a condenser, which is cooled by either air or water. The turbine rotates the generator and then the condensed fluid is recycled back into the heat exchangers by a pump, completing the cycle in a closed system. The cooled geothermal fluid is re-injected into the geothermal reservoir.

The County finds that these existing operations set the baseline for determining whether the Project will involve "negligible or no expansion" of these uses. Further, there are no changes proposed to the net generating capacity of the facility.

A-25 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-26 See response A-23, B-32.

A-27 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-28, B-34 The Heber 1 facility was previously constructed and operated in compliance with CUP #15-0013, the County's General Plan, Renewable Energy & Transmission Element, Land Use Ordinance, and with all other applicable local, state, and federal laws. The County therefore correctly asserts that the existing Heber 1 site has been previously planned, permitted, and developed. The proposed CUP #19-0028 would authorize repowering of the existing facility and extend the CUP term to 30 years (2021-2051).

A-29, B-35 The comments state that reports by Drs. Fox and Smallwood present evidence that the Project may have significant impacts. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-30,B-14,B-36 As part of the Staff Report, the Biological Technical Report included a comprehensive record search for biological resources, vegetation, special status species, and critical habitat to identify the potential biological resources that occupy the Project site and

surrounding area. (Biological Technical Report for the Heber 1 Geothermal Repower Project, p. 7 ("Bio Report").) After a review of the records, a qualified biologist performed a biological reconnaissance-level survey over the parcel containing the proposed Project features. (Bio Report, pp. 19–23.) Impacts to habitat were calculated for all proposed Project features and anticipated work areas combined. (Bio Report, p. 7.) This on-site survey confirmed that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP.

This comment also iterates Dr. Smallwood's argument that suitable habitat is present onsite and allegedly confirmed by 10 species of wildlife documented onsite during the reconnaissance-level survey. A habitat is suitable for a species when it contains all resources needed for a given activity in sufficient quantity (e.g., food when foraging, nest sites when breeding). The Heber 1 facility is currently developed for power production uses, is completely devoid of any vegetation, and is completely graded and covered by soil and gravel. Although 10 wildlife species were observed on the Project site during the survey, a qualified biologist determined that the site is void of the resources needed to support long-term presence of wildlife, including avian species. The sighting of a species during a site survey, particularly avian species, does not in and of itself indicate the presence of habitat. Avian species in particularly could be sighted and documented flying overhead without ever being present on the site. As such, evaluation of the conditions on the site was conducted in concert with species sighting during the survey. Thus, the determination was made that no suitable habitat exists onsite. These efforts were recorded and memorialized with site photographs. (See Appendix A to the CUP Application).

A-31,B-17,B-37 As observed in the Staff Report project description, no new transmission lines, fencing, or changes to existing Heber 1 fencing are proposed. Structures would be located in developed areas surrounded by existing structures. Baseline conditions would remain the same and the Project would not cause any significant impacts to avian species.

A-32, B-38 This comment summarizes the conclusion of Dr. Fox but does not provide any evidentiary support. As such, the comment is noted and no further response is necessary.

A-33, B-39 The comment asserts that Dr. Fox and Dr. Smallwood as technical experts in their respective fields. Please see response to Comment A-7 above. The consultants that commenter uses have no stated or discernible expertise in geothermal power plant operations or development, as evidenced by their resumes and Curriculum Vitae (CVs) provided with the comment letters. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-34 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-35, B-41 The Project proposes no changes to the existing facility's net generating capacity, use of geothermal resources for electricity generation, interconnection facilities, transmission

or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease as a result of the Project. For these reasons, the repowering, including technology replacement, will be "like-for-like" because they will utilize technology currently existing onsite and will not result in foreseeable significant environmental effects beyond those associated with the existing uses.

Additionally, on November 18, 2019, the Imperial Irrigation District (IID) issued "Amendment No. 1" to the Amended and Restated Water Supply Agreement (WSA) held between it and Ormat for the Heber 1 facility. The Amendment authorizes IID to supply an additional 500 acre-feet of irrigation water per year to the facility, in addition to the 1,800 acre-feet of irrigation water previously allowed under the original WSA, thereby bringing the total permitted amount to 2,300 acre-feet of irrigation water per year. Because CUP #15-0013 permits Ormat to use up to a total of 1,800 acre-feet of irrigation water per year pursuant to the original WSA, Ormat seeks to modify the CUP to account for the increase in allowable water usage under Amendment No. 1 to the WSA. Previous operations utilized flashes of geothermal brine to generate steam. The ensuing water condensation was then used in the wet cooling tower. Because changes to these existing facilities will no longer generate the requisite water condensation needed for the cooling towers, the Applicant seeks to modify the facility's permitted water intake. This comment asserts that the County "lacks adequate water supply for all existing industrial and agricultural uses"; however, if this were true, IID, the lead agency responsible for water management, would not have authorized Amendment No. 1. The Project is simply a retail customer taking water from the water wholesale provider.

The County's assertion that NOx, SO_2, H_2S, and Benzene emissions would be completely eliminated is in the context of operational emissions after completion of construction. As discussed in the Staff Report, a construction emissions model produced potential emissions estimates, provided as Appendix N to the IS/MND's responses to comments. These estimates were generated in accordance with ICAPCD protocols utilizing conservative inputs for Project equipment and operations. The results are well-substantiated and discussed in the IS/MND. Based on the conservative modeling, the Project is estimated to emit 75.13 lbs/day of PM_{10} during the 6-month construction phase. These temporary emissions are well below the 150 lbs/day threshold established by the Imperial County Air Pollution Control District (ICAPCD; PM_{10} Plan and $PM_{2.5}$ Plan, 2018) and are, therefore, considered less than significant. The ICAPCD does not impose thresholds for NOx emissions.

This evidence supports the County's findings that the Project would not result in a cumulatively significant impact.

A-36, B-42 The County performed a review of all reasonably foreseeable future projects and determined that no projects occur in relatively close proximity to the Heber 1 site (including the Heber 2 project, located approximately 1 mile away). There is no potential for an adverse significant cumulative impact in specific reference to the Heber 1 Project. As discussed above, potential cumulative impacts would be limited to those resources with the potential to have an off-site effect. For air quality, Heber 1 would improve overall air quality by removing criteria pollutants in their entirety, while keeping VOC emissions

below current levels, thereby representing a beneficial impact. Traffic impacts would be limited to localized delivery of heavy equipment and facilities and would not have overlapping traffic effects with Heber 2. Noise impacts for Heber 1 would be similar to baseline conditions and would not have overlapping noise fields with Heber 2. Geologic impacts would be similar to baseline conditions and would not have overlapping effects because the site is developed and would not introduce any seismic or geological hazards or populations to new geological conditions. Biological resource impacts would be similar to baseline conditions because the site is fully developed, void of habitat, and inhospitable to special status species. Therefore, the Heber 1 Project would not result in significant cumulative impacts with Heber 2.

A-37, B-43 Impacts related to future projects that have not yet been announced, planned, permitted, or developed are unknown and cannot be quantified with certainty. Therefore, these impacts are not reasonable to consider in the Project's cumulative impact analysis.

A-38 This comment is the commenter's opinion and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-39, B-44 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-40, B-45 Mitigation measures are only required for significant adverse impacts. Following further review of the Project, the County determined that there are no significant adverse impacts. With no potential for significant adverse impacts, previously labeled "mitigation measures" are not required. However, the Applicant requested that VEPFs be included as COAs in the CUP as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence supporting a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

A-41, B-40 The Project will merely replace and remove existing generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect). The Project does not require new production or injection wells, and the Heber 1 facility's utilization of the geothermal resource will not increase. There will be no change to the geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. There are no changes proposed to the existing facility's net generating capacity, use of geothermal resources for electricity generation, interconnection facilities, transmission or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease, stay below current levels, and in some cases, be eliminated entirely. Thus, the Project does not present significant impacts to the environment due to "unusual circumstances."

A-42, B-4, B-46 Project repowering will restore the Heber 1 plant's generating capacities of 52-megawatt (MW) net, and 78.2 MW gross, as initially approved in CUP #15-0013. The Project does not require new production or injection wells and use of the geothermal resource will not increase. The Project as repowered is expected to be better suited to the current and expected future conditions of the geothermal resource than the existing steam turbine generator, thereby improving operational efficiency and restoring net and gross generation.

Additionally, the IS/MND addresses geological conditions, including the potential for ground shaking, and recognizes that construction techniques must be consistent with applicable laws, ordinances, regulations, and standards, including the California Building Code and related regulations. CEQA generally does not require that public agencies analyze the impact existing environmental conditions might have on a project's future users or residents, according to the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369. Moreover, "[t]he questions in the sample checklist in appendix G to the Act's guidelines -- including, whether the project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires -- do not extend 'the [environmental impact report] requirement to situations where the environment has an effect on a project, instead of the other way around.'" (*Newtown Preservation Soc'y v. Cnty. of El Dorado* (2021) 65 Cal. App. 5th 771, 789 (changes in original, footnote omitted) (quoting *S. Orange Cnty. Wastewater Auth. v. City of Dana Point* (2011) 196 Cal. App. 4th 1604, 1615).) Rather, an agency must analyze how environmental conditions might adversely affect a project's residents or users only where the project itself might worsen existing environmental hazards in a way that will adversely affect them, or if one of the provisions of CEQA which require such an analysis for certain airport, school, and housing projects applies. (See id. (citing *Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist.*, 62 Cal.4th at 392).)

The Project proposes to repower an existing geothermal facility. It does not involve changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards.

A-43, B-47 The map produced by the commenter has no title, legend, or caption. No comments or explanation are provided. The map itself does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the map is noted as such and no further response is necessary.

A-44, B-48 This comment is premised on the contention that the Hazards Assessment (HA) should have considered Dr. Fox's preferred scenario of a boiling liquid expanding vapor explosion (BLEVE), though there is no regulatory guidance to support her bare contention that such an analysis is needed. Consistent with the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis" published guidance, BLEVEs are generally considered unlikely events and were therefore, consistent with EPA guidance, not considered a probable event for the Offsite Consequence Analysis performed in the HA.

The Project's analysis of a release from a single isopentane storage tank is representative of the worst-case scenario due to control measures associated with the OECs. Further, the Project's HA complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program guidance for Chemical Accidental Release Prevention. (See 40 C.F.R. §§ 68.20-68.42.) Moreover, the Applicant is in coordination with the Imperial County Fire Department regarding the Project. The County Fire Department has provided guidance regarding onsite safety, and a fire engineer will review and issue a stamped drawing to the County Fire Department before Project operations begin.

A-45, B-49 The comment generally references the "fair argument rule" under CEQA and alleges that substantial evidence has been provided to support a fair argument. However, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

The proposed Project site is entirely within the boundary of existing, permitted facilities. The site is entirely void of any vegetation, habitat, and waterbodies. The purpose of the Project is to repower the Heber 1 geothermal facilities by replacing aging OECs with state-of-the-art OECs that run more efficiently with fewer emissions and installing two new isopentane tanks to support maintenance and operations. No facilities are proposed outside of the existing facility's fence line. Due to the Project's limited nature, there is no potential for significant adverse impacts.

A-46, B-50 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-47 The comment generally references the "fair argument rule" under CEQA and states that substantial evidence has been provided to support a fair argument. However, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-48 The comment states that the County did not adequately respond to comments on the IS/MND. The County responded to all comments on the IS/MND in the August 2021 response to comments document and the Errata to the IS/MND. Further, the County has prepared this response to comments document. Substantial evidence supports that there is no potential for an adverse significant impact in specific reference to the Heber 1 Project.

A-49 This comment provides Dr. Smallwood's view of the Project and does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-50, B-51 A comprehensive record search was performed for biological resources, vegetation, special status species, and critical habitat to identify the potential biological resources

that occupy the Project site and surrounding area. (Biological Technical Report for the Heber 1 Geothermal Repower Project, p. 7 ("Bio Report").) After a review of the records, a qualified biologist performed a reconnaissance-level survey of the parcel containing the proposed Project features. (Bio Report, pp. 19–23.) Impacts to habitat were calculated for all proposed Project features and anticipated work areas combined. (Bio Report, p. 7.) This on-site survey confirmed that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. A reasonable effort was made to describe the baseline biological conditions and potentially occurring sensitive species. The Project site would also be surveyed prior to construction to verify the absence of any special status species. Dr. Smallwood's criticism speculates on the efficacy of methods that are used by professionals in biology.

A-51, B-16 The California Natural Diversity Database (CNDDB) and the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) database were not the only tools used to confirm the absence of a species. The Project biologists reviewed suitable habitat on the Project site using other databases (such as the U.S. Fish and Wildlife Service's Critical Habitat Mapper) and completed a biological reconnaissance survey where plant species were observed and recorded. If a species is restricted to habitats or environmental conditions that were found not to occur within the Proposed Project site, the species was considered absent.

The comment asserts that a review of the eBird and iNaturalist databases, non-governmental entities without the substantial credibility that the California Department of Fish and Wildlife affords the CNDDB process[2], identified 56 special status species or vertebrate wildlife present near the Project site or within ranges that overlap the site. However, no field data is provided to support these findings. The sources cited by commenter (eBird and iNaturalist) are not accredited and each are populated by unconfirmable observations, and therefore not credible as a technical source. The analysis followed the appropriate protocol for assessing potentially present sensitive species and is not required to expand its consideration of non-governmental technical sources, nor speak with local "experts". As previously commented in the letter dated May 10, 2021, field verification for the presence or absence of sensitive species is necessary. In this case, after a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site, confirming that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP.

A-52, B-15 As stated in previous responses, a comprehensive records search for biological resources, vegetation, and sensitive species was performed to identify species that could occupy the Proposed Project site and surrounding area. All databases used in this research (e.g., the California Native Plant Society's CNPSEI, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a

[2] From the California Department of Fish and Wildlife website: "The California Natural Diversity Database (CNDDB) is an inventory of the status and locations of rare plants and animals in California. CNDDB staff work with partners to maintain current lists of rare species, as well as to maintain an ever-growing database of GIS-mapped locations for these species." https://wildlife.ca.gov/Data/CNDDB

project site. After a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site, concurring that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. The Project site would also be surveyed prior to construction to verify the absence of any special status species.

Regarding the Project's "aerosphere," the comment cites to no laws, regulations, or statutes requiring the type of "aeroecology"-specific analysis the commenter purports to require of the County. No such authorities exist, and if they did, they would apply to every building, structure, and development, not just geothermal powerplants. The suggestion of the absence of evidence is not evidence. Substantively, as stated in the Biological Technical Report, all wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded during the reconnaissance-level survey. These methods fully capture the occurrence of volant species in the airspace just above the ground at the Project site.

A-53, A-54 As observed in the Staff Report project description, no new transmission lines, fencing, or changes to existing Heber 1 fencing are proposed. Structures would be located in developed areas surrounded by existing structures. Baseline conditions would remain the same and the Project would not cause any significant impacts to avian species.

A-54 The baseline is the operating Heber 1 facility. As observed in the CUP project description, no new transmission lines (or solar facilities, as volunteered in the CRI/CURE comment) or changes to existing Heber 1 substation are proposed; therefore, baseline conditions would remain the same and the Project would not cause any significant impacts to avian species. Further, due to the industrialized nature of the site, avian species are likely to avoid the site. In accordance with COA-BIO-2, if construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31), a nesting bird survey will be conducted prior to the start of construction or vegetation clearing activities. In the unlikely and unanticipated event that active nests are found, an appropriate nest buffer will be established by a qualified biologist until the nest fledges or fails naturally.

A-55 The Applicant requested that the VEPFs be included as conditions of approval (COAs) in the CUP. The Applicant voluntarily adopted these conditions as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial supporting a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

The IS/MND refers to these measures as mitigation measures using the label "MM-"; however, given that there is no substantial evidence of any significant effects, and consistent with the Applicant's request for the County to include these measures as COAs, the August 2021 Response to Comments re-labels the measures conditions of approval as "COA-" in order to avoid any confusion.

A-56, B-19 This comment provides Dr. Fox's view of the Project and states that the County does not adequately mitigate impacts to biological resources in the IS/MND or Errata. However, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-57, B-20 In this comment Dr. Fox suggests using the EPA emission factor for Heavy Construction Operations from the fifth edition of EPA's *Compilation of Air Pollution Emission Factors,* or AP-42. However, Dr. Fox failed to acknowledge that AP-42 states in its Introduction that "emission factors in AP-42 are neither EPA-recommended emission limits (e.g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e.g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance." (EPA 1995.)

Additionally, the Heavy Construction Operations Section of AP-42 reports that "only 1 set of field studies has been performed that attempts to relate the emissions from construction directly to an emission factor" and "at least 2 features limit its usefulness for specific construction sites. First, the conservative nature of the emission factor may result in too high an estimate for PM-10 to be of much use for a specific site under consideration. Second, the equation provides neither information about which particular construction activities have the greatest emission potential nor guidance for developing an effective dust control plan." (EPA 1995.) Thus, the heavy construction emissions factor is not recommended by the EPA for emission regulation compliance determinations, including PM-10 compliance during construction, because of the limitations and lack of field testing associated with the emissions factor.

A-58 In response to previous comments regarding construction emissions, Appendix N to the CUP application (Air Emissions Memorandum) was prepared to clarify the analysis regarding construction emissions. Appendix N sets forth the results of the modelling of construction emissions for criterial pollutants and GHG using CalEEMOD and confirms that there are no significant effects and the Project will not cause or contribute to an exceedance of any applicable air quality standards. As observed, construction emissions for criteria pollutants and GHG emissions are less than significant, well below applicable regulatory significance thresholds.

Moreover, as part of the plan to move toward attainment of these ambient air quality standards, Imperial County adopted the 2009 PM10 State Implementation Plan (SIP), the 2009 Ozone Air Quality Attainment Plan (AQAP) along with the 2009 Reasonably Available Control Technology (RACT) SIP and the 2013 SIP for the 2006 24-Hr PM2.5 moderate nonattainment area. To implement these plans, the ICAPCD has adopted rules, regulations, and requirements to limit and reduce emissions of these air pollutants and their precursors. To comply with these ICAPCD rules, the Project has filed for and will

obtain approval of an Authority to Construct (ATC). The Project will comply with the ICAPCD ATC and conditions of approval.

A-59, B-21 The previous analysis utilized the acreage of development where the Project structures would be constructed. It is not reasonable to assume that the entire Project site, including the areas where structures currently exist, will be graded for the implementation of the Project. However, in response to this comment, the CalEEMod model was re-run with a lot acreage of 7.67 acres and the construction phase type analyzed was changed to "Grading" in order to account for all possible equipment fugitive dust emissions. As a result, the CalEEMod model calculating that a total of 90 acres would be disturbed, based on an assumption that the same a grader will go over the same area multiple times. This scenario presented by the commenter is not at all realistic and grossly exaggerates potential impacts. Even so, the CalEEMod output files are included in the document as Appendix A and the revised results are shown in Tables 1 and 2 below, demonstrating that the construction emissions would remain below the ICAPCD significance threshold with implementation of Dr. Fox's suggested changes to the CalEEMod model run:

Table 1: Criteria Pollutant Construction Emissions: Fox Hypothetical

	Construction Emissions lbs/day[1]	ICAPCD Thresholds (lbs/day)	Exceed Threshold?
NO_X	53.01	100	No
ROG (VOC)	7.03	75	No
PM_{10}	75.49	150	No
PM2.5	9.87	--	--
SOx	0.12	--	--
CO	48.72	550	No

Notes:
[1]Daily emissions derived from worst-case of either CalEEMod Summer or Winter Emission Estimates. Annual emission estimates have been utilized to calculate the construction GHG emissions, below.

Table 2: Construction Annual Greenhouse Gas Emissions: Fox Hypothetical

	Construction Emissions Metric Tons CO_2e/yr[1]	Threshold	Exceed Threshold?
Total Construction Emissions	611.03	--	--
Amortized Construction Emissions[1]	20.37	10,000	No

Notes:
[1]Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

A-60, B-22 Even though Imperial County is not highly endemic for Valley Fever, and there are no documented instances of Valley Fever occurring at the Heber 1 site during the over 20+years that the plant has operated, the voluntary environmental protection features (VEPFs) directly incorporate the recommended Valley Fever measures provided by CRI/CURE. For example, the following VEPFs are included to prevent potential Valley Fever:

- Perform watering while performing site preparation and construction;
- Provide Valley Fever awareness training for workers;
- Provide respirators to workers when requested;
- Use of closed-cab earth-moving vehicles equipped with HEPA-filters air systems;
- Provide employee testing for Valley Fever as needed; and,
- Conduct earth-moving activities downwind of workers when possible.

The Applicant voluntarily proposed inclusion of each of these measures as VEPFs for the Project, which will be incorporated as COAs. The Applicant is also required to comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules, which set forth additional measures to control dust that the Applicant is required to implement, including preparation of and compliance with a Dust Control Plan.

Dr. Fox's previous comments that soil-disturbing activities at the Project site have a "heightened risk" to put receptors at risk based solely on the assertion that "Imperial County is endemic for Valley Fever" is not substantiated by any facts. As explained by the U.S. Centers for Disease Control and Prevention (CDC), "endemic areas" for Valley Fever are approximate areas where the fungus causing Valley Fever is either known or suspected to occur, and the CDC considers the entire southwest United States a potential zone. In this case, it is highly unlikely Valley Fever is present on the Project site, given the low incidence rates in Imperial County and lack of documented cases at the existing Heber 1 site. Given the low incidence rates in Imperial County and lack of documented cases at the existing Heber 1 site, the evidence supports that the potential risks from Valley Fever to workers and the public are low. This comment does not provide substantial evidence supporting a fair argument that the Project will result in any public health impact from Valley Fever.

A-61 As set forth in Appendix N of the CUP application, the results of the modelling of construction emissions for criterial pollutants and GHG reveal no significant effects nor that the Project will exceed any applicable air quality standards. As part of approval of the Project's ATC permit, ICAPCD will include conditions of approval to limit emissions from Project construction activities. The Project will comply with the ATC and conditions of the permit, which are legally enforceable.

The current Heber 1 facility is a synthetic minor source of air pollution and operates in compliance with all applicable air quality requirements and its permit to operate (PTO #1641B-5) issued by the ICAPCD. As detailed in the Project's Air Quality Analysis Summary, the Project would lead to a reduction in emissions for all pollutants including, in some cases, the complete elimination of certain pollutants. With the replacement equipment associated with the repowering, expected actual isopentane emissions would

be lower than current isopentane emission. (See Appendix B of the ATC permit application.) Moreover, with the retirement of the steam flash units, the emissions of NOx, SO_2, H_2S, and Benzene would be completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. Operational emissions are below and the ICAPCD's CEQA significance threshold levels.

A-62 This comment cites to no authority for CURE's preference for additional analyses of a boiling liquid expanding vapor explosion, or BLEVE. Consistent with the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis" published guidance, BLEVEs are generally considered unlikely events and were therefore, consistent with EPA guidance, not considered a probable event for the Offsite Consequence Analysis performed in the HA.

A-63, B-23 The comments are premised on the contention that the Hazards Assessment (HA) should have considered Dr. Fox's preferred scenario of a BLEVE, though there is no regulatory guidance to support her bare contention that such an analysis is needed. The Project's HA complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program guidance for Chemical Accidental Release Prevention. (40 C.F.R. §§ 68.20-68.42.) Moreover, the Applicant is in coordination with the Imperial County Fire Department regarding the Project. The County Fire Department has provided guidance regarding onsite safety, and a fire engineer will review and issue a stamped drawing to the County Fire Department before Project operations begin.

A-64, B-7 This comment provides the commenter's view of certain provisions of existing law. Quoting the referenced section of the California Code of Regulations: "(c) Recirculation [of a negative declaration] is not required under the following circumstances:" … "(3) Measures or conditions of project approval are added after circulation of the negative declaration which are not required by CEQA, which do not create new significant environmental effects and are not necessary to mitigate an avoidable significant effect." (14 C.C.R. § 15073.5(c)(3).) The Errata added conditions of project approval (COAs) which are not required by CEQA, which do not create new significant environmental effects and are not necessary to mitigate an avoidable significant effect; thus, the County correctly used CEQA procedures.

A-65 Dr. Smallwood's' comments cite to no laws, regulations, or statutes requiring the type of "airspace"-specific analysis the commenter seeks. No such authorities exist, and if they did, they would apply to every building, structure, and development, not just geothermal powerplants. The suggestion of the absence of evidence is not evidence. Substantively, as stated in the Biological Technical Report, all wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded during the reconnaissance-level survey. These methods fully capture the occurrence of volant species in the airspace just above the ground at the Project site.

As set forth in the CUP project description, no new transmission lines or changes to the existing Heber 1 substation are proposed; therefore, baseline conditions would remain the same and the Project would not cause any significant impacts to avian species. Further, due to the industrialized nature of the site, avian species are likely to avoid the

site. In accordance with COA-BIO-2, if construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31), a nesting bird survey will be conducted prior to the start of construction or vegetation clearing activities. In the unlikely and unanticipated even that active nests are found, an appropriate nest buffer will be established by a qualified biologist until the nest fledges or fails naturally.

A-66 Quoting the referenced section of the California Code of Regulations: "(c) Recirculation [of a negative declaration] is not required under the following circumstances:" … "(3) Measures or conditions of project approval are added after circulation of the negative declaration which are not required by CEQA, which do not create new significant environmental effects and are not necessary to mitigate an avoidable significant effect." (14 C.C.R. § 15073.5(c)(3).) The Errata added conditions of project approval (COAs) which are not required by CEQA, which do not create new significant environmental effects and are not necessary to mitigate an avoidable significant effect; thus, the County correctly used CEQA procedures.

A-67 As demonstrated throughout this document, the comments do not provide substantial evidence supporting a fair argument that the Project may have a significant effect on the environment. In many cases, the conclusions reached by the consultants retained by Citizens/CURE employ assumptions or facts that are erroneous or otherwise not supported by the record and thus are not credible. See also response A-7.

A-68 Documents referenced in the comment were provided to Citizens/CURE to the extent required by applicable law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-69 Information referenced in the comment was provided to Citizens/CURE to the extent required by applicable law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-70 Documents and information referenced were provided to Citizens/CURE to the extent required by applicable law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-71, B-11 The Heber 1 Geothermal Repower Project is located in an area designated as an A-2 Zone. Imperial County Ordinance Section 90508.02, titled "Uses permitted only with a conditional use permit," sets forth the uses conditionally permitted in the A-2 Zone. Subsection (y) of Imperial County Ordinance Section 90508.02 recognizes the California Energy Commission's (CEC's) exclusive jurisdiction over both (1) new power plants of 50 megawatts or greater and (2) modifications to existing power plants that increase net generating capacity by 50 megawatts or more pursuant to California Public Resources Code Section 25500 et seq.

For modifications adding to existing facilities, the California Supreme Court has confirmed that the CEC's jurisdiction is measured by the "net" increase in generating capacity

(Department of Water & Power, City of Los Angeles v. Energy Resources Conservation and Development Comm'n (1991), 2 Cal.App.4th 206, 221) ; see also Cal. Pub. Resource Code § 25123 (defining "modification of an existing facility" for purposes of CEC jurisdiction as an alteration "that results in a 50-megawatt or more increase in the electric generating capacity of an existing thermal powerplant") (emphasis added)).

By letter dated July 7, 2015, the parent company of the Heber 1 geothermal power plant requested that the CEC conduct a jurisdictional determination of proposed modifications to the existing 47-megawatt power plant to confirm that such modifications were not subject to CEC jurisdiction. The proposed 2015 modifications reviewed by the CEC increased the net generating capacity at the Heber 1 geothermal power plant to approximately 52 megawatts. By letter dated August 19, 2015, the California Energy Commission concluded that "Because this increase [for the existing Heber 1 geothermal power project] is below 50 MW, staff concludes that the project does not fall under the Energy Commission's licensing jurisdiction."

The Heber 1 Geothermal Repower Project currently before the County does not propose a change to the generating capacity of the Heber 1 power plant that was approved in 2015. Accordingly, the Heber 1 Geothermal Repower Project is consistent with Section 90508.02(y) and is not subject to the jurisdiction of the California Energy Commission because the Project is neither (1) a new powerplant greater than 50 megawatts nor (2) a modification to an existing power plant that increases net generating capacity by 50 megawatts or more.

A-72, B-52 This comment reflects the opinions of Citizens/CURE. As demonstrated throughout this document, the comments do not provide substantial evidence supporting a fair argument that the Project may have a significant effect on the environment. In many cases, the conclusions reached by the consultants retained by Citizens/CURE employ assumptions or facts that are erroneous and not credible. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. See also response A-7.

B-53 The comment summarizes previous letters submitted to the record, all of which are appended to Comment Letter B. Each of these letters have been previously responded to in the August 2021 Response to Comments document and the County's Errata; thus, further responses are not provided herein. As demonstrated throughout this document, the comments do not provide substantial evidence supporting a fair argument that the Project may have a significant effect on the environment. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

EXHIBIT A TO LETTER A
Adams Broadwell Joseph & Cardozo
November 16, 2021

A-73 This comment summarizes the opinions of Dr. Fox. As such, the comments are noted and no further response is necessary.

A-74 This comment is incorrect. A formal Response to Comments document was provided in the Project Staff Report, which responded to each of Dr. Fox's comments in full. This document was included as Attachment G of the Staff Report, with comments to Dr. Fox's letter beginning on page 35. Additionally, the Air Emissions Memorandum was provided to Citizens/CURE to the extent required by applicable law.

A-75 This comment is incorrect. A formal Response to Comments document was provided in the Project Staff Report, which directly responded to each of Dr. Fox's comments in full. This document was included as Attachment G of the Staff Report, with comments to Dr. Fox's letter beginning on page 35. All documents were provided to Citizens/CURE to the extent required by applicable law.

A-76 This comment summarizes the opinions of Dr. Fox. As such, the comments are noted and no further response is necessary

A-77 In response to prior comments, an Air Emissions Memorandum was prepared to report the results of CalEEMod modelling of construction emissions for criterial pollutants and GHG. Dr. Fox notes that she received this document. As set forth in the Memorandum, construction emissions for criteria pollutants and GHG emissions are less than significant because they are well below the applicable regulatory significance thresholds. Moreover, the comment notes that agencies "often" use CalEEMod, which confirms that the use of this particular model is not a regulatory requirement. This information provides clarification regarding construction activities and amplifies the prior determination that air quality impacts from construction are less than significant.

A-78 This comment provides the commenter's view of certain provisions of existing law. These comments do not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. In any event, as set forth in Appendix N, the modelling for criterial pollutants and GHG finds no significant effects nor that the Project will exceed any applicable air quality standards. As part of approval of the Project's ATC permit, ICAPCD will include conditions of approval to limit emissions from Project construction activities. The Project will comply with the ATC and conditions of the permit, which are legally enforceable.

A-79 Documents referenced in the comment were provided to Citizens/CURE to the extent required by applicable law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-80 Table 3 of the Errata to the IS/MND was incorrect due to a typo, but construction emissions estimates portrayed in the Air Emissions Memorandum (Appendix N) and CalEEMod printouts were correct. PM_{10} emissions are projected at 75.13 lbs/day with an ICAPCD threshold of 150 lbs/day. $PM_{2.5}$ emissions are projected at 9.83 lbs/day during construction, with no established ICAPCD threshold. See the correct table below, which is included in the Air Emissions Memorandum.

Table 3: Criteria Pollutant Construction Emissions

	Construction Emissions (lbs/day)[1]	ICAPCD Thresholds (lbs/day)	Exceed Threshold?
NO_X	57.97	100	No
ROG (VOC)	7.03	75	No
PM_{10}	75.13	150	No
$PM_{2.5}$	9.83	--	--
SO_X	0.12	--	--
CO	48.76	550	No
Source: Supplemental Construction Air Quality Modelling Memorandum, Vista Environmental, July 23, 2021.			

A-81 CEQA generally does not require that public agencies analyze the impact that existing environmental conditions might have on a project's future users or residents, according to the California Supreme Court's decision in *California Building Industry Association v Bay Area Air Quality Management District* (2015) 62 Cal.4th 369. Moreover, "[t]he questions in the sample checklist in appendix G to the Act's guidelines -- including, whether the project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires -- do not extend 'the [environmental impact report] requirement to situations where the environment has an effect on a project, instead of the other way around.'" (*Newtown Preservation Soc'y v. Cnty. of El Dorado*, 65 Cal. App. 5th at 789 (changes in original, footnote omitted) (quoting *S. Orange Cnty. Wastewater Auth. v. City of Dana Point*, 196 Cal. App. 4th at 1615).) An agency must analyze how environmental conditions might adversely affect a project's residents or users only where the project itself might worsen existing environmental hazards in a way that will adversely affect them, or if one of the provisions of CEQA which require such an analysis for certain airport, school, and housing projects applies. (See *Cal. Bldg. Indus. Ass'n*, 62 Cal.4th at 392.) As observed in the provided Air Emissions Memorandum, Project construction emissions are less than significant because they are well below the applicable regulatory significance thresholds. An analysis of fugitive dust from windblown surfaces beyond the Project site is not required under CEQA as it would require analysis of the effect of existing environmental conditions on the Project.

Additionally, the Heavy Construction Operations Section of AP-42 reports that "only 1 set of field studies has been performed that attempts to relate the emissions from construction directly to an emission factor" and "at least 2 features limit its usefulness for specific construction sites. First, the conservative nature of the emission factor may result in too high an estimate for PM-10 to be of much use for a specific site under consideration. Second, the equation provides neither information about which particular construction activities have the greatest emission potential nor guidance for developing an effective

dust control plan." (EPA 1995.) Thus, the heavy construction emissions factor is not recommended by the EPA for emission regulation compliance determinations, including PM-10 compliance during construction, because of the limitations and lack of field testing associated with the emissions factor.

A-82 Despite being an entirely unrealistic scenario and as discussed in the response toto Comment A-60, the CalEEMod model was re-run with a lot acreage of 7.67 acres and the construction phase type analyzed was changed to "Grading" in order to account for all possible equipment fugitive dust emissions. This resulted in the CalEEMod model calculating that a total of 90 acres would be disturbed, assuming a grader will go over the same area multiple times. The CalEEMod output files are included in the document as Appendix A and the revised results are shown in Tables 1 and 2 in Response A-60 above. The data shows that the construction emissions would remain below the significance threshold even with implementation of Dr. Fox's suggested changes to the CalEEMod model run.

A-83 See Responses A-60 and A-83.

A-84 See Response A-82.

A-85 This comment is incorrect. A formal Response to Comments document was provided in the Project Staff Report, which directly responded to all Dr. Fox's comments in full. This document was included as Attachment G of the Staff Report, with comments to Dr. Fox's letter beginning on page 35. All documents were provided to Citizens/CURE to the extent required by applicable law.

As observed in the Air Emissions Memorandum, Project construction emissions are less than significant because they are well below the applicable regulatory significance thresholds. Thus, mitigation is not required for the Project. However, the Applicant requested that the VEPFs be included as COAs in the CUP as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence presented of a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

A-86 Dr. Fox offers a list of suggested "mitigation measures." However, mitigation is only required where there is a potentially significant effect under CEQA. The current Heber 1 facility is a synthetic minor source of air pollution and operates in compliance with all applicable air quality requirements and its permit to operate (PTO #1641B-5) issued by the ICAPCD. As detailed in the Staff Report, the Project would produce less than significant construction emissions and would lead to an operational reduction in emissions for all pollutants including, in some cases, the complete elimination of certain pollutants. As construction and operational emissions are below ICAPCD's CEQA significance threshold levels, impacts are less than significant and thus the "mitigation" measures are not required.

A-87 This comment is incorrect. An Air Emissions Memorandum was provided to Dr. Fox which included estimated construction emissions, the construction fleet, engine horsepower, engine tier, hours of operation, and construction schedule. All documents were provided to Citizens/CURE to the extent required by applicable law.

Additionally, the Response to Comments document provided as Attachment G of the Staff Report states the following under Response 22:

"The Project is required to use Tier 3 engines, Tier 2 engines, or engines equipped with retrofit controls to reduce NOx and diesel particulate matter emissions."

All information necessary to review was provided to the extent required by applicable law.

A-88 See Responses A-60 and A-83.

A-89 See Responses A-60 and A-83.

A-90 A lack of evidence is not evidence. Construction has not begun on either Heber 1 or Heber 2. The strained readings of certain SEC filings are both inconsistent with the facts on the ground and with the plain meaning of the language in those filings and as properly understood in their context. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-91 See Responses A-44, A-63, and A-64.

A-92 The Project's analysis of a release from a single isopentane storage tank is representative of the worst-case scenario. The OECs are not considered in the Project's HA because the equipment is comprised of isolated compartments (i.e., heat exchangers, condensers, feed pumps, etc.) monitored and maintained with individual control measures to prevent failure of one compartment from effecting the OEC as a whole. Control measures within each individual OEC include gas detectors, flame detectors, and a fire suppression system. The process is also monitored by the operator, providing additional detection of potential leaks and further protection in the case thereof. For these reasons, the County used the applicable worst-case.

A-93 See Responses A-44, A-63, A-64, and A-93.

A-94 This comment provides the commenter's view of certain provisions of existing law. CURE/Citizens ignores the obvious CEQA baseline: the Heber 1 and Heber 2 power plants are existing and operating power plants. They are within and define the CEQA baseline. Section 3 of the IS/MND (Mandatory Findings of Significance) finds any cumulative effects to be less than significant. Cumulative effects for this Project would be limited to off-site Project impacts that coincide with effects from another past, present, or reasonably foreseeable future action. This area of overlap is referred to as the Area of Potential Effect and is specific to each resource area as defined by the analysis in the IS. The extent of these impacts is discussed in each resource's respective section in the IS/MND and, as

observed, none would result in a significant impact. In order to have a cumulative effect, there would need to be another project that generates the effect that would be additive to the Project's effects. There are no other projects occurring or proposed in the Heber 1 Area of Potential Effect. Therefore, no significant cumulative effects would occur as result of the Project.

A-95 This comment provides a summary of the County's previous response regarding cumulative impacts and gives the commenter's view of certain provisions of existing law. See Response A-95.

A-96 See Responses A-91 and A-95.

A-97 See Responses A-91, A-95, and A-97.

A-98 The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-99 As observed in the provided Air Emissions Memorandum, Project construction emissions are less than significant because they are well below the applicable ICAPCD regulatory significance thresholds. Thus, mitigation is not required for the Project. However, the Applicant requested that the VEPFs be included as COAs in the CUP as preventive and protective measures and BMPs. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence presented of a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

EXHIBIT B TO LETTER B
Adams Broadwell Joseph & Cardozo
November 16, 2021

A-100 A formal Response to Comments document was provided in the Project Staff Report, which responded to each of Dr. Smallwood's comments in full. This document was included as Attachment G of the Staff Report, with comments to Dr. Smallwood's letter beginning on page 36. Documents were provided to Citizens/CURE to the extent required by applicable law.

A-101 See Responses A-50, A-51, A-52.

A-102 See Responses A-30, A-50, A-51, A-52, and A-66.

A-103 See Responses A-30, A-50, A-51, A-52, and A-66.

A-104 Dr. Smallwood cites no published data, let alone a biological phenomenon established in the literature, that confirms his claim that the Project's reconnaissance survey is deficient simply because it was performed during the middle of the day in July. This is merely opinion based on personal experience and not evidence-supported facts. Additionally, preconstruction surveys of the Project site would be conducted prior to construction to verify the absence of any special status species.

A-105 See Response A-51.

A-106 The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-107 See Responses A-31, A-53, and A-54.

A-108 The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-109 The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-110 As discussed in the IS/MND, this is an existing industrial facility. The site is an operating energy generation station, and devoid of native vegetation and suitable habitat. These findings are substantiated by the site-specific due diligence and in-person site reconnaissance survey performed by a professional biologist. Nonetheless, it is standard practice to implement precautionary measures, like pre-construction surveys and worker education. As these measures are adopted as COAs, they are enforceable and effective.

A-111 See Responses A-30, A-50, A-51, A-52, and A-66.

A-112 This comment provides Dr. Smallwood's opinions on the global issue of habitat fragmentation. However, CEQA does not require the Project to analyze the loss of habitat in the entirety of the Imperial Valley. The CEQA "baseline" for this Project is the continuing operation of the developed Heber 1 facility. As set forth in the CUP project description, no new transmission lines or changes to the existing Heber 1 substation are proposed by the Project; therefore, baseline conditions would remain the same. A professional wildlife biologist performed a reconnaissance-level survey of the Project site, confirming that the site is completely void of any habitat and sensitive species. With implementation of the Project the site would remain a developed industrial complex with no existing habitat.

A-113 This comment still cites to no laws, regulations, or statutes requiring the type of "air space" specific analysis the commenter seeks. No such authorities exist, and if they did, they would apply to every building, structure, and development, not just geothermal powerplants. The suggestion of the absence of evidence is not evidence. Substantively, as stated in the Biological Technical Report, all wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded during the reconnaissance-level survey. These methods fully capture the occurrence of volant species in the airspace just above the ground at the Project site.

A-114 This comment still cites to no laws, regulations, or statutes requiring the type of "air space" specific analysis the commenter seeks; therefore, the comment is noted and no further response is necessary.

A-115 The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-**116** The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

A-117 This comment is incorrect. In compliance with CEQA, all structures within the Project footprint were analyzed for biological impacts.

A-118 Regardless of the size of the example projects given, no new transmission lines, fencing, or changes to existing Heber 1 fencing are proposed as part of this Project. Baseline conditions would remain the same and the Project would not cause any significant impacts to avian species.

A-119 Dr. Smallwood cites no published data, let alone a biological phenomenon established in the literature, that confirms his claims that birds do not habituate to hazards in their airspace. This is merely opinion based on one personal experience and not evidence-supported facts. Additionally, preconstruction surveys of the Project site would be conducted prior to construction to verify the absence of any special status species.

A-120 A professional wildlife biologist performed a reconnaissance-level survey of the Project site, confirming that the site is completely void of any habitat and sensitive species. However, it is standard practice to implement precautionary measures, here called COAs,

like pre-construction surveys and worker education. As these COAs are adopted as part of the CUP decision, they are enforceable and effective.

A-121 As stated in the Biological Technical Report, all wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded during the reconnaissance-level survey. These methods fully capture the occurrence of bat species on the Project site and no signs of bats were observed. As a precautionary measure, COA-BIO-4 will be implemented, which includes pre-construction surveys conducted within 14 days prior to ground disturbance and a focused bat survey prior to any modifications to existing buildings.

A-122 See Responses A-30, A-50, A-51, A-52, and A-66.

Appendix A
CalEEMod Output

Heber 1 Repower Project - Imperial County, Summer

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

Heber 1 Repower Project

Imperial County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	100.00	1000sqft	7.67	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2022
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	189.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 7.67 acres disturbed

Construction Phase - 120 days of construction

Off-road Equipment - 1 air compressor, 1 crane, 1 excavator, 3 forklifts, 1 grader, 1 roller, 3 welders, and 2 Off-Hwy Trucks. All equipment 12 hours per day

Trips and VMT - 46 worker trips and 40 vendor trips per day

On-road Fugitive Dust - Dirt Road vehicle speed set to 5 mph. Percent paved road increased to 80% to account for the existing paved roads to access the project site.

Grading -

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for ICAPCD Rule 801 minimum requirements.

Off-road Equipment - 1 air compressor, 1 crane, 1 excavator, 3 forklifts, 1 generator, 1 grader, 1 roller, 3 welders, and 2 Off-Hwy Trucks. All equipment 12 hours per day

Heber 1 Repower Project - Imperial County, Summer

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	120.00
tblLandUse	LotAcreage	2.30	7.67
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOnRoadDust	MeanVehicleSpeed	40.00	5.00
tblOnRoadDust	VendorPercentPave	50.00	80.00
tblOnRoadDust	WorkerPercentPave	50.00	80.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	30.00	46.00

Heber 1 Repower Project - Imperial County, Summer

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

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.0313	60.3661	48.7234	0.1163	73.2390	2.6860	75.9250	7.3780	2.5347	9.9127	0.0000	11,137.1530	11,137.1530	2.6287	0.1521	11,248.1924
Maximum	**7.0313**	**60.3661**	**48.7234**	**0.1163**	**73.2390**	**2.6860**	**75.9250**	**7.3780**	**2.5347**	**9.9127**	**0.0000**	**11,137.1530**	**11,137.1530**	**2.6287**	**0.1521**	**11,248.1924**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.0313	52.7669	48.7234	0.1163	72.8015	2.6860	75.4875	7.3308	2.5347	9.8655	0.0000	11,137.1529	11,137.1529	2.6287	0.1521	11,248.1924
Maximum	**7.0313**	**52.7669**	**48.7234**	**0.1163**	**72.8015**	**2.6860**	**75.4875**	**7.3308**	**2.5347**	**9.8655**	**0.0000**	**11,137.1529**	**11,137.1529**	**2.6287**	**0.1521**	**11,248.1924**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**12.59**	**0.00**	**0.00**	**0.60**	**0.00**	**0.58**	**0.64**	**0.00**	**0.48**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Heber 1 Repower Project - Imperial County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	All Construction	Grading	7/17/2021	12/31/2021	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90

Acres of Paving: 0

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
All Construction	Excavators	1	12.00	158	0.38
All Construction	Graders	1	12.00	187	0.41
All Construction	Rollers	1	12.00	80	0.38
All Construction	Generator Sets	1	12.00	84	0.74
All Construction	Air Compressors	1	12.00	78	0.48
All Construction	Cranes	1	12.00	231	0.29
All Construction	Forklifts	3	12.00	89	0.20
All Construction	Off-Highway Trucks	2	12.00	402	0.38
All Construction	Welders	3	12.00	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
All Construction	12	46.00	40.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

Heber 1 Repower Project - Imperial County, Summer

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

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 All Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7954	0.0000	0.7954	0.0859	0.0000	0.0859			0.0000			0.0000
Off-Road	6.6588	57.9300	46.2830	0.1040		2.6369	2.6369		2.4878	2.4878		9,860.0467	9,860.0467	2.6106		9,925.3109
Total	**6.6588**	**57.9300**	**46.2830**	**0.1040**	**0.7954**	**2.6369**	**3.4322**	**0.0859**	**2.4878**	**2.5737**		**9,860.0467**	**9,860.0467**	**2.6106**		**9,925.3109**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1366	2.3290	0.9570	9.6800e-003	37.3084	0.0476	37.3559	3.7638	0.0455	3.8093		1,018.2922	1,018.2922	6.7600e-003	0.1427	1,060.9953
Worker	0.2359	0.1071	1.4833	2.5600e-003	35.1353	1.5400e-003	35.1368	3.5283	1.4200e-003	3.5297		258.8140	258.8140	0.0114	9.3500e-003	261.8863
Total	**0.3726**	**2.4361**	**2.4404**	**0.0122**	**72.4436**	**0.0491**	**72.4927**	**7.2921**	**0.0469**	**7.3390**		**1,277.1062**	**1,277.1062**	**0.0182**	**0.1521**	**1,322.8816**

Date: 12/14/2021 4:16 PM

Heber 1 Repower Project - Imperial County, Summer

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3579	0.0000	0.3579	0.0387	0.0000	0.0387			0.0000			0.0000
Off-Road	6.6588	50.3309	46.2830	0.1040		2.6369	2.6369		2.4878	2.4878	0.0000	9,860.0467	9,860.0467	2.6106		9,925.3109
Total	**6.6588**	**50.3309**	**46.2830**	**0.1040**	**0.3579**	**2.6369**	**2.9948**	**0.0387**	**2.4878**	**2.5264**	**0.0000**	**9,860.0467**	**9,860.0467**	**2.6106**		**9,925.3109**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1366	2.3290	0.9570	9.6800e-003	37.3084	0.0476	37.3559	3.7638	0.0455	3.8093		1,018.2922	1,018.2922	6.7600e-003	0.1427	1,060.9953
Worker	0.2359	0.1071	1.4833	2.5600e-003	35.1353	1.5400e-003	35.1368	3.5283	1.4200e-003	3.5297		258.8140	258.8140	0.0114	9.3500e-003	261.8863
Total	**0.3726**	**2.4361**	**2.4404**	**0.0122**	**72.4436**	**0.0491**	**72.4927**	**7.2921**	**0.0469**	**7.3390**		**1,277.1062**	**1,277.1062**	**0.0182**	**0.1521**	**1,322.8816**

Heber 1 Repower Project - Imperial County, Winter

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

Heber 1 Repower Project

Imperial County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	100.00	1000sqft	7.67	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2022
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	189.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 7.67 acres disturbed

Construction Phase - 120 days of construction

Off-road Equipment - 1 air compressor, 1 crane, 1 excavator, 3 forklifts, 1 grader, 1 roller, 3 welders, and 2 Off-Hwy Trucks. All equipment 12 hours per day

Trips and VMT - 46 worker trips and 40 vendor trips per day

On-road Fugitive Dust - Dirt Road vehicle speed set to 5 mph. Percent paved road increased to 80% to account for the existing paved roads to access the project site.

Grading -

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for ICAPCD Rule 801 minimum requirements.

Off-road Equipment - 1 air compressor, 1 crane, 1 excavator, 3 forklifts, 1 generator, 1 grader, 1 roller, 3 welders, and 2 Off-Hwy Trucks. All equipment 12 hours per day

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Heber 1 Repower Project - Imperial County, Winter

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	120.00
tblLandUse	LotAcreage	2.30	7.67
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOnRoadDust	MeanVehicleSpeed	40.00	5.00
tblOnRoadDust	VendorPercentPave	50.00	80.00
tblOnRoadDust	WorkerPercentPave	50.00	80.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	30.00	46.00

Heber 1 Repower Project - Imperial County, Winter

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

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	6.9577	60.6058	48.3508	0.1159	73.2390	2.6861	75.9251	7.3780	2.5348	9.9128	0.0000	11,099.1808	11,099.1808	2.6290	0.1529	11,210.4602
Maximum	**6.9577**	**60.6058**	**48.3508**	**0.1159**	**73.2390**	**2.6861**	**75.9251**	**7.3780**	**2.5348**	**9.9128**	**0.0000**	**11,099.1808**	**11,099.1808**	**2.6290**	**0.1529**	**11,210.4602**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	6.9577	53.0067	48.3508	0.1159	72.8015	2.6861	75.4876	7.3308	2.5348	9.8656	0.0000	11,099.1808	11,099.1808	2.6290	0.1529	11,210.4602
Maximum	**6.9577**	**53.0067**	**48.3508**	**0.1159**	**72.8015**	**2.6861**	**75.4876**	**7.3308**	**2.5348**	**9.8656**	**0.0000**	**11,099.1808**	**11,099.1808**	**2.6290**	**0.1529**	**11,210.4602**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**12.54**	**0.00**	**0.00**	**0.60**	**0.00**	**0.58**	**0.64**	**0.00**	**0.48**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Heber 1 Repower Project - Imperial County, Winter

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	All Construction	Grading	7/17/2021	12/31/2021	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90

Acres of Paving: 0

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
All Construction	Excavators	1	12.00	158	0.38
All Construction	Graders	1	12.00	187	0.41
All Construction	Rollers	1	12.00	80	0.38
All Construction	Generator Sets	1	12.00	84	0.74
All Construction	Air Compressors	1	12.00	78	0.48
All Construction	Cranes	1	12.00	231	0.29
All Construction	Forklifts	3	12.00	89	0.20
All Construction	Off-Highway Trucks	2	12.00	402	0.38
All Construction	Welders	3	12.00	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
All Construction	12	46.00	40.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

Heber 1 Repower Project - Imperial County, Winter

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

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 All Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7954	0.0000	0.7954	0.0859	0.0000	0.0859			0.0000			0.0000
Off-Road	6.6588	57.9300	46.2830	0.1040		2.6369	2.6369		2.4878	2.4878		9,860.0467	9,860.0467	2.6106		9,925.3109
Total	**6.6588**	**57.9300**	**46.2830**	**0.1040**	**0.7954**	**2.6369**	**3.4322**	**0.0859**	**2.4878**	**2.5737**		**9,860.0467**	**9,860.0467**	**2.6106**		**9,925.3109**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1320	2.5639	0.9854	9.6800e-003	37.3084	0.0477	37.3560	3.7638	0.0456	3.8094		1,019.0804	1,019.0804	6.6000e-003	0.1433	1,061.9538
Worker	0.1669	0.1119	1.0824	2.1800e-003	35.1353	1.5400e-003	35.1368	3.5283	1.4200e-003	3.5297		220.0537	220.0537	0.0118	9.5500e-003	223.1956
Total	**0.2989**	**2.6758**	**2.0677**	**0.0119**	**72.4436**	**0.0492**	**72.4928**	**7.2921**	**0.0470**	**7.3391**		**1,239.1341**	**1,239.1341**	**0.0184**	**0.1529**	**1,285.1494**

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Heber 1 Repower Project - Imperial County, Winter

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3579	0.0000	0.3579	0.0387	0.0000	0.0387			0.0000			0.0000
Off-Road	6.6588	50.3309	46.2830	0.1040		2.6369	2.6369		2.4878	2.4878	0.0000	9,860.0467	9,860.0467	2.6106		9,925.3109
Total	**6.6588**	**50.3309**	**46.2830**	**0.1040**	**0.3579**	**2.6369**	**2.9948**	**0.0387**	**2.4878**	**2.5264**	**0.0000**	**9,860.0467**	**9,860.0467**	**2.6106**		**9,925.3109**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1320	2.5639	0.9854	9.6800e-003	37.3084	0.0477	37.3560	3.7638	0.0456	3.8094		1,019.0804	1,019.0804	6.6000e-003	0.1433	1,061.9538
Worker	0.1669	0.1119	1.0824	2.1800e-003	35.1353	1.5400e-003	35.1368	3.5283	1.4200e-003	3.5297		220.0537	220.0537	0.0118	9.5500e-003	223.1956
Total	**0.2989**	**2.6758**	**2.0677**	**0.0119**	**72.4436**	**0.0492**	**72.4928**	**7.2921**	**0.0470**	**7.3391**		**1,239.1341**	**1,239.1341**	**0.0184**	**0.1529**	**1,285.1494**

Heber 1 Repower Project - Imperial County, Annual

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

Heber 1 Repower Project

Imperial County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	100.00	1000sqft	7.67	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2022
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	189.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 7.67 acres disturbed

Construction Phase - 120 days of construction

Off-road Equipment - 1 air compressor, 1 crane, 1 excavator, 3 forklifts, 1 grader, 1 roller, 3 welders, and 2 Off-Hwy Trucks. All equipment 12 hours per day

Trips and VMT - 46 worker trips and 40 vendor trips per day

On-road Fugitive Dust - Dirt Road vehicle speed set to 5 mph. Percent paved road increased to 80% to account for the existing paved roads to access the project site.

Grading -

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for ICAPCD Rule 801 minimum requirements.

Off-road Equipment - 1 air compressor, 1 crane, 1 excavator, 3 forklifts, 1 generator, 1 grader, 1 roller, 3 welders, and 2 Off-Hwy Trucks. All equipment 12 hours per day

Heber 1 Repower Project - Imperial County, Annual

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	120.00
tblLandUse	LotAcreage	2.30	7.67
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	PhaseName		All Construction
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOnRoadDust	MeanVehicleSpeed	40.00	5.00
tblOnRoadDust	VendorPercentPave	50.00	80.00
tblOnRoadDust	WorkerPercentPave	50.00	80.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	30.00	46.00

Heber 1 Repower Project - Imperial County, Annual

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

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4186	3.6338	2.9069	6.9600e-003	4.2522	0.1612	4.4134	0.4285	0.1521	0.5806	0.0000	604.9787	604.9787	0.1431	8.3000e-003	611.0293
Maximum	**0.4186**	**3.6338**	**2.9069**	**6.9600e-003**	**4.2522**	**0.1612**	**4.4134**	**0.4285**	**0.1521**	**0.5806**	**0.0000**	**604.9787**	**604.9787**	**0.1431**	**8.3000e-003**	**611.0293**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4186	3.1779	2.9069	6.9600e-003	4.2260	0.1612	4.3871	0.4257	0.1521	0.5778	0.0000	604.9781	604.9781	0.1431	8.3000e-003	611.0287
Maximum	**0.4186**	**3.1779**	**2.9069**	**6.9600e-003**	**4.2260**	**0.1612**	**4.3871**	**0.4257**	**0.1521**	**0.5778**	**0.0000**	**604.9781**	**604.9781**	**0.1431**	**8.3000e-003**	**611.0287**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**12.55**	**0.00**	**0.00**	**0.62**	**0.00**	**0.59**	**0.66**	**0.00**	**0.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Heber 1 Repower Project - Imperial County, Annual

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-5-2021	9-30-2021	1.8294	1.6231
		Highest	1.8294	1.6231

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	All Construction	Grading	7/17/2021	12/31/2021	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90

Acres of Paving: 0

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
All Construction	Excavators	1	12.00	158	0.38
All Construction	Graders	1	12.00	187	0.41
All Construction	Rollers	1	12.00	80	0.38
All Construction	Generator Sets	1	12.00	84	0.74
All Construction	Air Compressors	1	12.00	78	0.48
All Construction	Cranes	1	12.00	231	0.29
All Construction	Forklifts	3	12.00	89	0.20
All Construction	Off-Highway Trucks	2	12.00	402	0.38
All Construction	Welders	3	12.00	46	0.45

Heber 1 Repower Project - Imperial County, Annual

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

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
All Construction	12	46.00	40.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 All Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0477	0.0000	0.0477	5.1500e-003	0.0000	5.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3995	3.4758	2.7770	6.2400e-003		0.1582	0.1582		0.1493	0.1493	0.0000	536.6930	536.6930	0.1421	0.0000	540.2454
Total	**0.3995**	**3.4758**	**2.7770**	**6.2400e-003**	**0.0477**	**0.1582**	**0.2059**	**5.1500e-003**	**0.1493**	**0.1544**	**0.0000**	**536.6930**	**536.6930**	**0.1421**	**0.0000**	**540.2454**

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Heber 1 Repower Project - Imperial County, Annual

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.9600e-003	0.1515	0.0581	5.8000e-004	2.1654	2.8600e-003	2.1682	0.2186	2.7300e-003	0.2213	0.0000	55.4447	55.4447	3.6000e-004	7.7900e-003	57.7753
Worker	0.0111	6.5600e-003	0.0718	1.4000e-004	2.0391	9.0000e-005	2.0392	0.2048	9.0000e-005	0.2049	0.0000	12.8409	12.8409	6.1000e-004	5.1000e-004	13.0086
Total	**0.0191**	**0.1580**	**0.1299**	**7.2000e-004**	**4.2045**	**2.9500e-003**	**4.2075**	**0.4234**	**2.8200e-003**	**0.4262**	**0.0000**	**68.2857**	**68.2857**	**9.7000e-004**	**8.3000e-003**	**70.7839**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0215	0.0000	0.0215	2.3200e-003	0.0000	2.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3995	3.0199	2.7770	6.2400e-003		0.1582	0.1582		0.1493	0.1493	0.0000	536.6924	536.6924	0.1421	0.0000	540.2448
Total	**0.3995**	**3.0199**	**2.7770**	**6.2400e-003**	**0.0215**	**0.1582**	**0.1797**	**2.3200e-003**	**0.1493**	**0.1516**	**0.0000**	**536.6924**	**536.6924**	**0.1421**	**0.0000**	**540.2448**

Heber 1 Repower Project - Imperial County, Annual

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.9600e-003	0.1515	0.0581	5.8000e-004	2.1654	2.8600e-003	2.1682	0.2186	2.7300e-003	0.2213	0.0000	55.4447	55.4447	3.6000e-004	7.7900e-003	57.7753
Worker	0.0111	6.5600e-003	0.0718	1.4000e-004	2.0391	9.0000e-005	2.0392	0.2048	9.0000e-005	0.2049	0.0000	12.8409	12.8409	6.1000e-004	5.1000e-004	13.0086
Total	**0.0191**	**0.1580**	**0.1299**	**7.2000e-004**	**4.2045**	**2.9500e-003**	**4.2075**	**0.4234**	**2.8200e-003**	**0.4262**	**0.0000**	**68.2857**	**68.2857**	**9.7000e-004**	**8.3000e-003**	**70.7839**

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November 16, 2021

VIA EMAIL AND OVERNIGHT MAIL

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Re: Agenda Item No. 6: Heber 1 Geothermal Repower Project (CUP #19-0028; IS #19-0033; SCH #2021020267)

Dear Chairman Schaffner and Commissioners:

We are writing on behalf of Citizens for Responsible Industry ("Citizens") to provide comments on Item No. 6 on the Imperial County Planning Commission's Agenda regarding consideration of Conditional Use Permit ("CUP") #19-0028 for the Heber 1 Geothermal Repower Project ("Project") proposed by Heber Field Company, a subsidiary of Ormat Nevada Inc., ("Applicant"). The Planning Commission is to determine whether the Project is Categorically Exempt ("CE") from further review pursuant to the California Environmental Quality Act ("CEQA")[1] under the Existing Facilities, Replacement/Reconstruction, and commonsense exemptions.[2] A-1

[1] Pub. Res. Code §§ 2100, *et seq.*
[2] *See* 14 C.C.R. §§ 15031, 15032, 15061.
3304-041j

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A-1 cont.

The Commission will also consider the Project's proposed Mitigated Negative Declaration ("MND"), Errata to the MND, and Mitigation Monitoring and Reporting Program ("MMRP").

A-2

The existing Heber 1 Geothermal Energy Complex, located within the Heber Specific Plan Area at 875 Pitzer Road, Heber, California, was previously constructed pursuant to CUP #15-0013, which was approved by the Planning Commission on September 9, 2015, by the Board of Supervisors on November 10, 2015, and recorded on November 30, 2015.[3] The Applicant is now proposing a fifteen (15) year renewal for the existing facilities' operations.[4] Additionally, to repower the plant to fifty-two megawatts (net) and 78.2 megawatts (gross), the proposed CUP would permit the replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit ("I3LU") and an Integrated two-level unit ("ITLU") as well as the installation of ancillary equipment.[5] The I3LU would include three 10-bay air coolers and one 14-bay air cooler for cooling ORMAT Energy Converters ("OECs") Units 1 and 2, and would also require the installation of two additional isopentane storage tanks, which would be 10,000 gallons each, and a new Vapor Recovery Mechanical Unit ("VRMU").[6] For the ITLU, the Project would convert OEC Units 11 and 13 to an ITLU, and the existing cooling tower and VRMU would be used for OEC Units 11 and 13.[7] Additional modifications to OEC Units 11 and 13 would include replacement of some of the brine heat exchangers, replacement of the existing generator and one turbine, and replacement of a portion of the piping system and pumps.[8]

The Applicant also proposes to modify the permitted water intake from 1,800-acre feet ("AF") of irrigation water to 2,300-AF of irrigation water.[9] On November 18, 2019, the Imperial Irrigation District issued an Amendment No. 1 to the

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[3] County of Imperial, *Staff Report* at 1, 2 (hereinafter "Staff Report").
[4] County of Imperial, *Planning Commission Agenda* at 4. Note that the Staff Report's Project Description is inconsistent and states that the Project "proposed to extend the permitted life of Heber 1 to 30 years (2021-2051)." Staff Report at 1.
[5] Staff Report at 1.
[6] *Id.*
[7] *Id.* at 2.
[8] *Id.*
[9] *Id.*

Amended and Restated Water Supply Agreement to supply an additional 500-AF of water per year in addition to the 1,800-AF that was in the agreement, for a total of 2,300-AF per year.[10]

A-2 cont.

An Initial Study ("IS") and MND for the Project were prepared for the Environmental Evaluation Committee's ("EEC") review and recommendation.[11] The MND concluded that the Project would have potentially significant impacts on biological resources, hazardous materials, and geology/soils which required mitigation.[12] After the EEC hearing on February 11, 2021, the IS/MND was circulated for public review and comment.[13] The comment period was originally from February 12, 2021 to March 15, 2021, but was extended twice to ultimately conclude on May 10, 2021.[14] On behalf of Citizens, we submitted comments on the IS/MND along with two expert reports dated May 10, 2021.[15] Citizens' comments provide substantial evidence supporting a fair argument that the Project may have significant impacts on air quality from construction and operational emissions, health risk, and more severe impacts on biological resources, hazardous materials, geology/soils, and cumulative impacts than described in the MND. Citizens' comments asked the County to prepare an EIR to accurately disclose and mitigate these impacts. As set forth in the Staff Report, the County provides deficient and confusing responses to these comments and expert reports.[16]

A-3

The County has now gutted the conclusions in the IS/MND by inexplicably claiming that the Project qualifies for Class 1, Class 2, and the commonsense CEs under CEQA, and that there are no exceptions to the exemptions which would warrant additional CEQA review.[17] The County's conclusion that the Project is exempt from CEQA is entirely unsupported by the law or facts in the record, including the County's own evidence. A "lead agency's implementation of CEQA 'proceeds by way of a multistep decision tree,'" and given that the County originally

A-4

[10] *Id.*
[11] *Id.* at 3.
[12] MND at 9, 39.
[13] *Id.*
[14] *Id.*
[15] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[16] Staff Report, Attachment G.
[17] *See* 14 C.C.R. §§ 15031, 15032, 15061, 15300.2.

determined pursuant to CEQA Guidelines Section 15070, subsection (b) that a *mitigated* negative declaration was necessary, it is entirely improper for the County to now attempt to backtrack the environmental review process.[18]

A-4 cont.

The Project is not exempt from CEQA for several reasons. First, mitigated categorical exemptions are expressly prohibited under CEQA.[19] Here, the County has already determined that mitigation measures are necessary to reduce the Project's potentially significant impacts. Evidence in the record demonstrates that these mitigation measures are necessary to reduce potentially significant effects to less than significant levels such that the Project is not exempt from CEQA. Second, CEs under Class 1 and Class 2 require a lead agency to provide "substantial evidence to support [their] finding that the Project will not have a significant effect," which the County fails to demonstrate here.[20] Third, the Project is facially inconsistent with the CEs identified by the County. Finally, exceptions to the CEs are applicable because (a) substantial evidence shows that there is a reasonable possibility that cumulative impacts of successive projects of the same type in the same place over time will be significant, and (b) substantial evidence demonstrates that the Project would have a significant effect on human health and the environment due to unusual circumstances.[21] As such, these exceptions render any CEs to CEQA review inapplicable.

A-5

Not only is the Project not exempt from CEQA, but an EIR is required because a fair argument can be made that the Project will result in significant environmental effects. Here, the County does not adequately consider and meaningfully respond to the substantial evidence provided in the comments and expert reports that support a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, hazards, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment. Therefore, the County

A-6

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[18] *Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal. App. 5th 665, 673–74, *reh'g denied* (Apr. 10, 2020), *review denied* (June 24, 2020); Imperial County Planning & Development Services Department, *Initial Study, Environmental Checklist Form& Mitigated Negative Declaration for Heber 1 Repower Project CUP # 19-0028* at 3 (February 2021) (hereinafter "MND").

[19] *Salmon Pro. & Watershed Network v. County of Marin* (*"SPAWN")* (2004) 125 Cal.App.4th at 1102; *Azusa Land Recl. Co. v. Main San Gabriel Basin Watermaster* (1997) 52 Cal. App.4th 1165, 1198-1201.

[20] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.

[21] 14 CCR § 15300.2(b), (c).

lacks substantial evidence to conclude that the Project will not have significant impacts, and substantial evidence supports a fair argument that an EIR is required for the Project. We request that the Planning Commission require the preparation of an EIR to fully analyze and mitigate the potentially significant impacts from the Project. A-6 cont.

We reviewed the County's Staff Report, including Responses to Comments, with the assistance of Phyllis Fox, Ph.D., PE and Shawn Smallwood, Ph.D.[22] Their technical comments and curriculum vitae are attached hereto and are submitted to the County, in addition to the comments in this letter. Accordingly, the County must address and respond to their comments separately.[23] A-7

I. STATEMENT OF INTEREST

Citizens is a coalition of labor organizations with members who may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The coalition includes Heber residents Jaime Cuevas, Delila and Efrain Guzman, Imperial County resident Eric Jones, and other members and organizations, including California Unions for Reliable Energy ("CURE") and its local affiliates, and the affiliates' members who live, recreate, work, and raise families in Imperial County and in communities near the Project site. Thus, Citizens, its participating organizations, and their members stand to be directly affected by the Project's impacts. A-8

Since its founding in 1997, CURE has been committed to building a strong economy and healthier environment and it works to construct, operate, and maintain conventional and renewable energy power plants and other industrial facilities throughout California. CURE supports the development of clean, renewable energy technology, including geothermal power generation, where properly analyzed and carefully planned to minimize impacts on public health and the environment. Geothermal projects should avoid adverse impacts to natural

[22] P. Fox, Curriculum Vitae and Comments on the Heber 1 Geothermal Repower Project (November 16, 2021)("Exhibit A")(hereinafter, "Fox Comments"); S. Smallwood, Curriculum Vitae and Comments on the Heber 1 Geothermal Repower Project (November 15, 2021)("Exhibit B")(hereinafter "Smallwood Comments").

[23] The Commenters reserve the right to supplement these comments at later hearings and proceedings related to this Project. Gov. Code § 65009(b); Pub. Res. Code § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; *see also Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

resources and public health and should take all feasible steps to ensure that unavoidable impacts are mitigated to the maximum extent feasible. Only by maintaining the highest standards can energy development truly be sustainable.

The individual members of Citizens, and the members of its affiliated labor organizations, would be directly affected by the Project and may also work constructing the Project itself. They would therefore be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal stake in protecting the Project area from unnecessary, adverse environmental and public health and safety impacts.

Citizens support and encourage the sustainable development of California's energy and natural resources and has an interest in enforcing environmental laws that encourage sustainable development and a safe working environment. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making it less desirable for businesses to locate and people to live and recreate in the County. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduces future employment opportunities.

A-8 cont.

Finally, the organizational members of Citizens are concerned with projects that can result in serious environmental harm without providing countervailing economic benefits. CEQA provides a balancing process whereby economic benefits are weighed against significant impacts to the environment. It is in this spirit we offer these comments.

II. LEGAL BACKGROUND

"CEQA and the regulations implementing it 'embody California's strong public policy of protecting the environment.'"[24] CEQA is designed to inform decision-makers and the public about the potential, significant environmental effects of a project.[25] "CEQA's fundamental goal [is] fostering informed decision-making."[26]

A-9

[24] *Save the Agoura Cornell Knoll*, 46 Cal. App. 5th at 673.
[25] 14 C.C.R. § 15002(a)(1).
[26] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 402.

"The purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind."[27]

The implementation of CEQA is a multistep process that begins with whether the proposed activity is subject to CEQA at all.[28] Next, assuming CEQA applies, the agency must determine whether the activity qualifies for a CE.[29] If the project is exempt, the agency need not proceed with environmental review.[30] Alternatively, if no exemptions are applicable, the agency must undertake environmental review of the activity, which begins with an initial study to determine whether the project may have a significant effect on the environment.[31] A negative declaration may be prepared "if there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment."[32] A *mitigated* negative declaration is required if the initial study identifies potentially significant environmental effects but (1) those effects can be fully mitigated by changes in the project and (2) the project applicant agrees to incorporate those changes.[33] Because "[t]he adoption of a negative declaration…has a terminal effect on the environmental review process" by allowing the agency to dispense with the duty to prepare an EIR, negative declarations, as well as mitigated negative declarations, are allowed only in cases where there is not even a "fair argument" that the project will have a significant environmental effect.[34]

A-9 cont.

An EIR is necessary for any discretionary project that may have a significant adverse effect on the environment.[35] "At the heart of CEQA is the requirement that public agencies prepare an EIR for any project that may have a significant effect on the environment."[36] A negative declaration is improper, and an EIR must be prepared, whenever it can be fairly argued on the basis of substantial evidence that the project may have a significant environmental impact.[37] A "significant effect on

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[27] *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283.
[28] *See* Pub. Res. Code § 21065.
[29] 14 C.C.R. § 15061.
[30] *Id.*
[31] *Id.* at § 15063.
[32] *Id.* at § 15063(b)(2).
[33] *Id.* at § 15070(b)(1)-(2).
[34] *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440; Pub. Res. Code §§ 21064, 21100.
[35] Pub. Res. Code § 21151(a).
[36] *Friends of College of San Mateo Gardens v. San Mateo County Community College Dist.* (2016) 1 Cal.5th 937, 944 (internal citations and quotations omitted).
[37] *Id.* at 957.

the environment" is defined as "a substantial, or potentially substantial, adverse change in the environment."[38] Substantial evidence, for purposes of the fair argument standard, includes "fact, a reasonable assumption predicated upon fact, or *expert opinion* supported by fact."[39]

A-9 cont.

A. Categorical Exemptions are for Projects Determined to Not Have a Significant Effect on the Environment, but These Exemptions are Subject to Exceptions

CEQA identifies certain classes of projects which are exempt from the provisions of CEQA.[40] CEs apply to certain classes of activities that generally do not have a significant effect on the environment.[41] "Where the specific issue is whether the lead agency correctly determined a project fell within a categorical exemption, [a court] must first determine as a matter of law the scope of the exemption and then determine if substantial evidence supports the agency's factual finding that the project fell within the exemption."[42] CEQA exemptions are to be narrowly construed and "[e]xemption categories are not to be expanded beyond the reasonable scope of their statutory language."[43] Erroneous reliance by a lead agency on a CE constitutes a prejudicial abuse of discretion and a violation of CEQA.[44]

A-10

If an agency meets its burden to demonstrate that the project is within a categorically exempt class, the burden shifts to the party challenging the CE to show that the project is not exempt due to an exception pursuant to CEQA Guidelines Section 15300.2.[45] One such exception is that a CE shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to "unusual circumstances,"[46] or where

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[38] Pub. Res. Code § 21068; 14 C.C.R. § 15382; *County Sanitation Dist. No. 2 v. County of Kern* (2005) 127 Cal.App.4th 1544, 1581.
[39] Pub. Res. Code § 21080(e)(1) (emphasis added); *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 331.
[40] Pub. Res. Code § 21084(a); 14 CCR §§ 15300, 15354.
[41] *Id.*
[42] *California Farm Bureau Fed'n v. California Wildlife Conservation Bd*. (2006) 143 Cal. App. 4th 173, 185.
[43] *Mountain Lion Found. v. Fish & Game Com*. (1997) 16 Cal.4th 105, 125; *McQueen*, 2 Cal.App.3d at 1148.
[44] *Azusa*, 52 Cal.App.4th at 1192.
[45] *California Farm Bureau Fed'n,* 143 Cal. App. 4th at 186
[46] 14 C.C.R. § 15300.2(c).
3304-041j

there is a reasonable possibility that the activity will have a significant effect on the environment, including (1) when "the cumulative impact of successive projects of the same type in the same place, over time is significant."[47]

A-10 cont.

B. An Agency's Decision to Rely on a Mitigated Negative Declaration under CEQA is Reviewed for Abuse of Discretion under the Fair Argument Standard

Under the fair argument standard, a reviewing court's function is to determine if substantial evidence supports the agency's conclusion as to whether there is a fair argument that the proposed project might have a significant environmental impact.[48] "Stated another way, if the [reviewing] court perceives substantial evidence that the project might have such an impact, but the agency failed to secure preparation of the required EIR, the agency's action is to be set aside because the agency abused its discretion by failing to proceed 'in a manner required by law.'"[49] If substantial evidence demonstrates that the proposed project might have a significant impact, evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a mitigated negative declaration.[50] Neither the lead agency nor a court may "weigh" conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.[51] "The fair argument standard thus creates a low threshold for requiring an EIR, reflecting the legislative preference for resolving doubts in favor of environmental review."[52]

A-11

Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[53] In short, when "expert opinions clash, an EIR should be done."[54] "It is the function of an EIR, not a negative declaration, to resolve conflicting claims, based on substantial evidence, as to the environmental effects of

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[47] *Id.* at 15300.2(b).
[48] *Id.*
[49] *Save the Agoura Cornell Knoll*, 46 Cal. App. 5th at 675–76.
[50] *Id.*
[51] *Id.* at *13.
[52] *Id.* at 4.
[53] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935 (Court concluded that expert opinion supported by facts may qualify as substantial evidence supporting a fair argument even if not based on specific observations as to the site under review); *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[54] *Pocket Protectors*, 124 Cal.App.4th at 928; *Sierra Club*, 6 Cal.App.4th at 1317–1318.

a project."[55] Where substantial evidence is presented, "evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a negative declaration, because it could be 'fairly argued' that the project might have a significant environmental impact."[56]

The fair argument test requires the preparation of an EIR whenever "there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial."[57]

A-11 cont.

III. THE PROJECT IS NOT CATEGORICALLY EXEMPT GIVEN THAT THE PROJECT IS LIKELY TO RESULT IN SIGNIFICANT IMPACTS REQUIRING MITIGATION

CEs are based on a finding that a class or category of projects does not have a significant effect on the environment.[58] Thus, an agency's finding that a particular proposed project comes within one of the exempt classes essentially includes an implied finding that the project has no significant effect on the environment.[59] CEs under Class 1 and Class 2 require a lead agency to provide "substantial evidence to support [their] finding that the Project will not have a significant effect."[60] Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency.[61]

A-12

Here, none of the exemptions claimed by the County—Class 1, Class 2, or the "common sense" exemption—apply to the Project because the Project has significant impacts which require mitigation. The County's own preparation of an IS/MND—which, by definition, must include mitigation measures to reduce a project's significant environmental impacts—establishes that the Project will result in impacts significant enough to warrant mitigation. Thus, by the County's own conclusions, no CE applies to the Project. Furthermore, as explained in detail below,

[55] *Id.* at 935.
[56] *Sundstrom*, 202 Cal.App.3d at 310 (citation omitted).
[57] 14 C.C.R. § 15063(b)(1).
[58] Pub. Res. Code §§ 21083, 21084; 14 C.C.R. § 15354.
[59] *Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 116.
[60] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.
[61] 14 C.C.R. § 15384.

both Dr. Fox and Dr. Smallwood provided substantial evidence supporting a fair argument that the Project will result in significant impacts on the environment that require preparation of an EIR under the fair argument standard.[62]

A-12 cont.

A. The Project is Not Exempt from CEQA Because Mitigated Categorical Exemptions are Prohibited under CEQA

An agency may not rely on a CE if to do so would require the imposition of mitigation measures to reduce potentially significant effects to less than significant levels.[63] Under the Guidelines, "mitigation" includes: "(a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation. (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment. (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. (e) Compensating for the impact by replacing or providing substitute resources or environments."[64]

A-13

As established by the courts, "there are sound reasons for precluding reliance upon mitigation measures at the preliminary stage of determining eligibility for a categorical exemption. Regulatory guidelines dealing with the environmental review process under CEQA 'contain elaborate standards–as well as significant procedural requirements–for determining whether *proposed* mitigation will adequately protect the environment and hence make an EIR unnecessary; in sharp contrast, the Guidelines governing preliminary review do not contain any requirements that expressly deal with the evaluation of mitigation measures.'"[65]

In *SPAWN*, the court set aside the county's approval of a project to construct a home, stating "[r]eliance upon mitigation measures (whether included in the application or later adopted) involves an evaluative process of assessing those mitigation measures and weighing them against potential environmental impacts, and that process must be conducted under established CEQA standards and procedures for EIRs or negative declarations."[66] There, the county determined that the proposed construction of a home was categorically exempt from CEQA under a

A-14

[62] *Farmland Protection Alliance v. County of Yolo* (Nov. 3, 2021) 2021 WL 5103355, *2; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928;
[63] *SPAWN,* 125 Cal.App.4th at 1102; *Azusa Land Recl. Co.,* 52 Cal. App.4th at 1198-1201.
[64] 14 C.C.R. § 15370.
[65] *SPAWN*, 125 Cal.App.4th at 1108.
[66] *Id.* at 1108.

CE for single-family homes, even though the home was adjacent to a protected anadromous fish stream and within a stream conservation area which the county conceded was of "critical concern."[67] The county's conclusion that there was no reasonable possibility of significant environmental impacts that would preclude the exemption "was expressly founded on 'dozens of conditions that have been applied to enhance mitigations and reduce to a minimum the possibility of any adverse environmental impacts.'"[68] The *SPAWN* court determined that "whether a project may impact a designated environmental resource must be made without reference to or reliance upon any proposed mitigation measures."[69]

A-14 cont,

Here, the measures set forth in the IS/MND and MMRP fall squarely within the definition of mitigation under CEQA Guidelines Section 15370. Following circulation of the IS/MND, the County deemed the Project to be categorically exempt despite previously identifying numerous significant environmental effects in the IS/MND that would require the imposition of formal mitigation measures to minimize the Project's significant impacts.[70] As stated in the Staff Report, the basis for the County's exemption determination is because the Project involves "a modification to an existing facility with replacement or reconstruction."[71] However, any Project changes were incorporated *prior* to the circulation of the IS/MND identifying significant impacts.[72] Therefore, based on the same Project Description, the County had previously made numerous findings in the IS/MND that the Project would result in several significant adverse impacts and incorporated a number of mitigation measures to reduce the Project's significant impacts.[73] The IS/MND's determinations of significance, in relevant part, include:

A-15

1. The Project "has the potential to result in significant or substantial adverse effects on humans. However, the Proposed Project would implement MM-FIRE-1 through MM-FIRE-7 to reduce any potentially significant impacts to hazard and hazardous materials."[74]

[67] *SPAWN,* 125 Cal.App.4th at 1106.
[68] *Id.* at 1107.
[69] *Id.* at 1108.
[70] Staff Report at 3.
[71] Staff Report, Attachment D at 1.
[72] *Id.*
[73] MND at 39.
[74] *Id.*

2. The Project "has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, and/or reduce the number or restrict the range of a rare or endangered plant or animal. However, the Proposed Project would implement MM-BIO-1 through MM-BIO-4 to reduce any potentially significant impacts to biological resources."[75]
3. The combination of the Project when evaluated with other projects causing related impacts may result in a cumulatively significant impact.[76]

A-15 cont.

"If a project may have a significant effect on the environment, CEQA review must occur, and only then are mitigation measures relevant."[77] To address the Project's potentially significant impacts, the IS/MND listed several formal and enforceable mitigation measures to address the risk of upset or accident (MM FIRE-1 through MM FIRE-7) and biological resources (MM BIO-1 through MM BIO-4).[78] These mitigation measures were designed to reduce the Project's potentially significant environmental impacts that would otherwise result from the Project, as disclosed in the IS/MND and supported by evidence set forth in the expert reports by Dr. Fox and Dr. Smallwood.[79]

The facts in the present case are akin to the proceedings in *SPAWN* and unlike the situation in *Citizens for Env't Resp. v. State ex rel. 14th Dist. Ag. Assn.* where the court determined that the manure management program ("MMP") used by the fairground for the rodeo was not a mitigation measure that precluded the rodeo from being exempt from CEQA because the MMP predated the at-issue rodeo

A-16

[75] *Id.*
[76] *Id.* As detailed in previously submitted comments dated May 10, 2021, although the MND's Mandatory Findings of Significance acknowledge that cumulatively considerable impacts of the Project and related nearby projects are significant and require mitigation, the failure to (1) identify the relevant projects and their cumulative impacts; and (2) suggest feasible mitigation measures is a clear violation of CEQA's requirements to evaluate and discuss cumulative impacts.
[77] *SPAWN*, 125 Cal.App.4th at 1108.
[78] MND at 21, 27.
[79] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

project and formalized practices that had been implemented for decades.[80] The court reasoned that "[n]othing in the NOE suggests the MMP was created for this project."[81] To the contrary, here, numerous mitigation measures were developed to minimize or reduce the significant impacts that were identified in the IS/MND for this specific Project. Though the Staff Report attempts to characterize these measures as "voluntary," they are in fact mandatory Conditions of Approval that the Staff Report classifies as "legally enforceable," therefore qualifying as mitigation measures within the meaning of CEQA.[82]

A-16 cont.

The County's improper attempt to include mitigation measures in a CE is contrary to law and deprives the public of its statutory rights to participate and comment on the sufficiency of the mitigation measures proposed to be applied to the Project.

A-17

IV. THE CATEGORICAL EXEMPTIONS ASSERTED BY THE COUNTY ARE FACIALLY INAPPLICABLE TO THE PROJECT

A. The Project is Not Categorically Exempt Under Class 1 Because the Proposal Involves Substantially More Than an Insignificant Expansion of Uses

A-18

Section 15301 of the CEQA Guidelines provides an exemption for the "operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use."[83] The key, as identified in the provision, is whether the activity involves negligible or no expansion of use.[84]

The existing facilities exemption on its face does not apply to this Project because this Project cannot be characterized as a negligible modification to a previously analyzed project.[85] Rather, the Project involves the installation of two new OECs, i.e., OEC 1 and OEC 2, which would jointly function as an I3LU that would use an entirely different process for cooling motive fluid, i.e., air cooling

A-19

[80] *Citizens for Env't Resp. v. State ex rel. 14th Dist. Ag. Assn*. (2015) 242 Cal. App. 4th 555, 570.
[81] *Id.*
[82] *See* Staff Report, Attachment G at 17.
[83] 14 C.C.R. §§ 1537015301.
[84] *Id.*
[85] *See, e.g., Communities for a Better Env't,* 48 Cal. 4th at 326.

rather than water cooling.[86] These new OECs would also require the installation of a new VRMU and two new isopentane storage tanks (10,000 gallons each) on the site—doubling the number of tanks from two to four.[87] With the addition of the two new isopentane storage tanks, the isopentane volume is estimated to increase from 96,8000 gallons under permitted conditions to 240,100 gallons.[88] Moreover, the IS/MND estimated that isopentane emissions would increase by 48.0 lbs/day due to the two new OEC units and now the Staff Report estimates that the change in isopentane emission volume would be as significant as 65.7 lbs/day.[89] Finally, the Project proposes to repower the plant to its "nameplate" output capacity of 52 megawatts (net) and 78.2 megawatts (gross).[90] The County therefore acknowledges that the Project will result in an expansion of existing use, and there is no evidence in the record that the existing facility formerly operated at its nameplate capacity, rending the Class 1 exemption inapplicable.

A-19 cont.

The Project would also reconfigure and convert OEC 11 and OEC 13 into an ITLU along with additional modifications.[91] Finally, due to changes to the existing facilities, the Project requires an additional 500 AF of water *annually*.[92] Based on the foregoing, at the outset of the CEQA implementation process, the County properly classified the Project as a non-exempt new project, proceeded forward with CEQA review, and issued an IS/MND, which concluded that the Project would have significant impacts that could be mitigated to less than significant levels.

The Staff Report's Findings of Fact now erroneously claim that the Project is categorically exempt on the basis that it will not result in an expansion of the facility's current use, describing the Project as a "'like-for-like' replacement…."[93] The Findings improperly rely on factually inaccurate claims or omit key Project components to reach the desired conclusion. First, the analysis in the Staff Report

A-20

[86] MND at 10.
[87] *Id.*
[88] Staff Report, Attachment F at 10.
[89] *Id.* at 12. Note that the Staff Report discloses that isopentane emissions under proposed conditions would be 99.0 lbs/day and emissions under actual emissions are 33.3 lbs/day. However, the Report incorrectly calculates the change to be 48.0 lbs/day when in fact the change would be 65.7 lbs/day. This discrepancy is due to the fact that the Staff Report significantly increased the Project's proposed conditions for isopentane emissions from 81.3 lbs/day to 99.0 lbs/day, which is less than a tenth below permitted conditions.
[90] Staff Report at 1; MND at 2.
[91] MND at 10.
[92] *Id.* at 12.
[93] Staff Report, Attachment F at 8; 18.

does not address the significant *increase* in isopentane emissions from the Project to approximately 99.0 lbs/day, which is less than a tenth below permitted conditions.[94] Moreover, the comments prepared by Dr. Fox dated May 10, 2021, provide evidence that isopentane emissions are underestimated in the IS/MND and are likely to increase significantly more than disclosed.[95] A-20 cont.

Rather than addressing the increase in isopentane emissions, the Staff Report focuses on the emissions of NOx, S02, H2S, and Benzene, claiming that these emissions "would be completely eliminated."[96] This statement, however, is not supported by substantial evidence given that the IS/MND failed to disclose both the construction fleet as well as the tier of the engines that would be in the construction fleet.[97] Dr. Fox explained in her expert report that in failing to require that the Project utilize Tier 4 construction equipment, the Applicant has no obligation to use lower emitting equipment and NOx exhaust emissions could be around thirty-five times higher if all Tier 1 construction equipment were used instead of Tier 4 equipment.[98] Similarly, PM exhaust emissions could be about fifteen times higher if all Tier 1 equipment were used instead of Tier 4 equipment.[99] A-21

Second, the Findings are misleading in claiming that "no additional physical expansion of facilities at the Project site would occur as a result of the Project."[100] This statement is patently incorrect. The Project proposes to add two new OECs, i.e., OEC 1 and OEC 2, a new VRMU, and two new isopentane storage tanks (10,000 gallons each), doubling the total number of tanks on-site from two to four, and increasing overall facility output.[101] The Findings are thus unsupported by the evidence set forth in the Project Description. A-22

Finally, the Findings state that "[t]he Project neither uses a new technology nor utilizes new processes, as the Heber 1 power plant already utilizes OECs to generate electricity."[102] To the contrary, the I3LU would use an entirely different A-23

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[94] *Id.* at 12.
[95] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).
[96] Staff Report, Attachment F at 17.
[97] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 9 (May 10, 2021).
[98] *Id.*
[99] Staff Report, Attachment F at 17.
[100] *Id.*
[101] MND at 2, 10.
[102] Staff Report, Attachment F at 17.
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process for cooling motive fluid, i.e., air cooling rather than water cooling.[103] Additionally, the Project would require an additional 500 AF per year of irrigation water because the "*original* operational process utilized flashes of geothermal brine to make steam," but "*[c]hanges* to these existing facilities will no longer generate the extra water needed for the cooling towers," thus necessitating additional water consumption.[104] The Project's additional water consumption, including the impacts of increased consumption in a County which lacks adequate water supply for all existing industrial and agricultural uses, is more than a "minor alteration" to the existing facility and was not analyzed in the facility's original CEQA document. A-23 cont.

For the foregoing reasons, the proposed expansion of existing uses by the Project is significantly more than "negligible or no expansion" and thus the Project is not categorically exempt from CEQA. An EIR is required for the Project. A-24

B. The Project is Not Categorically Exempt Under Class 2

Section 15302 of the CEQA Guidelines provides an exemption from CEQA for the "replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced," including the "[r]eplacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity."[105] Public agencies utilizing such exemptions must support their determination with substantial evidence.[106] A project may therefore be exempted from CEQA if the Lead Agency shows through substantial evidence that it is replacing an existing facility with substantially the same *purpose* and *capacity*. A-25

The Project involves the installation of a new OEC 1 with a design capacity of 19.85 MW, a new OEC 2 with a design capacity of 17.25 MW, two new 10,000-gallon isopentane storage tanks—doubling the number of tanks on site and increasing the volume from 96,8000 gallons under permitted conditions to 240,100 gallons, a new VRMU as well as additional new ancillary components within the existing Heber 1 Geothermal Energy Complex.[107] Nevertheless, the Staff Report again claims that A-26

[103] MND at 10.
[104] *Id.* at 12.
[105] 14 C.C.R. § 15302(c).
[106] Pub. Res. Code § 21168.5.
[107] MND at 11.

the proposed new facilities would be a "'like-for-like' replacement…."[108] The Project, however, would involve the construction of new and highly technical equipment that involves different technologies and processes as well as environmental impacts.[109] Namely, isopentane emissions, the number of isopentane tanks, and the volume of isopentane have all increased.[110] Moreover, due to equipment modifications and changes, the Project would require additional irrigation water to be supplied annually.[111] The Project, therefore, involves far more than a "replacement or reconstruction" of existing structures and is not exempt from CEQA review. A-26 cont.

C. The Project is Not Exempt Under the "Common Sense" Exemption

CEQA provides for a "common sense" exemption, which applies to a project if it can be determined with certainty that there is "no possibility" that the project "may have a significant effect on the environment."[112] "If legitimate questions can be raised about whether the project might have a significant impact and there is any dispute about the possibility of such an impact, the agency cannot find with certainty that a project is exempt."[113] The exemption must "be reserved for those 'obviously exempt' projects, 'where its absolute and precise language clearly applies.'"[114] A-27

The County's obligation to produce substantial evidence supporting its exemption decision is all the more important where the record shows, as it does here, that the Project will have significant environmental impacts. The Staff Report, in concluding that the commonsense exemption applies, states that its analysis of Project impacts "methodically demonstrates that the Project will not create any significant environmental effects, primarily because all construction and installation will occur on the existing site, which has been fully planned, permitted, and developed."[115] This is patently incorrect. As stated in the CEQA Findings, "[t]he purpose of the Project is to decommission the dual-flash steam turbine generator, A-28

[108] Staff Report, Attachment F at 21.
[109] MND at 11-12.
[110] *Id.* at 8, 10.
[111] *Id.* at 12.
[112] 14 C.C.R. § 15061(b)(3).
[113] *Davidon Homes v. City of San Jose* (1997) 54 Cal. App. 4th 106, 117, *as modified on denial of reh'g* (Apr. 29, 1997).
[114] *Id.*
[115] Staff Report, Attachment F at 22.

install two new ORMAT Energy Converters (OECs), reconfigure two existing OECs, install ancillary equipment including a vapor recovery maintenance unit, and install upgrades to replace aging equipment, including two new 10,000-gallon isopentane storage tanks, *subject to approval of a CUP from the County*."[116] Approval of the CUP is required in order for the Project to go forward and thus the County wrongly asserts that the existing site has been "fully planned, permitted, and developed."[117]

A-28 cont.

Moreover, the Staff Report alleges that "[o]ther potential areas of impact not necessarily related to the physical land—such as noise, geologic hazards, biological resources, and air emissions—are shown to not approach or exceed any applicable thresholds of significance."[118] The reports by Dr. Smallwood and Dr. Fox present substantial evidence that the Project may have significant impacts. Thus, the County cannot conclude with any certainty that there is no possibility the Project will cause no significant environmental impacts.

A-29

As detailed herein, Dr. Fox and Dr. Smallwood identified many potentially significant impacts, supported by substantial evidence, to which the County insufficiently addressed in its Responses to Comments. For example, in response to Dr. Smallwood's comments regarding potentially significant impacts to special-status species, the Staff Report claims that the Project site "is completely void of any suitable habitat for either special-status plant species or wildfire, including avian species," but fails to identify the study or information to support this factual conclusion.[119] In response, Dr. Smallwood reiterates that "[t]his assertion was readily refuted by the project's consultant who documented 10 species of wildlife at the site even though the survey was performed mid-day in July – a time date least likely to detect wildlife.[120]

A-30

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[116] Staff Report, Attachment B at 3.
[117] It must also be noted that the very requirement for a CUP indicates the possibility of a potentially significant impact. *See* County of Imperial, Code of Ordinances, § 90203.09, 90508.01.
[118] *Id.*
[119] *Id.* at 34-35. "Readers of an EIR should not be required to 'ferret out an unreferenced discussion in [related material].... The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project. '[I]nformation 'scattered here and there in EIR appendices,' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis....'"" *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal. 5th 918, 941, *citing to Vineyard*, 40 Cal.4th at 442.
[120] Smallwood Comments at 8.

Furthermore, the County improperly dismisses Dr. Smallwood's previous comments regarding the Project's significant collision-mortality impacts to wildlife on the grounds that "the new structure will be located on the same site as the structure replaced…."[121] In response, Dr. Smallwood identifies many of the Project's new structures, including "at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks," which he finds "would pose new collision hazards to wildlife for the subsequent 30 years of operation."[122] Based on his expertise, Dr. Smallwood explains that "[t]he County's response to [his] comments neither acknowledge these project changes, nor addresses the significant impacts on species that could result."[123] A-31

With regards to significant impacts on air quality, Dr. Fox's analysis demonstrates that Project construction activities will emit PM10 and NOx emissions in excess of the significance thresholds, thus creating significant and unmitigated impacts.[124] A-32

Both Dr. Fox and Dr. Smallwood are highly skilled and qualified technical experts with extensive experience in their fields.[125] Their conclusions are supported by well-documented, credible evidence. Their opinions therefore constitute substantial evidence within the meaning of the law.[126] The County's conclusions otherwise are not supported by any specific instances of unsubstantiated opinion or conjecture.[127] A-33

[121] *Id.* at 20.
[122] Smallwood Comments at 7.
[123] *Id.*
[124] Fox Comments at 2.
[125] *See* Curriculum Vitae for Dr. Fox attached hereto as Exhibit A and Curriculum Vitae for Dr. Smallwood attached hereto as Exhibit B.
[126] 14 C.C.R. § 15384(b) ("Substantial evidence" includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts); *Architectural Heritage v. County of Monterey* (2004) 122 Cal.App.4th 1095, 1117-18 (expert's opinion is "credible" if it constitutes "fact-based observations by people apparently qualified to speak to the question [at issue.] That testimony constitutes substantial evidence, because it consists of "facts, reasonable assumptions, and expert opinion supported by facts.").
[127] *See* Staff Report, Appendix F at 46.

V. THE PROJECT FALLS WITHIN THE EXCEPTIONS TO CEs

A. The Project May Have Significant Cumulative Impacts When Considered with Other Nearby Geothermal Power Projects

A-34

CEs are inapplicable when the "cumulative impact of successive projects of the same type in the same place, over time is significant. "[128] Cumulative impacts can result from individually minor but collectively significant impacts from projects taking place over a period of time.[129]

Despite concluding that cumulative impacts would be potentially significant in the IS/MND Mandatory Findings of Significance, the County now finds that the Project will not result in a cumulatively significant impact in part "[b]ecause the Project contemplates replacing the site's currently outdated dual flash turbine with more modernized equipment-thereby resulting in an increase in renewable energy production and a reduction in air emissions…."[130] The County's reasoning is flawed. The Project proposes substantially more than a simple replacement of like-for-like equipment and processes given that the Project involves the construction and operation of two new OEC units, the installation of two additional isopentane storage tanks, a new VRMU, and due to the new processes utilized by the Project, an additional 500 AF per year of irrigation water is required for the Project.[131] Furthermore, based on the evidence provided in Dr. Fox's previously submitted comments, the County also fails to adequately support its finding that the Project would result in a reduction in air emissions.[132] To the contrary, the Project's construction emissions of PM10 and NOx would be significant, and since "the Project will significantly increase the amount of isopentane in the OEC units, …, the maintenance, purging and fugitive emissions should also increase by about a factor of 2.5, resulting in significant ROG emissions" during Project operations.[133] The County's stated grounds for why the Project would not result in a cumulatively significant impact are therefore erroneous.

A-35

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[128] 14 C.C.R. § 15300.2(b).
[129] *Id.* at § 15355.
[130] MND at 39; Staff Report, Attachment F at 24.
[131] *Id.* at 10-12.
[132] *Id.*; Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 6-14, 21-23 (May 10, 2021).
[133] *Id.*

Moreover, the County states that "no projects occur in relatively close proximity to the Heber 1 site (including the Heber 2 project, located approximately 1 mile away)."[134] Factors to consider when determining whether to include a related project in a cumulative impacts analysis include environmental resources impacted, location, and project type.[135] Heber 2, for example, is a very similar geothermal project proposed by the same applicant located a mere mile away and yet is improperly identified as outside of the Heber 1 Area of Potential Effect.[136] Both projects involve facilities similar in size with overlapping construction schedules and thus overlapping impacts from construction emissions.[137] The projects also are likely to result in many of the same adverse environmental impacts.[138] For example, our comments on the Heber 2 project supported the conclusion that construction emissions from that project are also likely significant.[139] Since construction of these two projects may very well overlap, already-significant emissions impacts will be substantially worse. Additionally, both projects will increase the release of isopentane, an ozone precursor, into the atmosphere.[140] As detailed by Dr. Fox in her comments, the emissions of isopentane from Heber 1 and Heber 2 far exceed ICAPCD's significance threshold for ROG —an undeniably significant and cumulatively considerable impact.[141] Thus, the Heber 1 and Heber 2 projects would result in cumulatively significant impacts that the County fails to consider in the Staff Report's analysis.[142]

A-36

[134] Staff Report, Attachment F at 24.
[135] 14 C.C.R. § 15130(b)(2).
[136] *See* Heber 2 Mitigated Negative Declaration.
[137] *Id.*; *See also* MND.
[138] *See, e.g., Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project*, (SCH: 2020069002; CUP No. 19-0017) (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021).
[139] *Id.* at 23-27.
[140] Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 26 (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).
[141] ICAPCD, *CEQA Guidelines, Table 1* at 11; Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 35 (Feb. 22, 2021). Dr. Fox explains in her comments that when errors made in estimating isopentane emissions from Heber 2 are corrected, her calculations show an increase in emissions by 505 lb/day. The Heber 1 MND estimates that the Project will result in an increase in isopentane emissions of 48 lb/day. Cumulatively, the two projects will result in an increase of 553 lb/day, well over the ICAPCD threshold of 137 lb/day.
[142] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial*

Heber 2 is not the only project that must be considered in a cumulative impacts analysis. In its 2020 Annual Report, as well as in SEC filings, Ormat indicates that its growth plans include the repair and enhancement of existing wells and drilling of new wells.[143,144] The drilling and operation of new wells constitute additional cumulative project(s) that will result in air emissions that must be considered with those of the Project in a cumulative air quality analysis. A-37

Given the proximity of a remarkably similar project, the County's contention that the Project will not contribute to cumulatively considerable impacts is dubious. The exception makes the CEs inapplicable to this Project. A-38

B. The Project May Have Significant Effects on the Environment due to Unusual Circumstances

CEQA Guidelines state that a CE "shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances."[145] The Supreme Court in *Berkeley Hillside Preservation v. City of Berkeley* clarified the meaning of the CEQA Guidelines language and the applicable standards of review, and set forth two tests to determine whether the unusual circumstances exception applies.[146] "One may identify 'evidence that the project will have a significant effect on the environment.' Alternatively, one may show evidence (1) the project is unusual because it 'has some feature that distinguishes it from others in the exempt class, such as its size or location;' and (2) there is 'a reasonable possibility of a significant effect due to that unusual circumstance.'"[147] A-39

As to the first test, the County's determinations set forth in the IS/MND provide concrete evidence to demonstrate that the Project *will* have significant effects on the environment. The County's conclusions are further supported by the A-40

Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; *CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

[143] Ormat, *2020 Annual Report* at 64.

[144] U.S. SEC, *Form 10-K, Ormat Technologies, Inc.* (December 31, 2020), available at: https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/17c5fd2c-ee2c-431e-a993-fc6cd4626a05.pdf.

[145] 14 C.F.R. § 15003.2(c).

[146] *Berkeley Hillside Pres.,* 60 Cal. 4th at 1105.

[147] *Protect Tustin Ranch v. City of Tustin* (2021) 2021 WL 4962754, at *5.

expert reports previously submitted by Dr. Fox and Dr. Smallwood.[148] The IS/MND concludes that the Project would result in significant adverse impacts and incorporates several mitigation measures to reduce the Project's significant impacts.[149] The IS/MND's determinations of significance, in relevant part, include substantial adverse effects on humans that may be reduced by implementing MM-FIRE-1 through MM-FIRE-7, significant impacts to biological resources requiring implementation of implement MM-BIO-1 through MM-BIO-4, and cumulatively significant impacts.[150] The mitigation measures were designed to reduce the Project's potentially significant environmental impacts that would otherwise result from the Project. Thus, there is evidence that the Project *will* have a significant effect on the environment.

A-40 cont.

In the alternative, the Project also presents circumstances that are unusual for projects in the exempt classes, which pertain to the continued operation of existing facility with a negligible expansion of use and/or replacement structures.[151] The Supreme Court in *Berkeley Hillside Pres*. clearly established that "[a] party invoking the exception may establish an unusual circumstance without evidence of an environmental effect, by showing that the project has some feature that distinguishes it from others in the *exempt class*, such as its size or location."[152] Here, the Project proposes to construct and operate new structures as well as implement new processes to increase the net and gross generation of the existing geothermal power facility.[153] Although the Project is sited within the County's Geothermal Overlay Zone and other geothermal operations exist in the area, the Project is nevertheless unusual for purposes of CEQA Guidelines Section 15003.2.[154]

A-41

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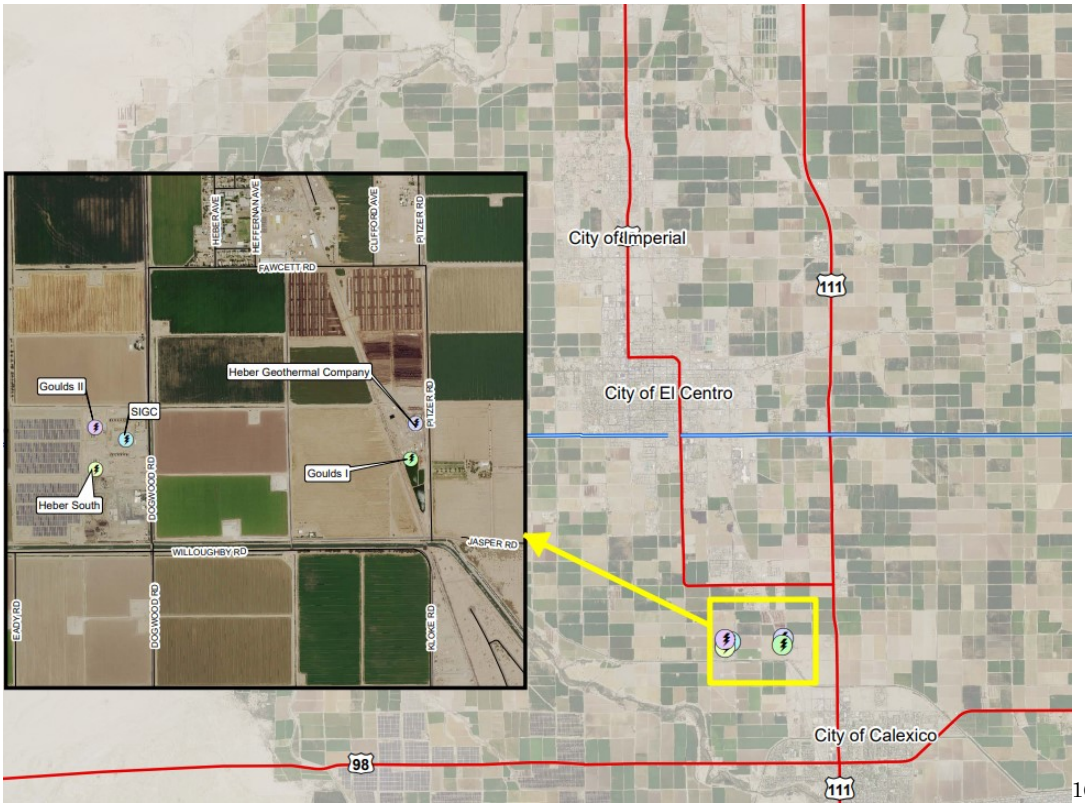
[148] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[149] *See* MND at 39.
[150] *Id.*
[151] The County concludes in the Staff Report that "[u]nder the 'Class 1' exemption, the Project constitutes an '[e]xisting facility[y] of both inventory and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services[.]' (CEQA Guidelines,§ 15301, subd. (b).) Under the 'Class 2' exemption, the Project constitutes a 'commercial structure with a new structure of substantially the same size, purpose, and capacity' and an 'existing utility system[] and/or facilit[y] involving negligible or no expansion of capacity.' (CEQA Guidelines, § 15302, subds. (b)-(c).)" Staff Report, Attachment F at 25.
[152] *Berkeley Hillside Pres*., 60 Cal. 4th at 1105. (emphasis added)
[153] MND at 10, 23.
[154] Staff Report, Attachment F at 25.

According to the U.S. Department of Energy, the combined capacity of the Imperial Valley Geothermal Resource Area is approximately 327 net megawatts.[155] Since the Project proposes to increase the net generation of the plant to 52MW, the Project would comprise nearly sixteen percent of the total capacity for the entire Geothermal Overlay Area in the County.[156] By way of comparison, the recent Heber 2 proposal refurbished the Heber 2 unit to its permitted net generation capacity of 33MW, which is 19MW less than this Project.[157] Moreover, unlike some of the other geothermal projects in the County's Geothermal Overlay Zone, this Project site, which is located in one of the most seismically active regions in the U.S.,[158] is surrounded by three cities—the City of Calexico with a population of approximately 40,000, the City of El Centro with a population of around 44,000, and the City of Imperial with a population of around 17,400.[159] The IS/MND concedes that the Project site is "subject to potential ground shaking due to nearby faults."[160] Though the County asserts that risk of seismic activity does not pose significant risks at the Project site, a "swarm of earthquakes" hit Imperial County on June 5, 2021, some felt as far away as Los Angeles.[161] A-42

[155] U.S. Department of Energy, *Imperial Valley Geothermal Area,* available at: https://www.energy.gov/eere/geothermal/imperial-valley-geothermal-area.
[156] *Id.*; MND at 10.
[157] Imperial County, *Initial Study and Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 11.
[158] *Id.* at 23.
[159] Imperial County, *Imperial County Geothermal Projects,* available at: https://www.icpds.com/assets/planning/energy-maps/imperial-county-geothermal-09-15-2017.pdf; U.S. Census Bureau (2019).
[160] *Id.* at 23.
[161] Los Angeles Times, *Earthquake: Swarm of tremblors, including magnitude 5.2 quake, hits Imperial County* (June 5, 2021), available at: https://www.latimes.com/california/story/2021-06-05/earthquake-hits-imperial-county?utm_id=30582&sfmc_id=1628513.



[162]

A-43

Finally, this Project involves storage and handling of isopentane, a highly volatile liquid which can readily boil and evaporate on a warm day, making assessment and mitigation of potential accidents involving isopentane extremely important. It is for this reason that Dr. Fox recommended evaluating the most extreme and dangerous scenarios in the hazards analysis, including the potential consequences of a boiling liquid expanding vapor explosion ("BLEVE"), a reasonably foreseeable worst-case scenario that combines both the mechanical effects of an explosion and the thermal effects of a fire.[163]

A-44

Given an adequate demonstration of unusual circumstances, the next question identified in *Berkeley Hillside Pres.* is whether there is a fair argument of a reasonable possibility of a significant environmental effect.[164] As demonstrated

A-45

[162] *Id.*
[163] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 47-52 (May 10, 2021).
[164] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105.

herein, in our previously submitted comments on the IS/MND, and in the expert comments by Dr. Phyllis Fox and Dr. Smallwood, which are hereby incorporated by reference, we have provided substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[165] Our conclusions are further supported by the significance determinations for this Project originally set forth in the IS/MND. For the foregoing reasons, there is a reasonable possibility that the Project will have a significant effect on the environment due to unusual circumstances such that an exception to the claimed CEs apply.

A-45 cont.

VI. SUBSTANTIAL EVIDENCE SUPPORTS A FAIR ARGUMENT THAT THE PROJECT MAY HAVE SIGNIFICANT ENVIRONMENTAL IMPACTS SUCH THAT AN EIR MUST BE PREPARED

An EIR is required if "there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment."[166] The EIR aids an agency in identifying, analyzing, disclosing, and, to the extent possible, avoiding a project's significant environmental effects through implementing feasible mitigation measures.[167] Mitigated negative declarations are allowed only in cases where there is not even a "fair argument" that the project will have a significant environmental effect.[168] Thus, an MND is also inadequate, and an EIR is required, whenever substantial evidence in the record supports a "fair argument" that significant impacts may occur even with the imposition of mitigation measures.

A-46

The "fair argument" standard is an exceptionally "low threshold" favoring environmental review in an EIR rather than a negative declaration.[169] The "fair argument" standard requires preparation of an EIR, if any substantial evidence in

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[165] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

[166] Pub. Resources Code, § 21080, subd. (d) (emphasis added); CEQA Guidelines, § 15064; see also *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 927; *Mejia v. City of Los Angeles* (2005) 13 Cal.App.4th 322.

[167] Pub. Res. Code § 21002.1(a); 14 C.C.R. § 15002(a) & (f).

[168] *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440; Pub. Resources Code, §§ 21100, 21064.

[169] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928.

the record indicates that a project may have an adverse environmental effect.[170] As a matter of law, substantial evidence includes both expert and lay opinion.[171] Even if other substantial evidence supports the opposite conclusion, the agency nevertheless must prepare an EIR.[172] Under the "fair argument," CEQA always resolves the benefit of the doubt in favor of the public and the environment.

A-46 cont.

As explained in our comments on the IS/MND, and in the expert comments attached thereto by Dr. Phyllis Fox and Dr. Smallwood, there is substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[173] Moreover, the County's Responses to Comments do not demonstrate that a "fair argument" cannot be made here. Based on the foregoing, the County must prepare an EIR to disclose and mitigate these impacts.

A-47

The Staff Report fails to respond to the majority of our comments on the IS/MND, which constitute substantial evidence to support a fair argument that the Project will have significant environmental effects requiring the preparation of an EIR. These comments and reports are hereby incorporated by reference.[174] The Staff Report ignores or fails to adequately address this evidence and instead now asserts that the Project will result in no significant impacts.[175] The County's conclusion, however, fails to consider a multitude of information about the nature and severity of the Project's direct impacts and omits an analysis of the cumulative impacts of multiple planned projects in the vicinity, including the similar Heber 2 project located less than 1 mile away from the Project site. Therefore, the County lacks substantial evidence to conclude that the Project will not have significant impacts, and substantial evidence continues to support a fair argument that an EIR is required for the Project.

A-48

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[170] 14 C.C.R. § 15064(f)(1); *Pocket Protectors v. City of Sacramento, supra*, 124 Cal.App.4th at 931.
[171] Pub. Res. Code § 21080(e)(1); 14 C.C.R. § 15064(f)(5).
[172] *Arviv Enterprises v. South Valley Area Planning Comm*. (2002) 101 Cal.App.4th 1333, 1346; *Stanislaus Audubon v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-151; *Quail Botanical Gardens v. City of Encinitas* (1994) 29 Cal.App.4th 1597.
[173] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[174] *Id.*; *Comments on the Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project (CUP #19-0028; IS #19-0033; SCH #2021020267)* (May 10, 2021).
[175] *See* Errata to the MND. Staff Report, Attachment E.

A. The Project May Result in Potentially Significant Impacts to Biological Resources That Would Require the Implementation of Mitigation Measures

A-49

In his previously submitted comments, Dr. Smallwood concludes that the Project will have significant, unmitigated impacts on several species, which the IS/MND, coupled with the Errata, fails to disclose and mitigate.[176] An EIR must be prepared to fully disclose and mitigate these impacts.

The IS/MND and Errata severely underestimate the Project's impacts to biological resources, including special-status species, because the analysis uses inadequate methods to observe the existing environmental setting and describe the Project site's baseline with respect to the occurrence of biological resources. Due to underestimations of these occurrences and the resulting impacts to species, the County also proposes inadequate mitigation measures—now identified as Conditions of Approval—to reduce those impacts.

A-50

Dr. Smallwood previously commented on the inadequate baseline in the IS/MND, which relies on improper methods for determining the occurrence of special-status species at the Project site.[177] Specifically, Dr. Smallwood details many issues with the site-specific survey.[178] The County responded to these comments by claiming Dr. Smallwood "speculate[d] on the efficacy of surveys that are used by professionals in this profession."[179] The County's response, however, misses the point. Dr. Smallwood explains in his attached comments that while "[a] reconnaissance-level survey would be useful for recommending which detection surveys to perform and when to perform them… reconnaissance-level surveys need to be performed during the time of year and time of day that makes sense for detecting particular species. Here, the survey was performed in the middle of a July afternoon in Imperial Valley, which does not allow for a representative picture of the site. High temperatures and other conditions during this time of year and time of day are unlikely to present an accurate view of the species present on the Project site."[180] Dr. Smallwood makes these comments based on his years of planning and

[176] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[177] *Id.*
[178] *Id.*
[179] Staff Report, Attachment F at 27.
[180] Smallwood Comments at 5.

conducting wildlife surveys.[181] He has "studied the efficacy of wildlife surveys and [has] done so throughout [his] career since 1985, as evidenced by many of [his] papers in peer-reviewed scientific journals."[182] Based on his experience and expertise, Dr. Smallwood concludes that the on-site wildlife surveys conducted to inform the Project's impacts on biological resources were "severely deficient."[183] Moreover, the County's response fails to demonstrate the efficacy of these surveys.

A-50 cont.

The County also claims that the IPac and CNDDB databases "serve as the standard for determining the biological community present in/near a project site."[184] Dr. Smallwood takes issue with the County's response, explaining that "these databases do not determine the presence of biological communities at a site" and only "track sightings records or occurrence potentials of special-status species."[185] Dr. Smallwood identifies other resources that could inform which species are present on the site, including iNaturalist and eBird.[186] eBird, for example, is administered by the Cornell University Laboratory of Ornithology.[187] The Cornell Laboratory is the most respected ornithological organization in North America and a leading authority in the world.[188] Nevertheless, the County dismisses the use of eBird: "eBird is a publicly-sourced, privately managed database, allowing both novice and expert birders to contribute; therefore, the accuracy of the database cannot be considered reliable and in fact is not relied upon by professionals."[189]

A-51

To the contrary, eBird is utilized by professionals and "[n]early 600 scientific papers based on eBird records have been peer-reviewed and published."[190] Dr. Smallwood thus concludes that "eBird not only serves as a highly useful source of information for predicting the occurrence likelihoods of special-status species, but it helps to meet CEQA's objective of public participation."[191] Dr. Smallwood's review of both eBird and iNaturalist resulted in the identification of 56 special-status species of vertebrate wildlife present near the Project site or with ranges that overlap the

[181] *Id.* at 6.
[182] *Id.*
[183] *Id.* at 5.
[184] Staff Report, Attachment F at 27.
[185] Smallwood Comments at 4.
[186] *Id.* at 5.
[187] *Id.*
[188] *Id.*
[189] Staff Report, Attachment F at 27.
[190] *Id.* at 5.
[191] *Id.*

site.[192] The detection records from eBird and iNaturalist provide substantial evidence supporting a fair argument that there are numerous special-status in the direct vicinity of the Project site which the County failed to detect. These species may be adversely impacted by the Project, requiring mitigation. The conflicting data from the County's surveys and these credible wildlife databases create a fair argument requiring preparation of an EIR to disclose and mitigate the Project's impacts on all special-status species that may be impacted by the Project.[193] Mr. Smallwood's comments also demonstrate that the County failed to make a reasonable effort to describe existing conditions for biological resources at the Project site, leading to inaccurate conclusions of the Project's impacts upon sensitive species, as well as inadequate mitigation measures.

A-51 cont.

In response to Dr. Smallwood's comments regarding the Project's potentially significant impacts on biological resources, the County claim that the site is a developed industrial complex with no existing habitat is inconsistent with its own evidence and findings.[194] Dr. Smallwood states that "the consulting biologist who visited the site documented 10 species of wildlife there, which confirmed the site provides habitat."[195] Nine of these species are protected by the Migratory Bird Treaty Act ("MBTA").[196] Moreover, based on his own professional expertise, Dr. Smallwood explains that "industrial sites are used as habitat by species of wildlife."[197] Examples include "wildlife [using] asphalt pads used to cover leaked plutonium (Smallwood 1996, Smallwood et al. 1998)," and "birds nesting on and within built structures on industrial facilities."[198] Dr. Smallwood also states that "[t]he County's premise [] neglects the aerosphere portion of the project as habitat of many species of wildlife," known as "aeroecology," which has been studied in Kunz

A-52

[192] *Id.*
[193] *Pocket Protectors*, 124 Cal.App.4th at 935 (where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR); *Sierra Club*, 6 Cal.App.4th at 1317–1318; CEQA Guidelines § 15064(f)(5).
[194] Staff Report, Attachment F at 27; Smallwood Comments at 1.
[195] *Id.*
[196] *Id.* at 5.
[197] *Id.* at 1.
[198] *Id.*

et al. 2008, Davy et al. 2017, and Diehl et al. 2017.[199] Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[200]

A-52 cont.

The County also attempts to minimize the significant impacts on biological resources identified in Dr. Smallwood's comments by claiming that the Project does not propose any changes to the site or facilities that would affect wildlife.[201] The County's response is not based in fact. Dr. Smallwood identifies several project changes that the County fails to consider or analyze in its response, including "at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks."[202] Given these specific changes, Dr. Smallwood concludes that these new structures would pose new collision hazards to wildlife for the subsequent 30 years of operations that could result in significant impacts on numerous species.[203]

A-53

The County next concludes that the Project would not cause significant impacts to avian species on the basis that "due to the industrialized nature of the site, avian species are likely to avoid the site."[204] In response to Dr. Smallwood's comments to the contrary, the County first speculates that Dr. Smallwood's use of collision fatality rates from utility solar projects were not representative of the scale of the structures on the Project site.[205] Dr. Smallwood responds in his comments that "the collision mortality along fences and transmission lines were [actually] drawn from a wide range of project sizes," and here, "the power blocks were of the same-sized solar projects."[206] To address the County's assertion that the Project's structures would somehow have different impacts than the comparative collision mortality cited in Dr. Smallwood's MND comments, Dr. Smallwood tested the scale effects of the structures by regressing the estimated fatality rates along the lengths of transmission line and fence that were used to generate the fatality estimates.[207]

A-54

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[199] *Id.* at 1-2.
[200] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935; *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[201] Staff Report, Attachment F at 28.
[202] Smallwood Comments at 7.
[203] *Id.*
[204] Staff Report, Attachment G at 28.
[205] Smallwood Comments at 10.
[206] *Id.*
[207] *Id.*

As detailed in his attached comments, Dr. Smallwood did not find "significant effects of length of transmission line nor of the fence on collision fatality rates," and thus concludes that his "original predictions of collision mortality [] stand."[208]

A-54 cont.

The County also attempts to distinguish the solar projects referenced by Dr. Smallwood to support his collision fatality estimates on the grounds that these projects were "green field" development and are not appropriate comparisons to the current Project's impacts.[209] However, Dr. Smallwood finds the County's response to be "speculative and unsupported," explaining that "[o]nce structures are built into a bird species' airspace, that species' collision risk with those structures does not depend on what existed at the site before."[210] In his experience working on wind energy repowering projects over the past fifteen years, he has seen no difference in fatality rates between new turbines built onto green fields versus those built exactly where the old turbines used to operate."[211] Based on his experience and studies, Dr. Smallwood supports his comparison by explaining that "[c]ollision risk applies to birds flying through the airspace that exists at the time of the flight, and not what existed there last year."[212]

A-55

As the IS/MND's estimations of impacts to biological resources were inadequate, so too were the mitigation measures—now erroneously labelled Conditions of Approval—which the County previously admitted were required to reduce those impacts to less than significant levels. Dr. Smallwood's previous comments recommended additional measures that, in addition to those proposed in the MND, would have much greater effect at minimizing the fatalities and habitat destruction to special-status species at the Project site.[213] These recommendations went unaddressed by the County, and are hereby referenced and incorporated.

In response, the County cites the measures identified in the IS/MND, which are now to be incorporated into the Project's conditions of approval.[214] While Dr. Smallwood concurs with the implementation of these measures, he recommends that the measures be identified as enforceable mitigation measures given the

A-56

[208] *Id.*
[209] *Id.* at 12.
[210] *Id.*
[211] *Id.*
[212] *Id.*
[213] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 8-10 (May 10, 2021).
[214] Staff Report, Attachment F at 31.

presence of significant impacts on biological resources and determines that the measures are not adequate to fully mitigate the Project's significant impacts.[215] COA BIO-3, for example, is inconsistent with CDFW guidance that does not recommend preconstruction surveys without first conducting detection surveys.[216] Dr. Smallwood concludes that the other measures are "take-minimization measures, but would not prevent impacts."[217]

A-56 cont.

The failure to minimize the fatalities and habitat destruction to special-status species at the Project site with adequate mitigation measures further confirms that a fair argument still exists that the Project will have significant impacts on wildlife and habitat.

B. The Project May Result in Potentially Significant Impacts to Air Quality That Would Require the Implementation of Mitigation Measures

In previously submitted comments, Dr. Fox concludes that the Project would have significant, unmitigated impacts on air quality during construction activities and the decades of operation, which the IS/MND, coupled with the Errata, fails to disclose and mitigate.[218] An EIR must be prepared to fully disclose and mitigate these impacts.

A-57

In response to Dr. Fox's analysis, the Staff Report fails to respond directly and fully to many of Dr. Fox's comments, further demonstrating that the record contains substantial evidence supporting a fair argument that the Project would have significant impacts, and that the County lacks substantial evidence to conclude otherwise.[219] For example, Dr. Fox's conclusion that the Project would result in significant and unmitigated impacts to air quality from the Project's construction-related PM10 emissions remains unrebutted in the record.[220] Since the IS/MND fails to estimate construction PM10 emissions, Dr. Fox conducted an analysis of construction fugitive dust PM10 emissions using AP-42, Section

A-58

[215] Smallwood Comments at 13.
[216] *Id.*
[217] *Id.*
[218] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[219] Fox Comments at 1.
[220] *Id.* at 2-6.

13.2.3.[221] In response to the County's comments regarding the use of this emissions factor, Dr. Fox explains that she properly utilized AP-42, Section 13.2.3 given the express language in the Introduction to AP-42:

> Emission factors may be appropriate to use in a number of situations such as making source-specific emission estimates for areawide inventories. These inventories have many purposes including ambient dispersion modeling and analysis, control strategy development, and in screening sources for compliance investigations. Emission factor use may also be appropriate in some permitting applications, such as in applicability determinations and in establishing operating permit fees.[222]

Moreover, the emission factor utilized by Dr. Fox "…is most applicable to construction operations with: (1) medium activity level, (2) moderate silt contents, and (3) semiarid climate."[223] These conditions are present at the site, according to Dr. Fox.[224]

She explains that "Section 13.2.3.3 also 'strongly recommends' that the construction process be broken down into component operations and emission factors specific to each use. The IS/MND did not contain any information to allow this approach. The [Staff] Report also does not contain any of this information."[225] Based on the foregoing, Dr. Fox calculated "unmitigated PM10 emissions of 319 lbs/day compared to a significance threshold of 150 lbs/day."[226] This is a significant PM10 impact which requires mitigation.[227]

A-58 cont.

Therefore, based on substantial evidence set forth in Dr. Fox's reports, construction PM10 emissions are identified as significant by Dr. Fox, thus requiring mitigation measures that the IS/MND fails to consider or require. However, the four conditions identified in the Staff Report are insufficient to fully mitigate the

A-59

[221] *Id.* at 2.
[222] *Id.* at 3.
[223] *Id.* at 4.
[224] *Id.*
[225] *Id.*
[226] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (May 10, 2021). It must be noted that the Imperial County Air Pollution Control District ("ICAPCD") considers PM10 to be of substantial concern. ICAPCD, *CEQA Guidelines* at 12 (December 12, 2017).
[227] *Comtys. for a Better Env't v. Cal. Resources Agency* (2002) 103 Cal.App.4th 98, 110-111 (when impact exceeds CEQA significance threshold, agency must disclose in the EIR that the impact is significant); *Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 960; *CBE v. SCAQMD*, 48 Cal.4th at 327 (impact is significant because exceeds "established significance threshold for NOx … constitute[ing] substantial evidence supporting a fair argument for a significant adverse impact").

significant construction PM10 impact documented in Dr. Fox's comments.[228] She recommends "requiring that all ICAPCD standard fugitive dust PM10 control measures, as well as discretionary mitigation measures for fugitive PM10 control, must be implemented."[229]

A-59 cont.

Dr. Fox also identifies significant and unmitigated impacts from the Project's NOx emissions during construction activities.[230] The Staff Report, in response, includes a new air quality modeling analysis in "Appendix N," which Dr. Fox identifies as entirely deficient analysis for three main reasons.[231] First, Appendix N assumes a lot acreage of 2.3 acres, which is not supported by other evidence that describes the disturbed area as 7.67 acres.[232] Second the CalEEMod input indicates zero acres of grading even though the construction equipment for the Project includes a 187 hp grader, thus confirming that more than zero acres will be graded.[233] Lastly, the analysis improperly omits off-site emissions in its calculations of mitigated and unmitigated NOx emissions.[234] Dr. Fox calculated the NOx emissions using the correct disturbed acreage of 7.67 acres and determines that the NOx emissions would be 201 lbs/day, which is double the significance threshold.[235] Although Dr. Fox acknowledges that these emissions could possibly be mitigated by requiring the use of all Tier 4 construction equipment, the Staff Report only requires the use of Tier 3 engines "when commercially available" in the VEPF and if not, then the VEPF allows for Tier 2 engines.[236]

A-60

Dr. Fox also provides extensive comments in her prior comment letter on the risks to worker health from valley fever during the life of the Project, noting that Imperial County is endemic for valley fever.[237] The County responds that "Imperial County is not highly endemic for Valley Fever..."[238] To the contrary, Dr. Fox provides evidence that the site is in an endemic area, and that the Project's soil-

A-61

[228] Fox Comments at 7-8.
[229] *Id.*
[230] *Id.* at 8.
[231] *Id.* at 9.
[232] *Id.*
[233] *Id.*
[234] *Id.*
[235] *Id.* at 10.
[236] Staff Report, Attachment E at 3.
[237] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 33 (May 10, 2021).
[238] Staff Report, Appendix G at 22.

disturbing activities have the potential to put receptors at risk.[239] Despite evidence from the California Department of Public Health, case studies, and other published literature that support Dr. Fox's conclusion that "conventional construction mitigation measures required by Imperial County CEQA guidance are not adequate to control Valley Fever spores raised during Project construction," the Staff Report set forth the conclusory assertion that the Applicant's "voluntary" mitigation measures were sufficient.[240] A fair argument can thus be made that the impacts on public health from Valley Fever may be significant and are unmitigated. A-61 cont,

Based on the foregoing, in addition to the analysis in the attached expert reports, a fair argument exists that the Project will have significant impacts on air quality. A-62

C. The Project May Result in Potentially Significant Impacts due to Risks of Hazards That Would Require the Implementation of Mitigation Measures

The IS/MND determined that the impacts from hazards would be potentially significant unless mitigated. Dr. Fox nevertheless explains that the IS/MND failed to accurately disclose the severity of the Project's hazards impacts because the IS/MND failed to evaluate a worst-case accident; "a [boiling liquid expanding vapor explosion ("BLEVE")] is the worst-case release scenario for very flammable materials such as isopentane because it combines both the mechanical effects of an explosion and the thermal effects of a fire."[241] The Staff Report fails to meaningfully respond to this comment, and lacks the requisite BLEVE analysis. An EIR must be prepared to fully disclose and mitigate these significant impacts. A-63

The County responds to Dr. Fox's comments regarding impacts from hazards by asserting that the Project's Hazards Analysis "complies with the regulatory standard for assessing a catastrophic event…," citing 40 C.F.R. §§ 68.20-68.42.[242] Dr. Fox disagrees given that she concludes a BLEVE is reasonably expected to occur in the Project's location given that "[a]mbient temperatures at the Project site A-64

[239] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 34-35 (May 10, 2021).
[240] Staff Report, Appendix G at 22.
[241] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 41-42 (May 10, 2021); Fox Comments at 12.
[242] Staff Report, Appendix G at 23.

routinely exceed isopentane's boiling point from March through October."[243] Dr. Fox explains that "on-site workers would be the most exposed population and would be within the zone of significant impact."[244] Furthermore, her analysis demonstrates that exposed parties within 0.3 miles of an isopentane tank experiencing a BLEVE would suffer from second degree burns yet the nearest off-site sensitive receptors are not identified.[245]

The Staff Report fails to meaningfully respond to these comments and lacks any evidence supporting the County's unsupported conclusion that the Project would not result in significant impacts from a BLEVE. The evidence presented by Dr. Fox is inadequately contested by the County in its Responses to Comments and "to the extent there was a conflict in the evidence, 'neither the lead agency nor a court may 'weigh' conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.'"[246] Thus, a fair argument can be made that there are potentially significant impacts from hazards associated with the Project, requiring an EIR.

A-64 cont.

VII. CEQA PROHIBITS THE USE OF AN ERRATA TO SUBSTANTIALLY ALTER THE SIGNIFICANCE DETERMINATIONS IN THE IS/MND

CEQA Guidelines permits the use of an errata, in relevant part, if (1) new revisions to the project are added in response to comments on the project's identified effects, which are not new and avoidable significant effects; (2) measures or conditions of approval that are added after circulation of the negative declaration that are not required by CEQA, do not create significant environmental effects, and not necessary to mitigate an avoidable significant effect; and (3) situations where new information is added to the negative declaration that merely clarifies, amplifies, or makes insignificant modifications to the negative declaration.[247] Here, the County improperly uses these CEQA's procedures to issue an Errata to the IS/MND that reduces all of the previously-identified significant impacts to less than significant levels and changes the previously-identified mitigation measures to Conditions of Approval without adequate support.[248] These changes are a far cry

A-65

[243] Fox Comments at 12-13.
[244] *Id.* at 13.
[245] *Id.*
[246] *Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal. App. 5th 665, 689, *reh'g denied* (Apr. 10, 2020), *review denied* (June 24, 2020).
[247] 14 C.C.R. § 15073.5(c)(2)-(4).
[248] *See* Staff Report, Attachment E.

from minor or insignificant modifications. The Errata essentially strikes the IS/MND's entire impact analysis and guts the conclusions originally set forth in the IS/MND. A-65 cont.

The County's revised analysis and conclusions in the Errata are also unsupported. For example, Dr. Smallwood disagrees with the Errata's conclusion that the impacts on biological resources are now less than significant.[249] To the contrary, he finds that the Project would have significant impacts to birds from collision-mortality due to the Project's additional structures erected in the airspace.[250] He also notes in his comments that "[t]he errata claims that no sensitive bird species occur at the project site, but this claim neglects the 10 species documented at the site by Chambers Group (2019:App. D), 9 of which are protected by the Migratory Bird Treaty Act."[251] A-66

Moreover, no changes to the Project have occurred to warrant the use of an Errata. Prior to circulating the IS/MND in 2019, there were Project-related changes, but none since.[252] The use of an Errata here is thus improper since the County's intent is clearly to evade its earlier findings that the Project would have significant impacts requiring mitigation. The County cannot use this Errata to proceed forward with its unfounded conclusion that the Project is categorically exempt from CEQA. The County's actions violate the specific procedures outlined in CEQA and for these reasons, the Planning Commission must not adopt the IS/MND and Errata. A-67

VIII. A CONTINUANCE OF THE PLANNING COMMISSION PROCEEDINGS IS NECESSARY DUE TO THE FAILURE TO PROVIDE NEW EVIDENCE CITED TO AND RELIED UPON IN THE STAFF REPORT

Pursuant to Section 54955.1 of the Government Code, we respectfully request a continuance of the Imperial County Planning Commission hearing on November 18, 2021, with regards to Item No. 6 regarding the Project. Section 54955.1 provides that "[a]ny hearing being held, or noticed or ordered to be held, by a legislative body of a local agency at any meeting may by order or notice of continuance be continued or recontinued to any subsequent meeting of the legislative body…."[253] A A-68

[249] Smallwood Comments at 13.
[250] *Id.*
[251] *Id.*
[252] Staff Report, Attachment G at 14.
[253] Gov't Code § 54955.1.

continuance is necessary with regards to Agenda Item No. 6 because the Staff Report omitted multiple pieces of critical information, thereby depriving the public and decision-makers of a meaningful opportunity to participate in the CEQA process. The omission of evidence on which the County purports to rely to support its CEQA and land use findings to approve the Project is also a reversible abuse of discretion.[254] A-68 cont.

The Responses to Comments on the IS/MND attached to the Staff Report as Attachment G repeatedly cited to new information contained in "Appendix O; Supplemental Construction Air Quality Modeling Memorandum" and "Appendix O; Heber 1 Repower Project—Summary Project Information."[255] Neither attachment, however, were included in the Staff Report. We notified the County of these omissions on Thursday, November 11, 2021, via email.[256] The documents were not produced to us until Friday, November 12, 2021, at 2:31pm.[257] Upon receiving the materials, we, along with the public and our experts, had a mere few days—including the weekend—to review and respond to the information, which did not provide our experts with sufficient time to fully review the newly submitted information. A-69

Furthermore, the new Air Quality Modeling Memorandum omits the engine tiers assumed in the CalEEMod run. On November 12, 2021, we again emailed the County to request this critical information and received a response on the day of the comment deadline even though the County had received the information the day prior.[258] A-70

For the foregoing reasons, we ask that the Planning Commission continue Item No. 6 regarding the Project to allow the public additional time to review and respond to the significant new information relied upon in the Staff Report for the Project. A-71

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[254] C.C.P. § 1094.5(e), (f).
[255] *See* Staff Report, Attachment G at 2.
[256] Email from Tara Messing, Adams, Broadwell, Joseph & Cardozo, to David Black, County of Imperial dated November 11, 2021.
[257] Email from Rosa Soto, County of Imperial, to Tara Messing, Adams, Broadwell, Joseph & Cardozo, dated November 12, 2021.
[258] Email from Tara Messing, Adams, Broadwell, Joseph & Cardozo, to David Black, County of Imperial dated November 11, 2021; Email from David Black, County of Imperial, to Tara Messing, Adams, Broadwell, Joseph & Cardozo, dated November 16, 2021. Mr. Black's email dated November 16, 2021 forwarded the requested information previously sent by Corinne Lytle Bonine, Chambers Group, via email the day prior on November 15, 2021.

IX. THE COUNTY LACKS SUBSTANTIAL EVIDENCE TO APPROVE THE PROJECT'S CUP

The Project requires approval of CUP # 19-0028, which the Planning Commission may review and approve or conditionally approve only if it makes all of the findings enumerated in Section 90203.09 of the County's Code of Ordinances.[259] One such finding is that the Project's "proposed use is consistent with the goals and policies of the adopted county general plan."[260] To support this finding, the Resolution in Attachment B to the Staff Report explains that "Section 90508.02 of the County Land Use Ordinance identify the permitted conditional uses within the A-2-G-Heber SPA Zone designation. Uses identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the Imperial County Planning Commission. … Therefore, pursuant to Land Use Ordinance section 90508.02, electrical generation facilities are permitted with approval of a CUP for 'electrical generation plants (*less than 50 mw*).' The Commission finds that the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations."[261] Section 90508.03 makes clear that "[a]ll other uses not expressly permitted by Section 90508.01 or 90508.02 are prohibited."[262] A-72

Both the IS/MND and Staff Report clearly establish that this Project is to increase "the plant's generating capacities of *52-megawatt (MW) net, and 78.2 MW gross*, …."[263] The Project's generating capacity—whether net or gross—exceeds the permitted use specified under Section 90508.02, subsection (y), and thus the Project is not a permitted use on lands zoned A-2 even with the approval of a CUP.[264] The Planning Commission is unable to make the findings required by Section 90203.09 and must not approve the CUP.

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[259] County of Imperial, Code of Ordinances § 90203.09.
[260] *Id.* at § 90203.09(A).
[261] Staff Report, Attachment B at 2. (emphasis added)
[262] County of Imperial, Code of Ordinances § 90508.03.
[263] Staff Report, Attachment F at 1. (emphasis added) Moreover, it must also be noted that the CEC has the exclusive authority to certify all thermal power plants (50 megawatts [MW] and greater) and related facilities proposed for construction in California. *See* California Energy Commission, available at: https://www.energy.ca.gov/.
[264] A Project's inconsistencies with local plans and policies also constitute significant impacts under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4; *see also, County of El Dorado v. Dept. of Transp*. (2005) 133 Cal.App.4th 1376.

X. CONCLUSION

The Project does not qualify for a CE: first and foremost, the County fails to provide substantial evidence that the Project would not result in significant environmental impacts. Second, the County has failed to demonstrate that the CEs under Class 1, Class 2, and the commonsense exemption apply. Even if it did qualify under a CE, the exceptions to the CEs apply given that the Project would result in significant cumulative impacts and would have potentially significant impacts due to unusual circumstances. A-73

The Project also cannot be approved in reliance on the IS/MND because there is substantial evidence supporting a fair argument that the Project may have significant impacts that require preparation of an EIR. The IS/MND fails to meet CEQA's basic requirements, fails to disclose numerous potentially significant, unmitigated Project impacts. The County must prepare an EIR to accurately disclose and mitigate the Project's significant impacts We urge the Planning Commission not to adopt the IS/MND.

For the foregoing reasons, we respectfully request that the Planning Commission deny Conditional Use Permit #19-0028 as well as the Notice of Exemption and findings of fact that the Project is categorically exempt from CEQA. We also urge the Planning Commission not to adopt the IS/MND, Errata to the MND, and MMRP, and not make the de minimums findings recommended by the EEC on February 11, 2021, that the Project will not individually or cumulatively have an adverse effect on fish and wildlife resources. The findings and resolutions attached to the IS/MND and CUP #19-0028 must also be denied. Instead, the County must require the preparation of an EIR to fully analyze and mitigate the Project's potentially significant impacts.

Sincerely,

Tara C. Messing

Tara C. Messing

TCM:ljl

3304-041j

EXHIBIT A

Phyllis Fox, PhD, PE
745 White Pine Avenue
Rockledge, FL 32955

November 16, 2021

Tara Messing
Adams Broadwell Joseph and Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

A-74

RE: Responses to Comments on the Heber 1 Geothermal Repower Project

As you requested, I have reviewed the responses to my May 10, 2021 Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project, CUP No. 19-0028 (Fox Comments)[1] in the Staff Report for the November 18, 2021 Planning Commission meeting. The Staff Report and supporting documents are contained in the "Project Report."[2] The Project Report and its various attachments and appendices are not adequate to support the proposed categorical exemption from CEQA.

A-75

The Project Report does not include copies of any of the comment letters, annotated with comments numbers, as is standard practice in responding to comments on CEQA documents. Rather, the Project Report only includes a brief summary of comments in six comment letters.[3] My comment letter was attached to Comment Letter No. 1, Adams Broadwell Joseph & Cardozo PC (ABJC). The responses to the ABJC letter ignore my letter and respond only to the County's superficial summary of ABJC's comments.[4] The Project Report does not respond directly and fully to any of my comments. Rather, it only responds to very brief summaries of my comments.[5] This prevents meaningful review of responses to my comments as well as responses to comments made by others. Further, the revised air quality analysis, cited in the Project

[1] Phyllis Fox, Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project, CUP No. 19-002, Heber, California, May 10, 2021 (Fox Comments).
[2] Project Report to the Planning Commission on CUP #19-0028, Heber 1 Geothermal Repower, November 18, 2021 ("Project Report"); https://www.icpds.com/assets/hearings/06.-CUP19-0028-Heber-1-Geothermal-Repower.pdf.
[3] Project Report, Section 3.0 – Response to Comments, pdf 103.
[4] Project Report, Letter 1, pdf 104-129.
[5] Project Report, Letter 1, Adams Broadwell Joseph & Cardozo PC, May 10, 2021, pdf 104-129 (ABJC Letter).

Report as Appendix N, Air Emissions Memorandum, was not provided with the Project Report and was not received until November 12, late in the day, severely limiting review time. A-75 cont.

As discussed below, my review of the Project Report indicates that none of my comments were responded to as I wrote them. Thus, I reassert them. The following comments respond only to a small subset of the County's responses to some of ABJC's summaries of my comments. Only some are responded to as the available review time was not adequate to review the 560 page Project Report and supporting documents and to correct all of the errors and omissions that they contain. The absence of a response to a comment in my May 10, 2021 comments does not imply concurrence but rather inadequate review time or absence of supporting documents in the record. Thus, I reassert my comments as written in my May 10, 2021 comments, which stand unrebutted in the record. A-76

I demonstrate below that the Project will result in significant impacts that require mitigation, including significant construction PM10 and NOx air quality impacts, significant risk of upset impacts, and significant cumulative construction impacts. Thus, this Project is subject to review under CEQA. A-77

I. CONSTRUCTION IMPACTS

I.A Construction Emissions Are Significant and Unmitigated

The IS/MND did not include any estimate of construction emissions. Thus, I estimated these emissions using the limited available information presented in the IS/MND. My analysis of construction emissions is in my Comment I. This comment demonstrates that the Project would result in significant construction PM10 and NOx emissions and significant construction ozone impacts.[6] There is no response to these comments, but rather only to ABJC's summary of them.[7] A-78

I.A.1 Construction PM10 Emissions Are Significant and Unmitigated

The IS/MND failed to estimate any construction PM10 emissions. I estimated construction fugitive dust PM10 emissions using U.S. EPA's AP-42, Section 13.2.3.[8] The response quotes from AP-42 (without providing a specific cite) as follows:[9] A-79

[6] Fox Comments, Comments 2.2, 2.3, 2.4.
[7] Project Report, pdf 77 and 110-111 (Response to ABJC Comment 21).
[8] Fox Comments, Comment 2.2: Construction PM10 Emissions Are Significant.

> Emission factors in AP-42 are neither EPA-recommended emission limits (e. g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e. g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance.

This quoted material is found in the Introduction of AP-42.[10] It is irrelevant to the case at hand. I did not recommend the use of any emission factors from AP-42 as "emission limits;" "best available control technology or BACT;" "lowest achievable emission rate or LAER;" "National Emission Standard for Hazardous Air Pollutants or NESHAPs;" or "New Source Performance Standards or NSPS." Thus, this response is irrelevant and does not address my Comment 2.4.

Rather, I used the fugitive dust emission factor from AP-42, Section 13.2.3, to estimate fugitive PM10 emissions from Project construction. The very same Introduction to AP-42 cited in the Responses further states as follows:[11]

> Emission factors may be appropriate to use in a number of situations such as making source-specific emission estimates for areawide inventories. These inventories have many purposes including ambient dispersion modeling and analysis, control strategy development, and in screening sources for compliance investigations. Emission factor use may also be appropriate in some permitting applications, such as in applicability determinations and in establishing operating permit fees.

A-79 cont.

I used the AP-42 construction activity emission factor of 1.2 tons per acre per month to estimate fugitive dust PM10 emissions from constructing the Project. Thus, my use of AP-42 is appropriate and the response to this comment is irrelevant as fails to address my comment.

The responses further assert that the fugitive dust emission factor I used from AP-42 Section 13.2.3 is inappropriate as it is based on only 1 set of field studies that limit its usefulness for specific construction sites. Thus, the Responses assert that "…the heavy construction emissions factor is not recommended by the EPA for emission regulation compliance determinations, including PM10-compliance during construction, because of the limitation and lack of field testing associated with the emissions factor."[12]

First, I did not and do not recommend this emission factor for emission regulation compliance determinations during construction. Second, this quote fails to accurately represent AP-42, Section ac13.2.3.3 Emission Factors. This section actually states that

[9] Project Report at pdf 77, 78, 110, 111; AP-42, Introduction, p. 2; https://www.epa.gov/sites/default/files/2020-09/documents/c00s00.pdf.
[10] AP-42, Introduction, pdf 2; https://www.epa.gov/sites/default/files/2020-09/documents/c00s00.pdf.
[11] *Ibid.*
[12] Responses, pdf 78, 111 (response to ABJC Comment 21).

the emission factor that I used "…is most applicable to construction operations with: (1) medium activity level, (2) moderate silt contents, and (3) semiarid climate." These conditions are present at the site.[13] AP-42 Section 13.2.3.3 further "strongly recommends" that the construction process be broken down into component operations and emission factors specific to each used. The IS/MND did not contain any information to allow this approach. The Project Report also does not contain any of this information.

My analysis indicates unmitigated PM10 emissions of 319 lb/day compared to a significance threshold of 150 lb/day.[14] Therefore, construction PM10 emissions are significant, requiring CEQA mitigation such as I recommend in my Comment 2.2. Therefore, Finding No. AQ-B[15] in the Project Report[16] is incorrect. The Project will result in significant construction PM10 impacts in a PM10 non-attainment area. This requires the imposition of enforceable mitigation under CEQA. The proposed "voluntary mitigation measures"[17] are not enforceable CEQA mitigation and are not sufficient to mitigate the significant PM10 impact identified in my comments.

A-79 cont.

In the facts supporting Finding No. AQ-B, the Project Report, on the other hand, states that construction would emit 75.13 lb/day of PM10 over the 6-month construction phase.[18] The Project Report asserts that "A construction emissions model was run to estimate potential emissions, and the estimates were provided as Appendix N to the IS/MND's responses to comments." No support is provided for this estimate in the Project Report. Supporting Appendix N was provided on November 12, 2021 upon request due to its omission in the Project Report.

A-80

The Project Report contains an estimate of construction emissions, cited to as "Supplemental Construction Air Quality Modeling Memorandum, Vista Environmental, July 23, 2021."[19] This is referred to in these comments as "Appendix N." The estimated PM10 emissions reported in the Project Report, Table 3 is 7.03

A-81

[13] See U.S. Climate Data, El Centro, California https://www.usclimatedata.com/climate/el-centro/california/united-states/usca0332; Heber, CA; https://www.google.com/search?q=climate+data+heber%2C+CA&ei=jtWJYKa8LI3P0PEPrfyQYA&oq=climate+data+heber%2C+CA&gs_lcp=Cgdnd3Mtd2l6EAMyBQghEKABMgUIIRCrAjIFCCEQqwI6BwgAEEcQsANQy0xY5lJgvVVoAXACeACAAW-IAckDkgEDNC4xmAEAoAEBqgEHZ3dzLXdpesgBCMABAQ&sclient=gws-wiz&ved=0ahUKEwimu4T38qHwAhWNJzQIHS0-BAwQ4dUDCA4&uact=5

[14] Fox Comments, Comment 2.2.

[15] Project Report, pdf 76, Finding AQ-B: "The Project will not result in potential impacts during construction from PM2.5 and PM10 in a non-attainment zone."

[16] Project Report, pdf 76.

[17] Project Report, COA-AQ-1, pdf 77.

[18] Project Report, pdf 76.

[19] Project Report, pdf 57.

lb/day.[20] However, Appendix N indicates that construction PM10 emissions are 75.13 lb/day and PM2.5 emissions are 7.03 lb/day.[21] Thus, Table 3 in the Project Report reverses PM10 and PM2.5,[22] reporting PM10 as PM2.5 and PM2.5 as PM10.

A-81 cont.

The Project Report construction PM10 (and PM2.5) emissions were estimated using the CalEEMod model.[23] The CalEEMod output is included in Appendix N. The CalEEMod output indicates that PM10 emissions are 75.13 lb/day, consisting of 72.44 lb/day of fugitive dust PM10 and 2.69 lb/day of diesel exhaust PM10.[24]

However, the CalEEMod model used to estimate construction fugitive dust PM10 emissions does not address my PM10 comment because the CalEEMod model does not include all sources of fugitive dust PM10 emissions from construction. It omits the major source of fugitive PM10 emissions at construction sites—fugitive dust from windblown sources:[25]

A-82

> vehicles traveling along paved and unpaved roads. (Fugitive dust from windblown sources such as storage piles and inactive disturbed areas, as well as fugitive dust from off-road vehicle travel, are not quantified in CalEEMod, which is consistent with approaches taken in other comprehensive models.)

These fugitive dust emissions must be separately calculated using methods in AP-42[26] and added to the CalEEMod PM10 and PM2.5 emissions. Fugitive dust emissions arise from storage piles, grading, truck loading, and inactive disturbed areas. Based on calculations I have made in many other cases, these are the major sources of PM10 and PM2.5 emissions from construction projects. Fugitive dust emissions taken alone frequently exceed the PM10 and PM2.5 significance thresholds. The record in this case does not contain any estimate of fugitive dust emissions from windblown sources. As the revised PM10 and PM2.5 emissions were calculated using the CalEEMod model, the response to my comment on significant construction fugitive dust PM10 emissions fails to address my comments[27] because this model does not estimate all fugitive dust PM10 and PM2.5 emissions.

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[20] Project Report, Table 3, pdf 57.
[21] *Ibid.*
[22] *Ibid.*
[23] Project Report, #14, pdf 107, #25, pdf 112, #34, pdf 115/116
[24] Appendix N, pdf 9.
[25] CAPCOA, California Emissions Estimator Model User's Guide, Version 2020.4.0, May 2021, 2016, pdf 8; http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/01_user-39-s-guide2020-4-0.pdf?sfvrsn=6.
[26] U.S. EPA, Compilation of Air Pollutant Emission Factors, Report AP-42; https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors#Proposed.
[27] Fox Comment 2.2.

Further, the amount of fugitive dust (PM10, PM2.5) is directly related to the disturbed area. The CalEEMod analysis is based on a "lot acreage"of 2.3 acres,[28] which is a significant underestimate. No support is provided for this estimate. Further, there is no condition in the Project Report limiting construction to 2.3 acres.

The Findings of Fact in the Project Report state: "Project construction will disturb approximately 7.67 acres of the 24.09 acre Project site."[29] The Biological Technical Report indicates that construction of the project would result in approximately 7.67 acres of surface disturbance,[30] stating "Construction of the Proposed Project would result in approximately 7.67 acres () of surface disturbance, including 1.64 acres of bare ground, 1.02 acres of sparse disturbed habitat and 5.01 acres of developed land."[31] The response to ABJC Comment 9 states that "The estimated surface disturbance is approximately 7.67 acres, comprised of which 6.03 acres are already disturbed/developed surface and 1.64 acres of bare ground."[32] Finally, a July 29, 2021 Technical Memorandum asserts that "[t]he reconstruction and replacement will occur within approximately 3.24 acres…of the existing site disturbance…"[33]

A-83

The total fugitive dust PM10 emissions is equal to the sum of fugitive dust PM10 calculated by the CalEEMod model plus windblown sources of fugitive dust that are omitted from this model, calculated using AP-42 emissions factors. Assuming the Findings of Fact estimate of disturbed area of 7.67 acres, the CalEEMod model fugitive PM10 emissions are underestimated by a factor of 3 (7.67/2.3 = 3.33). Thus, fugitive PM10 emissions could be as high as 217 lb/day (72.4436[34] x 3 = 217). This fraction of fugitive PM10 alone exceeds the ICAPCD PM10 significance threshold of 150 lb/day.[35]

A-84

Total construction PM10 emissions are even higher. They are calculated as follows:

A-85

[28] Appendix N, pdf 7.
[29] Project Report, pdf 61.
[30] Project Report, Biological Technical Report, Table 2, pdf 338.
[31] Project Report, pdf 322.
[32] Project Report, pdf 106, Response 9.
[33] Technical Memorandum from Corinne Lytle Bonine, Chambers Group to Jim Minnick, County of Imperial, Re: Heber 1 Repower Project – Summary Project Information, July 29, 2021 (7/29/2021 Memo).
[34] Appendix N, pdf 8, Section 2.1: Overall Construction (Maximum Daily Emission), Unmitigated Construction, Fugitive PM10 = 72.4436 lb/day.
[35] Appendix E, Table 4.

CalEEMod fugitive PM10 adjusted for the correct area (**217 lb/day**) + AP-42 windblown fugitive dust excluded from CalEEMod estimated in my Comment 2.2 (**319 lb/day**) + CalEEMod construction equipment exhaust (**2.69 lb/day**)[36] = **538.7 lb/day.** A-85 cont.

In sum, my analysis of construction emissions in my Comment I stands unrebutted in the record. This comment demonstrates that the Project would result in significant construction PM10 air quality impacts, requiring mitigation. Even though the Responses do not recognize this significant impact, the Project Report includes COA-AQ-1, which includes "Voluntary Environmental Protection Features (VEPFs)," some of which are designed to mitigate fugitive dust PM10 emissions including:[37] A-86

- Water shall be applied to the development site during site preparation and construction to control fugitive dust.
- Earth moving work shall be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads/areas will be restricted to 10 mph to control fugitive dust.
- During windy conditions, barriers will be constructed and/or additional watering conducted to minimize wind-blown fugitive dust.

These are not "voluntary" measures, but rather mandatory measures required to reduce the significant construction PM10 impact that I identified in my comments, supplemented by the analysis in this comment. Further, these four conditions are not sufficient to fully mitigate the highly significant construction PM10 impact that I documented in my comments.

The fugitive dust PM10 emissions are a factor of 3.6 higher than the ICAPCD significance threshold of 150 lb/day, requiring that all ICAPCD standard fugitive dust PM10 control measures that apply to a project, as well as discretionary mitigation measures for fugitive PM10 control, must be implemented.[38] These include:[39] A-87

[36] Appendix N, pdf 8, 9.
[37] Project Report, COA-AQ-1, pdf 2, 99.
[38] Imperial County Air Pollution Control District (ICAPCD), Air Quality Handbook, Guidelines for the Implementation of the California Environmental Quality Act of 1970, as Amended (ICAPCD Air Quality Handbook), December 12, 2017,pp. 23-24; https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf.
[39] *Ibid*. Some of these measures may not apply to the Project, e.g., item (g).

Standard Mitigation Measures for Fugitive PM_{10} Control

a. 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% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.

b. All on site and off site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

c. All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

d. The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.

e. 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.

f. Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.

g. 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% opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

Discretionary Mitigation Measures for Fugitive PM_{10} Control

a. Water exposed soil with adequate frequency for continued moist soil.

b. Replace ground cover in disturbed areas as quickly as possible

c. Automatic sprinkler system installed on all soil piles

d. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

e. Develop a trip reduction plan to achieve a 1.5 AVR for construction employees

f. Implement a shuttle service to and from retail services and food establishments during lunch hours

A-87 cont.

These measures are required in addition to compliance with ICAPCD Regulation VIII.[40] Proposed COA-AQ-1 includes only discretionary measures (a) and (d), which are not adequate to mitigate the significant construction PM10 air quality impact. Additional mitigation, identified in my Comment 2.2, is required to mitigate this significant air quality impact, requiring review under CEQA.

I.A.2 Construction NOx Emissions Are Significant and Unmitigated

The IS/MND for Heber 1 did not estimate construction emissions and did not include any of the information required to estimate them, including the construction fleet, engine horsepower, engine tier, hours of operation, and construction schedule. Thus, I prepared a rough estimate that demonstrated NOx emissions would be significant unless high tier construction equipment were used.[41]

A-88

[40] ICAPCD Air Quality Handbook, pdf 24.

[41] Fox Comments, Comment 2.

Rather than responding to my comments on significant construction NOx emissions, the Project Report includes the following Voluntary Environmental Protection Feature (VEPF):[42]

> Project construction equipment will utilize Tier 3 engines when commercially available. If a Tier 3 engine is not certified for a particular piece of equipment or not commercially available, then the equipment shall be either equipped with a Tier 2 engine or equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels.

A-88 cont.

The Project Report uses the CalEEMod model to estimate construction NOx emissions. The CalEEMod output provided in Appendix N failed to disclose the tier of the construction equipment assumed in the analysis. In response to a request on November 12, 2021,[43] an email from the County on the day these comments were due asserts that the CalEEMod analysis assumed Tier 2 engines.[44] The CalEEMod analysis in Appendix N should have disclosed that it used Tier 2 or equivalent control equipment, which is the key input assumption used in this analysis. The failure to disclose the engine "tier" in Appendix N prevented meaningful review.

The CalEEMod run in Appendix N underestimates NOx emissions for several reasons.

First, it assumes a lot acreage of 2.3 acres.[45] Other information throughout the Project Report reports the disturbed area as 7.67 acres. Comment I.A.1. As construction emissions are proportional to disturbed area, the CalEEMod analysis underestimated construction NOx emissions by a factor of 3 (7.67/2.3 = 3.33).

A-89

Second, the CalEEMod input indicates zero (0) acres of grading.[46] However, the list of construction equipment includes a 187 hp grader.[47] Thus, acres of grading is clearly not zero. Further, the area that will be disturbed during construction is reported in the Project Report as 7.67 acres, not 2.3 acres.

[42] Project Report, COA-AQ-1, pdf 28.
[43] Email from Tara Messing, Adams, Broadwell, Joseph & Cardozo, to David Black, County of Imperial (November 12, 2021).
[44] Email from David Black, Imperial County, to Tara Messing, Re: Heber 1 Air Quality Modeling Equipent Tier Assumption, November 16, 2021 (8:43 AM) attaching an email from Corinne Lytle-Bonine, Chambers Group, Inc. to David Black, November 15, 2021 (3:49 PM).
[45] Appendix N, pdf 7.
[46] Appendix N, pdf 9.
[47] Appendix N, pdf 10.

Finally, the CalEEMod run reports "unmitigated" and "mitigated" summer and winter "on-site" plus "off-site" NOx emission of 60.4 lb/day.[48] Mitigation identified in the CalEEMod ouput includes watering exposed areas twice per day to comply with ICAPCD Rule 801 and an unpaved road speed of 5 mph.[49] However, the Project Report, COA-AQ-1 only limits travel on unpaved roads to 10 mph.[50] Thus, the CalEEMod run underestimates fugitive PM10 and PM2.5 from travel on unpaved roads.

A-89 cont.

Appendix N incorrectly summarizes construction NOx emissions as 57.97 lb/day.[51] This is just on-site emissions. Off-site emissions from hauling, vendor, and worker trips are omitted and amount to an additional 2.4361 lb/day.[52]

A-90

The revised NOx emissions, adjusted for a disturbed area of 7.67 acres, are 201 lb/day,[53] which exceeds the significance threshold of 100 lb/day. Thus, construction NOx emissions are significant, requiring mitigation. These emissions could be mitigated by requiring the use of all Tier 4 construction equipment or by requiring other mitigation measures that I identified in my Comment 2.3.

I.A.3 Construction Has Started Without Permits And CEQA Review

I commented that construction had started at both Heber 1 and Heber 2 based on documents filed by the Applicant.[54] The Project Report asserts my comment is based on a "strained reading of certain SEC filing" that are "both inconsistent with the facts on the ground and with the plain meaning of the language in those filings and as properly understood in their context."[55]

A-91

However, as I reiterate below, the plain reading of my cited sources indicate that construction has started. The County failed to provide any evidence to demonstrate otherwise. Depending upon the nature of these on-going construction activities, the CEQA baseline may have been altered, affecting the construction impact analysis in the Project Report. Under CEQA, environmental review must be completed before the start of construction. I did not find any Applicant documents that did not assert that construction has started at both Heber 1 and Heber 2.

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[48] Appendix N, Section 2.1 Overall Construction (Maximum Daily Emissions), pdf 8-12: Total mitigated and unmitigated NOx = 57.9665 + 2.4361= **60.4 lb/day**.
[49] Appendix N, Section 1.3, pdf 7.
[50] Project Report, COA-AQ-1, pdf 28.
[51] Appendix N, Table 4, pdf 4.
[52] Appendix N, pdf 11.
[53] Revised NOx emissions = (60.4)(7.67/2.3) = **201.4 lb/day.**
[54] Fox Comment 2.5.
[55] Project Report, Response 65, pdf 130.

Documents filed by the Applicant with the SEC indicate that Project construction started in 2019 and is ongoing:[56]

> During fiscal year 2019, in the Electricity segment, we focused on the commencement of operations at Tungsten solar in Nevada and we began with construction of Heber Complex enhancement as well as with enhancement work in some of our operating power plants. During fiscal year 2018, we focused on

In this SEC filing, in a subsection labeled "Projects Released for Construction," the summary table describes the work at the Heber Complex as: "Permitting, Engineering and procurement ongoing. Manufacturing and **construction commenced**."[57] The Heber Complex consists of Heber 1 and Heber 2, viz.[58]

Project Name	Expected Size (MW)	Technology	Customer	Expected COD	Current Condition
Heber Complex	11	Geothermal air-cooled binary system	SCE and SCPPA	Early 2021	Permitting, Engineering and procurement ongoing. Manufacturing and construction commenced.

A-91 cont.

The 2019 SEC 10-Q filing similarly states "We are currently in the process of repowering the Heber 1 and Heber 2 power plants. We are planning to replace steam turbine and old OE units with new advanced technology equipment that will add a net capacity of 11 MW. Following these enhancements, we expect the capacity of the complex to reach 92 MW. Permitting, engineering and procurement are ongoing as well as manufacturing and **site construction**. We expect commercial operation in the second half of 2021."[59] The 92 MW is consistent with the original design capacity of the Heber Complex.

The Ormat 2019 annual report also reports that construction has commenced: "During fiscal year 2019, in the Electricity segment, we focused on the commencement of operations at Tungsten solar in Nevada and we began with construction of Heber Complex enhancement as well as with enhancement work in some of our operating

[56] SEC, Form 10-K, Ormat Technologies, Inc., December 31, 2019, pdf 24. The Heber Complex consists of Heber 1 and Heber 2; https://sec.report/Document/0001437749-20-004072/.
[57] SEC, Form 10-K, Ormat Technologies, Inc., December 31, 2019, pdf 30 (emphasis added); see also SEC, Form 10-K, Ormat Technologies, Inc., December 31, 2020, pdf 30; https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/17c5fd2c-ee2c-431e-a993-fc6cd4626a05.pdf.
[58] *Ibid*.
[59] U.S. Securities and Exchange Commission, Form 10-Q, Ormat Technologies, Inc., March 31, 2020, p. 41, pdf 36-37 (emphasis added); http://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/bd1a8403-baa2-4834-9e2f-29ea970e033c.pdf.

power plants."[60] Elsewhere, the annual report states: "Permitting, Engineering and procurement ongoing. Manufacturing and construction commenced."[61]

Similarly, the Ormat 2020 annual report states for the "Heber Complex": "We are currently in the process of enhancing the Heber 1 and Heber 2 power plants as discussed below."[62] Elsewhere, current conditions are stated as "permitting, engineering and procurement ongoing. Manufacturing and construction commenced."[63] The 2020 Form 10-Q[64] similarly states:

Heber Complex (California). We are currently in the process of repowering the Heber 1 and Heber 2 power plants. We are planning to replace steam turbine and old OEC units with new advanced technology equipment that will add a net capacity of 11 MW. Following these enhancements, we expect the capacity of the complex to reach 92 MW. Permitting, engineering and procurement as well as manufacturing and construction are ongoing. We expect commercial operation at the end of 2021.

A-91 cont.

The "plain meaning" of the language in these sections indicate that construction has started. If the Applicant's statements in its annual reports and SEC filings are correct, then it appears the Applicant has begun prematurely constructing improvements at both Heber 1 and Heber 2 without complying with CEQA and without obtaining necessary land use permits.

II. RISK OF UPSET

The risk of upset analysis in the IS/MND is based on a vapor cloud explosion using EPA's generic input parameters for conducting a hazard assessment.[65] I commented that this was not a reasonable worst-case release scenario for the Project and provided substantial evidence that a boiling liquid expanding vapor explosion (BLEVE) should have been evaluated.[66]

A-92

My risk of upset Comment 7.2 is not responded to. Instead, the responses only address ABJC's summary of my comment in responses 41 to 43.[67] These responses assert that my comment creates a "BLEVE 'straw man'" in an attempt to manufacture the appearance of a regulatory gap where none exists."[68] Further, they assert that the Project's hazard analysis (HA) "…complies with the regulatory standard for assessing a

[60] ORMAT, 2019 Annual Report, p. 31, pdf 39.
[61] ORMAT, 2019 Annual Report, p. 38, pdf 46.
[62] ORMAT, 2020 Annual Report, p. 40, pdf 47; https://s1.q4cdn.com/231465352/files/doc_financials/2020/ar/Ormat-AR-for-web-Final.pdf.
[63] Ormat, 2020 Annual Report, p. 41, pdf 48.
[64] U.S. Securities and Exchange Commission, Form 10-Q, for quarter ended September 30, 2020; https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/49c05273-a105-4328-8bd9-5f1394153474.pdf.
[65] Fox Comment 7.2.1.
[66] Fox Comment 7.2.1.1.
[67] Project Report, Responses 41-43, pdf 120-121.
[68] Project Report, Response 41, pdf 119-120.

catastrophic event…" citing 40 C.F.R §§68.20-68.42. These assertions are not supported by any analysis, do not address my hazard comment, are inconsistent with the cited CFR section, and are incorrect.

A BLEVE is feasible at the Project site and would result in significant on-site and off-site impacts if it were evaluated. As a BLEVE was not evaluated, the record is inadequate to support the absence of significant risk of upset impacts. Further, the responses do not address any of the substantial evidence in my Comment 7.2.1, which stands unrebutted in the record. Based on my experience and the evidence presented in my Comment 7.2, a BLEVE would result in a significant impact, requiring CEQA review.

A-92 cont.

I agree that 40 CFR 68.25 (f), "worst-case release scenario analysis -- flammable liquids" specifies analysis of a "vapor cloud explosion." The IS/MND analyzed a vapor cloud explosion, thus complying with 40 CFR 68.25(f). However, compliance with federal regulations is not per se evidence of compliance with CEQA.

This section of the CFR only applies to "regulated flammable substances that are normally liquids at ambient temperature." A BLEVE is an explosion caused by the rupture of a vessel containing a liquid that has reached a temperature above its boiling point. The normal boiling point of isopentane is 82°F. Ambient temperatures at the Project site routinely exceed isopentane's boiling point from March through October.[69] Thus, the conditions for a BLEVE can be reasonably expected to occur in the Project's desert location. Thus, a BLEVE should have been evaluated but was not.

A-93

As I explained in my Comment 7.2.1.1, a BLEVE is the worst-case release scenario for very flammable materials such as isopentane because it combines both the mechanical effects of an explosion and the thermal effects of a fire. Though EPA's guidance states that BLEVEs "are generally considered unlikely events," this does not excuse the Applicant from evaluating the impacts of a BLEVE. A BLEVE is feasible at the Project site due to the boiling point of isopentane and local ambient temperatures. A BLEVE is one of the most severe accidents that can happen and typically results in

A-94

[69] El Centro, California: https://www.usclimatedata.com/climate/el-centro/california/united-states/usca0332; Heber, CA: https://www.google.com/search?q=climate+data+heber%2C+CA&ei=jtWJYKa8LI3P0PEPrfyQYA&oq=climate+data+heber%2C+CA&gs_lcp=Cgdnd3Mtd2l6EAMyBQghEKABMgUIIRCrAjIFCCEQqwI6BwgAEEcQsANQy0xY5lJgvVVoAXACeACAAW-IAckDkgEDNC4xmAEAoAEBqgEHZ3dzLXdpesgBCMABAQ&sclient=gws-wiz&ved=0ahUKEwimu4T38qHwAhWNJzQIHS0-BAwQ4dUDCA4&uact=5.

mortalities.[70] On-site workers would be the most exposed population and would be within the zone of significant impact. EPA risk assessment guidance states as follows:[71]

> A boiling liquid, expanding vapor explosion (BLEVE), leading to a fireball that may produce intense heat, may occur if a vessel containing flammable material ruptures explosively as a result of exposure to fire. Heat radiation from the fireball is the primary hazard; vessel fragments and overpressure from the explosion also can result. BLEVEs are generally considered unlikely events; however, if you think a BLEVE is possible at your site, this guidance provides a method to estimate the distance at which radiant heat effects might lead to second degree burns. (See Section 10.3.) You also may want to consider models or

A-94 cont.

I used the method in this EPA guidance to estimate the distance at which radiant heat from a BLEVE would lead to second degree burns,[72] a significant health impact. My analysis indicates that exposed parties within 0.3 miles (1,584 ft)[73] of an isopentane tank undergoing a BLEVE would experience second degree burns, a significant health impact. The Project Report fails to identify the nearest off-site sensitive receptor, thus failing as an informational document under CEQA. However, numerous on-site workers would be within 1,584 feet of the isopentane tanks and would experience significant adverse health impact during a BLEVE.

III. CUMULATIVE IMPACTS

A-95

A cumulative air quality impact analysis identifies other nearby projects, sums their emissions, and compares them to a significance threshold. The Project Report and supporting documents do not contain any cumulative air quality impact analysis. Rather, cumulative impacts are dismissed by arguing no projects occur in the "Heber 1 Area of Potential Effect." The response to ABJC Comment #13, for example, asserts that "[t]here are no other projects occurring or proposed in the Heber 1 Area of Potential Effect."[74] This is wrong.

The "Area of Potential Effect" is described in the Project Report as follows: "The geographic scope of the cumulative area of analysis considers whether cumulative

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[70] See summary of BLEVE accidents in Fox Comment 7.2.1, Table 3. See also: Center for Chemical Process Safety, Guidelines for Vapor Cloud Explosion, Pressure Vessel Burst, BLEVE, and Flash Fire Hazards, Second Edition, John Wiley & Sons, Inc., 2010.

[71] U.S. EPA, Risk Management Program Guidance for Offsite Consequence Analysis, Report EPA 550-B-99-009, April 1999, p. 6-2, pdf 74; https://www.epa.gov/sites/default/files/2013-11/documents/oca-chps.pdf.

[72] *Id.*, Reference Table 30, p. 10-24, pdf 122.

[73] A single isopentane tank can hold up to 9,000 gallons of isopentane (Project Report, pdf 344). The density of isopentane is 616 kg/m^3. Thus, the amount of isopentane that would be released if a BLEVE occurred at a single tank full of isopentane = [(616 kg/m^3) (0.0083 lb/gal)/(kg/m^3)](9,000 gal) = **46,015 lb of isopentane**. EPA 1999, Table 30, p. 10-24, pdf 11 indicates for 50,000 lb of isopentane in a fireball, the "distance in miles at which exposure for the duration of fireball may cause second degree burns" is 0.3 miles.

[74] Project Report, #13, pdf 107.

effects for this Project would be limited to off-site Project impacts that coincide with effects from another past, present, or reasonably foreseeable future actions. This area of overlap is referred to as the "Area of Potential Effect" and is specific to each resource areas as defined by the analysis in the IS."[75]

The Project Report's "area of potential effect" for air quality impacts should be the air basin where the project is located.[76] Alternatively, one could argue that it is the area within an air basin where pollutant isopleths from cumulative projects overlap. This requires ambient air quality modeling, which is missing from the record. However, based on my experience, the proximity of Heber 1 and Heber 2 (1 mile apart) are within the area of potential effect.

A-95 cont.

Nevertheless, the Project Report asserts that "…no projects occur in relative close proximity to the Heber 1 complex or Heber 1 Area of Potential Effect (including the Heber 2 project located approximately 1 mile away.) Therefore, no significant cumulative effects would occur as a result of the Project."[77] No evidence is provided to support this assertion. Based on the decision in Kings County Farm Bureau v. City of Hanford,[78] all similar projects within the same air basin are considered to be cumulative projects. Thus, as the two projects are 1 mile apart in the same air basin, this is an on the record admission that Heber 1 and Heber 2 are both within the "Area of Potential Effect." Thus, Heber 2, at the very least, is a project that must be analyzed for the Project's cumulative impacts.

III.A Cumulative Construction Air Quality Impacts Are Significant

In my previous comments, I analyzed cumulative construction air quality impacts and demonstrated that they are significant.[79] The Project Report does not analyze cumulative construction air quality impacts.[80] Rather, it dismisses them by arguing as follows:[81]

A-96

[75] Project Report, pdf 89.

[76] See, *e.g.*, Kings County Farm Bureau v. City of Hanford (1990), Cal. App. 3d 692. (An EIR was prepared for a proposed coal-fired cogeneration power plant. The court decision held that it was reasonable and practical to include projects of similar type within the same air basin.). See also Gray v. Madera (2008) 167 Cal. App. 4th 1099 (The EIR should have considered whether noise, when added to existing levels, would be significant, rather than assessing the additional amount alone.)

[77] Project Report, pdf 42-43.

[78] Kings County Farm Bureau v. City of Hanford (1990), Cal. App. 3d 692.

[79] Fox Comments, Comment 4, p. 28.

[80] Project Report, pdf 185, 205.

[81] Project Report, pdf 185, item b). See also pdf 42-43.

> Addtionally, emissions from construction equipment would be temporary and not exceed any air quality thresholds or significantly contribute to an existing regional nonattainment condition. Air quality measures would be implemented during construction of the Proposed Project to minimize the potential for fugitive dust and particulate matter releases. Through the application of these measures, the construction of the Project would limit visible dust emissions and particulate matter emissions to be in compliance with Imperial County's approach to minimizing these construction-related emissions. Ozone, which stems from the use of fuel-combusting equipment, would also be limited to the construction phase of the Project; vehicles and equipment would be turned off when not in use and not left idling to minimize unnecessary emissions.

This line of argument is inconsistent with the definition of cumulative impacts under CEQA, which defines a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."[82] The Project Report does not include a cumulative construction air quality analysis and does not rebut my cumulative construction impact analysis, which concluded cumulative construction emissions are significant. A-96 cont.

The response to ABJC Comment #13 asserts that "[t]here are no other projects occurring or proposed in the Heber 1 Area of Potential Effect."[83] Heber 2, which is undergoing upgrades over the same time frame as Heber 1, is located 1 mile from Heber 1.[84] This is clearly a cumulative project, with the potential for overlapping construction and operational impacts.

According to reports filed by the Applicant with regulatory agencies, construction at both facilities is currently under way.[85] There is nothing in the Project Report to prevent continuing construction at these two sites from occurring simultaneously. Construction at both of these facilities would emit the same criteria pollutants into the same air basin. As the area where these projects is located is nonattainment for ozone, PM10, and PM2.5, simultaneous construction at these two facilities would emit PM2.5, PM10, VOC, and NOx, cumulatively contributing to existing PM2.5, PM10, and ozone nonattainment status of the basin. This is a significant cumulative ambient air quality impact that is not disclosed or mitigated in the Project Report. A-97

As discussed supra, Heber 1 and Heber 2 are cumulative projects located within 1 mile of each other. According to regulatory reports filed by the Applicant, construction at both facilities is currently under way.[86] Comment I.A.3. There is nothing to prevent construction at these two sites from continuing to occur simultaneously. Simultaneous construction at these two facilities would emit PM2.5, PM10, VOC, and NOx. VOC and NOx are ozone precursors.

[82] CEQA Section 15130[a][1].
[83] Project Report, #13, pdf 107.
[84] Project Report, pdf 44.
[85] Fox Comments, Comment 2.5.
[86] Fox Comments, Comment 2.5.

As the area where these projects is located is nonattainment for ozone, PM10 and PM2.5, simultaneous construction of Heber 1 and Heber 2 will cumulatively contribute to the existing ozone, PM2.5, and PM10 nonattainment status of the basin, resulting in significant cumulative ambient air quality impacts that are not disclosed in the Project Report. The sum of the construction emissions from these two Projects as reported in their respective Project Reports is summarized in Table 1 and compared to significance thresholds.

Table 1. Cumulative Construction Emissions

	EMISSIONS (lb/day)			
	Heber 1 (a)	Heber 2 (b)	Total	Significance Threshold (lb/day)
NOx	60.6[87]	65.6[88]	115.94	100
ROG	7.03	7.04	14.07	75
PM10	75.13	172[89]	247	150
PM2.5	9.83	9.82	19.65	-

(a) Appendix N: Air Emissions Memorandum, Table 4.

(b) Heber 2 Project Report, pdf 3073-3074, Section 1.0 Construction Emissions, Table 1, which reports emissions in lb/hr for a 12/hr day.

A-97 cont.

This summary shows that cumulative NOx and PM10 construction emissions from Heber 1 and Heber 2 exceed the construction significance thresholds. Thus, construction NOx and PM10 emissions are cumulatively significant, requiring mitigation and hence CEQA review. The responses do not address this issue.

I.A.1 Worker Health Impacts from the Project's Significant Cumulative Air Quality Impacts Are Significant and Unmitigated.

A-98

Imperial County is already in violation of ambient air quality standards for PM2.5, PM10 (24-hour), and ozone (federal 8-hour).[90] Emissions from constructing both Heber 1 and 2 at the same time, as is already in progress, will further deteriorate

[87] The value for NOx, reported in Appendix N, Table 4, is inconsistent with the attached CalEEMod output files on which it is based. Table 4 reports NOx emissions of 57.97 lb/day. However, the CalEEMod outputs in Appendix N indicate that construction NOx emissions in the summer are 2.4361 + 57.9665 = **60.4 lb/day** and in the winter are 2.6758+57.9665 = **60.6 lb/day**.

[88] Heber 2 Project Report, pdf 3074, Table 1. NOx emissions = 5.47 lb/hr x 12 hr/day = **65.6 lb/day**.

[89] The PM10 emissions for Heber 2 are a substantial underestimate as the reported value is only for fuel combustion. It excludes all fugitive PM10 emissions. My comments in that case estimated fugitive PM10 emissions of 172 lb/day. See: Phyllis Fox, Comments on the Initial Study for the Heber 2 Geothermal Repower Project, August 31, 202, p. 23.

[90] U.S. EPA, California Nonattainment/Maintenance Status for Each County by Year for all Criteria Pollutants, May 31, 2020; https://www3.epa.gov/airquality/greenbook/anayo_ca.html.

existing ambient air quality. Regardless, construction overlap at Heber 1 and Heber 2 would cause a significant cumulative air quality impact as emissions linger in the atmosphere, adding to existing ambient concentrations of ozone (NOx) and PM10.

A-98 cont.

This is a very serious issue. NOx is an ozone precursor. Imperial County fails the American Lung Association's (ALA's) State of the Air air quality ranking for both ozone and 24-hour PM10.[91] The ALA concludes that '**If you live in Imperial County the air you breathe may put your health at risk**."[92] In the past decade, ozone levels, PM2.5, and PM10 have consistently violated ambient air quality standards set to protect public health in Imperial County. Figures 1 and 2. Any addition to the existing ambient concentrations of NOx and PM10 will cumulatively contribute to these existing violations.

A-99

Figure 1. Annual Weighted Average Number of High Ozone Days in Imperial County.[93]

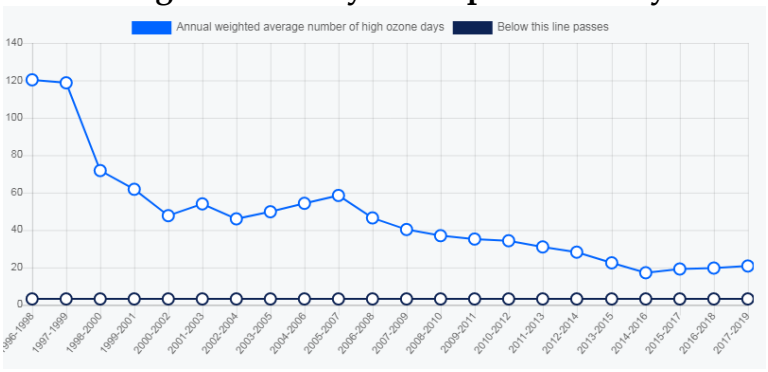
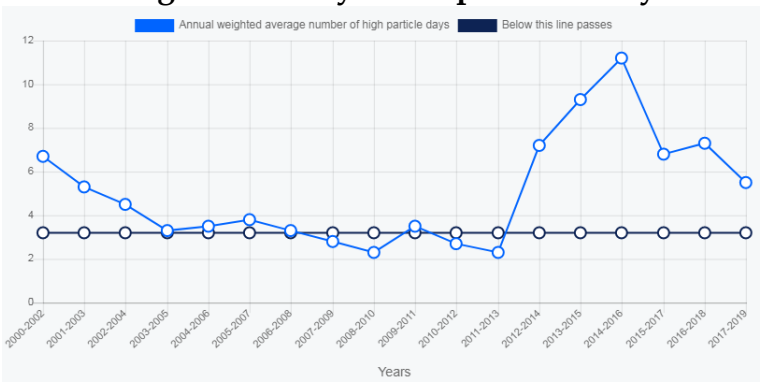


Figure 2. Annual Weighted Average Number of High PM10 Days in Imperial County.[94]



[91] American Lung Association, California: Imperial County; https://www.lung.org/research/sota/city-rankings/states/california/imperial.

[92] *Ibid.* (emphasis added).

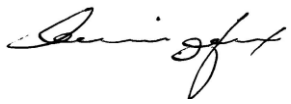
[93] *Ibid.*

[94] *Ibid.*

The response to ABJC Comment 14 asserts, based on Appendix N, that "…construction emissions for criteria pollutants and GHG emissions are significantly less than the regulatory thresholds and would not expose sensitive receptors to substantial pollutants."[95] This is not correct.

My Comment 5.1.1, which is not responded to in the Project Report, provides substantial evidence to demonstrate significant impacts on public health from the Project's emissions during construction and operation, especially to construction workers and employees at the site. These include 30 employees routinely present at the site plus 10 to 15 more during construction. Other information indicates 54 full-time equivalent employees. Further, 50 to 60 workers would be required to construct OEC 14.[96] Construction workers and employees at Heber 1 and Heber 2 are sensitive receptors that would be exposed to significant cumulative increases in ozone due to significant cumulative increase in NOx, an ozone precursor, and significant cumulative increases in PM10.[97] Thus, worker health impacts are significant, requiring mitigation and CEQA review. A-100

Sincerely,



Phyllis Fox, Ph.D., PE

[95] Project Report, Response to Comments, Letter 1, Comment 14, pdf 107.
[96] Fox Comments, Comments 5.1.1.
[97] The Right-to-Know Network, Heber Geothermal Company (Heber 1); https://rtk.rjifuture.org/rmp/facility/100000072253.

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Dr. Fox has over 40 years of experience in the field of environmental engineering, including air pollution control (BACT, BART, MACT, LAER, RACT), greenhouse gas emissions and control, cost effectiveness analyses, water quality and water supply investigations, hydrology, hazardous waste investigations, environmental permitting, nuisance investigations (odor, noise), environmental impact reports, CEQA/NEPA documentation, risk assessments, and litigation support.

EDUCATION

Ph.D. Environmental/Civil Engineering, University of California, Berkeley, 1980.
M.S. Environmental/Civil Engineering, University of California, Berkeley, 1975.
B.S. Physics (with high honors), University of Florida, Gainesville, 1971.

REGISTRATION

Registered Professional Engineer: Arizona (2001-2014: #36701; retired), California (2002-present; CH 6058), Florida (2001-2016; #57886; retired), Georgia (2002-2014; #PE027643; retired), Washington (2002-2014; #38692; retired), Wisconsin (2005-2014; #37595-006; retired)
Board Certified Environmental Engineer, American Academy of Environmental Engineers, Certified in Air Pollution Control (DEE #01-20014), 2002-2014; retired)
Qualified Environmental Professional (QEP), Institute of Professional Environmental Practice (QEP #02-010007, 2001-2015: retired).

PROFESSIONAL HISTORY

Environmental Management, Principal, 1981-present
Lawrence Berkeley National Laboratory, Principal Investigator, 1977-1981
University of California, Berkeley, Program Manager, 1976-1977
Bechtel, Inc., Engineer, 1971-1976, 1964-1966

PROFESSIONAL AFFILIATIONS

American Chemical Society (1981-2010)
Phi Beta Kappa (1970-present)
Sigma Pi Sigma (1970-present)
Who's Who Environmental Registry, PH Publishing, Fort Collins, CO, 1992.
Who's Who in the World, Marquis Who's Who, Inc., Chicago, IL, 11th Ed., p. 371, 1993-present.

Who's Who of American Women, Marquis Who's Who, Inc., Chicago, IL, 13th Ed., p. 264, 1984-present.
Who's Who in Science and Engineering, Marquis Who's Who, Inc., New Providence, NJ, 5th Ed., p. 414, 1999-present.
Who's Who in America, Marquis Who's Who, Inc., 59th Ed., 2005.
Guide to Specialists on Toxic Substances, World Environment Center, New York, NY, p. 80, 1980.
National Research Council Committee on Irrigation-Induced Water Quality Problems (Selenium), Subcommittee on Quality Control/Quality Assurance (1985-1990).
National Research Council Committee on Surface Mining and Reclamation, Subcommittee on Oil Shale (1978-80)

REPRESENTATIVE EXPERIENCE

Performed environmental and engineering investigations, as outlined below, for a wide range of industrial and commercial facilities including: petroleum refineries and upgrades thereto; reformulated fuels projects; refinery upgrades to process heavy sour crudes, including tar sands and light sweet crudes from the Eagle Ford and Bakken Formations; petroleum, gasoline and ethanol distribution terminals; coal, coke, and ore/mineral export terminals; LNG export, import, and storage terminals; crude-by-rail projects; shale oil plants; crude oil/condensate marine and rail terminals; coal gasification and liquefaction plants; oil and gas production, including conventional, thermally enhanced, hydraulic fracking, and acid stimulation techniques; underground storage tanks; pipelines; compressor stations; gasoline stations; landfills; railyards; hazardous waste treatment facilities; nuclear, hydroelectric, geothermal, wood, biomass, waste, tire-derived fuel, gas, oil, coke and coal-fired power plants; wind farms; solar energy facilities; battery storage facilities; transmission lines; airports; hydrogen plants; petroleum coke calcining plants; coke plants; activated carbon manufacturing facilities; asphalt plants; cement plants; incinerators; flares; manufacturing facilities (e.g., semiconductors, electronic assembly, aerospace components, printed circuit boards, amusement park rides); lanthanide processing plants; ammonia plants; nitric acid plants; urea plants; food processing plants; wineries; almond hulling facilities; composting facilities; grain processing facilities; grain elevators; ethanol production facilities; soy bean oil extraction plants; biodiesel plants; paint formulation plants; wastewater treatment plants; marine terminals and ports; gas processing plants; steel mills; iron nugget production facilities; pig iron plant, based on blast furnace technology; direct reduced iron plant; acid regeneration facilities; railcar refinishing facility; battery manufacturing plants; pesticide manufacturing and repackaging facilities; pulp and paper mills; olefin plants; methanol plants; ethylene crackers; alumina plants, desalination plants; battery storage facilities; data centers; covered lagoon anaerobic digesters with biogas generators and upgrading equipment to produce renewable natural gas and electricity; selective catalytic reduction (SCR) systems; selective noncatalytic reduction (SNCR) systems; halogen acid furnaces; contaminated property

redevelopment projects (e.g., Mission Bay, Southern Pacific Railyards, Moscone Center expansion, San Diego Padres Ballpark); residential developments; commercial office parks, campuses, and shopping centers; server farms; transportation plans; and a wide range of mines including sand and gravel, hard rock, limestone, nacholite, coal, molybdenum, gold, zinc, and oil shale.

EXPERT WITNESS/LITIGATION SUPPORT

- For plaintiffs-intervenors (Sierra Club), in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications at Rush Island Units 1 and 2 and Labadie Energy Center, assist counsel in evaluating best available control technology (BACT) to reduce SO2 emissions, including wet and dry scrubbing, sorbent injection, and offsets. Case settled. *U.S. and Sierra Club vs. Ameren Missouri*, Case No. 4-11 CV 77 RWS, U.S. District Court, Eastern District of Missouri, Eastern Division, September 30, 2019.
- For the California Attorney General, assist in determining compliance with probation terms in the matter of People v. Chevron USA.
- For plaintiffs, assist in developing Petitioners' proof brief for National Parks Conservation Association et al v. U.S. EPA, Petition for Review of Final Administrative Action of the U.S. EPA, In the U.S. Court of Appeals for the Third Circuit, Docket No. 14-3147.
- For plaintiffs, expert witness in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1997-2000) at the Cemex cement plant in Lyons, Colorado. Reviewed produced documents, prepared expert and rebuttal reports on PSD applicability based on NOx emission calculations for a collection of changes considered both individually and collectively. Deposed August 2011. *United States v. Cemex, Inc.*, In U.S. District Court for the District of Colorado (Civil Action No. 09-cv-00019-MSK-MEH). Case settled June 13, 2013.
- For plaintiffs, in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1988 – 2000) at James De Young Units 3, 4, and 5. Reviewed produced documents, analyzed CEMS and EIA data, and prepared netting and BACT analyses for NOx, SO2, and PM10 (PSD case). Expert report February 24, 2010 and affidavit February 20, 2010. *Sierra Club v. City of Holland, et al.*, U.S. District Court, Western District of Michigan (Civil Action 1:08-cv-1183). Case settled. Consent Decree 1/19/14.
- For plaintiffs, in civil action alleging failure to obtain MACT permit, expert on potential to emit hydrogen chloride (HCl) from a new coal-fired boiler. Reviewed record, estimated HCl emissions, wrote expert report June 2010 and March 2013 (Cost to Install a Scrubber at the Lamar Repowering Project Pursuant to Case-by-Case MACT), deposed August 2010 and

March 2013. *Wildearth Guardian et al. v. Lamar Utilities Board,* Civil Action No. 09-cv-02974, U.S. District Court, District of Colorado. Case settled August 2013.

- For plaintiffs, expert witness on permitting, emission calculations, and wastewater treatment for coal-to-gasoline plant. Reviewed produced documents. Assisted in preparation of comments on draft minor source permit. Wrote two affidavits on key issues in case. Presented direct and rebuttal testimony 10/27 - 10/28/10 on permit enforceability and failure to properly calculate potential to emit, including underestimate of flaring emissions and omission of VOC and CO emissions from wastewater treatment, cooling tower, tank roof landings, and malfunctions. *Sierra Club, Ohio Valley Environmental Coalition, Coal River Mountain Watch, West Virginia Highlands Conservancy v. John Benedict, Director, Division of Air Quality, West Virginia Department of Environmental Protection and TransGas Development System, LLC,* Appeal No. 10-01-AQB. Virginia Air Quality Board remanded the permit on March 28, 2011 ordering reconsideration of potential to emit calculations, including: (1) support for assumed flare efficiency; (2) inclusion of startup, shutdown and malfunction emissions; and (3) inclusion of wastewater treatment emissions in potential to emit calculations.
- For plaintiffs, expert on BACT emission limits for gas-fired combined cycle power plant. Prepared declaration in support of CBE's Opposition to the United States' Motion for Entry of Proposed Amended Consent Decree. Assisted in settlement discussions. *U.S. EPA, Plaintiff, Communities for a Better Environment, Intervenor Plaintiff, v. Pacific Gas & Electric Company, et al.*, U.S. District Court, Northern District of California, San Francisco Division, Case No. C-09-4503 SI.
- Technical expert in confidential settlement discussions with large coal-fired utility on BACT control technology and emission limits for NOx, SO2, PM, PM2.5, and CO for new natural gas fired combined cycle and simple cycle turbines with oil backup. (July 2010). Case settled.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1998-99) at Gallagher Units 1 and 3. Reviewed produced documents, prepared expert and rebuttal reports on historic and current-day BACT for SO2, control costs, and excess emissions of SO2. Deposed 11/18/09. *United States et al. v. Cinergy, et al.*, In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Settled 12/22/09.
- For plaintiffs, expert witness on MACT, BACT for NOx, and enforceability in an administrative appeal of draft state air permit issued for four 300-MW pet-coke-fired CFBs. Reviewed produced documents and prepared prefiled testimony. Deposed 10/8/09 and 11/9/09. Testified 11/10/09. *Application of Las Brisas Energy Center, LLC for State Air Quality Permit*; before the State Office of Administrative Hearings, Texas. Permit remanded 3/29/10 as LBEC failed to meet burden of proof on a number of issues including MACT.

Texas Court of Appeals dismissed an appeal to reinstate the permit. The Texas Commission on Environmental Quality and Las Brisas Energy Center, LLC sought to overturn the Court of Appeals decision but moved to have their appeal dismissed in August 2013.

- For defense, expert witness in unlawful detainer case involving a gasoline station, minimart, and residential property with contamination from leaking underground storage tanks. Reviewed agency files and inspected site. Presented expert testimony on July 6, 2009, on causes of, nature and extent of subsurface contamination. *A. Singh v. S. Assaedi,* in Contra Costa County Superior Court, CA. Settled August 2009.
- For plaintiffs, expert witness on netting and enforceability for refinery being upgraded to process tar sands crude. Reviewed produced documents. Prepared expert and rebuttal reports addressing use of emission factors for baseline, omitted sources including coker, flares, tank landings and cleaning, and enforceability. Deposed. *In the Matter of Objection to the Issuance of Significant Source Modification Permit No. 089-25484-00453 to BP Products North America Inc., Whiting Business Unit, Save the Dunes Council, Inc., Sierra Club., Inc., Hoosier Environmental Council et al., Petitioners, B. P. Products North American, Respondents/Permittee,* before the Indiana Office of Environmental Adjudication. Case settled.
- For plaintiffs, expert witness on BACT, MACT, and enforceability in appeal of Title V permit issued to 600 MW coal-fired power plant burning Powder River Basin coal. Prepared technical comments on draft air permit. Reviewed record on appeal, drafted BACT, MACT, and enforceability pre-filed testimony. Drafted MACT and enforceability pre-filed rebuttal testimony. Deposed March 24, 2009. Testified June 10, 2009. *In Re: Southwestern Electric Power Company,* Arkansas Pollution Control and Ecology Commission, Consolidated Docket No. 08-006-P. Recommended Decision issued December 9, 2009 upholding issued permit. Commission adopted Recommended Decision January 22, 2010.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1989-1992) at Wabash Units 2, 3 and 5. Reviewed produced documents, prepared expert and rebuttal report on historic and current-day BACT for NOx and SO2, control costs, and excess emissions of NOx, SO2, and mercury. Deposed 10/21/08. *United States et al. v. Cinergy, et al.*, In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Testified 2/3/09. Memorandum Opinion & Order 5-29-09 requiring shutdown of Wabash River Units 2, 3, 5 by September 30, 2009, run at baseline until shutdown, and permanently surrender SO2 emission allowances.
- For plaintiffs, expert witness in liability phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for three historic modifications (1997-2001) at two portland cement plants involving three cement kilns. Reviewed produced documents, analyzed CEMS data covering subject period, prepared netting analysis for NOx, SO_2 and CO, and prepared expert and rebuttal reports. *United States v. Cemex California*

Cement, In U.S. District Court for the Central District of California, Eastern Division, Case No. ED CV 07-00223-GW (JCRx). Settled 1/15/09.

- For intervenors Clean Wisconsin and Citizens Utility Board, prepared data requests, reviewed discovery and expert report. Prepared prefiled direct, rebuttal and surrebuttal testimony on cost to extend life of existing Oak Creek Units 5-8 and cost to address future regulatory requirements to determine whether to control or shutdown one or more of the units. Oral testimony 2/5/08. Application for a Certificate of Authority to Install Wet Flue Gas Desulfurization and Selective Catalytic Reduction Facilities and Associated Equipment for Control of Sulfur Dioxide and Nitrogen Oxide Emissions at Oak Creek Power Plant Units 5, 6, 7 and 8, WPSC Docket No. 6630-CE-299.
- For plaintiffs, expert witness on alternatives analysis and BACT for NOx, SO2, total PM10, and sulfuric acid mist in appeal of PSD permit issued to 1200 MW coal fired power plant burning Powder River Basin and/or Central Appalachian coal (Longleaf). Assisted in drafting technical comments on NOx on draft permit. Prepared expert disclosure. Presented 8+ days of direct and rebuttal expert testimony. Attended all 21 days of evidentiary hearing from 9/5/07 – 10/30/07 assisting in all aspects of hearing. *Friends of the Chatahooche and Sierra Club v. Dr. Carol Couch, Director, Environmental Protection Division of Natural Resources Department, Respondent, and Longleaf Energy Associates, Intervener*. ALJ Final Decision 1/11/08 denying petition. ALJ Order vacated & remanded for further proceedings, Fulton County Superior Court, 6/30/08. Court of Appeals of GA remanded the case with directions that the ALJ's final decision be vacated to consider the evidence under the correct standard of review, July 9, 2009. The ALJ issued an opinion April 2, 2010 in favor of the applicant. Final permit issued April 2010.
- For plaintiffs, expert witness on diesel exhaust in inverse condemnation case in which Port expanded maritime operations into residential neighborhoods, subjecting plaintiffs to noise, light, and diesel fumes. Measured real-time diesel particulate concentrations from marine vessels and tug boats on plaintiffs' property. Reviewed documents, depositions, DVDs, and photographs provided by counsel. Deposed. Testified October 24, 2006. *Ann Chargin, Richard Hackett, Carolyn Hackett, et al. v. Stockton Port District*, Superior Court of California, County of San Joaquin, Stockton Branch, No. CV021015. Judge ruled for plaintiffs.
- For plaintiffs, expert witness on NOx emissions and BACT in case alleging failure to obtain necessary permits and install controls on gas-fired combined-cycle turbines. Prepared and reviewed (applicant analyses) of NOx emissions, BACT analyses (water injection, SCR, ultra low NOx burners), and cost-effectiveness analyses based on site visit, plant operating records, stack tests, CEMS data, and turbine and catalyst vendor design information. Participated in negotiations to scope out consent order. *United States v. Nevada Power.* Case settled June 2007, resulting in installation of dry low NOx burners (5 ppm NOx averaged over 1 hr) on four units and a separate solar array at a local business.

- For plaintiffs, expert witness in appeal of PSD permit issued to 850 MW coal fired boiler burning Powder River Basin coal (Iatan Unit 2) on BACT for particulate matter, sulfuric acid mist and opacity and emission calculations for alleged historic violations of PSD. Assisted in drafting technical comments, petition for review, discovery requests, and responses to discovery requests. Reviewed produced documents. Prepared expert report on BACT for particulate matter. Assisted with expert depositions. Deposed February 7, 8, 27, and 28, 2007. *In Re PSD Construction Permit Issued to Great Plains Energy, Kansas City Power & Light – Iatan Generating Station, Sierra Club v. Missouri Department of Natural Resources, Great Plains Energy, and Kansas City Power & Light.* Case settled March 27, 2007, providing offsets for over 6 million ton/yr of CO2 and lower NOx and SO_2 emission limits.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications of coal-fired boilers and associated equipment. Reviewed produced documents, prepared expert report on cost to retrofit 24 coal-fired power plants with scrubbers designed to remove 99% of the sulfur dioxide from flue gases. Prepared supplemental and expert report on cost estimates and BACT for SO2 for these 24 complaint units. Deposed 1/30/07 and 3/14/07. *United States and State of New York et al. v. American Electric Power*, In U.S. District Court for the Southern District of Ohio, Eastern Division, Consolidated Civil Action Nos. C2-99-1182 and C2-99-1250. Settlement announced 10/9/07.
- For plaintiffs, expert witness on BACT, enforceability, and alternatives analysis in appeal of PSD permit issued for a 270-MW pulverized coal fired boiler burning Powder River Basin coal (City Utilities Springfield Unit 2). Reviewed permitting file and assisted counsel draft petition and prepare and respond to interrogatories and document requests. Reviewed interrogatory responses and produced documents. Assisted with expert depositions. Deposed August 2005. Evidentiary hearings October 2005. *In the Matter of Linda Chipperfield and Sierra Club v. Missouri Department of Natural Resources.* Missouri Supreme Court denied review of adverse lower court rulings August 2007.
- For plaintiffs, expert witness in civil action relating to plume touchdowns at AEP's Gavin coal-fired power plant. Assisted counsel draft interrogatories and document requests. Reviewed responses to interrogatories and produced documents. Prepared expert report "Releases of Sulfuric Acid Mist from the Gavin Power Station." The report evaluates sulfuric acid mist releases to determine if AEP complied with the requirements of CERCLA Section 103(a) and EPCRA Section 304. This report also discusses the formation, chemistry, release characteristics, and abatement of sulfuric acid mist in support of the claim that these releases present an imminent and substantial endangerment to public health under Section 7002(a)(1)(B) of the Resource Conservation and Recovery Act ("RCRA"). *Citizens Against Pollution v. Ohio Power Company*, In the U.S. District Court for the Southern District of Ohio, Eastern Division, Civil Action No. 2-04-cv-371. Case settled 12-8-06.

- For petitioners, expert witness in contested case hearing on BACT, enforceability, and emission estimates for an air permit issued to a 500-MW supercritical Power River Basin coal-fired boiler (Weston Unit 4). Assisted counsel prepare comments on draft air permit and respond to and draft discovery. Reviewed produced file, deposed (7/05), and prepared expert report on BACT and enforceability. Evidentiary hearings September 2005. *In the Matter of an Air Pollution Control Construction Permit Issued to Wisconsin Public Service Corporation for the Construction and Operation of a 500 MW Pulverized Coal-fired Power Plant Known as Weston Unit 4 in Marathon County, Wisconsin*, Case No. IH-04-21. The Final Order, issued 2/10/06, lowered the NOx BACT limit from 0.07 lb/MMBtu to 0.06 lb/MMBtu based on a 30-day average, added a BACT SO2 control efficiency, and required a 0.0005% high efficiency drift eliminator as BACT for the cooling tower. The modified permit, including these provisions, was issued 3/28/07. Additional appeals in progress.
- For plaintiffs, adviser on technical issues related to Citizen Suit against U.S. EPA regarding failure to update New Source Performance Standards for petroleum refineries, 40 CFR 60, Subparts J, VV, and GGG. *Our Children's Earth Foundation and Sierra Club v. U.S. EPA et al.* Case settled July 2005. CD No. C 05-00094 CW, U.S. District Court, Northern District of California – Oakland Division. Proposed revisions to standards of performance for petroleum refineries published 72 FR 27178 (5/14/07).
- For interveners, reviewed proposed Consent Decree settling Clean Air Act violations due to historic modifications of boilers and associated equipment at two coal-fired power plants. In response to stay order, reviewed the record, selected one representative activity at each of seven generating units, and analyzed to identify CAA violations. Identified NSPS and NSR violations for NOx, SO_2, PM/PM10, and sulfuric acid mist. Summarized results in an expert report. *United States of America, and Michael A. Cox, Attorney General of the State of Michigan, ex rel. Michigan Department of Environmental Quality, Plaintiffs, and Clean Wisconsin, Sierra Club, and Citizens' Utility Board, Intervenors, v. Wisconsin Electric Power Company, Defendant*, U.S. District Court for the Eastern District of Wisconsin, Civil Action No. 2:03-CV-00371-CNC. Order issued 10-1-07 denying petition.
- For a coalition of Nevada labor organizations (ACE), reviewed preliminary determination to issue a Class I Air Quality Operating Permit to Construct and supporting files for a 250-MW pulverized coal-fired boiler (Newmont). Prepared about 100 pages of technical analyses and comments on BACT, MACT, emission calculations, and enforceability. Assisted counsel draft petition and reply brief appealing PSD permit to U.S. EPA Environmental Appeals Board (EAB). Order denying review issued 12/21/05. *In re Newmont Nevada Energy Investment, LLC, TS Power Plant*, PSD Appeal No. 05-04 (EAB 2005).
- For petitioners and plaintiffs, reviewed and prepared comments on air quality and hazardous waste based on negative declaration for refinery ultra low sulfur diesel project located in SCAQMD. Reviewed responses to comments and prepared responses. Prepared declaration and presented oral testimony before SCAQMD Hearing Board on exempt sources (cooling towers) and calculation of potential to emit under NSR. Petition for writ of mandate filed

March 2005. Case remanded by Court of Appeals to trial court to direct SCAQMD to re-evaluate the potential environmental significance of NOx emissions resulting from the project in accordance with court's opinion. California Court of Appeals, Second Appellate Division, on December 18, 2007, affirmed in part (as to baseline) and denied in part. *Communities for a Better Environment v. South Coast Air Quality Management District and ConocoPhillips and Carlos Valdez et al v. South Coast Air Quality Management District and ConocoPhillips.* Certified for partial publication 1/16/08. Appellate Court opinion upheld by CA Supreme Court 3/15/10. *(2010) 48 Cal.4th 310*.

- For amici seeking to amend a proposed Consent Decree to settle alleged NSR violations at Chevron refineries, reviewed proposed settlement, related files, subject modifications, and emission calculations. Prepared declaration on emission reductions, identification of NSR and NSPS violations, and BACT/LAER for FCCUs, heaters and boilers, flares, and sulfur recovery plants. *U.S. et al. v. Chevron U.S.A.*, Northern District of California, Case No. C 03-04650. Memorandum and Order Entering Consent Decree issued June 2005. Case No. C 03-4650 CRB.
- For petitioners, prepared declaration on enforceability of periodic monitoring requirements, in response to EPA's revised interpretation of 40 CFR 70.6(c)(1). This revision limited additional monitoring required in Title V permits. 69 FR 3203 (Jan. 22, 2004). *Environmental Integrity Project et al. v. EPA* (U.S. Court of Appeals for the District of Columbia). Court ruled the Act requires all Title V permits to contain monitoring requirements to assure compliance. *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008).
- For interveners in application for authority to construct a 500 MW supercritical coal-fired generating unit before the Wisconsin Public Service Commission, prepared pre-filed written direct and rebuttal testimony with oral cross examination and rebuttal on BACT and MACT (Weston 4). Prepared written comments on BACT, MACT, and enforceability on draft air permit for same facility.
- For property owners in Nevada, evaluated the environmental impacts of a 1,450-MW coal-fired power plant proposed in a rural area adjacent to the Black Rock Desert and Granite Range, including emission calculations, air quality modeling, comments on proposed use permit to collect preconstruction monitoring data, and coordination with agencies and other interested parties. Project cancelled.
- For environmental organizations, reviewed draft PSD permit for a 600-MW coal-fired power plant in West Virginia (Longview). Prepared comments on permit enforceability; coal washing; BACT for SO_2 and PM10; Hg MACT; and MACT for HCl, HF, non-Hg metallic HAPs, and enforceability. Assist plaintiffs draft petition appealing air permit. Retained as expert to develop testimony on MACT, BACT, offsets, enforceability. Participate in settlement discussions. Case settled July 2004.
- For petitioners, reviewed record produced in discovery and prepared affidavit on emissions of carbon monoxide and volatile organic compounds during startup of GE 7FA combustion

turbines to successfully establish plaintiff standing. *Sierra Club et al. v. Georgia Power Company* (Northern District of Georgia).

- For building trades, reviewed air quality permitting action for 1500-MW coal-fired power plant before the Kentucky Department for Environmental Protection (Thoroughbred).
- For petitioners, expert witness in administrative appeal of the PSD/Title V permit issued to a 1500-MW coal-fired power plant. Reviewed over 60,000 pages of produced documents, prepared discovery index, identified and assembled plaintiff exhibits. Deposed. Assisted counsel in drafting discovery requests, with over 30 depositions, witness cross examination, and brief drafting. Presented over 20 days of direct testimony, rebuttal and sur-rebuttal, with cross examination on BACT for NOx, SO_2, and PM/PM10; MACT for Hg and non-Hg metallic HAPs; emission estimates for purposes of Class I and II air modeling; risk assessment; and enforceability of permit limits. Evidentiary hearings from November 2003 to June 2004. *Sierra Club et al. v. Natural Resources & Environmental Protection Cabinet, Division of Air Quality and Thoroughbred Generating Company et al.* Hearing Officer Decision issued August 9, 2005 finding in favor of plaintiffs on counts as to risk, BACT (IGCC/CFB, NOx, SO_2, Hg, Be), single source, enforceability, and errors and omissions. Assist counsel draft exceptions. Cabinet Secretary issued Order April 11, 2006 denying Hearing Offer's report, except as to NOx BACT, Hg, 99% SO2 control and certain errors and omissions.
- For citizens group in Massachusetts, reviewed, commented on, and participated in permitting of pollution control retrofits of coal-fired power plant (Salem Harbor).
- Assisted citizens group and labor union challenge issuance of conditional use permit for a 317,000 ft^2 discount store in Honolulu without any environmental review. In support of a motion for preliminary injunction, prepared 7-page declaration addressing public health impacts of diesel exhaust from vehicles serving the Project. In preparation for trial, prepared 20-page preliminary expert report summarizing results of diesel exhaust and noise measurements at two big box retail stores in Honolulu, estimated diesel PM10 concentrations for Project using ISCST, prepared a cancer health risk assessment based on these analyses, and evaluated noise impacts.
- Assisted environmental organizations to challenge the DOE Finding of No Significant Impact (FONSI) for the Baja California Power and Sempra Energy Resources Cross-Border Transmissions Lines in the U.S. and four associated power plants located in Mexico (DOE EA-1391). Prepared 20-page declaration in support of motion for summary judgment addressing emissions, including CO_2 and NH_3, offsets, BACT, cumulative air quality impacts, alternative cooling systems, and water use and water quality impacts. Plaintiff's motion for summary judgment granted in part. U.S. District Court, Southern District decision concluded that the Environmental Assessment and FONSI violated NEPA and the APA due to their inadequate analysis of the potential controversy surrounding the project, water impacts, impacts from NH_3 and CO_2, alternatives, and cumulative impacts. *Border Power Plant Working Group v. Department of Energy and Bureau of Land Management*, Case No. 02-CV-513-IEG (POR) (May 2, 2003).

- For Sacramento school, reviewed draft air permit issued for diesel generator located across from playfield. Prepared comments on emission estimates, enforceability, BACT, and health impacts of diesel exhaust. Case settled. BUG trap installed on the diesel generator.
- Assisted unions in appeal of Title V permit issued by BAAQMD to carbon plant that manufactured coke. Reviewed District files, identified historic modifications that should have triggered PSD review, and prepared technical comments on Title V permit. Reviewed responses to comments and assisted counsel draft appeal to BAAQMD hearing board, opening brief, motion to strike, and rebuttal brief. Case settled.
- Assisted California Central Coast city obtain controls on a proposed new city that would straddle the Ventura-Los Angeles County boundary. Reviewed several environmental impact reports, prepared an air quality analysis, a diesel exhaust health risk assessment, and detailed review comments. Governor intervened and State dedicated the land for conservation purposes April 2004.
- Assisted Central California city to obtain controls on large alluvial sand quarry and asphalt plant proposing a modernization. Prepared comments on Negative Declaration on air quality, public health, noise, and traffic. Evaluated process flow diagrams and engineering reports to determine whether proposed changes increased plant capacity or substantially modified plant operations. Prepared comments on application for categorical exemption from CEQA. Presented testimony to County Board of Supervisors. Developed controls to mitigate impacts. Assisted counsel draft Petition for Writ. Case settled June 2002. Substantial improvements in plant operations were obtained including cap on throughput, dust control measures, asphalt plant loadout enclosure, and restrictions on truck routes.
- Assisted oil companies on the California Central Coast in defending class action citizen's lawsuit alleging health effects due to emissions from gas processing plant and leaking underground storage tanks. Reviewed regulatory and other files and advised counsel on merits of case. Case settled November 2001.
- Assisted oil company on the California Central Coast in defending property damage claims arising out of a historic oil spill. Reviewed site investigation reports, pump tests, leachability studies, and health risk assessments, participated in design of additional site characterization studies to assess health impacts, and advised counsel on merits of case. Prepare health risk assessment.
- Assisted unions in appeal of Initial Study/Negative Declaration ("IS/ND") for an MTBE phaseout project at a Bay Area refinery. Reviewed IS/ND and supporting agency permitting files and prepared technical comments on air quality, groundwater, and public health impacts. Reviewed responses to comments and final IS/ND and ATC permits and assisted counsel to draft petitions and briefs appealing decision to Air District Hearing Board. Presented sworn direct and rebuttal testimony with cross examination on groundwater impacts of ethanol spills on hydrocarbon contamination at refinery. Hearing Board ruled 5 to 0 in favor of appellants, remanding ATC to district to prepare an EIR.

- Assisted Florida cities in challenging the use of diesel and proposed BACT determinations in prevention of significant deterioration (PSD) permits issued to two 510-MW simple cycle peaking electric generating facilities and one 1,080-MW simple cycle/combined cycle facility. Reviewed permit applications, draft permits, and FDEP engineering evaluations, assisted counsel in drafting petitions and responding to discovery. Participated in settlement discussions. Cases settled or applications withdrawn.
- Assisted large California city in federal lawsuit alleging peaker power plant was violating its federal permit. Reviewed permit file and applicant's engineering and cost feasibility study to reduce emissions through retrofit controls. Advised counsel on feasible and cost-effective NOx, SOx, and PM10 controls for several 1960s diesel-fired Pratt and Whitney peaker turbines. Case settled.
- Assisted coalition of Georgia environmental groups in evaluating BACT determinations and permit conditions in PSD permits issued to several large natural gas-fired simple cycle and combined-cycle power plants. Prepared technical comments on draft PSD permits on BACT, enforceability of limits, and toxic emissions. Reviewed responses to comments, advised counsel on merits of cases, participated in settlement discussions, presented oral and written testimony in adjudicatory hearings, and provided technical assistance as required. Cases settled or won at trial.
- Assisted construction unions in review of air quality permitting actions before the Indiana Department of Environmental Management ("IDEM") for several natural gas-fired simple cycle peaker and combined cycle power plants.
- Assisted coalition of towns and environmental groups in challenging air permits issued to 523 MW dual fuel (natural gas and distillate) combined-cycle power plant in Connecticut. Prepared technical comments on draft permits and 60 pages of written testimony addressing emission estimates, startup/shutdown issues, BACT/LAER analyses, and toxic air emissions. Presented testimony in adjudicatory administrative hearings before the Connecticut Department of Environmental Protection in June 2001 and December 2001.
- Assisted various coalitions of unions, citizens groups, cities, public agencies, and developers in licensing and permitting of over 110 coal, gas, oil, biomass, and pet coke-fired power plants generating over 75,000 MW of electricity. These included base-load, combined cycle, simple cycle, and peaker power plants in Alaska, Arizona, Arkansas, California, Colorado, Georgia, Florida, Illinois, Indiana, Kentucky, Michigan, Missouri, Ohio, Oklahoma, Oregon, Texas, West Virginia, Wisconsin, and elsewhere. Prepared analyses of and comments on applications for certification, preliminary and final staff assessments, and various air, water, wastewater, and solid waste permits issued by local agencies. Presented written and oral testimony before various administrative bodies on hazards of ammonia use and transportation, health effects of air emissions, contaminated property issues, BACT/LAER issues related to SCR and SCONOx, criteria and toxic pollutant emission estimates, MACT analyses, air quality modeling, water supply and water quality issues, and methods to reduce

water use, including dry cooling, parallel dry-wet cooling, hybrid cooling, and zero liquid discharge systems.

- Assisted unions, cities, and neighborhood associations in challenging an EIR issued for the proposed expansion of the Oakland Airport. Reviewed two draft EIRs and prepared a health risk assessment and extensive technical comments on air quality and public health impacts. The California Court of Appeals, First Appellate District, ruled in favor of appellants and plaintiffs, concluding that the EIR "2) erred in using outdated information in assessing the emission of toxic air contaminants (TACs) from jet aircraft; 3) failed to support its decision not to evaluate the health risks associated with the emission of TACs with meaningful analysis," thus accepting my technical arguments and requiring the Port to prepare a new EIR. See *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (August 30, 2001) 111 Cal.Rptr.2d 598.
- Assisted lessor of former gas station with leaking underground storage tanks and TCE contamination from adjacent property. Lessor held option to purchase, which was forfeited based on misrepresentation by remediation contractor as to nature and extent of contamination. Remediation contractor purchased property. Reviewed regulatory agency files and advised counsel on merits of case. Case not filed.
- Advised counsel on merits of several pending actions, including a Proposition 65 case involving groundwater contamination at an explosives manufacturing firm and two former gas stations with leaking underground storage tanks.
- Assisted defendant foundry in Oakland in a lawsuit brought by neighbors alleging property contamination, nuisance, trespass, smoke, and health effects from foundry operation. Inspected and sampled plaintiff's property. Advised counsel on merits of case. Case settled.
- Assisted business owner facing eminent domain eviction. Prepared technical comments on a negative declaration for soil contamination and public health risks from air emissions from a proposed redevelopment project in San Francisco in support of a CEQA lawsuit. Case settled.
- Assisted neighborhood association representing residents living downwind of a Berkeley asphalt plant in separate nuisance and CEQA lawsuits. Prepared technical comments on air quality, odor, and noise impacts, presented testimony at commission and council meetings, participated in community workshops, and participated in settlement discussions. Cases settled. Asphalt plant was upgraded to include air emission and noise controls, including vapor collection system at truck loading station, enclosures for noisy equipment, and improved housekeeping.
- Assisted a Fortune 500 residential home builder in claims alleging health effects from faulty installation of gas appliances. Conducted indoor air quality study, advised counsel on merits of case, and participated in discussions with plaintiffs. Case settled.

- Assisted property owners in Silicon Valley in lawsuit to recover remediation costs from insurer for large TCE plume originating from a manufacturing facility. Conducted investigations to demonstrate sudden and accidental release of TCE, including groundwater modeling, development of method to date spill, preparation of chemical inventory, investigation of historical waste disposal practices and standards, and on-site sewer and storm drainage inspections and sampling. Prepared declaration in opposition to motion for summary judgment. Case settled.
- Assisted residents in east Oakland downwind of a former battery plant in class action lawsuit alleging property contamination from lead emissions. Conducted historical research and dry deposition modeling that substantiated claim. Participated in mediation at JAMS. Case settled.
- Assisted property owners in West Oakland who purchased a former gas station that had leaking underground storage tanks and groundwater contamination. Reviewed agency files and advised counsel on merits of case. Prepared declaration in opposition to summary judgment. Prepared cost estimate to remediate site. Participated in settlement discussions. Case settled.
- Consultant to counsel representing plaintiffs in two Clean Water Act lawsuits involving selenium discharges into San Francisco Bay from refineries. Reviewed files and advised counsel on merits of case. Prepared interrogatory and discovery questions, assisted in deposing opposing experts, and reviewed and interpreted treatability and other technical studies. Judge ruled in favor of plaintiffs.
- Assisted oil company in a complaint filed by a resident of a small California beach community alleging that discharges of tank farm rinse water into the sanitary sewer system caused hydrogen sulfide gas to infiltrate residence, sending occupants to hospital. Inspected accident site, interviewed parties to the event, and reviewed extensive agency files related to incident. Used chemical analysis, field simulations, mass balance calculations, sewer hydraulic simulations with SWMM44, atmospheric dispersion modeling with SCREEN3, odor analyses, and risk assessment calculations to demonstrate that the incident was caused by a faulty drain trap and inadequate slope of sewer lateral on resident's property. Prepared a detailed technical report summarizing these studies. Case settled.
- Assisted large West Coast city in suit alleging that leaking underground storage tanks on city property had damaged the waterproofing on downgradient building, causing leaks in an underground parking structure. Reviewed subsurface hydrogeologic investigations and evaluated studies conducted by others documenting leakage from underground diesel and gasoline tanks. Inspected, tested, and evaluated waterproofing on subsurface parking structure. Waterproofing was substandard. Case settled.
- Assisted residents downwind of gravel mine and asphalt plant in Siskiyou County, California, in suit to obtain CEQA review of air permitting action. Prepared two declarations analyzing

air quality and public health impacts. Judge ruled in favor of plaintiffs, closing mine and asphalt plant.

- Assisted defendant oil company on the California Central Coast in class action lawsuit alleging property damage and health effects from subsurface petroleum contamination. Reviewed documents, prepared risk calculations, and advised counsel on merits of case. Participated in settlement discussions. Case settled.
- Assisted defendant oil company in class action lawsuit alleging health impacts from remediation of petroleum contaminated site on California Central Coast. Reviewed documents, designed and conducted monitoring program, and participated in settlement discussions. Case settled.
- Consultant to attorneys representing irrigation districts and municipal water districts to evaluate a potential challenge of USFWS actions under CVPIA section 3406(b)(2). Reviewed agency files and collected and analyzed hydrology, water quality, and fishery data. Advised counsel on merits of case. Case not filed.
- Assisted residents downwind of a Carson refinery in class action lawsuit involving soil and groundwater contamination, nuisance, property damage, and health effects from air emissions. Reviewed files and provided advice on contaminated soil and groundwater, toxic emissions, and health risks. Prepared declaration on refinery fugitive emissions. Prepared deposition questions and reviewed deposition transcripts on air quality, soil contamination, odors, and health impacts. Case settled.
- Assisted residents downwind of a Contra Costa refinery who were affected by an accidental release of naphtha. Characterized spilled naphtha, estimated emissions, and modeled ambient concentrations of hydrocarbons and sulfur compounds. Deposed. Presented testimony in binding arbitration at JAMS. Judge found in favor of plaintiffs.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects from several large accidents as well as routine operations. Reviewed files and prepared analyses of environmental impacts. Prepared declarations, deposed, and presented testimony before jury in one trial and judge in second. Case settled.
- Assisted business owner claiming damages from dust, noise, and vibration during a sewer construction project in San Francisco. Reviewed agency files and PM10 monitoring data and advised counsel on merits of case. Case settled.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects. Prepared declaration in opposition to summary judgment, deposed, and presented expert testimony on accidental releases, odor, and nuisance before jury. Case thrown out by judge, but reversed on appeal and not retried.

- Presented testimony in small claims court on behalf of residents claiming health effects from hydrogen sulfide from flaring emissions triggered by a power outage at a Contra Costa County refinery. Analyzed meteorological and air quality data and evaluated potential health risks of exposure to low concentrations of hydrogen sulfide. Judge awarded damages to plaintiffs.
- Assisted construction unions in challenging PSD permit for an Indiana steel mill. Prepared technical comments on draft PSD permit, drafted 70-page appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analysis for electric arc furnace and reheat furnace and faulty permit conditions, among others, and drafted briefs responding to four parties. EPA Region V and the EPA General Counsel intervened as amici, supporting petitioners. EAB ruled in favor of petitioners, remanding permit to IDEM on three key issues, including BACT for the reheat furnace and lead emissions from the EAF. Drafted motion to reconsider three issues. Prepared 69 pages of technical comments on revised draft PSD permit. Drafted second EAB appeal addressing lead emissions from the EAF and BACT for reheat furnace based on European experience with SCR/SNCR. Case settled. Permit was substantially improved. See *In re: Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5 (EAB June 22, 2000).
- Assisted defendant urea manufacturer in Alaska in negotiations with USEPA to seek relief from penalties for alleged violations of the Clean Air Act. Reviewed and evaluated regulatory files and monitoring data, prepared technical analysis demonstrating that permit limits were not violated, and participated in negotiations with EPA to dismiss action. Fines were substantially reduced and case closed.
- Assisted construction unions in challenging PSD permitting action for an Indiana grain mill. Prepared technical comments on draft PSD permit and assisted counsel draft appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analyses for heaters and boilers and faulty permit conditions, among others. Case settled.
- As part of a consent decree settling a CEQA lawsuit, assisted neighbors of a large west coast port in negotiations with port authority to secure mitigation for air quality impacts. Prepared technical comments on mobile source air quality impacts and mitigation and negotiated a $9 million CEQA mitigation package. Represented neighbors on technical advisory committee established by port to implement the air quality mitigation program. Program successfully implemented.
- Assisted construction unions in challenging permitting action for a California hazardous waste incinerator. Prepared technical comments on draft permit, assisted counsel prepare appeal of EPA permit to the Environmental Appeals Board. Participated in settlement discussions on technical issues with applicant and EPA Region 9. Case settled.

- Assisted environmental group in challenging DTSC Negative Declaration on a hazardous waste treatment facility. Prepared technical comments on risk of upset, water, and health risks. Writ of mandamus issued.
- Assisted several neighborhood associations and cities impacted by quarries, asphalt plants, and cement plants in Alameda, Shasta, Sonoma, and Mendocino counties in obtaining mitigations for dust, air quality, public health, traffic, and noise impacts from facility operations and proposed expansions.
- For over 100 industrial facilities, commercial/campus, and redevelopment projects, developed the record in preparation for CEQA and NEPA lawsuits. Prepared technical comments on hazardous materials, solid wastes, public utilities, noise, worker safety, air quality, public health, water resources, water quality, traffic, and risk of upset sections of EIRs, EISs, FONSIs, initial studies, and negative declarations. Assisted counsel in drafting petitions and briefs and prepared declarations.
- For several large commercial development projects and airports, assisted applicant and counsel prepare defensible CEQA documents, respond to comments, and identify and evaluate "all feasible" mitigation to avoid CEQA challenges. This work included developing mitigation programs to reduce traffic-related air quality impacts based on energy conservation programs, solar, low-emission vehicles, alternative fuels, exhaust treatments, and transportation management associations.

SITE INVESTIGATION/REMEDIATION/CLOSURE

- Technical manager and principal engineer for characterization, remediation, and closure of waste management units at former Colorado oil shale plant. Constituents of concern included BTEX, As, 1,1,1-TCA, and TPH. Completed groundwater monitoring programs, site assessments, work plans, and closure plans for seven process water holding ponds, a refinery sewer system, and processed shale disposal area. Managed design and construction of groundwater treatment system and removal actions and obtained clean closure.
- Principal engineer for characterization, remediation, and closure of process water ponds at a former lanthanide processing plant in Colorado. Designed and implemented groundwater monitoring program and site assessments and prepared closure plan.
- Advised the city of Sacramento on redevelopment of two former railyards. Reviewed work plans, site investigations, risk assessment, RAPS, RI/FSs, and CEQA documents. Participated in the development of mitigation strategies to protect construction and utility workers and the public during remediation, redevelopment, and use of the site, including buffer zones, subslab venting, rail berm containment structure, and an environmental oversight plan.

- Provided technical support for the investigation of a former sanitary landfill that was redeveloped as single family homes. Reviewed and/or prepared portions of numerous documents, including health risk assessments, preliminary endangerment assessments, site investigation reports, work plans, and RI/FSs. Historical research to identify historic waste disposal practices to prepare a preliminary endangerment assessment. Acquired, reviewed, and analyzed the files of 18 federal, state, and local agencies, three sets of construction field notes, analyzed 21 aerial photographs and interviewed 14 individuals associated with operation of former landfill. Assisted counsel in defending lawsuit brought by residents alleging health impacts and diminution of property value due to residual contamination. Prepared summary reports.
- Technical oversight of characterization and remediation of a nitrate plume at an explosives manufacturing facility in Lincoln, CA. Provided interface between owners and consultants. Reviewed site assessments, work plans, closure plans, and RI/FSs.
- Consultant to owner of large western molybdenum mine proposed for NPL listing. Participated in negotiations to scope out consent order and develop scope of work. Participated in studies to determine premining groundwater background to evaluate applicability of water quality standards. Served on technical committees to develop alternatives to mitigate impacts and close the facility, including resloping and grading, various thickness and types of covers, and reclamation. This work included developing and evaluating methods to control surface runoff and erosion, mitigate impacts of acid rock drainage on surface and ground waters, and stabilize nine waste rock piles containing 328 million tons of pyrite-rich, mixed volcanic waste rock (andesites, rhyolite, tuff). Evaluated stability of waste rock piles. Represented client in hearings and meetings with state and federal oversight agencies.

REGULATORY (PARTIAL LIST)

- In December 2020, researched and wrote 23 pages of comments on the Draft Supplemental Recirculated Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2020 A, Focused on Oil and Gas Local Permitting on: (a) significant and unmitigated construction emissions; (b) significant and unmitigated operational emissions; (c) public health and biological impacts of criteria pollutants emissions and ozone; (d) offsets not valid CEQA mitigation.
- In October and December 2020, researched and wrote 46 pages of comments on underestimated and unsupported construction emissions, omitted construction emission sources, failure to consider unique site geotechnical conditions; revised construction emissions; significant construction and operational GHG emissions; GHG mitigation; construction and operational health risks; risk of upset; and cumulative impacts for a facility proposed to upgrade landfill gas to pipeline quality natural gas.

- In October and November 2020, researched and wrote 37 pages of comments on significant construction impacts, significant operational VOC emissions, and significant public health impacts of new internal floating roof storage tanks at a marine terminal at the Port of Long Beach.
- In September to November 2020, review proposed permit amendment to add HCN emissions from the FCCU to Title V permit for a Houston Refinery and research and write report on methods to measure HCN from FCCUs in situ and remotely.
- In September and October 2020, researched and wrote 14 pages of comments on proposed Leak Detection and Repair (LDAR) program for controlling VOC emissions from a geothermal power plant.
- In August to October 2020, researched and wrote comments on grid-based impacts of San Francisco's proposed building code mandating that new construction be all electric.
- In July and August 2020, researched and wrote comments on groundwater impacts of sea level rise for Final SEIR on crude oil trucking proposal.
- In June to August 2020, researched and wrote 69 pages of comments on inadequate project description, construction impacts, operational air quality impacts, cumulative air quality impacts, public health impacts, valley fever, hazards, geologic impacts, water use, CEC licensing, and extended lifetime impacts for the repower of a geothermal power plant in Imperial County.
- In June 2020, review revised quarry reclamation plan and draft 27 pages of comments on proposed modification.
- In June and July 2020, researched and wrote 23 pages of comments on cement terminal at Port of Stockton on construction impacts, emission baseline, operational emissions, and greenhouse gas mitigation.
- In May to June 2020, review reclamation plan amendment for quarry and research and write 17 page report on hydrology and water quality impacts of proposed amendment.
- In May 2020, researched and wrote 10 pages of comments on FEIR for a new apartment project in Contra Costa County on GHG emissions from vegetation removal, mobile sources, and water use and mitigation for same.
- In March/April 2020, researched and wrote 50 pages of comments on IS/MND for battery energy storage project in San Jose (Hummingbird) on inadequate project description, criteria pollutant and GHG emissions, significant and unmitigated energy impacts, cumulative impacts, construction impacts, public health impacts from BESS accidents, and battery handling and transportation accidents. Wrote 15 pages of responses to comments on vendor specifications, battery composition, cumulative impacts, construction impacts, fire control methods, and battery accidents.

- In April 2020, researched and wrote 47 pages of comments on IS/MND for data center in Santa Clara (SV1) on operational NOx emissions; out-of-district emissions; interbasin pollutant transport; omitted emission sources; GHG compliance with plans, policies and regulations; indirect GHG emissions; air quality impacts; construction emissions; cumulative impacts; and risk of upset from battery accidents.
- In March 2020, researched and wrote 30 pages of comments on IS/MND for data center in San Jose (Hummingbird) on operational GHG and criteria pollutant emissions, cumulative impacts, and public health risks. Research and write responses to comments.
- In February-March 2020, researched and wrote 30 pages on an IS/MND for a data center in San Jose (Stack) on operational NOx and GHG emissions, cumulative impacts, heath risks, and odor.
- In February 2020, researched and wrote 33 pages of comments on Initial Study for a battery storage facility in Ventura County (Orni) on criteria pollutant and GHG emissions, worker and public health impacts, cumulative impacts, valley fever, and consistency with general plan.
- In February 2020, researched and wrote 20 pages of comments on valley fever in response to applicant's global response to comments on Valley Fever for a wind project in San Diego County.
- In January 2020, researched and wrote 32 pages of comments on the Orni battery storage facility (BESS) on incomplete project description, cumulative GHG and NOx impacts, BESS accidents, and health impacts, including soil contamination and valley fever.
- In January 2020, research and wrote 41 pages of comments on the DEIR for the NuStar Port of Stockton Liquid Bulk Terminal on operational emission calculations, significant NOx emissions, significant GHG emissions. GHG mitigation, and cumulative impacts.
- In December 2019, researched and wrote 3 pages of comments on the Silverstrand Grid battery storage facility on greenhouse gas emissions.
- In December 2019, researched and wrote 15 pages of comments on the Initial Study for the K2 Pure – Chlorine Rail Transportation Curtailment Project, including on air quality baseline, project description, emissions, cancer risks, risk of upset.
- In November 2019, reviewed agency files and researched and wrote 42 pages of comments on the Belridge Solar Project on compliance with local zoning ordinances, water quality impacts, air quality impacts, and worker and public health impacts due to soil contamination and valley fever.
- In October 2019, researched and wrote 49 pages of comments on IS/MND for data center in Santa Clara, CA on operational criteria pollutants (mobile sources, off-site electricity

generation, emergency generators), ambient air quality impacts, greenhouse gas emissions and mitigation, and cumulative impacts.

- In October 2019, researched and wrote 9 pages of comments on the Application, Statement of Basis and draft Permit to Construct and Temporary Permit to Operate for proposed changes at the Paramount Refinery to facilitate refining of biomass-based feedstock to produce renewable fuels.
- In September 2019, reviewed City of Sunnyvale's file on Google's proposed Central Utility Plant and researched and wrote 34 pages of comments on construction and operational air quality impacts, cumulative impacts, and battery fire and explosion impacts. In October 2019, researched and wrote 15 pages of responses to comments.
- In August 2019, research and wrote 37 pages of comments on the DSEIR for the Le Conte Battery Energy Storage System on GHG emissions, hazards and hazardous material impacts, and health impacts.
- In August 2019, researched and wrote 38 pages of comments on IS/MND for the Hanford-Lakeside Dairy digester Project, Kings County, on project description (piecemealing), cumulative impacts, construction impacts, air quality impacts, valley fever and risk of upset.
- In July 2019, researched and wrote 48 pages of comments on IS/MND for the Five Points Pipeline Dairy Digester Cluster Project, including on air quality, cumulative impacts, worker and public health impacts (including on pesticide-contaminated soils), Valley Fever, construction air quality impacts, and risk of upset.
- In June 2019, researched and wrote 15 pages of responses to comments on IS/MND for SV1 Data Center, including operational NOx emissions, air quality analyses, construction emissions, battery hazards, and mitigation plans for noise, vibration, risk management, storm water pollution, and emergency response and evacuation plans.
- In June 2019, researched and wrote 30 pages of comments on DEIR for the Humboldt Wind Energy Project on fire and aesthetic impacts of transmission line, construction air quality impacts and mitigation, and greenhouse gas emissions.
- In May 2019, researched and wrote 25 pages of comments on the DEIR for the ExxonMobil Interim Trucking for Santa Ynez Phased Restart Project on project description, baseline, and mitigation.
- In April 2019, researched and wrote a 16 page letter critiquing the adequacy of the FEIR for CalAm Desalination Project to support a Monterey County Combined Development Permit, consisting of a Use Permit, an Administrative Permit, and Design Approval for the Desalination Plant and Carmel Valley Pump Station.

- In April 2019, researched and wrote 22 pages of comments on DEIR for the Eco-Energy Liquid Bulk Terminal at the Port of Stockton on emissions, air quality impact mitigation, and health risk assessment.
- In March 2019, researched and wrote 43 pages of comments on DEIR for Contanda Renewable Diesel Bulk Liquid Terminal at the Port of Stockton on operational emissions, air quality impacts and mitigation and health risks.
- In February 2019, researched and wrote 36 pages of comments on general cumulative impacts, air quality, accidents, and valley fever for IS/MND for biogas cluster project in Kings County.
- In January 2019, researched and wrote 30 pages of comments on air quality and valley fever for IS/MND for energy storage facility in Kings County.
- In December 2018, researched and wrote 11 pages of comments on air quality for IS/MND for biomass gasification facility in Madera County.
- In December 2018, researched and wrote 10 pages of responses to comments on IS/MND for a wind energy project in Riverside County.
- In December 2018, researched and wrote 12 pages of responses to comments on IS/MND for a large Safeway fueling station in Petaluma. The Planning Commission voted unanimously to require an EIR.
- In November 2018, researched and wrote 30 pages of comments on IS/MND on wind energy project in Riverside County on construction health risks, odor impacts, waste disposal, transportation, construction emissions and mitigation and Valley Fever.
- In November 2018, researched and wrote 32 pages of comments on the DEIR for a solar energy generation and storage project in San Bernardino County on hazards, health risks, odor, construction emissions and mitigation, and Valley Fever.
- In September 2018, researched and wrote 36 pages of comments on the FEIR for the Newland Sierra Project including on greenhouse gas emissions, construction emissions, and cumulative impacts.
- In August 2018, researched and wrote 20 pages of comments on the health risk assessment in the IS/MND for a large Safeway fueling station in Petaluma.
- In August 2018, researched and wrote responses to comments on DEIR for the Newland Sierra Project, San Diego County on greenhouse gas emissions, construction emissions, odor, and Valley Fever.
- In July/August 2018, researched and wrote 12 pages of comments on DEIR for proposed Doheny Desal Project, on GHG, criteria pollutant, and TAC emissions and public health impacts during construction and indirect emissions during operation.

- In June 2018, researched and wrote 12 pages of technical comments rebutting NDDH responses to comments on Meridian Davis Refinery.
- In April 2018, researched and wrote 26 pages of comments on greenhouse gas emissions and mitigation as proposed in the San Diego County Climate Action Plan.
- In April 2018, researched and wrote 24 pages of comments on the FEIR for Monterey County water supply project, including GHG mitigation, air quality impacts and mitigation, and Valley Fever.
- In March-June 2018, researched and wrote 37 pages of comments on the IS/MND for the 2305 Mission College Boulevard Data Center, Santa Clara, California and responded to responses to comments.
- In March 2018, researched and wrote 40 pages of comments on the IS/MND for the Diablo Energy Storage Facility in Pittsburg, California.
- In March 2018, researched and wrote 19 pages of comments on Infill Checklist/Mitigated Negative Declaration for the Legacy@Livermore Project on CalEEMod emission calculations, including NOx and PM10 and construction health risk assessment, including Valley Fever.
- In January 2018, researched and wrote 28 pages of comments on draft Permit to Construct for the Davis Refinery Project, North Dakota, as a minor source of criteria pollutants and HAPs.
- In December 2017, researched and wrote 19 pages of comments on DEIR for the Rialto Bioenergy Facility, Rialto, California.
- In November and December 2017, researched and wrote 6 pages of comments on the Ventura County Air Pollution Control District's Preliminary Determination if Compliance (PDOC) for Mission Rock Energy Center.
- In November 2017, researched and wrote 11 pages of comments on control technology evaluation for the National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry Residual Risk and Technology Review.
- In September and November 2017, prepared comments on revised Negative Declaration for Delicato Winery in San Joaquin County, California.
- In October and November 2017, researched and wrote comments on North City Project Pure Water San Diego Program DEIR/DEIS to reclaim wastewater for municipal use.
- In August 2017, reviewed DEIR on a new residential community in eastern San Diego County (Newland Sierra) and research and wrote 60 pages of comments on air quality, greenhouse gas emissions and health impacts, including Valley Fever.

- In August 2017, reviewed responses to comments on Part 70 operating permit for IGP Methanol's Gulf Coast Methanol Complex, near Myrtle Grove, Louisiana, and researched and wrote comments on metallic HAP issues.
- In July 2017, reviewed the FEIS for an expansion of the Port of Gulfport and researched and wrote 10 pages of comments on air quality and public health.
- In June 2017, reviewed and prepared technical report on an Application for a synthetic minor source construction permit for a new Refinery in North Dakota.
- In June 2017, reviewed responses to NPCA and other comments on the BP Cherry Point Refinery modifications and assisted counsel in evaluating issues to appeal, including GHG BACT, coker heater SCR cost effectiveness analysis, and SO_2 BACT.
- In June 2017, reviewed Part 70 Operating Permit Renewal/Modification for the Noranda Alumina LC/Gramercy Holdings I, LLC alumina processing plant, St. James, Louisiana, and prepared comments on HAP emissions from bauxite feedstock.
- In May and June 2017, reviewed FEIR on Tesoro Integration Project and prepared responses to comments on the DEIR.
- In May 2017, prepared comments on tank VOC and HAP emissions from Tesoro Integration Project, based on real time monitoring at the Tesoro and other refineries in the SCAQMD.
- In April 2017, prepared comments on Negative Declaration for Delicato Winery in San Joaquin County, California.
- In March 2017, reviewed Negative Declaration for Ellmore geothermal facility in Imperial County, California and prepared summary of issues.
- In March 2017, prepared response to Phillips 66 Company's Appeal of the San Luis Obispo County Planning Commission's Decision Denying the Rail Spur Extension Project Proposed for the Santa Maria Refinery.
- In February 2017, researched and wrote comments on Kalama draft Title V permit for 10,000 MT/day methanol production and marine export facility in Kalama, Washington.
- In January 2017, researched and wrote 51 pages of comments on proposed Title V and PSD permits for the St. James Methanol Plant, St. James Louisiana, on BACT and enforceability of permit conditions.
- In December 2016, researched and wrote comments on draft Title V Permit for Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana, responding to EPA Order addressing enforceability issues.
- In November 2016, researched and wrote comments on Initial Study/Mitigated Negative Declaration for the AES Battery Energy Storage Facility, Long Beach, CA.

- In November 2016, researched and wrote comments on Campo Verde Battery Energy Storage System Draft Environmental Impact Report.
- In October 2016, researched and wrote comments on Title V Permit for NuStar Terminal Operations Partnership L.P, Stockton, CA.
- In October 2016, prepared expert report, Technical Assessment of Achieving the 40 CFR Part 423 Zero Discharge Standard for Bottom Ash Transport Water at the Belle River Power Plant, East China, Michigan. Reported resulted in a 2 year reduction in compliance date for elimination of bottom ash transport water. 1/30/17 DEQ Letter.
- In September 2016, researched and wrote comments on Proposed Title V Permit and Environmental Assessment Statement, Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana.
- In September 2016, researched and wrote response to "Further Rebuttal in Support of Appeal of Planning Commission Resolution No. 16-1, Denying Use Permit Application 12PLN-00063 and Declining to Certify Final Environmental Impact Report for the Valero Benicia Crude-by-Rail Project.
- In August 2016, reviewed and prepared comments on manuscript: Hutton et al., Freshwater Flows to the San Francisco Bay-Delta Estuary over Nine Decades: Trends Evaluation.
- In August/September 2016, researched and wrote comments on Mitigated Negative Declaration for the Chevron Long Wharf Maintenance and Efficiency Project.
- In July 2016, researched and wrote comments on the Ventura County APCD Preliminary Determination of Compliance and the California Energy Commission Revised Preliminary Staff Assessment for the Puente Power Project.
- In June 2016, researched and wrote comments on an Ordinance (1) Amending the Oakland Municipal Code to Prohibit the Storage and Handling of Coal and Coke at Bulk Material Facilities or Terminals Throughout the City of Oakland and (2) Adopting CEQA Exemption Findings and supporting technical reports. Council approved Ordinance on an 8 to 0 vote on June 27, 2016.
- In May 2016, researched and wrote comments on Draft Title V Permit and Draft Environmental Impact Report for the Tesoro Los Angeles Refinery Integration and Compliance Project.
- In March 2016, researched and wrote comments on Valero's Appeal of Planning Commission's Denial of Valero Crude-by-Rail Project.
- In February 2016, researched and wrote comments on Final Environmental Impact Report, Santa Maria Rail Spur Project.
- In February 2016, researched and wrote comments on Final Environmental Impact Report, Valero Benicia Crude by Rail Project.

- In January 2016, researched and wrote comments on Draft Programmatic Environmental Impact Report for the Southern California Association of Government's (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy.
- In November 2015, researched and wrote comments on Final Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2015(C) (Focused on Oil and Gas Local Permitting), November 2015.
- In October 2015, researched and wrote comments on Revised Draft Environmental Report, Valero Benicia Crude by Rail Project.
- In September 2015, prepared report, "Environmental, Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, and presented oral testimony on September 21, 2015 before Oakland City Council on behalf of the Sierra Club.
- In September 2015, researched and wrote comments on revisions to two chapters of EPA's Air Pollution Control Cost Manual: Docket ID No. EPA-HQ-OAR-2015-0341.
- In June 2015, researched and wrote comments on DEIR for the CalAm Monterey Peninsula Water Supply Project.
- In April 2015, researched and wrote comments on proposed Title V Operating Permit Revision and Prevention of Significant Deterioration Permit for Arizona Public Service's Ocotillo Power Plant Modernization Project (5 GE LMS100 105-MW simple cycle turbines operated as peakers), in Tempe, Arizona; Final permit appealed to EAB.
- In March 2015, researched and wrote "Comments on Proposed Title V Air Permit, Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana". Client filed petition objecting to the permit. EPA granted majority of issues. In the Matter of Yuhuang Chemical Inc. Methanol Plant, St. James Parish, Louisiana, Permit No. 2560-00295-V0, Issued by the Louisiana Department of Environmental Quality, Petition No. VI-2015-03, Order Responding to the Petitioners' Request for Objection to the Issuance of a Title V Operating Permit, September 1, 2016.
- In February 2015, prepared compilation of BACT cost effectiveness values in support of comments on draft PSD Permit for Bonanza Power Project.
- In January 2015, prepared cost effectiveness analysis for SCR for a 500-MW coal fire power plant, to address unpermitted upgrades in 2000.
- In January 2015, researched and wrote comments on Revised Final Environmental Impact Report for the Phillips 66 Propane Recovery Project. *Communities for a Better Environment et al. v. Contra Costa County et al. Contra Costa County (Superior Court, Contra Costa County, Case No. MSN15-0301, December 1, 2016).*
- In December 2014, researched and wrote "Report on Bakersfield Crude Terminal Permits to Operate." In response, the U.S. EPA cited the Terminal for 10 violations of the Clean Air

Act. The Fifth Appellate District Court upheld the finding in this report in CBE et al v. San Joaquin Valley Unified Air Pollution Control District and Bakersfield Crude Terminal LLC et al, Super. Ct. No. 284013, June 23, 2017.

- In December 2014, researched and wrote comments on Revised Draft Environmental Impact Report for the Phillips 66 Propane Recovery Project.
- In November 2014, researched and wrote comments on Revised Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project and Crude Unloading Project, Santa Maria, CA to allow the import of tar sands crudes.
- In November 2014, researched and wrote comments on Draft Environmental Impact Report for Phillips 66 Ultra Low Sulfur Diesel Project, responding to the California Supreme Court Decision, *Communities for a Better Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310.*
- In November 2014, researched and wrote comments on Draft Environmental Impact Report for the Tesoro Avon Marine Oil Terminal Lease Consideration.
- In October 2014, prepared: "Report on Hydrogen Cyanide Emissions from Fluid Catalytic Cracking Units", pursuant to the Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, 79 FR 36880.
- In October 2014, researched and wrote technical comments on Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.
- In October 2014, researched and wrote technical comments on the Title V Permit Renewal and three De Minimus Significant Revisions for the Tesoro Logistics Marine Terminal in the SCAQMD.
- In September 2014, researched and wrote technical comments on the Draft Environmental Impact Report for the Valero Crude by Rail Project.
- In August 2014, for EPA Region 6, prepared technical report on costing methods for upgrades to existing scrubbers at coal-fired power plants.
- In July 2014, researched and wrote technical comments on Draft Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.
- In June 2014, researched and wrote technical report on Initial Study and Draft Negative Declaration for the Tesoro Logistics Storage Tank Replacement and Modification Project.
- In May 2014, researched and wrote technical comments on Intent to Approve a new refinery and petroleum transloading operation in Utah.

- In March and April 2014, prepared declarations on air permits issued for two crude-by-rail terminals in California, modified to switch from importing ethanol to importing Bakken crude oils by rail and transferring to tanker cars. Permits were issued without undergoing CEQA review. One permit was upheld by the San Francisco Superior Court as statute of limitations had run. The Sacramento Air Quality Management District withdrew the second one due to failure to require BACT and conduct CEQA review.
- In March 2014, researched and wrote technical report on Negative Declaration for a proposed modification of the air permit for a bulk petroleum and storage terminal to the allow the import of tar sands and Bakken crude oil by rail and its export by barge, under the New York State Environmental Quality Review Act (SEQRA).
- In February 2014, researched and wrote technical report on proposed modification of air permit for midwest refinery upgrade/expansion to process tar sands crudes.
- In January 2014, prepared cost estimates to capture, transport, and use CO2 in enhanced oil recovery, from the Freeport LNG project based on both Selexol and Amine systems.
- In January 2014, researched and wrote technical report on Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project, Santa Maria, CA. Comments addressed project description (piecemealing, crude slate), risk of upset analyses, mitigation measures, alternative analyses and cumulative impacts.
- In November 2013, researched and wrote technical report on the Phillips 66 Propane Recovery Project, Rodeo, CA. Comments addressed project description (piecemealing, crude slate) and air quality impacts.
- In September 2013, researched and wrote technical report on the Draft Authority to Construct Permit for the Casa Diablo IV Geothermal Development Project Environmental Impact Report and Declaration in Support of Appeal and Petition for Stay, U.S. Department of the Interior, Board of Land Appeals, Appeal of Decision Record for the Casa Diablo IV Geothermal Development Project.
- In September 2013, researched and wrote technical report on Effluent Limitation Guidelines for Best Available Technology Economically Available (BAT) for Bottom Ash Transport Waters from Coal-Fired Power Plants in the Steam Electric Power Generating Point Source Category.
- In July 2013, researched and wrote technical report on Initial Study/Mitigated Negative Declaration for the Valero Crude by Rail Project, Benicia, California, Use Permit Application 12PLN-00063.
- In July 2013, researched and wrote technical report on fugitive particulate matter emissions from coal train staging at the proposed Coyote Island Terminal, Oregon, for draft Permit No. 25-0015-ST-01.

- In July 2013, researched and wrote technical comments on air quality impacts of the Finger Lakes LPG Storage Facility as reported in various Environmental Impact Statements.
- In July 2013, researched and wrote technical comments on proposed Greenhouse Gas PSD Permit for the Celanese Clear Lake Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June/July 2013, researched and wrote technical comments on proposed Draft PSD Preconstruction Permit for Greenhouse Gas Emission for the ExxonMobil Chemical Company Baytown Olefins Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June 2013, researched and wrote technical report on a Mitigated Negative Declaration for a new rail terminal at the Valero Benicia Refinery to import increased amounts of "North American" crudes. Comments addressed air quality impacts of refining increased amounts of tar sands crudes.
- In June 2013, researched and wrote technical report on Draft Environmental Impact Report for the California Ethanol and Power Imperial Valley 1 Project.
- In May 2013, researched and wrote comments on draft PSD permit for major expansion of midwest refinery to process 100% tar sands crudes, including a complex netting analysis involving debottlenecking, piecemealing, and BACT analyses.
- In April 2013, researched and wrote technical report on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Keystone XL Pipeline on air quality impacts from refining increased amount of tar sands crudes at Refineries in PADD 3.
- In October 2012, researched and wrote technical report on the Environmental Review for the Coyote Island Terminal Dock at the Port of Morrow on fugitive particulate matter emissions.
- In October 2012-October 2014, review and evaluate Flint Hills West Application for an expansion/modification for increased (Texas, Eagle Ford Shale) crude processing and related modification, including netting and BACT analysis. Assist in settlement discussions.
- In February 2012, researched and wrote comments on BART analysis in PA Regional Haze SIP, 77 FR 3984 (Jan. 26, 2012). On Sept. 29, 2015, a federal appeals court overturned the U.S. EPA's approval of this plan, based in part on my comments, concluding "..we will vacate the 2014 Final Rule to the extent it approved Pennsylvania's source-specific BART analysis and remand to the EPA for further proceedings consistent with this Opinion." Nat'l Parks Conservation Assoc. v. EPA, 3d Cir., No. 14-3147, 9/19/15.
- Prepared cost analyses and comments on New York's proposed BART determinations for NOx, SO2, and PM and EPA's proposed approval of BART determinations for Danskammer Generating Station under New York Regional Haze State Implementation Plan and Federal Implementation Plan, 77 FR 51915 (August 28, 2012).

- Prepared cost analyses and comments on NOx BART determinations for Regional Haze State Implementation Plan for State of Nevada, 77 FR 23191 (April 18, 2012) and 77 FR 25660 (May 1, 2012).
- Prepared analyses of and comments on New Source Performance Standards for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 FR 22392 (April 13, 2012).
- Researched and wrote comments on CASPR-BART emission equivalency and NOx and PM BART determinations in EPA proposed approval of State Implementation Plan for Pennsylvania Regional Haze Implementation Plan, 77 FR 3984 (January 26, 2012).
- Researched and wrote comments and statistical analyses on hazardous air pollutants (HAPs) emission controls, monitoring, compliance methods, and the use of surrogates for acid gases, organic HAPs, and metallic HAPs for proposed National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 76 FR 24976 (May 3, 2011).
- Prepared cost analyses and comments on NOx BART determinations and emission reductions for proposed Federal Implementation Plan for Four Corners Power Plant, 75 FR 64221 (October 19, 2010).
- Prepared cost analyses and comments on NOx BART determinations for Colstrip Units 1- 4 for Montana State Implementation Plan and Regional Haze Federal Implementation Plan, 77 FR 23988 (April 20, 2010).
- For EPA Region 8, prepared report: Revised BART Cost Effectiveness Analysis for Tail-End Selective Catalytic Reduction at the Basin Electric Power Cooperative Leland Olds Station Unit 2 Final Report, March 2011, in support of 76 FR 58570 (Sept. 21, 2011).
- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Selective Catalytic Reduction at the Public Service Company of New Mexico San Juan Generating Station, November 2010, in support of 76 FR 52388 (Aug. 22, 2011).
- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Flue Gas Desulfurization at Coal-Fired Electric Generating Units in Oklahoma: Sooner Units 1 & 2, Muskogee Units 4 & 5, Northeastern Units 3 &4, October 2010, in support of 76 FR 16168 (March 26, 2011). My work was upheld in: *State of Oklahoma v. EPA*, App. Case 12-9526 (10th Cri. July 19, 2013).
- Identified errors in N_2O emission factors in the Mandatory Greenhouse Gas Reporting Rule, 40 CFR 98, and prepared technical analysis to support Petition for Rulemaking to Correct Emissions Factors in the Mandatory Greenhouse Gas Reporting Rule, filed with EPA on 10/28/10.

- Assisted interested parties develop input for and prepare comments on the Information Collection Request for Petroleum Refinery Sector NSPS and NESHAP Residual Risk and Technology Review, 75 FR 60107 (9/29/10).
- Technical reviewer of EPA's "Emission Estimation Protocol for Petroleum Refineries," posted for public comments on CHIEF on 12/23/09, prepared in response to the City of Houston's petition under the Data Quality Act (March 2010).
- Researched and wrote comments on SCR cost effectiveness for EPA's Advanced Notice of Proposed Rulemaking, Assessment of Anticipated Visibility Improvements at Surrounding Class I Areas and Cost Effectiveness of Best Available Retrofit Technology for Four Corners Power Plant and Navajo Generating Station, 74 FR 44313 (August 28, 2009).
- Researched and wrote comments on Proposed Rule for Standards of Performance for Coal Preparation and Processing Plants, 74 FR 25304 (May 27, 2009).
- Prepared comments on draft PSD permit for major expansion of midwest refinery to process up to 100% tar sands crudes. Participated in development of monitoring and controls to mitigate impacts and in negotiating a Consent Decree to settle claims in 2008.
- Reviewed and assisted interested parties prepare comments on proposed Kentucky air toxic regulations at 401 KAR 64:005, 64:010, 64:020, and 64:030 (June 2007).
- Prepared comments on proposed Standards of Performance for Electric Utility Steam Generating Units and Small Industrial-Commercial-Industrial Steam Generating Units, 70 FR 9706 (February 28, 2005).
- Prepared comments on Louisville Air Pollution Control District proposed Strategic Toxic Air Reduction regulations.
- Prepared comments and analysis of BAAQMD Regulation, Rule 11, Flare Monitoring at Petroleum Refineries.
- Prepared comments on Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electricity Utility Steam Generating Units (MACT standards for coal-fired power plants).
- Prepared Authority to Construct Permit for remediation of a large petroleum-contaminated site on the California Central Coast. Negotiated conditions with agencies and secured permits.
- Prepared Authority to Construct Permit for remediation of a former oil field on the California Central Coast. Participated in negotiations with agencies and secured permits.
- Prepared and/or reviewed hundreds of environmental permits, including NPDES, UIC, Stormwater, Authority to Construct, Prevention of Significant Deterioration, Nonattainment New Source Review, Title V, and RCRA, among others.

- Participated in the development of the CARB document, *Guidance for Power Plant Siting and Best Available Control Technology*, including attending public workshops and filing technical comments.
- Performed data analyses in support of adoption of emergency power restoration standards by the California Public Utilities Commission for "major" power outages, where major is an outage that simultaneously affects 10% of the customer base.
- Drafted portions of the Good Neighbor Ordinance to grant Contra Costa County greater authority over safety of local industry, particularly chemical plants and refineries.
- Participated in drafting BAAQMD Regulation 8, Rule 28, Pressure Relief Devices, including participation in public workshops, review of staff reports, draft rules and other technical materials, preparation of technical comments on staff proposals, research on availability and costs of methods to control PRV releases, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and cost of low-leak technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pumps and Compressors, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak and seal-less technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 5, Storage of Organic Liquids, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of controlling tank emissions, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors at Petroleum Refinery Complexes, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 22, Valves and Flanges at Chemical Plants, etc, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pump and Compressor Seals, including participation in public workshops, review of staff reports, proposed rules, and other

supporting technical material, preparation of technical comments on staff proposals, research on availability of low-leak technology, and presentation of testimony before the Board.

- Participated in the development of the BAAQMD Regulation 2, Rule 5, Toxics, including participation in public workshops, review of staff proposals, and preparation of technical comments.
- Participated in the development of SCAQMD Rule 1402, Control of Toxic Air Contaminants from Existing Sources, and proposed amendments to Rule 1401, New Source Review of Toxic Air Contaminants, in 1993, including review of staff proposals and preparation of technical comments on same.
- Participated in the development of the Sunnyvale Ordinance to Regulate the Storage, Use and Handling of Toxic Gas, which was designed to provide engineering controls for gases that are not otherwise regulated by the Uniform Fire Code.
- Participated in the drafting of the Statewide Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries, including participation in workshops, review of draft plans, preparation of technical comments on draft plans, and presentation of testimony before the SWRCB.
- Participated in developing Se permit effluent limitations for the five Bay Area refineries, including review of staff proposals, statistical analyses of Se effluent data, review of literature on aquatic toxicity of Se, preparation of technical comments on several staff proposals, and presentation of testimony before the Bay Area RWQCB.
- Represented the California Department of Water Resources in the 1991 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on a striped bass model developed by the California Department of Fish and Game.
- Represented the State Water Contractors in the 1987 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on natural flows, historical salinity trends in San Francisco Bay, Delta outflow, and hydrodynamics of the South Bay.
- Represented interveners in the licensing of over 20 natural-gas-fired power plants and one coal gasification plant at the California Energy Commission and elsewhere. Reviewed and prepared technical comments on applications for certification, preliminary staff assessments, final staff assessments, preliminary determinations of compliance, final determinations of compliance, and prevention of significant deterioration permits in the areas of air quality, water supply, water quality, biology, public health, worker safety, transportation, site contamination, cooling systems, and hazardous materials. Presented written and oral testimony in evidentiary hearings with cross examination and rebuttal. Participated in technical workshops.

- Represented several parties in the proposed merger of San Diego Gas & Electric and Southern California Edison. Prepared independent technical analyses on health risks, air quality, and water quality. Presented written and oral testimony before the Public Utilities Commission administrative law judge with cross examination and rebuttal.
- Represented a PRP in negotiations with local health and other agencies to establish impact of subsurface contamination on overlying residential properties. Reviewed health studies prepared by agency consultants and worked with agencies and their consultants to evaluate health risks.

WATER QUALITY/RESOURCES

- Directed and participated in research on environmental impacts of energy development in the Colorado River Basin, including contamination of surface and subsurface waters and modeling of flow and chemical transport through fractured aquifers.
- Played a major role in Northern California water resource planning studies since the early 1970s. Prepared portions of the Basin Plans for the Sacramento, San Joaquin, and Delta basins including sections on water supply, water quality, beneficial uses, waste load allocation, and agricultural drainage. Developed water quality models for the Sacramento and San Joaquin Rivers.
- Conducted hundreds of studies over the past 40 years on Delta water supplies and the impacts of exports from the Delta on water quality and biological resources of the Central Valley, Sacramento-San Joaquin Delta, and San Francisco Bay. Typical examples include:

    1. Evaluate historical trends in salinity, temperature, and flow in San Francisco Bay and upstream rivers to determine impacts of water exports on the estuary;
    2. Evaluate the role of exports and natural factors on the food web by exploring the relationship between salinity and primary productivity in San Francisco Bay, upstream rivers, and ocean;
    3. Evaluate the effects of exports, other in-Delta, and upstream factors on the abundance of salmon and striped bass;
    4. Review and critique agency fishery models that link water exports with the abundance of striped bass and salmon;
    5. Develop a model based on GLMs to estimate the relative impact of exports, water facility operating variables, tidal phase, salinity, temperature, and other variables on the survival of salmon smolts as they migrate through the Delta;
    6. Reconstruct the natural hydrology of the Central Valley using water balances, vegetation mapping, reservoir operation models to simulate flood basins, precipitation records, tree ring research, and historical research;

7. Evaluate the relationship between biological indicators of estuary health and down-estuary position of a salinity surrogate (X2);
8. Use real-time fisheries monitoring data to quantify impact of exports on fish migration;
9. Refine/develop statistical theory of autocorrelation and use to assess strength of relationships between biological and flow variables;
10. Collect, compile, and analyze water quality and toxicity data for surface waters in the Central Valley to assess the role of water quality in fishery declines;
11. Assess mitigation measures, including habitat restoration and changes in water project operation, to minimize fishery impacts;
12. Evaluate the impact of unscreened agricultural water diversions on abundance of larval fish;
13. Prepare and present testimony on the impacts of water resources development on Bay hydrodynamics, salinity, and temperature in water rights hearings;
14. Evaluate the impact of boat wakes on shallow water habitat, including interpretation of historical aerial photographs;
15. Evaluate the hydrodynamic and water quality impacts of converting Delta islands into reservoirs;
16. Use a hydrodynamic model to simulate the distribution of larval fish in a tidally influenced estuary;
17. Identify and evaluate non-export factors that may have contributed to fishery declines, including predation, shifts in oceanic conditions, aquatic toxicity from pesticides and mining wastes, salinity intrusion from channel dredging, loss of riparian and marsh habitat, sedimentation from upstream land alternations, and changes in dissolved oxygen, flow, and temperature below dams.

- Developed, directed, and participated in a broad-based research program on environmental issues and control technology for energy industries including petroleum, oil shale, coal mining, and coal slurry transport. Research included evaluation of air and water pollution, development of novel, low-cost technology to treat and dispose of wastes, and development and application of geohydrologic models to evaluate subsurface contamination from in-situ retorting. The program consisted of government and industry contracts and employed 45 technical and administrative personnel.
- Coordinated an industry task force established to investigate the occurrence, causes, and solutions for corrosion/erosion and mechanical/engineering failures in the waterside systems (e.g., condensers, steam generation equipment) of power plants. Corrosion/erosion failures

caused by water and steam contamination that were investigated included waterside corrosion caused by poor microbiological treatment of cooling water, steam-side corrosion caused by ammonia-oxygen attack of copper alloys, stress-corrosion cracking of copper alloys in the air cooling sections of condensers, tube sheet leaks, oxygen in-leakage through condensers, volatilization of silica in boilers and carry over and deposition on turbine blades, and iron corrosion on boiler tube walls. Mechanical/engineering failures investigated included: steam impingement attack on the steam side of condenser tubes, tube-to-tube-sheet joint leakage, flow-induced vibration, structural design problems, and mechanical failures due to stresses induced by shutdown, startup and cycling duty, among others. Worked with electric utility plant owners/operators, condenser and boiler vendors, and architect/engineers to collect data to document the occurrence of and causes for these problems, prepared reports summarizing the investigations, and presented the results and participated on a committee of industry experts tasked with identifying solutions to prevent condenser failures.

- Evaluated the cost effectiveness and technical feasibility of using dry cooling and parallel dry-wet cooling to reduce water demands of several large natural-gas fired power plants in California and Arizona.
- Designed and prepared cost estimates for several dry cooling systems (e.g., fin fan heat exchangers) used in chemical plants and refineries.
- Designed, evaluated, and costed several zero liquid discharge systems for power plants.
- Evaluated the impact of agricultural and mining practices on surface water quality of Central Valley steams. Represented municipal water agencies on several federal and state advisory committees tasked with gathering and assessing relevant technical information, developing work plans, and providing oversight of technical work to investigate toxicity issues in the watershed.

AIR QUALITY/PUBLIC HEALTH

- Prepared or reviewed the air quality and public health sections of hundreds of EIRs and EISs on a wide range of industrial, commercial and residential projects.
- Prepared or reviewed hundreds of NSR and PSD permits for a wide range of industrial facilities.
- Designed, implemented, and directed a 2-year-long community air quality monitoring program to assure that residents downwind of a petroleum-contaminated site were not impacted during remediation of petroleum-contaminated soils. The program included real-time monitoring of particulates, diesel exhaust, and BTEX and time integrated monitoring for over 100 chemicals.
- Designed, implemented, and directed a 5-year long source, industrial hygiene, and ambient monitoring program to characterize air emissions, employee exposure, and downwind environmental impacts of a first-generation shale oil plant. The program included stack

monitoring of heaters, boilers, incinerators, sulfur recovery units, rock crushers, API separator vents, and wastewater pond fugitives for arsenic, cadmium, chlorine, chromium, mercury, 15 organic indicators (e.g., quinoline, pyrrole, benzo(a)pyrene, thiophene, benzene), sulfur gases, hydrogen cyanide, and ammonia. In many cases, new methods had to be developed or existing methods modified to accommodate the complex matrices of shale plant gases.

- Conducted investigations on the impact of diesel exhaust from truck traffic from a wide range of facilities including mines, large retail centers, light industrial uses, and sports facilities. Conducted traffic surveys, continuously monitored diesel exhaust using an aethalometer, and prepared health risk assessments using resulting data.
- Conducted indoor air quality investigations to assess exposure to natural gas leaks, pesticides, molds and fungi, soil gas from subsurface contamination, and outgasing of carpets, drapes, furniture and construction materials. Prepared health risk assessments using collected data.
- Prepared health risk assessments, emission inventories, air quality analyses, and assisted in the permitting of over 70 1 to 2 MW emergency diesel generators.
- Prepare over 100 health risk assessments, endangerment assessments, and other health-based studies for a wide range of industrial facilities.
- Developed methods to monitor trace elements in gas streams, including a continuous real-time monitor based on the Zeeman atomic absorption spectrometer, to continuously measure mercury and other elements.
- Performed nuisance investigations (odor, noise, dust, smoke, indoor air quality, soil contamination) for businesses, industrial facilities, and residences located proximate to and downwind of pollution sources.

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Assessment, Control and Remediation of LNAPL Contaminated Sites, API and USEPA, 9/94
Pesticides in the TIE Process, SETAC, 6/96
Sulfate Minerals: Geochemistry, Crystallography, and Environmental Significance, Mineralogical Society of America/Geochemical Society, 11/00.
Design of Gas Turbine Combined Cycle and Cogeneration Systems, Thermoflow, 12/00
Air-Cooled Steam Condensers and Dry- and Hybrid-Cooling Towers, Power-Gen, 12/01
Combustion Turbine Power Augmentation with Inlet Cooling and Wet Compression, Power-Gen , 12/01
CEQA Update, UC Berkeley Extension, 3/02
The Health Effects of Chemicals, Drugs, and Pollutants, UC Berkeley Extension, 4-5/02
Noise Exposure Assessment: Sampling Strategy and Data Acquisition, AIHA PDC 205, 6/02
Noise Exposure Measurement Instruments and Techniques, AIHA PDC 302, 6/02
Noise Control Engineering, AIHA PDC 432, 6/02
Optimizing Generation and Air Emissions, Power-Gen, 12/02
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McIlvaine Hot Topic Hour, WE Energies Hg Control Update, 1/12/07
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McIlvaine Hot Topic Hour, Spray Driers vs. CFBs, 7/3/08
McIlvaine Hot Topic Hour, Air Pollution Control Cost Escalation, 9/25/08
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McIlvaine Hot Topic Hour, Mercury and Toxics Monitoring, 2/5/09
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McIlvaine Hot Topic Hour, 98% Limestone Scrubber Efficiency, 7/9/09
McIlvaine Hot Topic Hour, Carbon Management Strategies and Technologies, 6/24/10
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EXHIBIT B

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15 November 2021

A-101

RE: Heber 1 Geothermal Repower Project

Dear Ms. Messing,

I write to reply to responses to my comments on the Initial Study and Mitigated Negative Declaration (IS/MND) prepared for the proposed Heber 1 Geothermal Repower Project. I note that the County responded to comments it referenced by number, but it provided no link between the numbers and specific comments. I could not determine whether the County responded to a letter prepared by Adams and Broadwell or the letter I prepared. I therefore did my best to associate the responses to comments I had prepared, based on topic. My qualifications for providing expert comments were provided with my letter of 10 March 2021.

County Response 45: "The site is a developed industrial complex with no existing habitat."

Reply: The County's premise for this conclusion is unsupported and inconsistent with the County's own findings. For one thing, the consulting biologist who visited the site documented 10 species of wildlife there, which confirmed the site provides habitat. Also, many industrial sites are used as habitat by species of wildlife. In my experience, wildlife, including special-status species, often occur on industrial sites such as machine-intensive agriculture (Photos 1 and 2), wind turbine pads (Photo 3). And access roads (Photo 4), sewage treatment facilities, the runways and tarmacs of Naval Air bases, and even on the most intensively industrialized portions of nuclear weapons facilities. I have documented wildlife use of asphalt pads used to cover leaked plutonium (Smallwood 1996, Smallwood et al. 1998). I have documented birds nesting on and within built structures on industrial facilities. And I have reviewed an abundant literature of wildlife use of industrial sites. My experience and the experience of many other ecologists support the standard that habitat is defined by a species' use of the environment (Hall et al. 1997, Morrison et al. 1998, Smallwood 2002), and not by County staff. The standard for determining absence of a species is not by summarily declaring a place absent of habitat, but rather by performing the appropriate surveys to exhaust reasonable opportunities to detect the species.

A-102

The County's premise also neglects the aerosphere portion of the project as habitat of many species of wildlife. The aerosphere is a vital habitat element of volant wildlife. Indeed, an entire discipline of ecology has emerged to study this essential aspect of

habitat – the discipline of aeroecology (Kunz et al. 2008, Davy et al. 2017, Diehl et al. 2017).



Photos 1 and 2. *A pair of California horned larks at their breeding site on bare ground in April 2020, in an agricultural field where safflower and wheat were cultivated to either side. Photos by K. Shawn Smallwood.*

A-102 cont.

Photo 3. *Male horned lark demonstrates its nesting skills to a watchful female on the bare ground of a wind turbine pad, Altamont Pass Wind Resource Area, 5 April 2017.*





Photo 4. *Killdeer nest on a graveled wind turbine access road in the Altamont Pass, 26 April 2016.*

A-102 cont.

County Response 45: "As noted by CRI/CURE, a comprehensive records search for biological resources, vegetation, and sensitive species was performed to identify species that could occupy the proposed project site and surrounding area. All databases used in this research (e.g., IPac, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site."

Reply: The County asserts a false standard. No standard exists that only public agency-managed databases should be consulted. This is not the standard in science, which includes thousands of peer-reviewed publications based on databases under than IPac or CNDDB, nor is it the standard of CEQA. Another false assertion of the response is that IPac or CNDDB are the standard databases to be consulted to determine the biological community at a project site. This was never the intended purpose of IPac nor CNDDB. CNDDB appropriately posts the following disclaimer: "We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers. Likewise, your contribution of data to the CNDDB is equally important to the maintenance of the CNDDB. …" Similarly, iPac makes no claim of perfect knowledge of species occurrences at or near a site. Below is an explanation for why these databases cannot serve the role the County inappropriately ascribes them.

A-103

Spatial distributions of animal populations are naturally dynamic, with centers of activity shifting every generation or so (Taylor and Taylor 1979). Hypotheses for these include the need to exploit forage that has accumulated elsewhere while it depleted at the sites from where the population is shifting, the need to escape predator or parasite loads, and the need of young animals to leave natal areas to form new breeding

populations. Whatever the reasons, animal populations are not static in their distribution, so past sightings records cannot entirely inform of a species' current locations. A recorded presence of a species in CNDDB informs of the capacity of a site to support the species, but it does not mean the species is always present. Likewise, the reported absence of a species does not necessarily mean the site lacks the capacity to support members of the species nor that the species would continue to be absent from the site. But this latter point goes to another weakness of CNDDB for the purpose the County ascribes it. Absence is never recorded in CNDDB. That is, negative findings from reconnaissance-level surveys and protocol-level detection surveys are never reported to CNDDB. CNDDB does not support the means to track negative findings, nor does it monitor survey effort or survey methods. Lacking these types of contextual data, CNDDB's records can be interpreted only as fortuitous sightings of special-status species. There is no scientific sampling framework to CNDDB, which also relies entirely on volunteer reporting from biologists who were allowed access to whatever property they are reporting from. Many properties have never been surveyed by biologists, and there are many more that have been surveyed by the survey outcomes never reported to CNDDB.

The response also claims that IPac and CNDDB "serve as the standard for determining the biological community present in/near a project site." Partly for the reasons given above, these databases do not determine the presence of biological communities at a site. These databases track sightings records or occurrence potentials of special-status species. Where special-status species are detected during a survey, the investigator might (but often does not) report the detections to CNDDB. Those special-status species that were present at the site but which were undetected, are not recorded to CNDDB. None of the species lacking special status are recorded to CNDDB, and these species compose the majority of species at any given site. In other words, sightings records are of a very small fraction of the biological community at any given site. CNDDB does not inform of biological communities.

A-103 cont.

An important CEQA objective is to publicly disclose potential environmental impacts of a proposed project so that decision-makers and the public can make more informed decisions over whether and how to proceed with a proposed project. To meet this objective, CEQA does not require use of CNDDB and iPac as the sole databases upon which to inform the public. Nor do detection survey guidelines for any particular species suggest relying solely on CNDDB or iPac for determining habitat suitability at a site. The response asserts exclusionary use of CNDDB and iPac as a false standard, and it asserts a purpose for these databases that was never intended nor scientifically justifiable.

Public participation with decision-making over proposed projects is another important CEQA objective, and one to which the public can contribute via their observations of special-status species on or near a project site. Observations of the public can be just as informative – and more so – as those of professional biologists, especially regarding cases where biologists commit very little time and effort toward detecting special-status species at a site. eBird is a compilation of observations of the public. It is administered competently by Cornell University Laboratory of Ornithology – the most respected ornithological organization in North America and a leading authority in the world. Nearly 600 scientific papers based on eBird records have been peer-reviewed and published: https://ebird.org/science/ publications. eBird not only serves as a highly useful source of information for predicting the occurrence likelihoods of special-status species, but it helps to meet CEQA's objective of public participation. My review of eBird and iNaturalist identified 56 special-status species of vertebrate wildlife either observed near the project site or whose ranges overlap the site (see Table 1 of my 10 March 2021 letter).

A-103 cont.

County Response 45: "After a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site" … and "confirmed that the site is completely void of any habitat and sensitive species."

Reply: The survey confirmed no such conclusion that the site is void of habitat and wildlife. Ten species of vertebrate wildlife were detected on the site, 9 of which are protected by the Migratory Bird Treaty Act, as well as California's version of the MBTA. Even had the consultant seen no wildlife at the site, reconnaissance-level surveys in general are not designed nor intended for confirming absence of species. Detection surveys are the types of surveys that have been formulated by species' experts for this purpose. For example, the California Department of Fish and Wildlife committed a large effort to formulate survey guidelines for burrowing owl (CDFW 2012). A reconnaissance-level survey would be useful for recommending which detection surveys to perform and when to perform them. Another purpose of reconnaissance-level surveys is to fortuitously detect species, thereby negating the need for detection surveys. But to be taken seriously, reconnaissance-level surveys need to be performed during the time of year and time of day that makes sense for detecting particular species. Here, the survey was performed in the middle of a July afternoon in Imperial Valley, which does not allow for a representative picture of the site. High temperatures and other conditions during this time of year and time of day are unlikely to present an accurate view of the species present on the Project site.

A-104

County Response 45: "Dr. Smallwood's criticism of the on-site surveys speculates on the efficacy of surveys that are used by professionals in this profession."

Reply: My comments do not speculate on the efficacy of surveys used by professionals. Rather, my comments address the severely deficient on-site survey that was performed in the middle of a July day in the Imperial Valley. Based on my years of planning and conducting wildlife surveys, it is evident to me that there was a low likelihood of detecting animal species due to the selected time of year and time of day to conduct the survey. For the survey to provide meaningful information about the species present on

A-105

the site, the time of year and time of day must be adequately considered to determine when species are most active and most detectable. In my professional capacity, I have studied the efficacy of wildlife surveys and have done so throughout my career since 1985, as evidenced by many of my papers in peer-reviewed scientific journals. I studied the efficacy of track counts for mammalian carnivores, of burrow counts for fossorial mammals, of GPS telemetry for golden eagles, of thermal-imaging surveys for nocturnal animals, of live-trapping for small mammals, and of visual scan surveys for behavior observations and for species detections. I have performed thousands of visual scan surveys of the type often referred to as reconnaissance-level surveys, including on industrial sites and in desert environments including in Imperial County. I have surveyed many of the same sites that were surveyed by consulting biologists; my last count of such surveys was more than 150. I have also directly compared survey outcomes between the consulting biologists' reconnaissance-level surveys and my own. I have specifically measured times of year and times of day when species of wildlife are most active and most detectable.

A-105 cont.

County Response 46: eBird is a data base to which both novices and experts contribute sightings records, so it is not used by professionals.

Reply: Nearly 600 papers have been published by professionals who relied upon eBird data. eBird applies filters to submitted records, and these filters are used by professionals to minimize errors when preparing papers for publication. Although it is true that novices contribute records to eBird, they receive feedback from experts and submitted records often include notes and photos. I have checked many of the notes and photos, and have occasionally found errors such as a juvenile red-tailed hawk identified as a Swainson's hawk. Another flag for potential error is when records identify species far outside their geographic range or outside their migration season. However, these flags are for *potential* errors because it is not uncommon for birds to stray from their normal range or to occur out of season. A means for checking whether anomalous records represent errors is to search for patterns by checking for other sightings of the same species in the same area. Another means for checking on the veracity of records is to notice who entered the record. I am familiar with many of the most experienced naturalists in California. If a lone record of a species within the region is from a reliable source or if it was supported by a clear photo or compelling note, then I am more inclined to trust it. If a lone record is from a source of unknown skill level and it lacks any clear photo or compelling note, then I do not rely on it. In my experience, the vast majority of submitted records have proven accurate.

A-106

Ironically, the response goes on to defend the use of CNDDB without addressing my comment that the County used CNDDB inappropriately. As explained in my reply to Response 45, CNDDB is not useful for characterizing the wildlife community nor for determining species' absence. To characterize wildlife communities, intensive multiyear studies are performed using all methods available to detect and count all types of fauna. Such studies are costly and rare, and usually performed to meet academic objectives. The vast majority of studies from which CNDDB records have accumulated were inconsistent with the types of study needed for characterizing wildlife communities.

CNDDB is a fine tool for CEQA analysis, but not for the way it was used in the analysis of potential impacts related to the proposed project.

A-106 cont.

County Response 46: The County complains that the quoted assertions were provided without citation, thereby preventing verification.

Reply: I do not know exactly which quoted assertions to which the County refers, because the response number is not linked to comment letters. If the response was to the following quoted statement, then my reply that follows would be appropriate. "We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers. Likewise, your contribution of data to the CNDDB is equally important to the maintenance of the CNDDB. …" As I wrote in my comment letter, the quote appears as a disclaimer by CNDDB. It appears at the bottom of the main web page: https://wildlife.ca.gov/Data/CNDDB/About.

A-107

County Response 47: The response asserts that the baseline environment is the operative Heber 1 project, and that nothing would change about it to affect wildlife.

Reply: My comments identify specific changes to the project, which would include at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks. I commented that these new structures would pose new collision hazards to wildlife for the subsequent 30 years of operations. The County's response to my comments neither acknowledge these project changes, nor addresses the significant impacts on species that could result.

A-108

County Response 48: The response claims that my comment is vague because I did not name the species for which occurrence likelihood analysis was inconsistent.

Reply: The County response is wrong. I cited the page (page 20) where the County makes the errors, and I cited my Table 1 which identifies the species for which occurrence likelihood analysis was inconsistent, such as the Yellow warbler, *Setophaga petechia*, Western mastiff bat, *Eumops perotis*, and Western yellow bat, *Lasiurus xanthinus*.

A-109

County Response 49: The County claims that my Table 1 was based on eBird.

Reply: My Table 1 was based on both eBird and iNaturalist. Note that I did not use either of these databases to determine absence of any species, which is exactly how the County misused IPac and CNDDB.

A-110

County Response 49: COA-BIO-1 through COA-BIO-4 would prevent impacts to wildlife.

A-111

Reply: The measures proposed are not preventative; they are take-minimization measures. All four of the measures are intended to minimize take during construction, but do nothing to avoid, minimize, rectify or compensate for impacts that would happen over the subsequent 30 years of operations. None of the measures would prevent collision mortality, which is a potentially significant impact due to new structures that would pose new collision hazards to wildlife for the subsequent 30 years of operations. And although the proposed measures should be implemented should the project go forward, they typically avoid impacts to very few animals because wildlife are proficient at hiding their nest and roost sites. At best, the proposed measures would minimize take to a small fraction of animals at the site at the time of construction.

A-111 cont.

County Response 50: The assertion is repeated that the project site is completely void of habitat and of wildlife species.

A-112

Reply: This assertion was readily refuted by the project's consultant who documented 10 species of wildlife at the site even though the survey was performed mid-day in July – a time date least likely to detect wildlife.

County Response 51: The County says that my analogy of wildlife species occupying the last remaining patches of habitat as a game of musical chairs is speculative.

Reply: My analogy is based on my years of experience surveying for wildlife and a well-documented process known as habitat fragmentation (Smallwood 2015), which is the diminishment and increasing separation of habitat patches or fragments. It is regarded by ecologists and conservation biologists as one of the two greatest threats to plants and animals – the other major threat being that of habitat loss. As habitat fragments into smaller, isolated patches, species of wildlife tend to load into the remaining fragments, at least temporarily resulting in greater species richness than one might expect. For example, burrowing owls are on the decline in California as their traditional habitat is being destroyed for various types of development, and as burrowing owls have declined, they have more often been detected on construction sites and other highly disturbed sites. Burrowing owls will try to survive in whatever environmental footholds they can, including where they are under threat from heavy machinery. If the owls can survive long enough to produce chicks, then they will use industrial sites. If this is the only type of environment humans will leave for species such as burrowing owls, then they will try their best to survive in it.

A-113

The musical chairs pattern of species' occurrence is a pattern I have noticed in my own surveys for wildlife, even in highly disturbed environments. I recently surveyed a site that had been severely damaged by decades of hydraulic mining followed by decades of testing of rocket engines, and in the meantime surrounded by residential and commercial development. As damaged as the site appears today, with all the industrial infrastructure standing atop soilless cobble and surrounded by urban sprawl, in less than three hours I detected 34 species of wildlife, including 8 special-status species – one of them a listed species. At another site I recently surveyed, a biomass electrical generation plant had just been decommissioned, leaving hard-packed ground with

scattered patches of ruderal vegetation. It was bordered by an operative gravel mining operation and bare-floor nut orchards. But it was the only place where many species of wildlife in the region could find opportunities for stop-over or staging to reach other destinations. The gravel mining operation also included a small retention pond, much like that of the Heber 1 project site. This retention pond along with the open space of the proposed project site drew the attention of many volant animals. During my reconnaissance survey, I saw 30 species of wildlife at this highly degraded site, including 7 special-status species with 2 of them listed. I can cite many more examples of this type of species loading onto the last remaining patches of what the species regard as habitat.

My musical chairs analogy includes the end of the music, when only the last chair remains. This part of the analogy is also true to experience, and I can cite many examples of it, but I will mention only two. Burrowing owls in Yolo County can serve as one example. I once monitored multiple populations of burrowing owls in Yolo County, but these populations were displaced by developments, one after the other. Burrowing owls showed up here and there, including on construction sites and in places that conventional wisdom would have ruled out. The last known breeding pair nested under a stand of large trees next to a new hotel in 2019. Their last "chair" was in a setting – under trees – that was atypical of the species. But with even more of their foraging habitat taken by commercial development that year, their last chair was pulled out from under them. It appears that the burrowing owl has been extirpated from Yolo County.

The second example is the endangered Fresno kangaroo rat (*Dipodomys nitratoides*). I worked to conserve this species for 13 years on three fragments of habitat that looked little like the environment where they thrived a century earlier (we know this from records of naturalists of that time). The first chair was pulled when one of the three sites was laser-planed to prepare for a high-value commercial crop. The second was pulled by poor management decisions that choked out the species with dense stands of one type of plant. Fresno kangaroo rats are now residing on their last chair until the music stops and this last chair is also pulled from the kangaroo rat's world. My analogy is not speculative; it represents what has been happening time and again and will likely continue until there is little left in the world of any human interest.

A-113 cont.

County Response 52: The Count complains that I cited no laws, regulations or statutes requiring analysis of aerial habitat of wildlife.

Reply: Except for the cases of nest structures, roost sites, and other special habitat features, the laws, regulations and statutes regarding wildlife apply to habitat. Habitat for many species includes those portions of the aerosphere that they use (Kunz et al. 2008, Davy et al. 2017, Diehl et al. 2017). No additional laws, regulations or statutes need to be cited because they are the same laws, regulations and statutes that apply to terrestrial habitat.

A-114

County Response 52: The County says that if such authorities exist regarding aerial portions of habitat, they would apply to every building, structure, and development.

A-115

Reply: Many guidelines and best practices guidelines have been formulated to minimize collision impacts of wildlife with anthropogenic structures, including with buildings, utility lines, communication towers, and wind turbines.

A-115 cont.

County Response 52: "The suggestion of absence of evidence is not evidence."

Reply: It is unclear which comment this response refers, but its context likely has something to do with the collision mortality estimates I cited for the types of structures the project proposes. The estimates I cited were empirical, meaning they were based on data from scientific measurements. The point of making such estimates is to apply them to situations where the estimates can predict outcomes. My application of the estimates was appropriate, and the estimates predict substantial impacts to wildlife that would likely be caused by the project. The estimates support a fair argument for the need to prepare an EIR to appropriately analyze potential project impacts to wildlife.

A-116

County Response 53: A complaint is made about views having been made regarding certain laws.

Reply: Without knowing which comment the response goes to, I am unable to reply except to generally state that given my professional expertise as a biologist, the scope of my comments pertain to biological impacts from a technical and scientific perspective.

A-117

County Response 54: "No new transmission lines, fencing or changes to Heber 1 fencing are proposed. Structures would be located in developed areas surrounded by existing structures."

Reply: The response misleads by conveniently redefining new structures as those built outside the existing layout of structures. New structures are proposed that present significant biological impacts requiring effective and enforceable mitigation measures, even though most of these new structures would occur within the bounds of the existing project, including the retention pond. New structures along with existing structures would be assigned the new condition of causing another 3 decades of chronic collision-mortality impacts to wildlife.

A-118

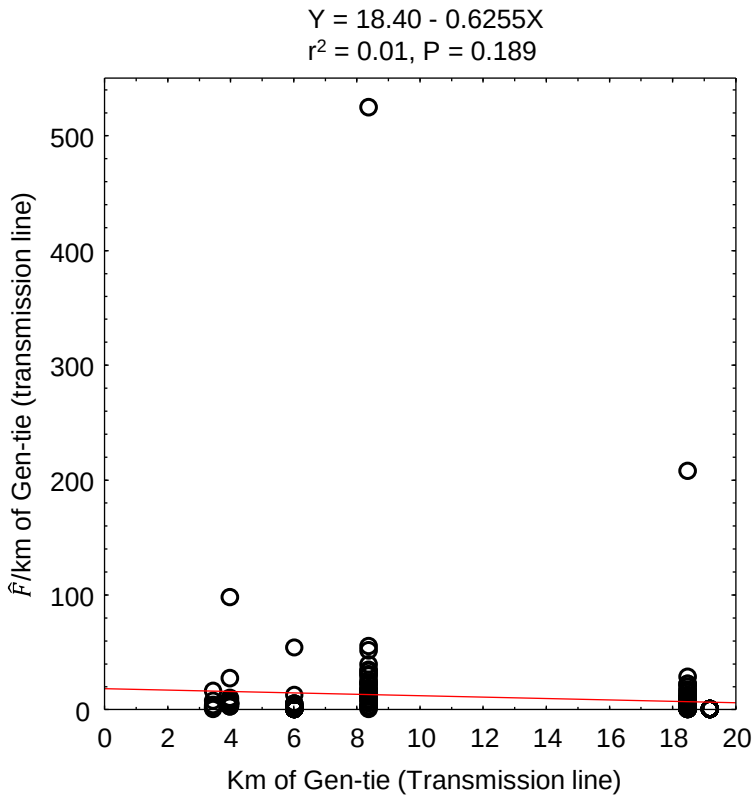
County Response 54: The County speculates that my use of collision fatality rates had been drawn from utility solar projects that are unrepresentative of the scale of the structures to occur in the proposed project.

Reply: In fact, the collision mortality along fences and transmission lines were drawn from a wide range of project sizes. The County provides no basis for its assertion, thus qualifying it as speculation. Here, the power blocks that I used as surrogates for proposed structures such as the ORMAT energy converters were for the same-sized solar projects, and I therefore did not need to explore a scale effect for the power blocks . It is possible, however, that collision fatalities with the power blocks in solar projects would number more or fewer than those with Heber 1's proposed structures due to a difference in scale, i.e., size. The lengths of fences and transmission lines that were monitored at solar projects varied considerably, so I had the basis for testing for scale

A-119

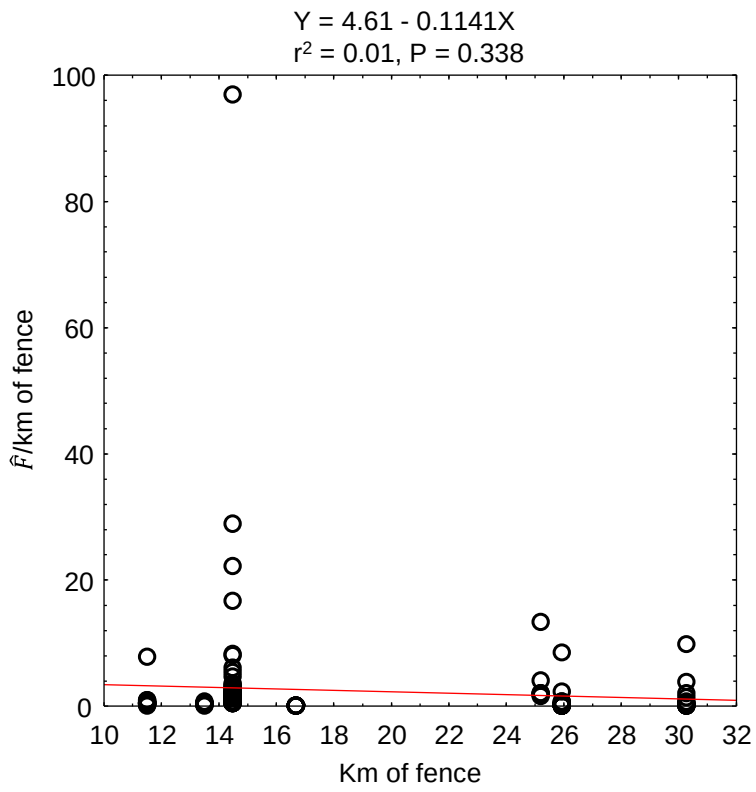
effects of these structures. I regressed estimated fatality rates on the lengths of transmission line and fence used to generate the fatality estimates (Figures 1 and 2). I found no significant effects of length of transmission line nor of the fence on collision fatality rates. My original predictions of collision mortality therefore stand.

Figure 1. *Estimated fatalities/km of transmission line regressed on km of transmission line among solar projects analyzed in Smallwood (2020).*



A-119 cont.

Figure 2. *Estimated fatalities/km of fence regressed on km of fence among solar projects analyzed in Smallwood (2020).*



A-119 cont.

County Response 54: The County argues that the solar projects from which I drew collision fatality estimates were green fields, thereby disqualifying them as suitable comparisons to potential impacts at the proposed Heber 1 project, which already exists.

Reply: The County's argument is speculative and unsupported. The County's argument implies that birds habituate to hazards in their airspace. Whether birds habituate to such hazards has been looked into, most often in the context of wind turbine collision mortality. My most recent test of habituation revealed that resident songbirds might show some capacity for habituation when they are assisted by contrast painting of the structures that pose the hazard, but not migrants nor raptors (K. S. Smallwood, unpublished data). Without the assistance of contrast painting, fatality rates continued unchanged for years, and showed no change other than reflections of multi-annual cycles of abundance unique to each species.

A-120

Once structures are built into a bird species' airspace, that species' collision risk with those structures does not depend on what existed at the site before. Among the wind energy repowering projects I have worked with over the last 15 years, I have seen no difference in fatality rates between new turbines built onto green fields versus those built exactly where the old turbines used to operate. The substantial collision risk factors have been terrain and wind. Collision risk applies to birds flying through the airspace that exists at the time of the flight, and not what existed there last year.

County Responses 55 –57: The County argues that its four conditions would prevent the impacts to wildlife that it also argues would not happen because wildlife do not occur on the project site.

Reply: As I explained earlier, I concur with the implementation of the four measures proposed, but they must be imposed as enforceable mitigation measures and I disagree that they would prevent impacts or that they would reduce impacts to less-than-significant levels. The measures proposed are take-minimization measures, but would not prevent impacts. Contrary to the County's claim, CAO-BIO 3 would not be consistent with CDFW (2012) guidelines, which do not recommend preconstruction surveys without first having performed detection surveys. A-121

County Response 57: The County takes issue with my characterization of the focused Mastiff bat survey as a preconstruction survey, which it then labels as a preconstruction survey.

Reply: In effect, due to the proposed timing of the survey, it would be a preconstruction survey. A focused survey is typically performed for the purpose of informing the CEQA review and the consumers of that review. Performing the survey after CEQA review fails to inform decision-makers and the public, nor does it inform the formulation of an appropriate mitigation plan. A-122

Errata to the MND

I disagree with the change to the IS/MND to Less that Significant Impact under Biological Resources (d). The IS/MND does not analyze potential project impacts to flying birds that could be caused by additional structures built into the airspace used by birds to move through the region. My analysis of potential impacts reveal substantial collision mortality would be caused by new structures, let alone by existing structures allowed to operate another 30 years. The errata claims that no sensitive bird species occur at the project site, but this claim neglects the 10 species documented at the site by Chambers Group (2019:App. D), 9 of which are protected by the Migratory Bird Treaty Act. Moreover, it is important to again emphasize that these species were identified during a survey performed in the heat of a July day when wildlife would least likely be detectable, and by a type of survey unsuited for supporting determinations of absence of special-status species. Additionally, publicly available data indicates the presence of 42 special-status species of birds in the area of the project (see Table 1 of my 10 March 2021 comment letter), which means there is a high likelihood of the project's structures interfering with the movement of wildlife in the region. Furthermore, the project would eliminate two of the site's three existing retention ponds, which are likely used by many of the 42 special-status species of birds and by the 12 special-status species of bats known to the area. A-123

Thank you for your attention,



Shawn Smallwood, Ph.D.

A-123
cont.

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Curriculum Vitae

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Born May 3, 1963 in
Sacramento, California.
Married, father of two.

Ecologist

Expertise

- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;
- Wildlife monitoring and field study using GPS, thermal imaging, behavior surveys;
- Using systems analysis and experimental design principles to identify meaningful ecological patterns that inform management decisions.

Education

Ph.D. Ecology, University of California, Davis. September 1990.
M.S. Ecology, University of California, Davis. June 1987.
B.S. Anthropology, University of California, Davis. June 1985.
Corcoran High School, Corcoran, California. June 1981.

Experience

- 704 professional publications, including:
- 89 peer reviewed publications
- 24 in non-reviewed proceedings
- 589 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 92 public presentations of research results

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC reviewed the science underlying the Alameda County Avian Protection Program, and advised

the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Part-time Lecturer, 1998-2005, California State University, Sacramento. Instructed Mammalogy, Behavioral Ecology, and Ornithology Lab, Contemporary Environmental Issues, Natural Resources Conservation.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Informed academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws. Testified at public hearings on endangered species issues.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning, and quantitative assessment of land units for their conservation and restoration opportunities basedon ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County

to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science, *U.C. Davis*. Under Dr. Shu Geng's mentorship, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Managed and analyzed a data base of energy use in California agriculture. Assisted with landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing statewide mountain lion track count for long-term monitoring.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District, I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a $718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin, I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founds of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al*. v. Rockwell International *et al*., No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a $553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

Workshops on HCPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a "properly functioning HCP." Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson's hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersion of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

Peer Reviewed Publications

Smallwood, K. S., and N. L. Smallwood. 2021. Breeding Density and Collision Mortality of Loggerhead Shrike (*Lanius ludovicianus*) in the Altamont Pass Wind Resource Area. Diversity 13, 540. https://doi.org/10.3390/d13110540.

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- Woodland Research Park DEIR (2021; 45);

- Jersey Industrial Complex Rancho Cucamonga (2021; 20);
- 1188 Champions Drive Parking Garage Staff Report, San Jose (2021; 5);
- San Pedro Mountain, Pacifica (2021; 22);
- Pixior Warehouse IS/MND, Hesperia (2021; 29);
- 2nd Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2021; 9);
- Hearn Veterans Village IS/MND, Santa Rosa (2021; 23);
- Second visit, Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2021; 11);
- Replies on Station East Residential/Mixed Use EIR, Union City (2021; 26);
- Schulte Logistics Centre EIR, Tracy (2021; 30);
- 4150 Point Eden Way Industrial Development EIR, Hayward (2021; 13);
- Airport Business Centre IS/MND, Manteca (2021; 27);
- Dual-branded Hotel IS/MND, Santa Clara (2021; 26);
- Legacy Highlands Specific Plan EIR, Beaumont (2021; 47);
- UC Berkeley LRDP and Housing Projects #1 and #2 EIR (2021; 27);
- Santa Maria Airport Business Park EIR, Santa Maria (2021; 27);
- Replies on Coachella Valley Arena EIR Addendum, Thousand Palms (2021; 20);
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- Alvarado Specific Plan DEIR, La Mesa (2021; 35);
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- Gillespie Field EIR Addendum, El Cajon (2021; 28);
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- Citrus-Slover Warehouse Project MND, Fontana (2021; 20);
- Scott Ranch Project RDEIR (Davidon Homes), Petaluma (2021; 31);
- Replies on StratosFuel Renewable H2 Project MND, Victorville (2021; 5);
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- Replies on PARS Global Storage MND, Murietta (2021; 22);
- Baldwin-Zacharias Master Plans EIR, Patterson (2021; 38);
- 1000 Gibraltar Drive EIR, Milpitas (2021; 20);
- Mango Avenue Industrial Warehouse Project, Fontana, MND (2021; 20);
- Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2021; 25);
- Replies on UCSF Comprehensive Parnassus Heights Plan EIR (2021; 13);
- 14 Charles Hill Circle Design Review (2021; 11);
- SDG Commerce 217 Warehouse IS, American Canyon (2021; 26);
- Mulqueeney Ranch Wind Repowering Project DSEIR (2021; 98);
- Clawiter Road Industrial Project IS/MND, Hayward (2021; 18);
- Garnet Energy Center Stipulations, New York (2020);
- Heritage Wind Energy Project, New York (2020: 71);
- Ameresco Keller Canyon RNG Project IS/MND, Martinez (2020; 11);
- Cambria Hotel Project Staff Report, Dublin (2020; 19);
- Central Pointe Mixed-Use Staff Report, Santa Ana (2020; 20);
- Oak Valley Town Center EIR Addendum, Calimesa (2020; 23);

- Coachillin Specific Plan MND Amendment, Desert Hot Springs (2020; 26);
- Stockton Avenue Hotel and Condominiums Project Tiering to EIR, San Jose (2020; 19);
- Cityline Sub-block 3 South Staff Report, Sunyvale (2020; 22);
- Station East Residential/Mixed Use EIR, Union City (2020; 21);
- Multi-Sport Complex & Southeast Industrial Annexation Suppl. EIR, Elk Grove (2020; 24);
- Sun Lakes Village North EIR Amendment 5, Banning, Riverside County (2020; 27);
- 2nd comments on 1296 Lawrence Station Road, Sunnyvale (2020; 4);
- 1296 Lawrence Station Road, Sunnyvale (2020; 16);
- Mesa Wind Project EA, Desert Hot Springs (2020; 31);
- 11th Street Development Project IS/MND, City of Upland (2020; 17);
- Vista Mar Project IS/MND, Pacifica (2020; 17);
- Emerson Creek Wind Project Application, Ohio (2020; 64);
- Replies on Wister Solar Energy Facility EIR, Imperial County (2020; 12);
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- Crimson Solar EIS/EIR, Mojave Desert (2020, 35) not submitted;
- Sakioka Farms EIR tiering, Oxnard (2020; 14);
- 3440 Wilshire Project IS/MND, Los Angeles (2020; 19);
- Replies on 2400 Barranca Office Development Project EIR, Irvine (2020; 8);
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- Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 4);
- 2nd comments on Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 8);
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- Declaration on DDG Visalia Warehouse project (2020; 5);
- Terraces of Lafayette EIR Addendum (2020; 24);
- AMG Industrial Annex IS/MND, Los Banos (2020; 15);
- Replies to responses on Casmalia and Linden Warehouse, Rialto (2020; 15);
- Clover Project MND, Petaluma (2020; 27);
- Ruby Street Apartments Project Env. Checklist, Hayward (2020; 20);
- Replies to responses on 3721 Mt. Diablo Boulevard Staff Report (2020; 5);
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- Steeno Warehouse IS/MND, Hesperia (2020; 19);
- UCSF Comprehensive Parnassus Heights Plan EIR (2020; 24);
- North Pointe Business Center MND, Fresno (2020; 14);
- Casmalia and Linden Warehouse IS, Fontana (2020; 15);
- Rubidoux Commerce Center Project IS/MND, Jurupa Valley (2020; 27);
- Haun and Holland Mixed Use Center MND, Menifee (2020; 23);
- First Industrial Logistics Center II, Moreno Valley IS/MND (2020; 23);
- GLP Store Warehouse Project Staff Report (2020; 15);
- Replies on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 29);
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- Levine-Fricke Softball Field Improvement Addendum, UC Berkeley (2020; 16);
- Greenlaw Partners Warehouse and Distribution Center Staff Report, Palmdale (2020; 14);

- Humboldt Wind Energy Project DEIR (2019; 25);
- Sand Hill Supplemental EIR, Altamont Pass (2019; 17);
- 1700 Dell Avenue Office Project, Campbell (2019, 28);
- 1180 Main Street Office Project MND, Redwood City (2019; 19:
- Summit Ridge Wind Farm Request for Amendment 4, Oregon (2019; 46);
- Shafter Warehouse Staff Report (2019; 4);
- Park & Broadway Design Review, San Diego (2019; 19);
- Pinnacle Pacific Heights Design Review, San Diego (2019; 19);
- Pinnacle Park & C Design Review, San Diego (2019; 19);
- Preserve at Torrey Highlands EIR, San Diego (2019; 24);
- Santana West Project EIR Addendum, San Jose (2019; 18);
- The Ranch at Eastvale EIR Addendum, Riverside County (2020; 19);
- Hageman Warehouse IS/MND, Bakersfield (2019; 13);
- Oakley Logistics Center EIR, Antioch (2019; 22);
- 27 South First Street IS, San Jose (2019; 23);
- 2nd replies on Times Mirror Square Project EIR, Los Angeles (2020; 11);
- Replies on Times Mirror Square Project EIR, Los Angeles (2020; 13);
- Times Mirror Square Project EIR, Los Angeles (2019; 18);
- East Monte Vista & Aviator General Plan Amend EIR Addendum, Vacaville (2019; 22);
- Hillcrest LRDP EIR, La Jolla (2019; 36);
- 555 Portola Road CUP, Portola Valley (2019; 11);
- Johnson Drive Economic Development Zone SEIR, Pleasanton (2019; 27);
- 1750 Broadway Project CEQA Exemption, Oakland (2019; 19);
- Mor Furniture Project MND, Murietta Hot Springs (2019; 27);
- Harbor View Project EIR, Redwood City (2019; 26);
- Visalia Logistics Center (2019; 13);
- Cordelia Industrial Buildings MND (2019; 14);
- Scheu Distribution Center IS/ND, Rancho Cucamonga (2019; 13);
- Mills Park Center Staff Report, San Bruno (2019; 22);
- Site visit to Desert Highway Farms IS/MND, Imperial County (2019; 9);
- Desert Highway Farms IS/MND, Imperial County (2019; 12);
- ExxonMobil Interim Trucking for Santa Ynez Unit Restart SEIR, Santa Barbara (2019; 9);
- Olympic Holdings Inland Center Warehouse Project MND, Rancho Cucamonga (2019; 14);
- Replies to responses on Lawrence Equipment Industrial Warehouse, Banning (2019; 19);
- PARS Global Storage MND, Murietta (2019; 13);
- Slover Warehouse EIR Addendum, Fontana (2019; 16);
- Seefried Warehouse Project IS/MND, Lathrop (2019; 19)
- World Logistics Center Site Visit, Moreno Valley (2019; 19);
- Merced Landfill Gas-To-Energy Project IS/MND (2019; 12);
- West Village Expansion FEIR, UC Davis (2019; 11);
- Site visit, Doheny Ocean Desalination EIR, Dana Point (2019; 11);
- Replies to responses on Avalon West Valley Expansion EIR, San Jose (2019; 10);
- Avalon West Valley Expansion EIR, San Jose (2019; 22);
- Sunroad – Otay 50 EIR Addendum, San Diego (2019; 26);

- Del Rey Pointe Residential Project IS/MND, Los Angeles (2019; 34);
- 1 AMD Redevelopment EIR, Sunnyvale (2019; 22);
- Lawrence Equipment Industrial Warehouse IS/MND, Banning (2019; 14);
- SDG Commerce 330 Warehouse IS, American Canyon (2019; 21);
- PAMA Business Center IS/MND, Moreno Valley (2019; 23);
- Cupertino Village Hotel IS (2019; 24);
- Lake House IS/ND, Lodi (2019; 33);
- Campo Wind Project DEIS, San Diego County (DEIS, (2019; 14);
- Stirling Warehouse MND site visit, Victorville (2019; 7);
- Green Valley II Mixed-Use Project EIR, Fairfield (2019; 36);
- We Be Jammin rezone MND, Fresno (2019; 14);
- Gray Whale Cove Pedestrian Crossing IS/ND, Pacifica (2019; 7);
- Visalia Logistics Center & DDG 697V Staff Report (2019; 9);
- Mather South Community Masterplan Project EIR (2019; 35);
- Del Hombre Apartments EIR, Walnut Creek (2019; 23);
- Otay Ranch Planning Area 12 EIR Addendum, Chula Vista (2019; 21);
- The Retreat at Sacramento IS/MND (2019; 26);
- Site visit to Sunroad – Centrum 6 EIR Addendum, San Diego (2019; 9);
- Sunroad – Centrum 6 EIR Addendum, San Diego (2018; 22);
- North First and Brokaw Corporate Campus Buildings EIR Addendum, San Jose (2018; 30);
- South Lake Solar IS, Fresno County (2018; 18);
- Galloo Island Wind Project Application, New York (not submitted) (2018; 44);
- Doheny Ocean Desalination EIR, Dana Point (2018; 15);
- Stirling Warehouse MND, Victorville (2018; 18);
- LDK Warehouse MND, Vacaville (2018; 30);
- Gateway Crossings FEIR, Santa Clara (2018; 23);
- South Hayward Development IS/MND (2018; 9);
- CBU Specific Plan Amendment, Riverside (2018; 27);
- 2nd replies to responses on Dove Hill Road Assisted Living Project MND (2018; 11);
- Replies to responses on Dove Hill Road Assisted Living Project MND (2018; 7);
- Dove Hill Road Assisted Living Project MND (2018; 12);
- Deer Ridge/Shadow Lakes Golf Course EIR, Brentwood (2018; 21);
- Pyramid Asphalt BLM Finding of No Significance, Imperial County (2018; 22);
- Amáre Apartments IS/MND, Martinez (2018; 15);
- Petaluma Hill Road Cannabis MND, Santa Rosa (2018; 21);
- 2nd comments on Zeiss Innovation Center IS/MND, Dublin (2018: 12);
- Zeiss Innovation Center IS/MND, Dublin (2018: 32);
- City of Hope Campus Plan EIR, Duarte (2018; 21);
- Palo Verde Center IS/MND, Blythe (2018; 14);
- Logisticenter at Vacaville MND (2018; 24);
- IKEA Retail Center SEIR, Dublin (2018; 17);
- Merge 56 EIR, San Diego (2018; 15);
- Natomas Crossroads Quad B Office Project P18-014 EIR, Sacramento (2018; 12);
- 2900 Harbor Bay Parkway Staff Report, Alameda (2018; 30);

- At Dublin EIR, Dublin (2018; 25);
- Fresno Industrial Rezone Amendment Application No. 3807 IS (2018; 10);
- Nova Business Park IS/MND, Napa (2018; 18);
- Updated Collision Risk Model Priors for Estimating Eagle Fatalities, USFWS (2018; 57);
- 750 Marlborough Avenue Warehouse MND, Riverside (2018; 14);
- Replies to responses on San Bernardino Logistics Center IS (2018; 12);
- San Bernardino Logistics Center IS (2018; 19);
- CUP2017-16, Costco IS/MND, Clovis (2018; 11);
- Desert Land Ventures Specific Plan EIR, Desert Hot Springs (2018; 18);
- Ventura Hilton IS/MND (2018; 30);
- North of California Street Master Plan Project IS, Mountain View (2018: 11);
- Tamarind Warehouse MND, Fontana (2018; 16);
- Lathrop Gateway Business Park EIR Addendum (2018; 23);
- Centerpointe Commerce Center IS, Moreno Valley (2019; 18);
- Amazon Warehouse Notice of Exemption, Bakersfield (2018; 13);
- CenterPoint Building 3 project Staff Report, Manteca (2018; 23);
- Cessna & Aviator Warehouse IS/MND, Vacaville (2018; 24);
- Napa Airport Corporate Center EIR, American Canyon (2018, 15);
- 800 Opal Warehouse Initial Study, Mentone, San Bernardino County (2018; 18);
- 2695 W. Winton Ave Industrial Project IS, Hayward (2018; 22);
- Trinity Cannabis Cultivation and Manufacturing Facility DEIR, Calexico (2018; 15);
- Shoe Palace Expansion IS/MND, Morgan Hill (2018; 21);
- Newark Warehouse at Morton Salt Plant Staff Report (2018; 15);
- Northlake Specific Plan FEIR “Peer Review”, Los Angeles County (2018; 9);
- Replies to responses on Northlake Specific Plan SEIR, Los Angeles County (2018; 13);
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- Bogle Wind Turbine DEIR, east Yolo County (2017; 48);
- Ferrante Apartments IS/MND, Los Angeles (2017; 14);
- The Villages of Lakeview EIR, Riverside (2017; 28);
- Data Needed for Assessing Trail Management Impacts on Northern Spotted Owl, Marin County (2017; 5);
- Notes on Proposed Study Options for Trail Impacts on Northern Spotted Owl (2017; 4);
- Pyramid Asphalt IS, Imperial County (Declaration) (2017; 5);
- San Gorgonio Crossings EIR, Riverside County (2017; 22);
- Replies to responses on Jupiter Project IS and MND, Apple Valley (2017; 12);
- Proposed World Logistics Center Mitigation Measures, Moreno Valley (2017, 2019; 12);
- MacArthur Transit Village Project Modified 2016 CEQA Analysis (2017; 12);
- PG&E Company Bay Area Operations and Maintenance HCP (2017; 45);
- Central SoMa Plan DEIR (2017; 14);
- Suggested mitigation for trail impacts on northern spotted owl, Marin County (2016; 5);
- Colony Commerce Center Specific Plan DEIR, Ontario (2016; 16);
- Fairway Trails Improvements MND, Marin County (2016; 13);
- Review of Avian-Solar Science Plan (2016; 28);
- Replies on Pyramid Asphalt IS, Imperial County (2016; 5);

- Pyramid Asphalt IS, Imperial County (2016; 4);
- Agua Mansa Distribution Warehouse Project Initial Study (2016; 14);
- Santa Anita Warehouse MND, Rancho Cucamonga (2016; 12);
- CapRock Distribution Center III DEIR, Rialto (2016: 12);
- Orange Show Logistics Center IS/MND, San Bernardino (2016; 9);
- City of Palmdale Oasis Medical Village Project IS/MND (2016; 7);
- Comments on proposed rule for incidental eagle take, USFWS (2016, 49);
- Replies on Grapevine Specific and Community Plan FEIR, Kern County (2016; 25);
- Grapevine Specific and Community Plan DEIR, Kern County (2016; 15);
- Clinton County Zoning Ordinance for Wind Turbine siting (2016);
- Hallmark at Shenandoah Warehouse Project Initial Study, San Bernardino (2016; 6);
- Tri-City Industrial Complex Initial Study, San Bernardino (2016; 5);
- Hidden Canyon Industrial Park Plot Plan 16-PP-02, Beaumont (2016; 12);
- Kimball Business Park DEIR (2016; 10);
- Jupiter Project IS and MND, Apple Valley, San Bernardino County (2016; 9);
- Revised Draft Giant Garter Snake Recovery Plan of 2015 (2016, 18);
- Palo Verde Mesa Solar Project EIR, Blythe (2016; 27);
- Reply on Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 14);
- Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 41);
- Reply on Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 38);
- Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 31);
- Second Reply on White Pines Wind Farm, Ontario (2015, 6);
- Reply on White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 10);
- White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 9);
- Proposed Section 24 Specific Plan Agua Caliente Band of Cahuilla Indians DEIS (2015, 9);
- Replies on 24 Specific Plan Agua Caliente Band of Cahuilla Indians FEIS (2015, 6);
- Willow Springs Solar Photovoltaic Project DEIR, Rosamond (2015; 28);
- Sierra Lakes Commerce Center Project DEIR, Fontana (2015, 9);
- Columbia Business Center MND, Riverside (2015; 8);
- West Valley Logistics Center Specific Plan DEIR, Fontana (2015, 10);
- Willow Springs Solar Photovoltaic Project DEIR (2015, 28);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10);
- World Logistic Center Specific Plan FEIR, Moreno Valley (2015, 12);
- Elkhorn Valley Wind Power Project Impacts, Oregon (2015; 143);
- Bay Delta Conservation Plan EIR/EIS, Sacramento (2014, 21);
- Addison Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Addison Wind Energy Project DEIR, Mojave (2014, 15);
- Addison and Rising Tree Wind Energy Project FEIR, Mojave (2014, 12);
- Palen Solar Electric Generating System FSA (CEC), Blythe (2014, 20);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9);
- Seven Mile Hill and Glenrock/Rolling Hills impacts + Addendum, Wyoming (2014; 105);
- Rising Tree Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Rising Tree Wind Energy Project DEIR, Mojave (2014, 15);
- Soitec Solar Development Project PEIR, Boulevard, San Diego County (2014, 18);

- Oakland Zoo expansion on Alameda whipsnake and California red-legged frog (2014; 3);
- Alta East Wind Energy Project FEIS, Tehachapi Pass (2013, 23);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16);
- Clearwater and Yakima Solar Projects DEIR, Kern County (2013, 9);
- West Antelope Solar Energy Project IS/MND, Antelope Valley (2013, 18);
- Cuyama Solar Project DEIR, Carrizo Plain (2014, 19);
- Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49);
- Kingbird Solar Photovoltaic Project EIR, Kern County (2013, 19);
- Lucerne Valley Solar Project IS/MND, San Bernardino County (2013, 12);
- Tule Wind project FEIR/FEIS (Declaration) (2013; 31);
- Sunlight Partners LANDPRO Solar Project MND (2013; 11);
- Declaration in opposition to BLM fracking (2013; 5);
- Blythe Energy Project (solar) CEC Staff Assessment (2013;16);
- Rosamond Solar Project EIR Addendum, Kern County (2013; 13);
- Pioneer Green Solar Project EIR, Bakersfield (2013; 13);
- Replies on Soccer Center Solar Project MND (2013; 6);
- Soccer Center Solar Project MND, Lancaster (2013; 10);
- Plainview Solar Works MND, Lancaster (2013; 10);
- Alamo Solar Project MND, Mojave Desert (2013; 15);
- Replies on Imperial Valley Solar Company 2 Project (2013; 10);
- Imperial Valley Solar Company 2 Project (2013; 13);
- FRV Orion Solar Project DEIR, Kern County (PP12232) (2013; 9);
- Casa Diablo IV Geothermal Development Project (2013; 6);
- Reply on Casa Diablo IV Geothermal Development Project (2013; 8);
- Alta East Wind Project FEIS, Tehachapi Pass (2013; 23);
- Metropolitan Air Park DEIR, City of San Diego (2013;);
- Davidon Homes Tentative Subdivision Rezoning Project DEIR, Petaluma (2013; 9);
- Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10);
- Campo Verde Solar project FEIR, Imperial Valley (2013; 11pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8);
- North Steens Transmission Line FEIS, Oregon (Declaration) (2012; 62);
- Summer Solar and Springtime Solar Projects Ism Lancaster (2012; 8);
- J&J Ranch, 24 Adobe Lane Environmental Review, Orinda (2012; 14);
- Replies on Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 8);
- Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 9);
- Desert Harvest Solar Project EIS, near Joshua Tree (2012; 15);
- Solar Gen 2 Array Project DEIR, El Centro (2012; 16);
- Ocotillo Sol Project EIS, Imperial Valley (2012; 4);
- Beacon Photovoltaic Project DEIR, Kern County (2012; 5);
- Butte Water District 2012 Water Transfer Program IS/MND (2012; 11);
- Mount Signal and Calexico Solar Farm Projects DEIR (2011; 16);
- City of Elk Grove Sphere of Influence EIR (2011; 28);
- Sutter Landing Park Solar Photovoltaic Project MND, Sacramento (2011; 9);

- Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4);
- Ivanpah Solar Electric Generating System (ISEGS) (Declaration) (2011; 9);
- Draft Eagle Conservation Plan Guidance, USFWS (2011; 13);
- Niles Canyon Safety Improvement Project EIR/EA (2011; 16);
- Route 84 Safety Improvement Project (Declaration) (2011; 7);
- Rebuttal on Whistling Ridge Wind Energy Power DEIS, Skamania County, (2010; 6);
- Whistling Ridge Wind Energy Power DEIS, Skamania County, Washington (2010; 41);
- Klickitat County's Decisions on Windy Flats West Wind Energy Project (2010; 17);
- St. John's Church Project DEIR, Orinda (2010; 14);
- Results Radio Zone File #2009-001 IS/MND, Conaway site, Davis (2010; 20);
- Rio del Oro Specific Plan Project FEIR, Rancho Cordova (2010;12);
- Results Radio Zone File #2009-001, Mace Blvd site, Davis (2009; 10);
- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009; 9);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Second Declaration) (2008; 17);
- Draft 1A Summary Report to CAISO (2008; 10);
- Hilton Manor Project Categorical Exemption, County of Placer (2009; 9);
- Protest of CARE to Amendment to the Power Purchase and Sale Agreement for Procurement of Eligible Renewable Energy Resources Between Hatchet Ridge Wind LLC and PG&E (2009; 3);
- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142);
- Delta Shores Project EIR, south Sacramento (2009; 11 + addendum 2);
- Declaration in Support of Care's Petition to Modify D.07-09-040 (2008; 3);
- The Public Utility Commission's Implementation Analysis December 16 Workshop for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 9);
- The Public Utility Commission's Implementation Analysis Draft Work Plan for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 11);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7.);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Declaration) (2008; 16);
- Colusa Generating Station, California Energy Commission PSA (2007; 24);
- Rio del Oro Specific Plan Project Recirculated DEIR, Mather (2008: 66);
- Replies on Regional University Specific Plan EIR, Roseville (2008; 20);
- Regional University Specific Plan EIR, Roseville (2008: 33);
- Clark Precast, LLC's "Sugarland" project, ND, Woodland (2008: 15);
- Cape Wind Project DEIS, Nantucket (2008; 157);
- Yuba Highlands Specific Plan EIR, Spenceville, Yuba County (2006; 37);
- Replies to responses on North Table Mountain MND, Butte County (2006; 5);
- North Table Mountain MND, Butte County (2006; 15);
- Windy Point Wind Farm EIS (2006; 14 and Powerpoint slide replies);
- Shiloh I Wind Power Project EIR, Rio Vista (2005; 18);

- Buena Vista Wind Energy Project NOP, Byron (2004; 15);
- Callahan Estates Subdivision ND, Winters (2004; 11);
- Winters Highlands Subdivision IS/ND (2004; 9);
- Winters Highlands Subdivision IS/ND (2004; 13);
- Creekside Highlands Project, Tract 7270 ND (2004; 21);
- Petition to California Fish and Game Commission to list Burrowing Owl (2003; 10);
- Altamont Pass Wind Resource Area CUP renewals, Alameda County (2003; 41);
- UC Davis Long Range Development Plan: Neighborhood Master Plan (2003; 23);
- Anderson Marketplace Draft Environmental Impact Report (2003; 18);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003; 6);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002; 23);
- Replies on East Altamont Energy Center evidentiary hearing (2002; 9);
- Revised Draft Environmental Impact Report, The Promenade (2002; 7);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002; 3);
- UC Merced -- Declaration (2002; 5);
- Replies on Atwood Ranch Unit III Subdivision FEIR (2003; 22);
- Atwood Ranch Unit III Subdivision EIR (2002; 19);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002; 20);
- Silver Bend Apartments IS/MND, Placer County (2002; 13);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001; 26);
- Colusa County Power Plant IS, Maxwell (2001; 6);
- Dog Park at Catlin Park, Folsom, California (2001; 5);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring Program (BRMIMP) for the Metcalf Energy Center (2000; 10);
- Metcalf Energy Center, California Energy Commission FSA (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000; 4);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7);
- Affidavit of K. Shawn Smallwood in Spirit of the Sage Council, et al. (Plaintiffs) vs. Bruce Babbitt, Secretary, U.S. Department of the Interior, et al. (Defendants), Injuries caused by the No Surprises policy and final rule which codifies that policy (1999: 9).
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Sunset Skyranch Airport Use Permit IS/MND (1999);
- Ballona West Bluffs Project Environmental Impact Report (1999; oral presentation);
- Draft Recovery Plan for Giant Garter Snake (Fed. Reg. 64(176): 49497-49498) (1999; 8);
- Draft Recovery Plan for Arroyo Southwestern Toad (1998);
- Pacific Lumber Co. (Headwaters) HCP & EIR, Fortuna (1998; 28);
- Natomas Basin HCP Permit Amendment, Sacramento (1998);
- San Diego Multi-Species Conservation Program FEIS/FEIR (1997; 10);

Comments on other Environmental Review Documents:

- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015; 8);
- Covell Village PEIR, Davis (2005; 19);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping (2003; 7.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001; 2 letters totaling 35.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis candensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*), on behalf of The Wildlife Society—Western Section (2000: 10.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7.);
- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10);
- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOA Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, termed the HCP 5-Point Policy Plan (Fed. Reg. 64(45): 11485 - 11490) (1999; 2 + attachments);
- Covell Center Project EIR and EIR Supplement (1997).

Position Statements I prepared the following position statements for the Western Section of The Wildlife Society, and one for nearly 200 scientists:

- Recommended that the California Department of Fish and Game prioritize the extermination of the introduced southern water snake in northern California. The Wildlife Society--Western Section (2001);
- Recommended that The Wildlife Society—Western Section appoint or recommend members of the independent scientific review panel for the UC Merced environmental review process (2001);
- Opposed the siting of the University of California's 10th campus on a sensitive vernal pool/grassland complex east of Merced. The Wildlife Society--Western Section (2000);
- Opposed the legalization of ferret ownership in California. The Wildlife Society--Western Section (2000);
- Opposed the Proposed "No Surprises," "Safe Harbor," and "Candidate Conservation Agreement" rules, including permit-shield protection provisions (Fed. Reg. Vol. 62, No. 103, pp. 29091-29098 and No. 113, pp. 32189-32194). This statement was signed by 188 scientists and went to the responsible federal agencies, as well as to the U.S. Senate and House of Representatives.

Posters at Professional Meetings

Leyvas, E. and K. S. Smallwood. 2015. Rehabilitating injured animals to offset and rectify wind project impacts. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S., J. Mount, S. Standish, E. Leyvas, D. Bell, E. Walther, B. Karas. 2015. Integrated detection trials to improve the accuracy of fatality rate estimates at wind projects. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S. and C. G. Thelander. 2005. Lessons learned from five years of avian mortality research in the Altamont Pass WRA. AWEA conference, Denver, May 2005.

Neher, L., L. Wilder, J. Woo, L. Spiegel, D. Yen-Nakafugi, and K.S. Smallwood. 2005. Bird's eye view on California wind. AWEA conference, Denver, May 2005.

Smallwood, K. S., C. G. Thelander and L. Spiegel. 2003. Toward a predictive model of avian fatalities in the Altamont Pass Wind Resource Area. Windpower 2003 Conference and Convention, Austin, Texas.

Smallwood, K.S. and Eva Butler. 2002. Pocket Gopher Response to Yellow Star-thistle Eradication as part of Grassland Restoration at Decommissioned Mather Air Force Base, Sacramento County, California. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and Michael L. Morrison. 2002. Fresno kangaroo rat (*Dipodomys nitratoides*) Conservation Research at Resources Management Area 5, Lemoore Naval Air Station. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and E.L. Fitzhugh. 1989. Differentiating mountain lion and dog tracks. Third Mountain Lion Workshop, Prescott, AZ.

Smith, T. R. and K. S. Smallwood. 2000. Effects of study area size, location, season, and allometry on reported *Sorex* shrew densities. Annual Meeting of the Western Section of The Wildlife Society.

Presentations at Professional Meetings and Seminars

Long-Term Population Trend of Burrowing Owls in the Altamont. Golden Gate Audubon, 21 October 2020.

Long-Term Population Trend of Burrowing Owls in the Altamont. East Bay Regional Park District 2020 Stewardship Seminar, Oakland, California, 18 November 2020.

Smallwood, K.S., D.A. Bell, and S, Standish. Dogs detect larger wind energy effects on bats and birds. The Wildlife Society, 28 September 2020.

Smallwood, K.S. and D.A. Bell. Effects of wind turbine curtailment on bird and bat fatalities in the Altamont Pass Wind Resource Area. The Wildlife Society, 28 September 2020.

Smallwood, K.S., D.A. Bell, and S, Standish. Dogs detect larger wind energy effects on bats and birds. The Wildlife Survey, 7 February 2020.

Smallwood, K.S. and D.A. Bell. Effects of wind turbine curtailment on bird and bat fatalities in the Altamont Pass Wind Resource Area. The Wildlife Survey, 7 February 2020.

Dog detections of bat and bird fatalities at wind farms in the Altamont Pass Wind Resource Area. East Bay Regional Park District 2019 Stewardship Seminar, Oakland, California, 13 November 2019.

Repowering the Altamont Pass. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Developing methods to reduce bird mortality in the Altamont Pass Wind Resource Area, 1999-2007. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Conservation and recovery of burrowing owls in Santa Clara Valley. Santa Clara Valley Habitat Agency, Newark, California, 3 February 2017.

Mitigation of Raptor Fatalities in the Altamont Pass Wind Resource Area. Raptor Research Foundation Meeting, Sacramento, California, 6 November 2015.

From burrows to behavior: Research and management for burrowing owls in a diverse landscape. California Burrowing Owl Consortium meeting, 24 October 2015, San Jose, California.

The Challenges of repowering. Keynote presentation at Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 10 March 2015.

Research Highlights Altamont Pass 2011-2015. Scientific Review Committee, Oakland, California, 8 July 2015.

Siting wind turbines to minimize raptor collisions: Altamont Pass Wind Resource Area. US Fish and Wildlife Service Golden Eagle Working Group, Sacramento, California, 8 January 2015.

Evaluation of nest boxes as a burrowing owl conservation strategy. Sacramento Chapter of the Western Section, The Wildlife Society. Sacramento, California, 26 August 2013.

Predicting collision hazard zones to guide repowering of the Altamont Pass. Conference on wind power and environmental impacts. Stockholm, Sweden, 5-7 February 2013.

Impacts of Wind Turbines on Wildlife. California Council for Wildlife Rehabilitators, Yosemite, California, 12 November 2012.

Impacts of Wind Turbines on Birds and Bats. Madrone Audubon Society, Santa Rosa, California, 20 February 2012.

Comparing Wind Turbine Impacts across North America. California Energy Commission Staff

Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Alameda County Scientific Review Committee meeting, 17 February 2011

Comparing Wind Turbine Impacts across North America. Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 3 May 2011.

Update on Wildlife Impacts in the Altamont Pass Wind Resource Area. Raptor Symposium, The Wildlife Society—Western Section, Riverside, California, February 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Raptor Symposium, The Wildlife Society - Western Section, Riverside, California, February 2011.

Wildlife mortality caused by wind turbine collisions. Ecological Society of America, Pittsburgh, Pennsylvania, 6 August 2010.

Map-based repowering and reorganization of a wind farm to minimize burrowing owl fatalities. California burrowing Owl Consortium Meeting, Livermore, California, 6 February 2010.

Environmental barriers to wind power. Getting Real About Renewables: Economic and Environmental Barriers to Biofuels and Wind Energy. A symposium sponsored by the Environmental & Energy Law & Policy Journal, University of Houston Law Center, Houston, 23 February 2007.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Meeting with Japan Ministry of the Environment and Japan Ministry of the Economy, Wild Bird Society of Japan, and other NGOs Tokyo, Japan, 9 November 2006.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Symposium on bird collisions with wind turbines. Wild Bird Society of Japan, Tokyo, Japan, 4 November 2006.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. California Society for Ecological Restoration (SERCAL) 13th Annual Conference, UC Santa Barbara, 27 October 2006.

Fatality associations as the basis for predictive models of fatalities in the Altamont Pass Wind Resource Area. EEI/APLIC/PIER Workshop, 2006 Biologist Task Force and Avian Interaction with Electric Facilities Meeting, Pleasanton, California, 28 April 2006.

Burrowing owl burrows and wind turbine collisions in the Altamont Pass Wind Resource Area. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, February 8, 2006.

Mitigation at wind farms. Workshop: Understanding and resolving bird and bat impacts. American

Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Incorporating data from the California Wildlife Habitat Relationships (CWHR) system into an impact assessment tool for birds near wind farms. Shawn Smallwood, Kevin Hunting, Marcus Yee, Linda Spiegel, Monica Parisi. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Toward indicating threats to birds by California's new wind farms. California Energy Commission, Sacramento, May 26, 2005.

Avian collisions in the Altamont Pass. California Energy Commission, Sacramento, May 26, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. EPRI Environmental Sector Council, Monterey, California, February 17, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. The Wildlife Society—Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Associations between avian fatalities and attributes of electric distribution poles in California. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Minimizing avian mortality in the Altamont Pass Wind Resources Area. UC Davis Wind Energy Collaborative Forum, Palm Springs, California, December 14, 2004.

Selecting electric distribution poles for priority retrofitting to reduce raptor mortality. Raptor Research Foundation Meeting, Bakersfield, California, November 10, 2004.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Meeting of the Society for Ecological Restoration, South Lake Tahoe, California, October 16, 2004.

Lessons learned from five years of avian mortality research at the Altamont Pass Wind Resources Area in California. The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

The ecology and impacts of power generation at Altamont Pass. Sacramento Petroleum Association, Sacramento, California, August 18, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Consortium meeting, Hayward, California, February 7, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Symposium, Sacramento, November 2, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. National Wind Coordinating Committee, Washington, D.C., November 17, 2003.

Raptor Behavior at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

California mountain lions. Ecological & Environmental Issues Seminar, Department of Biology, California State University, Sacramento, November, 2000.

Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. National Wind Coordinating Committee, Carmel, California, May, 2000.

Using a Geographic Positioning System (GPS) to map wildlife and habitat. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Suggested standards for science applied to conservation issues. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

The indicators framework applied to ecological restoration in Yolo County, California. Society for Ecological Restoration, September 25, 1999.

Ecological restoration in the context of animal social units and their habitat areas. Society for Ecological Restoration, September 24, 1999.

Relating Indicators of Ecological Health and Integrity to Assess Risks to Sustainable Agriculture and Native Biota. International Conference on Ecosystem Health, August 16, 1999.

A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Southern California Edison, Co. and California Energy Commission, March 4-5, 1999.

Mountain lion track counts in California: Implications for Management. Ecological & Environmental Issues Seminar, Department of Biological Sciences, California State University, Sacramento, November 4, 1998.

“No Surprises” -- Lack of science in the HCP process. California Native Plant Society Annual Conservation Conference, The Presidio, San Francisco, September 7, 1997.

In Your Interest. A half hour weekly show aired on Channel 10 Television, Sacramento. In this episode, I served on a panel of experts discussing problems with the implementation of the Endangered Species Act. Aired August 31, 1997.

Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Estimating prairie dog and pocket gopher burrow volume. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Ten years of mountain lion track survey. Fifth Mountain Lion Workshop, San Diego, February 27,

1996.

Study and interpretive design effects on mountain lion density estimates. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Small animal control. Session moderator and speaker at the California Farm Conference, Sacramento, California, Feb. 28, 1995.

Small animal control. Ecological Farming Conference, Asylomar, California, Jan. 28, 1995.

Habitat associations of the Swainson's Hawk in the Sacramento Valley's agricultural landscape. 1994 Raptor Research Foundation Meeting, Flagstaff, Arizona.

Alfalfa as wildlife habitat. Seed Industry Conference, Woodland, California, May 4, 1994.

Habitats and vertebrate pests: impacts and management. Managing Farmland to Bring Back Game Birds and Wildlife to the Central Valley. Yolo County Resource Conservation District, U.C. Davis, February 19, 1994.

Management of gophers and alfalfa as wildlife habitat. Orland Alfalfa Production Meeting and Sacramento Valley Alfalfa Production Meeting, February 1 and 2, 1994.

Patterns of wildlife movement in a farming landscape. Wildlife and Fisheries Biology Seminar Series: Recent Advances in Wildlife, Fish, and Conservation Biology, U.C. Davis, Dec. 6, 1993.

Alfalfa as wildlife habitat. California Alfalfa Symposium, Fresno, California, Dec. 9, 1993.

Management of pocket gophers in Sacramento Valley alfalfa. California Alfalfa Symposium, Fresno, California, Dec. 8, 1993.

Association analysis of raptors in a farming landscape. Plenary speaker at Raptor Research Foundation Meeting, Charlotte, North Carolina, Nov. 6, 1993.

Landscape strategies for biological control and IPM. Plenary speaker, International Conference on Integrated Resource Management and Sustainable Agriculture, Beijing, China, Sept. 11, 1993.

Landscape Ecology Study of Pocket Gophers in Alfalfa. Alfalfa Field Day, U.C. Davis, July 1993.

Patterns of wildlife movement in a farming landscape. Spatial Data Analysis Colloquium, U.C. Davis, August 6, 1993.

Sound stewardship of wildlife. Veterinary Medicine Seminar: Ethics of Animal Use, U.C. Davis. May 1993.

Landscape ecology study of pocket gophers in alfalfa. Five County Grower's Meeting, Tracy, California. February 1993.

Turbulence and the community organizers: The role of invading species in ordering a turbulent

system, and the factors for invasion success. Ecology Graduate Student Association Colloquium, U.C. Davis. May 1990.

Evaluation of exotic vertebrate pests. Fourteenth Vertebrate Pest Conference, Sacramento, California. March 1990.

Analytical methods for predicting success of mammal introductions to North America. The Western Section of the Wildlife Society, Hilo, Hawaii. February 1988.

A state-wide mountain lion track survey. Sacramento County Dept Parks and Recreation. April 1986.

The mountain lion in California. Davis Chapter of the Audubon Society. October 1985.

Ecology Graduate Student Seminars, U.C. Davis, 1985-1990: Social behavior of the mountain lion; Mountain lion control; Political status of the mountain lion in California.

Other forms of Participation at Professional Meetings

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Berlin, Germany, March 2015.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Stockholm, Sweden, February 2013.
- Workshop co-presenter at Birds & Wind Energy Specialist Group (BAWESG) Information sharing week, Bird specialist studies for proposed wind energy facilities in South Africa, Endangered Wildlife Trust, Darling, South Africa, 3-7 October 2011.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 2-5 May 2011.
- Chair of Animal Damage Management Session, The Wildlife Society, Annual Meeting, Reno, Nevada, September 26, 2001.
- Chair of Technical Session: Human communities and ecosystem health: Comparing perspectives and making connection. Managing for Ecosystem Health, International Congress on Ecosystem Health, Sacramento, CA August 15-20, 1999.
- Student Awards Committee, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.
- Student Mentor, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Printed Mass Media

Smallwood, K.S., D. Mooney, and M. McGuinness. 2003. We must stop the UCD biolab now. Op-

Ed to the Davis Enterprise.

Smallwood, K.S. 2002. Spring Lake threatens Davis. Op-Ed to the Davis Enterprise.

Smallwood, K.S. Summer, 2001. Mitigation of habitation. The Flatlander, Davis, California.

Entrikan, R.K. and K.S. Smallwood. 2000. Measure O: Flawed law would lock in new taxes. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2000. Davis delegation lobbies Congress for Wildlife conservation. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 1998. Davis Visions. The Flatlander, Davis, California.

Smallwood, K.S. 1997. Last grab for Yolo's land and water. The Flatlander, Davis, California.

Smallwood, K.S. 1997. The Yolo County HCP. Op-Ed to the Davis Enterprise.

Radio/Television

PBS News Hour,

FOX News, Energy in America: Dead Birds Unintended Consequence of Wind Power Development, August 2011.

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Mountain lion attacks (with guest Professor Richard Coss). 23 April 2009;

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Wind farm Rio Vista Renewable Power. 4 September 2008;

KQED QUEST Episode #111. Bird collisions with wind turbines. 2007;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. December 27, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. May 3, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. February 8, 2001;

KDVS Speaking in Tongues (host Ron Glick & Shawn Smallwood), California Energy Crisis: 1 hour. Jan. 25, 2001;

KDVS Speaking in Tongues (host Ron Glick), Headwaters Forest HCP: 1 hour. 1998;

Davis Cable Channel (host Gerald Heffernon), Burrowing owls in Davis: half hour. June, 2000;

Davis Cable Channel (hosted by Davis League of Women Voters), Measure O debate: 1 hour. October, 2000;

KXTV 10, In Your Interest, The Endangered Species Act: half hour. 1997.

Reviews of Journal Papers (Scientific journals for whom I've provided peer review)

Journal	**Journal**
American Naturalist	Journal of Animal Ecology
Journal of Wildlife Management	Western North American Naturalist
Auk	Journal of Raptor Research
Biological Conservation	National Renewable Energy Lab reports
Canadian Journal of Zoology	Oikos
Ecosystem Health	The Prairie Naturalist
Environmental Conservation	Restoration Ecology
Environmental Management	Southwestern Naturalist
Functional Ecology	The Wildlife Society--Western Section Trans.
Journal of Zoology (London)	Proc. Int. Congress on Managing for Ecosystem Health
Journal of Applied Ecology	Transactions in GIS
Ecology	Tropical Ecology
Wildlife Society Bulletin	Peer J
Biological Control	The Condor

Committees

- Scientific Review Committee, Alameda County, Altamont Pass Wind Resource Area
- Ph.D. Thesis Committee, Steve Anderson, University of California, Davis
- MS Thesis Committee, Marcus Yee, California State University, Sacramento

Other Professional Activities or Products

Testified in Federal Court in Denver during 2005 over the fate of radio-nuclides in the soil at Rocky Flats Plant after exposure to burrowing animals. My clients won a judgment of $553,000,000. I have also testified in many other cases of litigation under CEQA, NEPA, the Warren-Alquist Act, and other environmental laws. My clients won most of the cases for which I testified.

Testified before Environmental Review Tribunals in Ontario, Canada regarding proposed White Pines, Amherst Island, and Fairview Wind Energy projects.

Testified in Skamania County Hearing in 2009 on the potential impacts of zoning the County for development of wind farms and hazardous waste facilities.

Testified in deposition in 2007 in the case of O'Dell et al. vs. FPL Energy in Houston, Texas.

Testified in Klickitat County Hearing in 2006 on the potential impacts of the Windy Point Wind Farm.

Memberships in Professional Societies

The Wildlife Society
Raptor Research Foundation

Honors and Awards

Fulbright Research Fellowship to Indonesia, 1987
J.G. Boswell Full Academic Scholarship, 1981 college of choice
Certificate of Appreciation, The Wildlife Society—Western Section, 2000, 2001
Northern California Athletic Association Most Valuable Cross Country Runner, 1984
American Legion Award, Corcoran High School, 1981, and John Muir Junior High, 1977
CIF Section Champion, Cross Country in 1978
CIF Section Champion, Track & Field 2 mile run in 1981
National Junior Record, 20 kilometer run, 1982
National Age Group Record, 1500 meter run, 1978

Community Activities

District 64 Little League Umpire, 2003-2007
Dixon Little League Umpire, 2006-07
Davis Little League Chief Umpire and Board member, 2004-2005
Davis Little League Safety Officer, 2004-2005
Davis Little League Certified Umpire, 2002-2004
Davis Little League Scorekeeper, 2002
Davis Visioning Group member
Petitioner for Writ of Mandate under the California Environmental Quality Act against City of Woodland decision to approve the Spring Lake Specific Plan, 2002
Served on campaign committees for City Council candidates

Representative Clients/Funders

Law Offices of Stephan C. Volker
Blum Collins, LLP
Eric K. Gillespie Professional Corporation
Law Offices of Berger & Montague
Lozeau | Drury LLP
Law Offices of Roy Haber
Law Offices of Edward MacDonald
Law Office of John Gabrielli
Law Office of Bill Kopper
Law Office of Donald B. Mooney
Law Office of Veneruso & Moncharsh
Law Office of Steven Thompson
Law Office of Brian Gaffney
California Wildlife Federation
Defenders of Wildlife
Sierra Club
National Endangered Species Network
Spirit of the Sage Council
The Humane Society
Hagens Berman LLP
Environmental Protection Information Center
Goldberg, Kamin & Garvin, Attorneys at Law
Californians for Renewable Energy (CARE)
Seatuck Environmental Association
Friends of the Columbia Gorge, Inc.
Save Our Scenic Area
Alliance to Protect Nantucket Sound
Friends of the Swainson's Hawk
Alameda Creek Alliance
Center for Biological Diversity
California Native Plant Society
Endangered Wildlife Trust
and BirdLife South Africa
AquAlliance
Oregon Natural Desert Association
Save Our Sound
G3 Energy and Pattern Energy
Emerald Farms
Pacific Gas & Electric Co.
Southern California Edison Co.
Georgia-Pacific Timber Co.
Northern Territories Inc.
David Magney Environmental Consulting
Wildlife History Foundation
NextEra Energy Resources, LLC
Ogin, Inc.
EDF Renewables
National Renewable Energy Lab
Altamont Winds LLC
Salka Energy
Comstocks Business (magazine)
BioResource Consultants
Tierra Data
Black and Veatch
Terry Preston, Wildlife Ecology Research Center
EcoStat, Inc.
US Navy
US Department of Agriculture
US Forest Service
US Fish & Wildlife Service
US Department of Justice
California Energy Commission
California Office of the Attorney General
California Department of Fish & Wildlife
California Department of Transportation
California Department of Forestry
California Department of Food & Agriculture
Ventura County Counsel
County of Yolo
Tahoe Regional Planning Agency
Sustainable Agriculture Research & Education Program
Sacramento-Yolo Mosquito and Vector Control District
East Bay Regional Park District
County of Alameda
Don & LaNelle Silverstien
Seventh Day Adventist Church
Escuela de la Raza Unida
Susan Pelican and Howard Beeman
Residents Against Inconsistent Development, Inc.
Bob Sarvey
Mike Boyd
Hillcroft Neighborhood Fund
Joint Labor Management Committee, Retail Food Industry
Lisa Rocca
Kevin Jackson
Dawn Stover and Jay Letto
Nancy Havassy
Catherine Portman (for Brenda Cedarblade)
Ventus Environmental Solutions, Inc.
Panorama Environmental, Inc.
Adams Broadwell Professional Corporation

Representative special-status species experience

Common name	Species name	Description
Field experience		
California red-legged frog	*Rana aurora draytonii*	Protocol searches; Many detections
Foothill yellow-legged frog	*Rana boylii*	Presence surveys; Many detections
Western spadefoot	*Spea hammondii*	Presence surveys; Few detections
California tiger salamander	*Ambystoma californiense*	Protocol searches; Many detections
Coast range newt	*Taricha torosa torosa*	Searches and multiple detections
Blunt-nosed leopard lizard	*Gambelia sila*	Detected in San Luis Obispo County
California horned lizard	*Phrynosoma coronatum frontale*	Searches; Many detections
Western pond turtle	*Clemmys marmorata*	Searches; Many detections
San Joaquin kit fox	*Vulpes macrotis mutica*	Protocol searches; detections
Sumatran tiger	*Panthera tigris*	Track surveys in Sumatra
Mountain lion	*Puma concolor californicus*	Research and publications
Point Arena mountain beaver	*Aplodontia rufa nigra*	Remote camera operation
Giant kangaroo rat	*Dipodomys ingens*	Detected in Cholame Valley
San Joaquin kangaroo rat	*Dipodomys nitratoides*	Monitoring & habitat restoration
Monterey dusky-footed woodrat	*Neotoma fuscipes luciana*	Non-target captures and mapping of dens
Salt marsh harvest mouse	*Reithrodontomys raviventris*	Habitat assessment, monitoring
Salinas harvest mouse	*Reithrodontomys megalotus distichlus*	Captures; habitat assessment
Bats		Thermal imaging surveys
California clapper rail	*Rallus longirostris*	Surveys and detections
Golden eagle	*Aquila chrysaetos*	Numerical & behavioral surveys
Swainson's hawk	*Buteo swainsoni*	Numerical & behavioral surveys
Northern harrier	*Circus cyaeneus*	Numerical & behavioral surveys
White-tailed kite	*Elanus leucurus*	Numerical & behavioral surveys
Loggerhead shrike	*Lanius ludovicianus*	Large area surveys
Least Bell's vireo	*Vireo bellii pusillus*	Detected in Monterey County
Willow flycatcher	*Empidonax traillii extimus*	Research at Sierra Nevada breeding sites
Burrowing owl	*Athene cunicularia hypugia*	Numerical & behavioral surveys
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Monitored success of relocation and habitat restoration
Analytical		
Arroyo southwestern toad	*Bufo microscaphus californicus*	Research and report.
Giant garter snake	*Thamnophis gigas*	Research and publication
Northern goshawk	*Accipiter gentilis*	Research and publication
Northern spotted owl	*Strix occidentalis*	Research and reports
Alameda whipsnake	*Masticophis lateralis euryxanthus*	Expert testimony

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KENDRA D. HARTMANN*
DARIEN K. KEY
RACHAEL E. KOSS
AIDAN P. MARSHALL
TARA C. RENGIFO

Of Counsel
MARC D. JOSEPH
DANIEL L. CARDOZO

Not admitted in California. Licensed in Colorado.

November 24, 2021

VIA EMAIL, HAND DELIVERY, AND OVERNIGHT MAIL

Jim Minnick
Director of Planning and Development Services
Planning Division
Imperial County
801 Main Street
El Centro, CA 92243
Email: JimMinnick@co.imperial.ca.us

RECEIVED
NOV 24 2021
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

VIA EMAIL ONLY

David Black, Planner
Email: DavidBlack@co.imperial.ca.us

Re: Appeal of Planning Commission's Approval of Conditional Use Permit No. 19-0028 for the Heber 1 Geothermal Repower Project

Dear Mr. Minnick, Mr. Black:

We are writing on behalf of Citizens for Responsible Industry ("Citizens"), including Imperial County residents Jaime Cuevas, Dalila and Efrain Guzman, Eric Jones, and Citizens' other members, to appeal the November 18, 2021 decision of the Imperial County Planning Commission to approve the Conditional Use Permit ("CUP") #19-0028 for the Heber 1 Geothermal Repower Project ("Project"), proposed by Heber Field Company, a subsidiary of Ormat Nevada Inc., ("Applicant"), and all related Project approvals, including the Commission's adoption of an Initial Study and Mitigated Negative Declaration ("IS/MND"), determination that the Project is

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exempt from environmental review under the California Environmental Quality Act ("CEQA")[1] pursuant to categorical exemptions, and all related findings.

As a result of potentially significant environmental effects which the County concluded require mitigation, the County initially prepared an IS/MND for the Project pursuant to CEQA.[2] Following circulation of the IS/MND for public comment and without any changes being made to the proposed Project, the resolutions submitted to the Planning Commission proposed a new set of findings that the Project is now categorically exempt from CEQA review under the Existing Facilities, Replacement/Reconstruction categorical exemption, and the commonsense exemption.[3] At the November 18, 2021 hearing, the Commission adopted these mutually exclusive CEQA findings – concluding, on the one hand, that the Project had significant impacts requiring mitigation, and adopting the IS/MND, and finding, on the other hand, that the Project would not result in any significant impacts and qualified for a categorical exemption and the common sense exemption. These findings were not supported by law or the evidence in the record, and were made over Citizens' objections.

B-1 cont.

Citizens submitted comments supported by extensive expert reports at multiple stages of CEQA review for this Project, including during the public review and comment period for the IS/MND, and in anticipation of its consideration by the Planning Commission.[4] Citizens' comments on the IS/MND provided substantial evidence supporting a fair argument that the Project may have significant impacts on air quality from construction and operational emissions, health risk, and more severe impacts on biological resources, hazardous materials, geology/soils, and cumulative impacts than described in the IS/MND. Citizens asked the County to prepare an EIR to accurately disclose and mitigate these impacts.

Citizens' comments to the Planning Commission explained that the County's responses to comments on the IS/MND were inadequate, than an EIR is still

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[1] Imperial County, *Mitigated Negative Declaration for Heber 1 Geothermal Repower Project CUP No. 19-0028* (February 2021) (hereinafter "MND").
[2] Imperial County, *Mitigated Negative Declaration for Heber 1 Geothermal Repower Project CUP No. 19-0028* (February 2021) (hereinafter "MND").
[3] *See* 14 C.C.R. §§ 15031, 15032, 15061.
[4] Letter to Jim Minnick, Planning Director, and Mariela Moran, Planner II, from Kendra Hartmann, Counsel for Citizens, dated May 10, 2021 (Exhibit A) (hereinafter "Citizens' MND Comments"); Letter to Planning Commission from Tara Messing, Counsel for Citizens, dated November 16, 2021 (Exhibit B) (hereinafter "Citizens' Comments to PC").
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required, that the County cannot rely on mitigated exemptions from CEQA, and that no CEQA exemptions apply to the Project due to its numerous significant, unmitigated impacts. The Planning Commission failed to meaningfully respond to Citizens' comments, and approved the Project despite the legal and factual deficiencies in the record.

B-1 cont.

Citizens respectfully request that the Board of Supervisors ("Board") uphold this appeal, rescind the Planning Commission's approval of the Project and adoption of inadequate CEQA documents, and remand the Project to Staff to prepare a legally adequate EIR. We reserve the right to supplement this appeal at later hearings and proceedings on this Project.[5]

I. PROJECT DESCRIPTION

The existing Heber 1 Geothermal Energy Complex, located within the Heber Specific Plan Area at 875 Pitzer Road, Heber, California, was initially constructed in 1985 pursuant to CUP #9-80 and most recently pursuant to CUP #15-0013, which was approved by the Planning Commission on September 9, 2015, by the Board of Supervisors on November 10, 2015, and recorded on November 30, 2015.[6] The Applicant is now proposing a fifteen (15) year renewal for the existing facilities' operations.[7] Additionally, to repower the plant to 52 megawatts (net) and 78.2 megawatts (gross), the proposed CUP would permit the replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit ("I3LU") and an Integrated two-level unit ("ITLU") as well as the installation of ancillary equipment.[8] The I3LU would include three 10-bay air coolers and one 14-bay air cooler for cooling ORMAT Energy Converters ("OECs") Units 1 and 2, and would also require the installation of two additional isopentane storage tanks, which would be 10,000 gallons each, and a new Vapor Recovery Mechanical Unit ("VRMU").[9] For the ITLU, the Project would convert OEC Units

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[5] Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* ("*Bakersfield*") (2004) 124 Cal. App. 4th 1184, 1199-1203; *see Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

[6] County of Imperial, *Staff Report* at 1, 2 (hereinafter "Staff Report"); Staff Report, Attachment F at 4.

[7] County of Imperial, *Planning Commission Agenda* at 4 (November 18, 2021). Note that the Staff Report's Project Description is inconsistent and states that the Project "proposed to extend the permitted life of Heber 1 to 30 years (2021-2051)." Staff Report at 1.

[8] Staff Report at 1.

[9] *Id.*

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11 and 13 to an ITLU, and the existing cooling tower and VRMU would be used for OEC Units 11 and 13.[10] Additional modifications to OEC Units 11 and 13 would include replacement of some of the brine heat exchangers, replacement of the existing generator and one turbine, and replacement of a portion of the piping system and pumps.[11]

The Applicant also proposes to modify the permitted water intake from 1,800-acre feet ("AF") of irrigation water to 2,300-AF of irrigation water.[12] On November 18, 2019, the Imperial Irrigation District issued an Amendment No. 1 to the Amended and Restated Water Supply Agreement to supply an additional 500-AF of water per year in addition to the 1,800-AF that was in the agreement, for a total of 2,300-AF per year.[13]

B-2 cont.

II. NAME OF APPELLANTS AND CONTACT INFORMATION

This appeal is being filed on behalf of Citizens, including Imperial County residents Jaime Cuevas, Dalila and Efrain Guzman, and Eric Jones.

All notices and correspondence concerning this appeal should be sent directly to Tara Rengifo on behalf of all appellants, as follows:

Tara C. Rengifo
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
Tel: (650) 589-1660
Fax: (650) 589-5062
Email: trengifo@adamsbroadwell.com

B-3

Contact information for individual appellants is provided below for compliance with County Code requirements only. Individuals should be contacted through Mrs. Rengifo of Adams Broadwell Joseph & Cardozo:

[10] *Id.* at 2.
[11] *Id.*
[12] *Id.*
[13] *Id.*

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Jaime Cuevas
57 W. Maple Ave
Heber, CA 92249
Telephone: (442) 236-8684

Dalila and Efrain Guzman
P.O. BOX 14
Heber, CA 92249
Telephone: (760) 235-0902
(760) 235-0902

The address and phone number of appellant California Unions for Reliable Energy ("CURE") is provided below for compliance with County Code requirements only. CURE should be contacted through Mrs. Rengifo of Adams Broadwell Joseph & Cardozo:

California Unions for Reliable Energy
c/o Robert Balgenorth, Chair
1225 8th Street, Suite 375
Sacramento, CA 95814
Telephone: (916) 443-3302

B-3 cont.

Citizens is a coalition of labor organizations with members who may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The coalition includes the above-named residents, along with other members and organizations, including CURE and its local affiliates, and the affiliates' members who live, recreate, work, and raise families in Imperial County and in communities near the Project site. Thus, Citizens, its participating organizations, and their members stand to be directly affected by the Project's impacts.

Since its founding in 1997, CURE has been committed to building a strong economy and healthier environment and it works to construct, operate, and maintain conventional and renewable energy power plants and other industrial facilities throughout California. CURE supports the development of clean, renewable energy technology, including geothermal power generation, where properly analyzed and carefully planned to minimize impacts on public health and the environment. Geothermal projects should avoid adverse impacts to natural resources and public health and should take all feasible steps to ensure that

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unavoidable impacts are mitigated to the maximum extent feasible. Only by maintaining the highest standards can energy development truly be sustainable.

The individual members of Citizens, and the members of its affiliated labor organizations, would be directly affected by the Project and may also work constructing the Project itself. They would therefore be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal stake in protecting the Project area from unnecessary, adverse environmental and public health and safety impacts.

Citizens support and encourage the sustainable development of California's energy and natural resources and have an interest in enforcing environmental laws that encourage sustainable development and a safe working environment. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making it less desirable for businesses to locate and people to live and recreate in the County. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduces future employment opportunities.

B-3 cont.

Finally, the organizational members of Citizens and the individuals who have joined this appeal are concerned with projects that can result in serious environmental harm without providing countervailing economic benefits. CEQA provides a balancing process whereby economic benefits are weighed against significant impacts to the environment.

III. REASONS FOR APPEAL

Citizens appeals the Planning Commission's approval of the Project on several grounds, as set forth in Citizens' prior comment letters to the County regarding the Project.[14]

B-4

First, the necessary finding that the Project is a conditionally permitted use within the A-2 zone is unsupported by substantial evidence.[15] The decision to approve CUP # 19-0028 must be supported by the findings enumerated in Section

[14] Citizens' written comments on the IS/MND and to the Planning Commission are attached hereto and incorporated by reference.
[15] *See* County of Imperial, Code of Ordinances § 90508.02.

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90203.09 of the County's Code of Ordinances.[16] To support these finding, the Staff Report explains that "pursuant to Land Use Ordinance section 90508.02, electrical generation facilities are permitted with approval of a CUP for 'electrical generation plants (*less than 50 mw*),'" and thus "the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations."[17] To the contrary, the evidence in the IS/MND and Staff Report clearly establish that this Project would increase "the plant's generating capacities of *52-megawatt (MW) net, and 78.2 MW gross*, ..."[18] Since the Project's generating capacity—both net and gross—exceeds the permitted use specified under Section 90508.02, subsection (y), the Project is not a permitted use on lands zoned A-2 even with the approval of a CUP.[19] The findings required by Section 90203.09 cannot be made and the CUP must be denied.

B-4 cont.

Second, substantial evidence set forth in the expert reports attached to Citizens' comments support a fair argument that the Project would have significant impacts on air quality from construction and operational emissions, health risk, and more severe impacts on biological resources, hazardous materials, and cumulative impacts than described in the MND.[20] The Commission should not have approved CUP #19-0028 until an Environmental Impact Report ("EIR") was prepared that adequately analyzes the Project's direct, indirect and cumulative impacts, and incorporates all feasible mitigation measures to minimize these impacts to the greatest extent feasible.

B-5

Third, the Project is not exempt from CEQA for several reasons. Mitigated categorical exemptions are expressly prohibited under CEQA.[21] Here, substantial

B-6

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[16] *Id.* at § 90203.09.
[17] Staff Report, Attachment B at 2. (emphasis added)
[18] Staff Report, Attachment F at 1. (emphasis added) Moreover, it must also be noted that the CEC has the exclusive authority to certify all thermal power plants (50 megawatts [MW] and greater) and related facilities proposed for construction in California. *See* California Energy Commission, available at: https://www.energy.ca.gov/.
[19] Section 90508.03 explicitly establishes that "[a]ll other uses not expressly permitted by Section 90508.01 or 90508.02 are prohibited." Moreover, a Project's inconsistencies with local plans and policies also constitute significant impacts under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4; *see also, County of El Dorado v. Dept. of Transp.* (2005) 133 Cal.App.4th 1376.
[20] *See* attached expert reports to Citizens' MND Comments and Citizens' Comments to PC.
[21] *Salmon Pro. & Watershed Network v. County of Marin ("SPAWN")*(2004) 125 Cal.App.4th at 1102; *Azusa Land Recl. Co. v. Main San Gabriel Basin Watermaster* (1997) 52 Cal. App.4th 1165, 1198-1201.
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evidence in the record demonstrates that the Project would have potentially significant impacts that require mitigation, both by the County's own admission in the IS/MND and based on substantial evidence presented by Citizens' experts.[22] The Project has not been modified to eliminate these significant effects. Moreover, the Commission's new characterization of the Project's mitigation measures as "voluntary" is unsupported by the record, contrary to the definition of mitigation measures under CEQA Guidelines Section 15370, and contradicted by the County's and Citizens' own evidence. Therefore, the Planning Commission's decision was improperly based on the finding that the Project is categorically exempt while also adopting the IS/MND and its Mitigation, Monitoring and Reporting Program ("MMRP"). The Project cannot be both exempt from CEQA and require mitigation pursuant to CEQA.

For a categorical exemption to be applicable, a lead agency must provide "substantial evidence to support [their] finding that the Project will not have a significant effect."[23] To the contrary here, the County's own evidence in the IS/MND and substantial evidence presented by Citizens' experts establish an adequate showing that the Project would have potentially significant impacts that require mitigation.

Even if the Project would not have significant impacts, the categorical exemptions are facially inconsistent with the Project and are thus inapplicable. The Project proposes to decommission and replace several essential components of the facility with new technology that utilizes new processes.[24] The Class 1 and Class 2 categorical exemptions, which exempt a new facility that replaces or reconstructs an existing facility with substantially the same purpose and capacity, are limited to projects proposing to streamline the replacement of analogous utility systems, a like-for-like replacement, where the environmental impacts of the same type of project have been previously analyzed under CEQA.[25] Here, the proposed Project is different from the existing Heber 1 facility and would result in new and different significant environmental and public health impacts that were not analyzed in the facility's original environmental review document, as explained more fully below. The County's overly broad application of these exemptions controverts the long line

B-6 cont.

[22] MND at 39; Citizens' MND Comments; Citizen's Comments to PC.
[23] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.
[24] MND at 10-12.
[25] *See* 14 C.C.R. §§ 15031, 15032.

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of CEQA cases mandating that categorical exemptions be "construed narrowly" in order to afford the "fullest possible environmental protection...."[26]

Additionally, exceptions to the exemptions are applicable because (a) substantial evidence shows that there is a reasonable possibility that cumulative impacts of successive projects of the same type in the same place over time will be significant, and (b) substantial evidence demonstrates that the Project would have a significant effect on human health and the environment due to unusual circumstances.[27] As such, these exceptions render any categorical exemptions to CEQA review inapplicable.

B-6 cont.

Finally, the County's use of the Errata to the IS/MND is entirely improper under CEQA Guidelines Section 15073.5, subsection (c). The Errata purports to reduce all of the previously identified significant impacts to less than significant levels and changes the previously identified mitigation measures to Conditions of Approval, without adequate support.[28] These changes are a far cry from minor or insignificant modifications and no changes to the Project occurred to warrant the use of an Errata. The County's intent in using the Errata in such an improper manner is clear—to evade its earlier findings that the Project would have significant impacts requiring mitigation. The County's actions thus violate the specific procedures outlined in CEQA and for these reasons, the IS/MND and Errata should not have been adopted.

B-7

For the foregoing reasons, we respectfully request that the Board overturn the Planning Commission's approval of the Project, including approval of CUP # 19-0028, as well as approval of any CEQA exemption and/or certification of the IS/MND and require that an EIR be prepared for the Project in which all impacts are fully disclosed and mitigated, and released for the statutorily mandated public review and comment period.

B-8

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[26] *County of Amador v. El Dorado County Water Agency*, 76 Cal. App. 4th 931, 943; 966 (1999); *see also Azusa Land Reclamation Co. v. Main San Gabriel Basin Watermaster*, 52 Cal. App. 4th 1165, 1193 (1997); *see also County of Amador v. El Dorado County Water Agency*, 76 Cal. App. 4th 931, 966 (1999); *see also Dehne v. County of Santa Clara, supra,* 115 Cal. App. 3d 827, 842 (1981).
[27] 14 CCR § 15300.2(b), (c).
[28] *See* Staff Report, Attachment E.
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IV. LEGAL BACKGROUND

"CEQA and the regulations implementing it 'embody California's strong public policy of protecting the environment.'"[29] CEQA is designed to inform decision-makers and the public about the potential, significant environmental effects of a project.[30] "CEQA's fundamental goal [is] fostering informed decision-making."[31] "The purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind."[32]

The implementation of CEQA is a multistep process that begins with whether the proposed activity is subject to CEQA at all.[33] Next, assuming CEQA applies, the agency must determine whether the activity qualifies for a CE.[34] If the project is exempt, the agency need not proceed with environmental review.[35] Alternatively, if no exemptions are applicable, the agency must undertake environmental review of the activity, which begins with an initial study to determine whether the project may have a significant effect on the environment.[36] A negative declaration may be prepared "if there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment."[37] A *mitigated* negative declaration is required if the initial study identifies potentially significant environmental effects but (1) those effects can be fully mitigated by changes in the project and (2) the project applicant agrees to incorporate those changes.[38] Because "[t]he adoption of a negative declaration...has a terminal effect on the environmental review process" by allowing the agency to dispense with the duty to prepare an EIR, negative declarations, as well as mitigated negative declarations, are allowed only in cases where there is not even a "fair argument" that the project will have a significant environmental effect.[39]

B-9

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[29] *Save the Agoura Cornell Knoll*, 46 Cal. App. 5th at 673.
[30] 14 C.C.R. § 15002(a)(1).
[31] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 402.
[32] *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283.
[33] *See* Pub. Res. Code § 21065.
[34] 14 C.C.R. § 15061.
[35] *Id.*
[36] *Id.* at § 15063.
[37] *Id.* at § 15063(b)(2).
[38] *Id.* at § 15070(b)(1)-(2).
[39] *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440; Pub. Res. Code §§ 21064, 21100.

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An EIR is necessary for any discretionary project that may have a significant adverse effect on the environment.[40] "At the heart of CEQA is the requirement that public agencies prepare an EIR for any project that may have a significant effect on the environment."[41] A negative declaration is improper, and an EIR must be prepared, whenever it can be fairly argued on the basis of substantial evidence that the project may have a significant environmental impact.[42] A "significant effect on the environment" is defined as "a substantial, or potentially substantial, adverse change in the environment."[43] Substantial evidence, for purposes of the fair argument standard, includes "fact, a reasonable assumption predicated upon fact, or *expert opinion* supported by fact."[44]

A. An Agency's Decision to Rely on a Mitigated Negative Declaration under CEQA is Reviewed for Abuse of Discretion under the Fair Argument Standard

B-9 cont.

Under the fair argument standard, a reviewing court's function is to determine if substantial evidence supports the agency's conclusion as to whether there is a fair argument that the proposed project might have a significant environmental impact.[45] "Stated another way, if the [reviewing] court perceives substantial evidence that the project might have such an impact, but the agency failed to secure preparation of the required EIR, the agency's action is to be set aside because the agency abused its discretion by failing to proceed 'in a manner required by law.'"[46] If substantial evidence demonstrates that the proposed project might have a significant impact, evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a mitigated negative declaration.[47] Neither the lead agency nor a court may "weigh" conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.[48] "The fair argument standard thus creates a low threshold for requiring

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[40] Pub. Res. Code § 21151(a).
[41] *Friends of College of San Mateo Gardens v. San Mateo County Community College Dist.* (2016) 1 Cal.5th 937, 944 (internal citations and quotations omitted).
[42] *Id.* at 957.
[43] Pub. Res. Code § 21068; 14 C.C.R. § 15382; *County Sanitation Dist. No. 2 v. County of Kern* (2005) 127 Cal.App.4th 1544, 1581.
[44] Pub. Res. Code § 21080(e)(1) (emphasis added); *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 331.
[45] *Id.*
[46] *Save the Agoura Cornell Knoll*, 46 Cal. App. 5th at 675–76.
[47] *Id.*
[48] *Id.* at *13.

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an EIR, reflecting the legislative preference for resolving doubts in favor of environmental review."[49]

Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[50] In short, when "expert opinions clash, an EIR should be done."[51] "It is the function of an EIR, not a negative declaration, to resolve conflicting claims, based on substantial evidence, as to the environmental effects of a project."[52] Where substantial evidence is presented, "evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a negative declaration, because it could be 'fairly argued' that the project might have a significant environmental impact."[53] B-9 cont.

The fair argument test requires the preparation of an EIR whenever "there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial."[54]

B. Categorical Exemptions are for Projects Determined to Not Have a Significant Effect on the Environment, but These Exemptions are Subject to Exceptions

CEQA identifies certain classes of projects which are exempt from the provisions of CEQA.[55] Categorical exemptions apply to certain classes of activities that generally do not have a significant effect on the environment.[56] "Where the specific issue is whether the lead agency correctly determined a project fell within a categorical exemption, [a court] must first determine as a matter of law the scope of the exemption and then determine if substantial evidence supports the agency's

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[49] *Id.* at 4.
[50] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935 (Court concluded that expert opinion supported by facts may qualify as substantial evidence supporting a fair argument even if not based on specific observations as to the site under review); *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[51] *Pocket Protectors*, 124 Cal.App.4th at 928; *Sierra Club*, 6 Cal.App.4th at 1317–1318.
[52] *Id.* at 935.
[53] *Sundstrom*, 202 Cal.App.3d at 310 (citation omitted).
[54] 14 C.C.R. § 15063(b)(1).
[55] Pub. Res. Code § 21084(a); 14 CCR §§ 15300, 15354.
[56] *Id.*

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factual finding that the project fell within the exemption."[57] CEQA exemptions are to be narrowly construed and "[e]xemption categories are not to be expanded beyond the reasonable scope of their statutory language."[58] Erroneous reliance by a lead agency on a categorical exemption constitutes a prejudicial abuse of discretion and a violation of CEQA.[59]

If an agency meets its burden to demonstrate that the project is within a categorically exempt class, the burden shifts to the party challenging the categorical exemption to show that the project is not exempt due to an exception pursuant to CEQA Guidelines Section 15300.2.[60] One such exception is that a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to "unusual circumstances,"[61] or where there is a reasonable possibility that the activity will have a significant effect on the environment, including (1) when "the cumulative impact of successive projects of the same type in the same place, over time is significant."[62]

B-9 cont.

V. AN APPEAL OF THE PLANNING COMMISSION'S DECISION TO APPROVE CUP #19-0028 IS WARRANTED DUE TO FACTS, CONDITIONS, INFORMATION, ERRORS, AND OTHER SPECIFICS

Pursuant to Section 90104.05 of the Imperial County Municipal Code, the following facts, conditions, information, errors, and other specifics clearly warrant an appeal.[63] For these reasons, we respectfully request that the Board overturn the Planning Commission's approval of the Project, including approval of CUP # 19-0028, as well as approval of any CEQA exemption and/or certification of the IS/MND and require that an EIR be prepared for the Project in which all impacts are fully disclosed and mitigated, and released for the statutorily mandated public review and comment period.

B-10

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[57] *California Farm Bureau Fed'n v. California Wildlife Conservation Bd.* (2006) 143 Cal. App. 4th 173, 185.
[58] *Mountain Lion Found. v. Fish & Game Com.* (1997) 16 Cal.4th 105, 125; *McQueen*, 2 Cal.App.3d at 1148.
[59] *Azusa*, 52 Cal.App.4th at 1192.
[60] *California Farm Bureau Fed'n,* 143 Cal. App. 4th at 186
[61] 14 C.C.R. § 15300.2(c).
[62] *Id.* at 15300.2(b).
[63] County of Imperial, Municipal Code § 90104.05(B)(4)(e).
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A. The Project is Not a Conditionally Permitted Use in the A-2 Zone and Therefore the Findings Pursuant to Section 90203.09 Cannot be Made

The Project requires approval of CUP # 19-0028, which may be approved or conditionally approved only if it makes all of the findings enumerated in Section 90203.09 of the County's Code of Ordinances.[64] These findings include that the Project's "proposed use is consistent with the goals and policies of the adopted county general plan," and the "proposed use is consistent with the purpose of the zone or sub-zone within which the use will be located."[65] To support these findings, the Resolution for CEQA Findings in the Staff Report explains that "Section 90508.02 of the County Land Use Ordinance identify the permitted conditional uses within the A-2-G-Heber SPA Zone designation. Uses identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the Imperial County Planning Commission. ... Therefore, pursuant to Land Use Ordinance section 90508.02, electrical generation facilities are permitted with approval of a CUP for 'electrical generation plants (*less than 50 mw*).' The Commission finds that the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations."[66] Section 90508.03 makes clear that "[a]ll other uses not expressly permitted by Section 90508.01 or 90508.02 are prohibited."[67] B-11

Both the IS/MND and Staff Report clearly establish that this Project is to increase "the plant's generating capacities of *52-megawatt (MW) net, and 78.2 MW gross*, ..."[68] The Project's generating capacity—whether net or gross—exceeds the permitted use specified under Section 90508.02, subsection (y), and thus the Project is not a permitted use on lands zoned A-2 even with the approval of a CUP.[69] The Planning Commission lacked substantial evidence to make the findings required by Section 90203.09 and must not approve the CUP.

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[64] County of Imperial, Code of Ordinances § 90203.09.
[65] *Id.* at § 90203.09(A).
[66] Staff Report, Attachment B at 2. (emphasis added)
[67] County of Imperial, Code of Ordinances § 90508.03.
[68] Staff Report, Attachment F at 1. (emphasis added) Moreover, it must also be noted that the CEC has the exclusive authority to certify all thermal power plants (50 megawatts [MW] and greater) and related facilities proposed for construction in California. *See* California Energy Commission, available at: https://www.energy.ca.gov/.
[69] A Project's inconsistencies with local plans and policies also constitute significant impacts under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4; *see also, County of El Dorado v. Dept. of Transp.* (2005) 133 Cal.App.4th 1376.

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B. Substantial Evidence Supports a Fair Argument that an EIR is Required

As explained in our May 10, 2021 comments on the IS/MND and our November 16, 2021 comments on the Staff Report to the Planning Commission, as well as in the accompanying comments of Dr. Phyllis Fox and Dr. Shawn Smallwood, there is substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, hazards, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[70] Our prior comments explained that an IS/MND is inadequate for the Project, and that the County must prepare an environmental impact report ("EIR") to disclose and mitigate these impacts. B-12

The Staff Report presented to the Planning Commission failed to respond to the majority of our comments on the IS/MND, nor to the substantial evidence we provided.[71] With no new analysis and ignoring the substantial evidence provided by Citizens' experts, the Staff Report concluded that the Project will result in less than significant impacts "[w]ith the implementation of the VEPFs, …."[72] The County lacks substantial evidence to conclude that the Project will not have significant impacts, and substantial evidence supports a fair argument that an EIR is required for the Project.

1. The Project May Result in Significant Impacts to Biological Resources That Would Require the Implementation of Mitigation Measures

In his comments, Dr. Smallwood concluded that the Project will have significant, unmitigated impacts on several species, which the IS/MND, coupled with the Errata, failed to disclose and mitigate.[73] An EIR must be prepared to fully disclose and mitigate these impacts. B-13

The IS/MND and Errata severely underestimated the Project's impacts to biological resources, including special-status species, because the analysis uses

[70] *See* Citizens' Comments on MND; Citizens' Comments to Planning Commission.
[71] *See* Citizens' Comments to Planning Commission.
[72] *See* Errata to the MND. Staff Report, Attachment E at 8, 15.
[73] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

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inadequate methods to observe the existing environmental setting and describe the Project site's baseline with respect to the occurrence of biological resources. Due to underestimations of these occurrences and the resulting impacts to species, the County also proposed inadequate mitigation measures—now identified as Conditions of Approval—to reduce those impacts.

B-13 cont.

Dr. Smallwood commented on the inadequate baseline in the IS/MND, which relied on improper methods for determining the occurrence of special-status species at the Project site.[74] Specifically, Dr. Smallwood detailed many issues with the site-specific survey.[75] The County responded to these comments by claiming Dr. Smallwood "speculate[d] on the efficacy of surveys that are used by professionals in this profession."[76] The County's response, however, missed the point. Dr. Smallwood explained that while "[a] reconnaissance-level survey would be useful for recommending which detection surveys to perform and when to perform them... reconnaissance-level surveys need to be performed during the time of year and time of day that makes sense for detecting particular species. Here, the survey was performed in the middle of a July afternoon in Imperial Valley, which does not allow for a representative picture of the site. High temperatures and other conditions during this time of year and time of day are unlikely to present an accurate view of the species present on the Project site."[77] His comments are based on his years of planning and conducting wildlife surveys.[78] He has "studied the efficacy of wildlife surveys and [has] done so throughout [his] career since 1985, as evidenced by many of [his] papers in peer-reviewed scientific journals."[79] Based on his experience and expertise, Dr. Smallwood concluded that the on-site wildlife surveys conducted to inform the Project's impacts on biological resources were "severely deficient."[80] Moreover, the County's response failed to demonstrate the efficacy of these surveys.

B-14

In response to Dr. Smallwood's comments regarding the Project's potentially significant impacts on biological resources, the County claimed that the site is a developed industrial complex with no existing habitat is inconsistent with its own

B-15

[74] *Id.*
[75] *Id.*
[76] Staff Report, Attachment F at 27.
[77] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 5 (November 15, 2021).
[78] *Id.* at 6.
[79] *Id.*
[80] *Id.* at 5.

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evidence and findings.[81] Dr. Smallwood, however, found no support for this contention in the record and to the contrary, explained that "the consulting biologist who visited the site documented 10 species of wildlife there, which confirmed the site provides habitat."[82] Nine of these species are protected by the Migratory Bird Treaty Act ("MBTA").[83] Moreover, based on his own professional expertise, Dr. Smallwood explained that "industrial sites are used as habitat by species of wildlife."[84] Examples include "wildlife [using] asphalt pads used to cover leaked plutonium (Smallwood 1996, Smallwood et al. 1998)," and "birds nesting on and within built structures on industrial facilities."[85] Dr. Smallwood also discussed that "[t]he County's premise [] neglects the aerosphere portion of the project as habitat of many species of wildlife," known as "aeroecology," which has been studied in Kunz et al. 2008, Davy et al. 2017, and Diehl et al. 2017.[86] Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[87]

B-15 cont.

Additionally, Dr. Smallwood's review of both eBird and iNaturalist resulted in the identification of 56 special-status species of vertebrate wildlife present near the Project site or with ranges that overlap the site.[88] The detection records from eBird and iNaturalist provide substantial evidence supporting a fair argument that there are numerous special-status in the direct vicinity of the Project site which the County failed to detect. These species may be adversely impacted by the Project, requiring mitigation. The conflicting data from the County's surveys and these credible wildlife databases create a fair argument requiring preparation of an EIR to disclose and mitigate the Project's impacts on all special-status species that may be impacted by the Project.[89] Mr. Smallwood's comments also demonstrate that the County failed to make a reasonable effort to describe existing conditions for

B-16

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[81] Staff Report, Attachment F at 27; Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 1 (November 15, 2021).
[82] *Id.*
[83] *Id.* at 5.
[84] *Id.* at 1.
[85] *Id.*
[86] *Id.* at 1-2.
[87] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935; *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[88] *Id.*
[89] *Pocket Protectors*, 124 Cal.App.4th at 935 (where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR); *Sierra Club*, 6 Cal.App.4th at 1317–1318; CEQA Guidelines § 15064(f)(5).
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biological resources at the Project site, leading to inaccurate conclusions regarding the Project's impacts upon sensitive species, as well as inadequate mitigation measures. B-16 cont.

The County also minimized the significant impacts on biological resources identified in Dr. Smallwood's comments by claiming that the Project does not propose any changes to the site or facilities that would affect wildlife.[90] The County's response was not based in fact. Dr. Smallwood identified several project changes that the County fails to consider or analyze in its response, including "at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks."[91] Given these specific changes, Dr. Smallwood concluded that these new structures would pose new collision hazards to wildlife for the subsequent 30 years of operations that could result in significant impacts on numerous species.[92] B-17

Furthermore, the County stated that the Project would not cause significant impacts to avian species on the basis that "due to the industrialized nature of the site, avian species are likely to avoid the site."[93] In response, Dr. Smallwood explained that "[o]nce structures are built into a bird species' airspace, that species' collision risk with those structures does not depend on what existed at the site before."[94] In his experience working on wind energy repowering projects over the past fifteen years, he has seen no difference in fatality rates between new turbines built onto green fields versus those built exactly where the old turbines used to operate."[95] Based on his experience and studies, Dr. Smallwood supports his comparison by explaining that "[c]ollision risk applies to birds flying through the airspace that exists at the time of the flight, and not what existed there last year."[96]

As the IS/MND's estimations of impacts to biological resources were inadequate, so too were the mitigation measures—now erroneously labelled Conditions of Approval—which the County previously admitted were required to B-18

[90] Staff Report, Attachment F at 28.
[91] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (November 15, 2021).
[92] *Id.*
[93] Staff Report, Attachment G at 28.
[94] *Id.*
[95] *Id.*
[96] *Id.*

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reduce those impacts to less than significant levels. Dr. Smallwood's previous comments recommended additional measures that, in addition to those proposed in the MND, would have much greater effect at minimizing the fatalities and habitat destruction to special-status species at the Project site.[97] These recommendations went unaddressed by the County, and are hereby referenced and incorporated.

In response, the County cited the measures identified in the IS/MND, which are now to be incorporated into the Project's conditions of approval rather than an MMRP.[98] Renaming the mitigation measures did not improve their efficacy. While Dr. Smallwood concurred with the implementation of these measures, he determined that the measures are not adequate to fully mitigate the Project's significant impacts.[99] COA BIO-3, for example, is inconsistent with CDFW guidance that does not recommend preconstruction surveys without first conducting detection surveys.[100] Dr. Smallwood concluded that the other measures are "take-minimization measures, but would not prevent impacts."[101]

B-18 cont.

The failure to minimize the fatalities and habitat destruction to special-status species at the Project site with adequate mitigation measures further confirms that a fair argument exists that the Project will have significant impacts on wildlife and habitat.

2. The Project May Result in Significant Impacts to Air Quality That Would Require the Implementation of Mitigation Measures

In Dr. Fox's comments, she concluded that the Project would have significant, unmitigated impacts on air quality during construction activities and for the decades of operation, which the IS/MND, coupled with the Errata, failed to disclose and mitigate.[102] An EIR must be prepared to fully disclose and mitigate these impacts.

B-19

[97] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 8-10 (May 10, 2021).
[98] Staff Report, Attachment F at 31.
[99] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 13 (November 15, 2021).
[100] *Id.*
[101] *Id.*
[102] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
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The County failed to respond directly and fully to many of Dr. Fox's comments, further demonstrating that the record still contains substantial evidence supporting a fair argument that the Project would have significant impacts, and that the County lacks substantial evidence to conclude otherwise.[103] For example, Dr. Fox's conclusion that the Project would result in significant and unmitigated impacts to air quality from the Project's construction-related PM10 emissions remains unrebutted in the record.[104] Dr. Fox conducted an analysis of construction fugitive dust PM10 emissions using AP-42, Section 13.2.3.[105] In response to the County's comments regarding the use of this emissions factor, Dr. Fox explains that she properly utilized AP-42, Section 13.2.3 given the express language in the Introduction to AP-42.[106]

B-20

Moreover, the emission factor utilized by Dr. Fox "...is most applicable to construction operations with: (1) medium activity level, (2) moderate silt contents, and (3) semiarid climate."[107] These conditions are present at the site, according to Dr. Fox.[108]

She explained that "Section 13.2.3.3 also 'strongly recommends' that the construction process be broken down into component operations and emission factors specific to each use. The IS/MND did not contain any information to allow this approach. The [Staff] Report also does not contain any of this information."[109] Based on the foregoing, Dr. Fox calculated "unmitigated PM10 emissions of 319 lbs/day compared to a significance threshold of 150 lbs/day."[110] This is a significant PM10 impact which requires mitigation.[111] However, Dr. Fox determined that the

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[103] Fox Comments at 1.
[104] *Id.* at 2-6.
[105] *Id.* at 2.
[106] *Id.* at 3.
[107] *Id.* at 4.
[108] *Id.*
[109] *Id.*
[110] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (May 10, 2021). It must be noted that the Imperial County Air Pollution Control District ("ICAPCD") considers PM10 to be of substantial concern. ICAPCD, *CEQA Guidelines* at 12 (December 12, 2017).
[111] *Comtys. for a Better Env't v. Cal. Resources Agency* (2002) 103 Cal.App.4th 98, 110-111 (when impact exceeds CEQA significance threshold, agency must disclose in the EIR that the impact is significant); *Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 960; *CBE v. SCAQMD*, 48 Cal.4th at 327 (impact is significant because exceeds "established significance threshold for NOx ... constitute[ing] substantial evidence supporting a fair argument for a significant adverse impact").

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four conditions of approval identified in the Staff Report would be insufficient to fully mitigate the significant impacts from construction PM10 emissions.[112] She recommended "requiring that all ICAPCD standard fugitive dust PM10 control measures, as well as discretionary mitigation measures for fugitive PM10 control, must be implemented."[113]

B-20 cont.

Dr. Fox also identified significant and unmitigated impacts from the Project's NOx emissions during construction activities.[114] The Staff Report, in response, includes a new air quality modeling analysis in "Appendix N," which Dr. Fox identified as entirely deficient analysis for three main reasons.[115] First, Appendix N assumed a lot acreage of 2.3 acres, which is not supported by other evidence that describes the disturbed area as 7.67 acres.[116] Second the CalEEMod input indicates zero acres of grading even though the construction equipment for the Project includes a 187 hp grader, thus confirming that more than zero acres will be graded.[117] Lastly, the analysis improperly omitted off-site emissions in its calculations of mitigated and unmitigated NOx emissions.[118] Dr. Fox calculated the NOx emissions using the correct disturbed acreage of 7.67 acres and determines that the NOx emissions would be 201 lbs/day, which is double the significance threshold.[119] Although Dr. Fox acknowledged that these emissions could possibly be mitigated by requiring the use of all Tier 4 construction equipment, only the use of Tier 3 engines "when commercially available" is required by the Project conditions and if not, then Tier 2 engines are permitted.[120] Dr. Fox provided substantial evidence demonstrating that these lower engine tiers will not reduce the Project's significant impacts to less than significant levels.

B-21

Dr. Fox also provided extensive comments about the risks to worker health from valley fever during the life of the Project, noting that Imperial County is endemic for valley fever.[121] The County responded that "Imperial County is not

B-22

[112] Fox Comments at 7-8.
[113] *Id.*
[114] *Id.* at 8.
[115] *Id.* at 9.
[116] *Id.*
[117] *Id.*
[118] *Id.*
[119] *Id.* at 10.
[120] Staff Report, Attachment E at 3.
[121] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 33 (May 10, 2021).

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highly endemic for Valley Fever..."[122] To the contrary, Dr. Fox provided evidence that the site is in an endemic area, and that the Project's soil-disturbing activities would have the potential to put receptors at risk.[123] Despite evidence from the California Department of Public Health, case studies, and other published literature that support Dr. Fox's conclusion that "conventional construction mitigation measures required by Imperial County CEQA guidance are not adequate to control Valley Fever spores raised during Project construction," the Staff Report set forth the conclusory assertion that the Applicant's "voluntary" mitigation measures were sufficient.[124] A fair argument can thus be made that the impacts on public health from Valley Fever may be significant and are unmitigated. Under the fair argument standard, a disagreement among experts also necessitates preparation of an EIR.[125] B-22 cont.

For the foregoing reasons, a fair argument exists that the Project will have significant impacts on air quality and public health which require the County to prepare an EIR.

3. The Project May Result in Significant Impacts to from Hazard Risks That Would Require the Implementation of Mitigation Measures

The IS/MND determined that the impacts from hazards would be potentially significant unless mitigated. According to Dr. Fox's analysis, the IS/MND failed to accurately disclose the severity of the Project's hazards impacts because the IS/MND failed to evaluate a worst-case accident. She explained that "a [boiling liquid expanding vapor explosion ("BLEVE")] is the worst-case release scenario for very flammable materials such as isopentane because it combines both the mechanical effects of an explosion and the thermal effects of a fire."[126] The Staff Report failed to meaningfully respond to this comment and lacked the requisite B-23

[122] Staff Report, Appendix G at 22.
[123] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 34-35 (May 10, 2021).
[124] Staff Report, Appendix G at 22.
[125] *Pocket Protectors*, 124 Cal.App.4th at 935; *Sierra Club*, 6 Cal.App.4th at 1317–1318; CEQA Guidelines § 15064(f)(5).
[126] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 41-42 (May 10, 2021); Fox Comments at 12.

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BLEVE analysis. An EIR must be prepared to fully disclose and mitigate these significant impacts.

Additionally, the County responded to Dr. Fox's comments regarding impacts from hazards by asserting that the Project's Hazards Analysis "complies with the regulatory standard for assessing a catastrophic event...," citing 40 C.F.R. §§ 68.20-68.42.[127] Dr. Fox disagreed on the grounds that a BLEVE is reasonably expected to occur in the Project's location given that "[a]mbient temperatures at the Project site routinely exceed isopentane's boiling point from March through October."[128] Dr. Fox explained that "on-site workers would be the most exposed population and would be within the zone of significant impact."[129] Furthermore, she found that exposed parties within 0.3 miles of an isopentane tank experiencing a BLEVE would suffer from second degree burns yet the nearest off-site sensitive receptors are not identified.[130] B-23 cont.

The Staff Report failed to meaningfully respond to these comments and lacked any evidence supporting the County's unsupported conclusion that the Project would not result in significant impacts from a BLEVE. The evidence presented by Dr. Fox is inadequately contested by the County in its Responses to Comments and "to the extent there was a conflict in the evidence, 'neither the lead agency nor a court may 'weigh' conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.'"[131] Thus, a fair argument can be made that there are potentially significant impacts from hazards associated with the Project, requiring an EIR.

C. The Project is Not Categorically Exempt from CEQA Due to Potentially Significant Impacts Requiring Mitigation

Categorical exemptions are based on a finding that a class or category of projects does not have a significant effect on the environment.[132] An agency's finding that a particular proposed project comes within one of the exempt classes essentially includes an implied finding that the project has no significant effect on B-24

[127] Staff Report, Appendix G at 23.
[128] Fox Comments at 12-13.
[129] *Id.* at 13.
[130] *Id.*
[131] *Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal. App. 5th 665, 689, *reh'g denied* (Apr. 10, 2020), *review denied* (June 24, 2020).
[132] Pub. Res. Code §§ 21083, 21084; 14 C.C.R. § 15354.

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the environment.[133] A lead agency must provide "substantial evidence to support [their] finding that the Project will not have a significant effect."[134] Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency.[135] Additionally, an agency may not rely on a categorical exemption if mitigation measures would be necessary to reduce potentially significant effects to less than significant levels.[136]

B-24 cont.

Here, none of the exemptions claimed by the County—Class 1, Class 2, or the "common sense" exemption—apply to the Project because the Project has significant impacts which require mitigation. As set forth in the IS/MND, the County's significance determinations and mitigation measures to reduce the impacts to less than significant levels establish that the Project has the potential to result in impacts significant enough to warrant mitigation. Thus, by the County's own conclusions, and further supported by the comment letters submitted by Dr. Fox and Dr. Smallwood, no exemptions apply to the Project.

1. The County Lacks Substantial Evidence to Support a Finding That the Project Will Not Have a Significant Effect

As explained above, "[o]nly those projects having no significant effect on the environment are categorically exempt from CEQA review. An activity that may have a significant effect on the environment cannot be categorically exempt."[137] Exemption determinations must be supported by substantial evidence in the record demonstrating that the exempt project will have no significant environmental effects.

B-25

The "fair argument" standard is virtually the opposite of the typical deferential standard accorded to agencies when they have prepared an EIR. As a matter of law, "substantial evidence includes . . . expert opinion."[138] The CEQA Guidelines demand that where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the

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[133] *Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 116.
[134] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.
[135] 14 C.C.R. § 15384.
[136] *SPAWN,* 125 Cal.App.4th at 1102; *Azusa Land Recl. Co.,* 52 Cal. App.4th at 1198-1201.
[137] *Id.* at 1107; Pub. Res. Code §§ 21080(b)(9), 21084(a).
[138] Pub. Res. Code § 21080(e)(1); 14 C.C.R. § 15064(f)(5).
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environmental effects to be significant and prepare an EIR.[139] The courts have also held that substantial evidence includes facts and lay opinion, including eyewitness testimony, of potentially significant impacts such as impacts on aesthetics and the environmental consequences of economic and social changes caused by a project.[140]

As explained above and detailed in Citizens' previous comments on this Project, there is substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, hazards, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[141]

Moreover, by the County's own admission, the IS/MND made the following determinations of significance, in relevant part: (1) the Project "has the potential to result in significant or substantial adverse effects on humans. However, the Proposed Project would implement MM-FIRE-1 through MM-FIRE-7 to reduce any potentially significant impacts to hazard and hazardous materials.";[142] (2) the Project "has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, and/or reduce the number or restrict the range of a rare or endangered plant or animal. However, the Proposed Project would implement MM-BIO-1 through MM-BIO-4 to reduce any potentially significant impacts to biological resources.";[143] and (3) the combination of the Project when evaluated with other projects causing related impacts may result in a cumulatively significant impact.[144] Taken together, the County lacks substantial evidence to support a finding that the Project will not have a significant effect and thus the Project is not exempt from CEQA review.

B-25 cont.

[139] *Id.*; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App. 4th 903, 935.
[140] *Id.* at 929; *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1603-04.
[141] *See* Citizens' Comments on MND; Citizens' Comments to Planning Commission.
[142] *Id.*
[143] *Id.*
[144] Staff Report at 3. As detailed in previously submitted comments dated May 10, 2021, although the MND's Mandatory Findings of Significance acknowledge that cumulatively considerable impacts of the Project and related nearby projects are significant and require mitigation, the failure to (1) identify the relevant projects and their cumulative impacts; and (2) suggest feasible mitigation measures is a clear violation of CEQA's requirements to evaluate and discuss cumulative impacts.
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2. The Project is Not Exempt from CEQA Because Mitigated Categorical Exemptions are Prohibited under CEQA

An agency may not rely on a categorical exemption if to do so would require the imposition of mitigation measures to reduce potentially significant effects to less than significant levels.[145] Under the Guidelines, "mitigation" includes: "(a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation. (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment. (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. (e) Compensating for the impact by replacing or providing substitute resources or environments."[146]

B-26

The measures set forth in the IS/MND and MMRP fall squarely within the definition of mitigation under CEQA Guidelines Section 15370. Incorporating mandatory language like "shall," the mitigation measures are intended to reduce the risk of upset or accidents by requiring components like automatic fire suppression equipment, automatic fire detection systems, and containment area(s) for product and water run-off (MM FIRE-1 through MM FIRE-7).[147] The measures also minimize impacts to biological resources like the burrowing owl, western mastiff bat, and nesting birds (MM BIO-1 through MM BIO-4).[148] These measures were designed to reduce the potentially significant environmental impacts that would otherwise result from the Project, as disclosed in the IS/MND and supported by evidence set forth in the expert reports by Dr. Fox and Dr. Smallwood.[149] Moreover, the County's own preparation of an IS/MND—which, by definition, must include mitigation measures to reduce a project's significant, adverse impacts—is an admission that the Project will result in impacts significant enough to warrant mitigation. Thus, based on the County's own conclusions, no categorical exemption applies to the Project.

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[145] *SPAWN,* 125 Cal.App.4th at 1102; *Azusa Land Recl. Co.,* 52 Cal. App.4th at 1198-1201.
[146] 14 C.C.R. § 15370.
[147] MND at 21, 27.
[148] *Id.*
[149] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

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"If a project may have a significant effect on the environment, CEQA review must occur, and *only then* are mitigation measures relevant."[150] As established by the courts, "there are sound reasons for precluding reliance upon mitigation measures at the preliminary stage of determining eligibility for a categorical exemption. Regulatory guidelines dealing with the environmental review process under CEQA 'contain elaborate standards–as well as significant procedural requirements–for determining whether *proposed* mitigation will adequately protect the environment and hence make an EIR unnecessary; in sharp contrast, the Guidelines governing preliminary review do not contain any requirements that expressly deal with the evaluation of mitigation measures.'"[151] The courts employ a de novo standard of review when evaluating whether an agency has employed the correct procedures to "'scrupulously enforc[e] all legislatively mandated CEQA requirements,'" meaning "the agency has no discretion,...."[152]

B-26 cont.

In preparing the IS/MND and MMRP, the County initially made an attempt to comply with the procedural and substantive requirements of the CEQA statue and CEQA Guidelines, as well as the County's own rules for implementing CEQA.[153] Nevertheless, at the Applicant's request, the County drastically changed course in ultimately finding the Project to be categorically exempt from CEQA.[154] In accordance with this decision, the Errata to the MND purports to change each and every mitigation measure to conditions "voluntarily adopted" by the Applicant.[155] The measures, however, are not truly "voluntary." The Staff Report concludes the measures are "legally enforceable" and the Errata to the MND describes the measures as "preventative and protective measures" that are "embodied as [Conditions of Approval]" to be "monitored and enforced."[156] As mandatory Conditions of Approval, these measures qualify as mitigation measures within the meaning of CEQA.

The court's analysis and decision in *SPAWN* is instructive here. There, the county determined that the proposed construction of a home was categorically exempt from CEQA under a categorical exemption for single-family homes, even

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[150] *SPAWN*, 125 Cal.App.4th at 1108. (emphasis added).
[151] *Id.*
[152] *Sierra Club v. Cty. of Fresno* (2018) 6 Cal. 5th 502, 512.
[153] *See, e.g.,* County of Imperial, *CEQA Regulations; Guidelines for the Implementation of CEQA* (April 2017).
[154] Staff Report at 4; Staff Report, Attachment F at 3.
[155] Staff Report, Attachment E at 2.
[156] *Id.*; Staff Report, Attachment G at 17.

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though the home was adjacent to a protected anadromous fish stream and within a stream conservation area which the county conceded was of "critical concern."[157] In nevertheless finding that there was no reasonable possibility of significant environmental impacts, the county supported its exemption determination "on 'dozens of conditions that [were] applied to enhance mitigations and reduce to a minimum the possibility of any adverse environmental impacts.'"[158] The court set aside the county's approval of the project, reasoning that "[r]eliance upon mitigation measures (whether included in the application or later adopted) involves an evaluative process of assessing those mitigation measures and weighing them against potential environmental impacts, and that process must be conducted under established CEQA standards and procedures for EIRs or negative declarations."[159] The *SPAWN* court set forth the proposition that "whether a project may impact a designated environmental resource must be made without reference to or reliance upon any proposed mitigation measures."[160]

B-26 cont.

Likewise here, the County's improper attempt to find the Project exempt from CEQA review with the inclusion of enforceable mitigation measures is contrary to law and deprives the public of its statutory rights to participate and comment on the sufficiency of the mitigation measures proposed to be applied to the Project.

D. The Categorical Exemptions are Facially Inapplicable to the Project

In analyzing whether the lead agency correctly determined a project to be categorically exemption, the courts first determine the scope of the exemption and "then determine if substantial evidence supports the agency's factual finding that the project fell within the exemption."[161] CEQA exemptions are to be narrowly construed.[162] Erroneous reliance by a lead agency on a categorical exemption constitutes a prejudicial abuse of discretion and a violation of CEQA.[163]

B-27

[157] *SPAWN,* 125 Cal.App.4th at 1106.
[158] *Id.* at 1107.
[159] *Id.*
[160] *Id.*
[161] *California Farm Bureau Fed'n v. California Wildlife Conservation Bd.* (2006) 143 Cal. App. 4th 173, 185.
[162] *Mountain Lion Found. v. Fish & Game Com.* (1997) 16 Cal.4th 105, 125; *McQueen,* 2 Cal.App.3d at 1148.
[163] *Azusa,* 52 Cal.App.4th at 1192.

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None of the exemptions claimed by the County—Class 1, Class 2, or the "common sense" exemption—apply to the Project. As explained in more detail below, both Dr. Fox, Dr. Smallwood provided substantial evidence supporting a fair argument that the Project will result in significant impacts on the environment. The County, meanwhile, failed to provide substantial evidence showing that the Project will not result in significant impacts, as required to support an exemption. The Project, therefore, fails to qualify for any available exemption.

B-27 cont.

1. The Project is not Categorically Exempt Under Class 1 Because the Proposal Involves Substantially More Than an Insignificant Expansion of Uses

Section 15301 of the CEQA Guidelines provides an exemption for the "operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use."[164] The key, as identified in the provision, is whether the activity involves negligible or no expansion of use.[165]

B-28

The existing facilities exemption on its face does not apply to this Project because this Project cannot be characterized as a negligible modification to a previously analyzed project.[166] Rather, the Project involves the installation of two new OECs, i.e., OEC 1 and OEC 2, which would jointly function as an I3LU that would use an entirely different process for cooling motive fluid, i.e., air cooling rather than water cooling.[167] These new OECs would also require the installation of a new VRMU and two new isopentane storage tanks (10,000 gallons each) on the site—doubling the number of tanks from two to four.[168] With the addition of the two new isopentane storage tanks, the isopentane volume is estimated to increase from 96,8000 gallons under permitted conditions to 240,100 gallons.[169] Moreover, the IS/MND estimated that isopentane emissions would increase by 48.0 lbs/day due to the two new OEC units and now the Staff Report estimates that the change in

[164] 14 C.C.R. §§ 1537015301.
[165] *Id.*
[166] *See, e.g., Communities for a Better Env't,* 48 Cal. 4th at 326.
[167] MND at 10.
[168] *Id.*
[169] Staff Report, Attachment F at 10.

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isopentane emission volume would be as significant as 65.7 lbs/day.[170] Finally, the Project proposes to repower the plant to its "nameplate" output capacity of 52 megawatts (net) and 78.2 megawatts (gross).[171] The County therefore acknowledged that the Project will result in an expansion of existing use, and there is no evidence in the record that the existing facility formerly operated at its nameplate capacity, rending the Class 1 exemption inapplicable.

The Project would also reconfigure and convert OEC 11 and OEC 13 into an ITLU along with additional modifications.[172] Finally, due to changes to the existing facilities, the Project requires an additional 500 AF of water *annually*.[173] Based on the foregoing, at the outset of the CEQA implementation process, the County properly classified the Project as a non-exempt new project, proceeded forward with CEQA review, and issued an IS/MND, which concluded that the Project would have significant impacts that could be mitigated to less than significant levels.

B-28 cont.

The Staff Report's Findings of Fact erroneously claimed that the Project is categorically exempt on the basis that it will not result in an expansion of the facility's current use, describing the Project as a "'like-for-like' replacement...."[174] The Findings improperly relied on factually inaccurate claims and omitted key Project components to reach the desired conclusion. First, the analysis in the Staff Report did not address the significant *increase* in isopentane emissions from the Project to approximately 99.0 lbs/day, which is less than a tenth below permitted conditions.[175] Moreover, the comments prepared by Dr. Fox dated May 10, 2021, provided evidence that isopentane emissions were underestimated in the IS/MND and are likely to increase significantly more than disclosed.[176]

B-29

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[170] *Id.* at 12. Note that the Staff Report discloses that isopentane emissions under proposed conditions would be 99.0 lbs/day and emissions under actual emissions are 33.3 lbs/day. However, the Report incorrectly calculates the change to be 48.0 lbs/day when in fact the change would be 65.7 lbs/day. This discrepancy is due to the fact that the Staff Report significantly increased the Project's proposed conditions for isopentane emissions from 81.3 lbs/day to 99.0 lbs/day, which is less than a tenth below permitted conditions.

[171] Staff Report at 1; MND at 2.

[172] MND at 10.

[173] *Id.* at 12.

[174] Staff Report, Attachment F at 8; 18.

[175] *Id.* at 12.

[176] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).

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Rather than addressing the increase in isopentane emissions, the Staff Report focuses on the emissions of NOx, S02, H2S, and Benzene, claiming that these emissions "would be completely eliminated."[177] To the contrary, however substantial evidence demonstrates that the Project's NOx emissions during construction would be significant and unmitigated. In her report, Dr. Fox identified many deficiencies with the Project's severely underestimated construction NOx emissions, and conducted an independent analysis that determined these emissions would actually contribute around 201 lbs/day, which is more than double the significance threshold of 100 lbs/day.[178] In failing to require that the Project utilize Tier 4 construction equipment, these emissions remain unmitigated.[179] B-30

Second, the Findings are misleading in claiming that "no additional physical expansion of facilities at the Project site would occur as a result of the Project."[180] This statement is patently incorrect. The Project proposes to add two new OECs, i.e., OEC 1 and OEC 2, a new VRMU, and two new isopentane storage tanks (10,000 gallons each), doubling the total number of tanks on-site from two to four, and increasing overall facility output.[181] The Findings are thus unsupported by the evidence set forth in the Project Description. B-31

Finally, the Findings state that "[t]he Project neither uses a new technology nor utilizes new processes, as the Heber 1 power plant already utilizes OECs to generate electricity."[182] To the contrary, the I3LU would use an entirely different process for cooling motive fluid, i.e., air cooling rather than water cooling.[183] Additionally, the Project would require an additional 500 AF per year of irrigation water because the "*original* operational process utilized flashes of geothermal brine to make steam," but "*[c]hanges* to these existing facilities will no longer generate the extra water needed for the cooling towers," thus necessitating additional water consumption.[184] The Project's additional water consumption, including the impacts of increased consumption in a County which lacks adequate water supply for all B-32

[177] Staff Report, Attachment F at 17.
[178] Dr. Phyllis Fox, PhD, PE, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 9-10 (November 16, 2021).
[179] *Id.* at 10.
[180] Staff Report, Attachment F at 17.
[181] MND at 2, 10.
[182] Staff Report, Attachment F at 17.
[183] MND at 10.
[184] *Id.* at 12.

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existing industrial and agricultural uses, is more than a "minor alteration" to the existing facility and was not analyzed in the facility's original CEQA document.

For the foregoing reasons, the proposed expansion of existing uses by the Project is significantly more than "negligible or no expansion" and thus the Project is not categorically exempt from CEQA. An EIR is required for the Project.

B-32 cont.

2. The Project is not Categorically Exempt Under Class 2

Section 15302 of the CEQA Guidelines provides an exemption from CEQA for the "replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced," including the "[r]eplacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity."[185] Public agencies utilizing such exemptions must support their determination with substantial evidence.[186] A project may therefore be exempted from CEQA if the Lead Agency shows through substantial evidence that it is replacing an existing facility with substantially the same *purpose* and *capacity*.

B-33

This Project involves the installation of a new OEC 1 with a design capacity of 19.85 MW, a new OEC 2 with a design capacity of 17.25 MW, two new 10,000-gallon isopentane storage tanks—doubling the number of tanks on site and increasing the volume from 96,8000 gallons under permitted conditions to 240,100 gallons, a new VRMU as well as additional new ancillary components within the existing Heber 1 Geothermal Energy Complex.[187] Nevertheless, the Staff Report again claims that the proposed new facilities would be a "'like-for-like' replacement...."[188] The Project, however, would involve the construction of new and highly technical equipment that involves different technologies and processes as well as environmental impacts.[189] Namely, isopentane emissions, the number of isopentane tanks, and the volume of isopentane have all increased.[190] Moreover, due to equipment modifications and changes, the Project would require additional

[185] 14 C.C.R. § 15302(c).
[186] Pub. Res. Code § 21168.5.
[187] MND at 11.
[188] Staff Report, Attachment F at 21.
[189] MND at 11-12.
[190] *Id.* at 8, 10.

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irrigation water to be supplied annually.[191] The Project, therefore, involves far more than a "replacement or reconstruction" of existing structures and is not exempt from CEQA review. B-33 cont.

3. The Project is not Exempt Under the "Common Sense" Exemption

CEQA provides for a "common sense" exemption, which applies to a project if it can be determined with certainty that there is "no possibility" that the project "may have a significant effect on the environment."[192] "If legitimate questions can be raised about whether the project might have a significant impact and there is any dispute about the possibility of such an impact, the agency cannot find with certainty that a project is exempt."[193] The exemption must "be reserved for those 'obviously exempt' projects, 'where its absolute and precise language clearly applies.'"[194]

The County's obligation to produce substantial evidence supporting its exemption decision is particularly important where the record shows, as it does here, that the Project will have significant environmental impacts. The Staff Report, in concluding that the commonsense exemption applies, states that its analysis of Project impacts "methodically demonstrates that the Project will not create any significant environmental effects, primarily because all construction and installation will occur on the existing site, which has been fully planned, permitted, and developed."[195] The County wrongly asserts that the existing site has been "fully planned, permitted, and developed." As stated in the CEQA Findings, "[t]he purpose of the Project is to decommission the dual-flash steam turbine generator, install two new ORMAT Energy Converters (OECs), reconfigure two existing OECs, install ancillary equipment including a vapor recovery maintenance unit, and install upgrades to replace aging equipment, including two new 10,000-gallon isopentane storage tanks, *subject to approval of a CUP from the County*."[196] Approval of the B-34

[191] *Id.* at 12.
[192] 14 C.C.R. § 15061(b)(3).
[193] *Davidon Homes v. City of San Jose* (1997) 54 Cal. App. 4th 106, 117, *as modified on denial of reh'g* (Apr. 29, 1997).
[194] *Id.*
[195] Staff Report, Attachment F at 22.
[196] Staff Report, Attachment B at 3.

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CUP is required in order for the Project to go forward and thus the existing site has not been fully permitted.[197] B-34 cont.

Moreover, the Staff Report alleged that "[o]ther potential areas of impact not necessarily related to the physical land—such as noise, geologic hazards, biological resources, and air emissions—are shown to not approach or exceed any applicable thresholds of significance."[198] The reports by Dr. Smallwood and Dr. Fox presented substantial evidence that the Project may have significant impacts. Thus, the County cannot conclude with any certainty that there is no possibility the Project will cause no significant environmental impacts. B-35

As detailed in their respective expert reports, Dr. Fox and Dr. Smallwood identified many potentially significant impacts, supported by substantial evidence, to which the County insufficiently addressed in its Responses to Comments. For example, in response to Dr. Smallwood's comments regarding potentially significant impacts to special-status species, the Staff Report claims that the Project site "is completely void of any suitable habitat for either special-status plant species or wildfire, including avian species."[199] In response, Dr. Smallwood reiterates that "[t]his assertion was readily refuted by the project's consultant who documented 10 species of wildlife at the site even though the survey was performed mid-day in July – a time date least likely to detect wildlife."[200] B-36

Furthermore, the County improperly dismissed Dr. Smallwood's previous comments regarding the Project's significant collision-mortality impacts to wildlife on the grounds that "the new structure will be located on the same site as the structure replaced...."[201] In response, Dr. Smallwood identified many of the Project's new structures, including "at least 1,820 m of security fence and 925 m of electric B-37

[197] It must also be noted that the very requirement for a CUP indicates the possibility of a potentially significant impact. *See* County of Imperial, Code of Ordinances, § 90203.09, 90508.01.
[198] Staff Report, Attachment F at 22.
[199] *Id.* at 34-35. "Readers of an EIR should not be required to 'ferret out an unreferenced discussion in [related material].... The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project. '[I]nformation 'scattered here and there in EIR appendices,' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis....'"" *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal. 5th 918, 941, *citing to Vineyard*, 40 Cal.4th at 442.
[200] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 8 (November 15, 2021).
[201] *Id.* at 20.

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distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks," which he finds "would pose new collision hazards to wildlife for the subsequent 30 years of operation."[202] Based on his expertise, Dr. Smallwood explains that "[t]he County's response to [his] comments neither acknowledge these project changes, nor addresses the significant impacts on species that could result."[203] B-37 cont.

With regards to significant impacts on air quality, Dr. Fox's analysis demonstrates that Project construction activities will emit PM10 and NOx emissions in excess of the significance thresholds, thus creating significant and unmitigated impacts.[204] B-38

Both Dr. Fox and Dr. Smallwood are highly skilled and qualified technical experts with extensive experience in their fields.[205] Their conclusions are supported by well-documented, credible evidence. Their opinions therefore constitute substantial evidence within the meaning of the law.[206] The Commission's conclusions otherwise were supported only by instances of unsubstantiated opinion or conjecture.[207] B-39

E. The Project Falls Within the Exceptions to Categorical Exemptions

B-40

Even if an agency meets its burden to demonstrate that the project is within a categorically exempt class, a project is not exempt if an exception to the exemption is applicable pursuant to CEQA Guidelines Section 15300.2.[208] Here, an exception to

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[202] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (November 15, 2021).
[203] *Id.*
[204] Dr. Phyllis Fox, PhD, PE, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 2-10 (November 16, 2021).
[205] *See* Curriculum Vitae for Dr. Fox and Curriculum Vitae for Dr. Smallwood attached to Citizens' Comments.
[206] 14 C.C.R. § 15384(b) ("Substantial evidence" includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts); *Architectural Heritage v. County of Monterey* (2004) 122 Cal.App.4th 1095, 1117-18 (expert's opinion is "credible" if it constitutes "fact-based observations by people apparently qualified to speak to the question [at issue.] That testimony constitutes substantial evidence, because it consists of "facts, reasonable assumptions, and expert opinion supported by facts.").
[207] *See* Staff Report, Appendix F at 46.
[208] *California Farm Bureau Fed'n,* 143 Cal. App. 4th at 186

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the exemption is applicable because there is a reasonable possibility that the Project will have a significant effect on the environment due to the Project's cumulative impacts,[209] and there is a reasonable possibility that the activity will have a significant effect on the environment due to "unusual circumstances."[210]

B-40 cont.

1. The Project May Have Significant Cumulative Impacts When Considered with Other Nearby Geothermal Power Projects

Categorical exemptions are inapplicable when the "cumulative impact of successive projects of the same type in the same place, over time is significant. "[211] Cumulative impacts can result from individually minor but collectively significant impacts from projects taking place over a period of time.[212]

Despite concluding that cumulative impacts would be potentially significant in the IS/MND Mandatory Findings of Significance, the County subsequently determined that the Project would not result in a cumulatively significant impact in part "[b]ecause the Project contemplates replacing the site's currently outdated dual flash turbine with more modernized equipment-thereby resulting in an increase in renewable energy production and a reduction in air emissions...."[213] The County's reasoning is flawed. The Project proposes substantially more than a simple replacement of like-for-like equipment and processes given that the Project involves the construction and operation of two new OEC units, the installation of two additional isopentane storage tanks, a new VRMU, and due to the new processes utilized by the Project, an additional 500 AF per year of irrigation water is required for the Project.[214] Furthermore, based on the evidence provided in Dr. Fox's comments, the County also failed to adequately support its finding that the Project would result in a reduction in air emissions.[215] To the contrary, the Project's construction emissions of PM10 and NOx would be significant, and since "the Project will significantly increase the amount of isopentane in the OEC units, ..., the maintenance, purging and fugitive emissions should also increase by about a

B-41

[209] *Id.* at 15300.2(b).
[210] *Id.* at § 15300.2(c).
[211] *Id.* at § 15300.2(b).
[212] *Id.* at § 15355.
[213] MND at 39; Staff Report, Attachment F at 24.
[214] *Id.* at 10-12.
[215] *Id.*; Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 6-14, 21-23 (May 10, 2021).

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factor of 2.5, resulting in significant ROG emissions" during Project operations.[216] The County thus has not provided support for its claim that the Project would not result in a cumulatively significant impact.

B-41 cont.

Moreover, the County states that "no projects occur in relatively close proximity to the Heber 1 site (including the Heber 2 project, located approximately 1 mile away)."[217] Factors to consider when determining whether to include a related project in a cumulative impacts analysis include environmental resources impacted, location, and project type.[218] Heber 2, for example, is a very similar geothermal project proposed by the same applicant located a mere mile away and yet is improperly identified as outside of the Heber 1 Area of Potential Effect.[219] Both projects involve facilities similar in size with overlapping construction schedules and thus overlapping impacts from construction emissions.[220] The projects also are likely to result in many of the same adverse environmental impacts.[221] For example, our comments on the Heber 2 project supported the conclusion that construction emissions from that project are also likely significant.[222] Since construction of these two projects may very well overlap, already-significant emissions impacts will be substantially worse. Additionally, both projects will increase the release of isopentane, an ozone precursor, into the atmosphere.[223] Dr. Fox concluded in her comments that the emissions of isopentane from Heber 1 and Heber 2 far exceed ICAPCD's significance threshold for ROG —an undeniably significant and

B-42

[216] *Id.*
[217] Staff Report, Attachment F at 24.
[218] 14 C.C.R. § 15130(b)(2).
[219] *See* Heber 2 Mitigated Negative Declaration.
[220] *Id.*; *See also* MND.
[221] *See, e.g., Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project*, (SCH: 2020069002; CUP No. 19-0017) (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021).
[222] *Id.* at 23-27.
[223] Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 26 (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).
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cumulatively considerable impact.[224] Thus, the Heber 1 and Heber 2 projects would result in cumulatively significant impacts that the County failed to consider.[225]

B-42 cont.

Heber 2 is not the only project that must be considered in a cumulative impacts analysis. In its 2020 Annual Report, as well as in SEC filings, Ormat indicates that its growth plans include the repair and enhancement of existing wells and drilling of new wells.[226,227] The drilling and operation of new wells constitute additional cumulative project(s) that will result in air emissions that must be considered with those of the Project in a cumulative air quality analysis.

B-43

Given the proximity of a remarkably similar project that is part of the same Ormat geothermal complex, the County's contention that the Project will not contribute to cumulatively considerable impacts is dubious and completely unsupported. The exception makes the CEs inapplicable to this Project.

2. The Project May Have Significant Effects on the Environment due to Unusual Circumstances

CEQA Guidelines state that a categorical exemption "shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances."[228] The Supreme Court in *Berkeley Hillside Preservation v. City of Berkeley* clarified the meaning of the CEQA Guidelines language and the applicable standards of review, and set forth two tests to determine whether the unusual circumstances exception

B-44

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[224] ICAPCD, *CEQA Guidelines, Table 1* at 11; Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 35 (Feb. 22, 2021). Dr. Fox explains in her comments that when errors made in estimating isopentane emissions from Heber 2 are corrected, her calculations show an increase in emissions by 505 lb/day. The Heber 1 MND estimates that the Project will result in an increase in isopentane emissions of 48 lb/day. Cumulatively, the two projects will result in an increase of 553 lb/day, well over the ICAPCD threshold of 137 lb/day.

[225] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

[226] Ormat, *2020 Annual Report* at 64.

[227] U.S. SEC, *Form 10-K, Ormat Technologies, Inc.* (December 31, 2020), available at: https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/17c5fd2c-ee2c-431e-a993-fc6cd4626a05.pdf.

[228] 14 C.F.R. § 15003.2(c).

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applies.[229] "One may identify 'evidence that the project will have a significant effect on the environment.' Alternatively, one may show evidence (1) the project is unusual because it 'has some feature that distinguishes it from others in the exempt class, such as its size or location;' and (2) there is 'a reasonable possibility of a significant effect due to that unusual circumstance.'"[230] B-44 cont.

As to the first test, the County's determinations set forth in the IS/MND provide concrete evidence to demonstrate that the Project *will* have significant effects on the environment. The County's conclusions are further supported by the expert reports previously submitted by Dr. Fox and Dr. Smallwood.[231] The IS/MND concludes that the Project would result in significant adverse impacts and incorporates several mitigation measures to reduce the Project's significant impacts.[232] The IS/MND's determinations of significance, in relevant part, include substantial adverse effects on humans that may be reduced by implementing MM-FIRE-1 through MM-FIRE-7, significant impacts to biological resources requiring implementation of implement MM-BIO-1 through MM-BIO-4, and cumulatively significant impacts.[233] The mitigation measures were designed to reduce the Project's potentially significant environmental impacts that would otherwise result from the Project. Thus, there is evidence that the Project *will* have a significant effect on the environment. B-45

In the alternative, the Project also presents circumstances that are unusual for projects in the exempt classes, which are comprised of classes of projects that involve the continued operation of existing facility with a negligible expansion of use and/or replacement structures.[234] The Supreme Court in *Berkeley Hillside Pres.* B-46

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[229] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105.
[230] *Protect Tustin Ranch v. City of Tustin* (2021) 2021 WL 4962754, at *5.
[231] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[232] *See* MND at 39.
[233] *Id.*
[234] The County concludes in the Staff Report that "[u]nder the 'Class 1' exemption, the Project constitutes an '[e]xisting facility[y] of both inventory and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services[.]' (CEQA Guidelines,§ 15301, subd. (b).) Under the 'Class 2' exemption, the Project constitutes a 'commercial structure with a new structure of substantially the same size, purpose, and capacity' and an 'existing utility system[] and/or facilit[y] involving negligible or no expansion of capacity.' (CEQA Guidelines, § 15302, subds. (b)-(c).)" Staff Report, Attachment F at 25.

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clearly established that "[a] party invoking the exception may establish an unusual circumstance without evidence of an environmental effect, by showing that the project has some feature that distinguishes it from others in the *exempt class*, such as its size or location."[235]

Here, the Project proposes to construct and operate new structures as well as implement new processes to increase the net and gross generation of the existing geothermal power facility.[236] Although the Project is sited within the County's Geothermal Overlay Zone and other geothermal operations exist in the area, the Project is nevertheless unusual for purposes of CEQA Guidelines Section 15003.2.[237] According to the U.S. Department of Energy, the combined capacity of the Imperial Valley Geothermal Resource Area is approximately 327 net megawatts.[238] Since the Project proposes to increase the net generation of the plant to 52MW, the Project would comprise nearly sixteen percent of the total capacity for the entire Geothermal Overlay Area in the County.[239] By way of comparison, the recent Heber 2 proposal refurbished the Heber 2 unit to its permitted net generation capacity of 33MW, which is 19MW less than this Project.[240] Moreover, unlike some of the other geothermal projects in the County's Geothermal Overlay Zone, this Project site, which is located in one of the most seismically active regions in the U.S.,[241] is surrounded by three cities—the City of Calexico with a population of approximately 40,000, the City of El Centro with a population of around 44,000, and the City of Imperial with a population of around 17,400.[242] The IS/MND concedes that the Project site is "subject to potential ground shaking due to nearby faults."[243] Though the County asserts that risk of seismic activity does not pose significant risks at the

B-46 cont.

[235] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105. (emphasis added)
[236] MND at 10, 23.
[237] Staff Report, Attachment F at 25.
[238] U.S. Department of Energy, *Imperial Valley Geothermal Area,* available at: https://www.energy.gov/eere/geothermal/imperial-valley-geothermal-area.
[239] *Id.*; MND at 10.
[240] Imperial County, *Initial Study and Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 11.
[241] *Id.* at 23.
[242] Imperial County, *Imperial County Geothermal Projects,* available at: https://www.icpds.com/assets/planning/energy-maps/imperial-county-geothermal-09-15-2017.pdf; U.S. Census Bureau (2019).
[243] *Id.* at 23.
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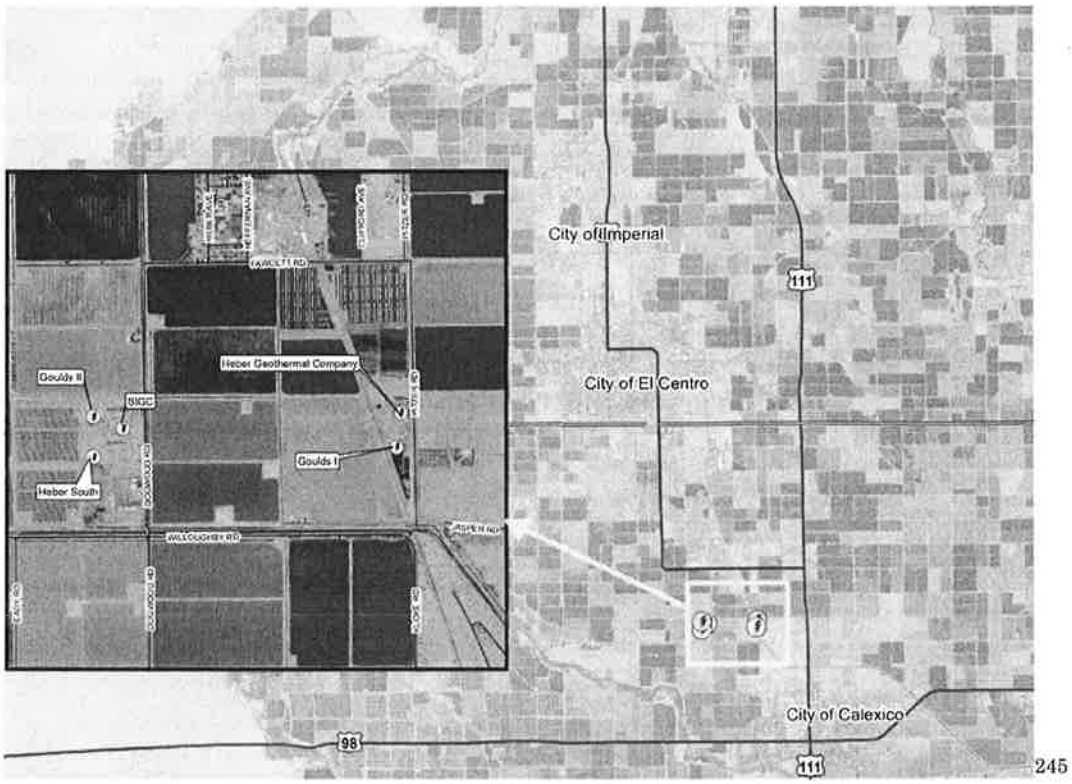
Project site, a "swarm of earthquakes" hit Imperial County on June 5, 2021, some felt as far away as Los Angeles.[244]

B-46 cont.



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B-47

Finally, this Project involves storage and handling of isopentane, a highly volatile liquid which can readily boil and evaporate on a warm day, making assessment and mitigation of potential accidents involving isopentane extremely important. It is for this reason that Dr. Fox recommended evaluating the most extreme and dangerous scenarios in the hazards analysis, including the potential consequences of a boiling liquid expanding vapor explosion ("BLEVE"), a reasonably foreseeable worst-case scenario that combines both the mechanical effects of an explosion and the thermal effects of a fire.[246]

B-48

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[244] Los Angeles Times, *Earthquake: Swarm of tremblors, including magnitude 5.2 quake, hits Imperial County* (June 5, 2021), available at: https://www.latimes.com/california/story/2021-06-05/earthquake-hits-imperial-county?utm_id=30582&sfmc_id=1628513.
[245] *Id.*
[246] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 47-52 (May 10, 2021).

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Given an adequate demonstration of unusual circumstances, the next question identified in *Berkeley Hillside Pres.* is whether there is a fair argument of a reasonable possibility of a significant environmental effect.[247] As demonstrated herein, in our previously submitted comments on the IS/MND, and in the expert comments by Dr. Phyllis Fox and Dr. Smallwood, which are hereby incorporated by reference, we have provided substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[248] Our conclusions are further supported by the significance determinations for this Project originally set forth in the IS/MND. For the foregoing reasons, there is a reasonable possibility that the Project will have a significant effect on the environment due to unusual circumstances such that an exception to the claimed categorical exemptions apply. B-49

F. CEQA Prohibits the Use of an Errata to Substantially Alter the Significance Determinations in the IS/MND

The CEQA Guidelines authorize the use of an errata, in relevant part, if (1) new revisions to the project are added in response to comments on the project's identified effects, which are not new and avoidable significant effects; (2) measures or conditions of approval that are added after circulation of the negative declaration that are not required by CEQA, do not create significant environmental effects, and not necessary to mitigate an avoidable significant effect; and (3) situations where new information is added to the negative declaration that merely clarifies, amplifies, or makes insignificant modifications to the negative declaration.[249] Here, the County improperly uses these CEQA's procedures to issue an "Errata" to the IS/MND which is intended to supplant the evidence in the IS/MND with new evidence that purportedly reduces all of the previously-identified significant impacts to less than significant levels and changes the previously-identified mitigation measures to Conditions of Approval without adequate support.[250] These changes are a far cry from minor or insignificant modifications. The Errata B-50

[247] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105.
[248] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[249] 14 C.C.R. § 15073.5(c)(2)-(4).
[250] *See* Staff Report, Attachment E.

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essentially strikes the IS/MND's entire impact analysis and guts the conclusions originally set forth in the IS/MND. This approach is not authorized by CEQA. B-50 cont.

The County's revised analysis and conclusions in the Errata are also unsupported. For example, Dr. Smallwood disagrees with the Errata's conclusion that the impacts on biological resources are now less than significant.[251] To the contrary, he finds that the Project would have significant impacts to birds from collision-mortality due to the Project's additional structures erected in the airspace.[252] He also notes in his comments that "[t]he errata claims that no sensitive bird species occur at the project site, but this claim neglects the 10 species documented at the site by Chambers Group (2019:App. D), 9 of which are protected by the Migratory Bird Treaty Act."[253] B-51

Moreover, no changes to the Project have occurred to warrant the use of an Errata. Prior to circulating the IS/MND in 2019, there were Project-related changes, but none since.[254] The use of an Errata here is thus improper since the County's intent is clearly to evade its earlier findings that the Project would have significant impacts requiring mitigation. The County cannot use this Errata to proceed forward with its unfounded conclusion that the Project is categorically exempt from CEQA. The County's actions violate the specific procedures outlined in CEQA. B-52

VI. PRIOR EFFORTS MADE TO ARRIVE AT ACCEPTABLE SOLUTION

Citizens previously raised each of these objections in its letters to the Imperial County Planning Director dated May 10, 2021 and November 16, 2021. The May 10, 2021 letter was submitted during the public comment period on the IS/MND. That letter was followed by the November 16, 2021 letter submitted to the Planning Director and Planning Commission ahead of its consideration of the CUP application. All have been accompanied by numerous supporting documents and expert declarations, including the comments of air quality expert Dr. Fox and biologist Dr. Smallwood. B-53

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[251] Dr. Shawn Smallwood, PhD, *Comments on the Staff Report for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 13 (November 15, 2021).
[252] *Id.*
[253] *Id.*
[254] Staff Report, Attachment G at 14.

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A copy of each letter and accompanying exhibits are attached to this letter. Citizens' representative also attended the Planning Commission hearing and submitted oral comments via Zoom.

VII. ACTION BEING REQUESTED

We respectfully request that the Board overturn the Planning Commission's approval of the Project, including approval of CUP # 19-0028, as well as approval of any CEQA exemption and/or certification of the IS/MND and require that an EIR be prepared for the Project in which all impacts are fully disclosed and mitigated, and released for the statutorily mandated public review and comment period. B-53 cont.

Thank you for your consideration of this appeal.

Sincerely,

Christina M. Caro
Tara C. Rengifo

TCR:acp

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EXHIBIT A

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May 10, 2021

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Re: Comments on the Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project (CUP #19-0028; IS #19-0033; SCH #2021020267)

Dear Mr. Minnick, Ms. Moran:

We are writing on behalf of Citizens for Responsible Industry ("Citizens") to provide comments on the Mitigated Negative Declaration ("IS/MND") prepared by Imperial County ("County"), pursuant to the California Environmental Quality Act ("CEQA"),[1] for the Heber 1 Geothermal Repower Project (CUP #19-0028; IS #19-0033; SCH #2021020267) ("Project"), proposed by Heber Field Company/Ormat Nevada, Inc. ("Applicant").

The Project proposes to amend the existing CUP #15-0013 and expand the Heber 1 facility by installing two new Ormat Energy Converters ("OECs") and ancillary equipment, including two new 10,000-gallon isopentane storage tanks, and reconfiguring two existing OECs into a combined two-level unit. The Project would

[1] Pub. Resources Code §§ 21000 et seq.

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also shut down the dual-flash steam turbine generator and proposes to increase facility power output to 52 megawatts ("MW") net and 78.2 MW gross and to extend the permitted life of Heber 1 to 30 years.

The Project site is located 895 Pitzer Road, Heber, California 92249, in Imperial County (APNs 054-250-035 and 054-250-036). Located within the Heber Specific Plan Area, which is designated for commercial, residential, industrial, and renewable energy land uses in mixed-use development, the Project site is zoned General Agriculture/Specific Plan Area (A2G-SPA) and is surrounded by agricultural land uses. The Applicant is proposing an amendment to its existing Conditional Use Permit #15-0013. Conditional Use Permit #19-0028 would supersede existing CUP #15-0013. Per the original CUP 15-0013, the permittee may use up to a total of 1,800 acre feet of irrigation water per year for 30 years from Imperial Irrigation District (IID). On November 18, 2019, the 11D issued an amendment No. 1 to the Amended and Restated Water Supply Agreement to supply an additional 500 acre feet of water per year in addition to the 1,800 acre feet that was in the agreement, for a total of 2,300 acre feet per year. The Applicant asserts that the purpose of this increase is the original operational process utilized flashes of geothermal brine to make steam, which made water condensate that was then used in the wet cooling tower. Changes to these existing facilities will no longer generate the extra water needed for the cooling towers. In 1985, the IID supplied 5,000 acre feet per year, so over time with equipment modifications and changes in the geothermal resource, water consumption has fluctuated. The Applicant claims that there will be no change to the existing water intake.[2]

We reviewed the MND with the assistance of Phyllis Fox, Ph.D., PE and Shawn Smallwood, Ph.D.[3,4] Their technical comments and curriculum vitae are attached hereto and are submitted to the County, in addition to the comments in this letter. Accordingly, the County must address and respond to their comments separately.[5]

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[2] Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project, pdf p. 7.

[3] P. Fox, Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project (May 8, 2021) (hereinafter, "Fox Comments"), **Exhibit A**.

[4] S. Smallwood, Comments RE: Heber 1 Geothermal Repower Project (March 10, 2021), (hereinafter "Smallwood Comments"), **Exhibit B**.

[5] The Commenters reserve the right to supplement these comments at later hearings and proceedings related to this Project. Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield Citizens for Local Control v.*

I. STATEMENT OF INTEREST

Citizens is a coalition of labor organizations with members who may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The coalition includes Heber residents Jaime Cuevas, Delila and Efrain Guzman, Imperial County resident Eric Jones, and other members and organizations, including California Unions for Reliable Energy ("CURE") and its local affiliates, and the affiliates' members who live, recreate, work, and raise families in Imperial County and in communities near the Project site. Thus, Citizens, its participating organizations, and their members stand to be directly affected by the Project's impacts.

Since its founding in 1997, CURE has been committed to building a strong economy and healthier environment and it works to construct, operate, and maintain conventional and renewable energy power plants and other industrial facilities throughout California. CURE supports the development of clean, renewable energy technology, including geothermal power generation, where properly analyzed and carefully planned to minimize impacts on public health and the environment. Geothermal projects should avoid adverse impacts to natural resources and public health, and should take all feasible steps to ensure that unavoidable impacts are mitigated to the maximum extent feasible. Only by maintaining the highest standards can energy development truly be sustainable.

The individual members of Citizens, and the members of its affiliated labor organizations, would be directly affected by the Project and may also work constructing the Project itself. They would therefore be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal stake in protecting the Project area from unnecessary, adverse environmental and public health and safety impacts.

Citizens supports and encourages the sustainable development of California's energy and natural resources and has an interest in enforcing environmental laws that encourage sustainable development and a safe working environment. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making it less desirable for businesses to locate and people to live and recreate in

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Bakersfield (2004) 124 Cal. App. 4th 1184, 1199-1203; *see Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

the County. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduces future employment opportunities.

Finally, the organizational members of Citizens are concerned with projects that can result in serious environmental harm without providing countervailing economic benefits. CEQA provides a balancing process whereby economic benefits are weighed against significant impacts to the environment. It is in this spirit we offer these comments.

II. THE COUNTY VIOLATED CEQA BY FAILING TO PROVIDE ACCESS TO ALL MND REERENCE DOCUMENTS DURING THE PUBLIC COMMENT PERIOD AND LACKS INDEPENDENT JUDGMENT FOR THE ANALYSIS AND CONCLUSIONS IN THE MND

Failure to provide access to the MND reference documents during the public comment period is a clear violation of CEQA's requirement that all documents referenced and incorporated by reference in a negative declaration be "readily accessible to the public during the lead agency's normal working hours" during the entire public comment period.[6] The courts have held that the failure to provide even a few pages of a CEQA document for a portion of the review and comment period invalidates the entire CEQA process, and that such a failure must be remedied by permitting additional public comment.[7] It is also well settled that a CEQA document may not rely on hidden studies or documents that are not provided to the public.[8]

We made our initial request for immediate access to all documents referenced and relied upon in the MND on February 16, 2021, at the beginning of the MND public comment period.[9] The County agreed on February 18, 2021 to send

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[6] Pub. Resources Code § 21092(b)(1); 14 C.C.R. § 15072(g)(4).

[7] *Ultramar v. South Coast Air Quality Man. Dist.* (1993) 17 Cal.App.4th 689, 699.

[8] *Santiago Cty. Water Dist. v. Cty. of Orange* (1981) 118 Cal.App.3d 818, 831 ("Whatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.").

[9] **Attachment A**: Letters from Adams, Broadwell, Joseph & Cardozo to Imperial County re Request for Immediate Access to Documents Referenced in the Mitigated Negative Declaration – Heber 1 Geothermal Repower Project (CUP #19-0028; IS #19-0033; SCH #2021020267) (February 16, 2021 & March 4, 2021).

responsive documents via mail on a CD as soon as they were compiled. By March 1, 2021, we still had not received the CD. To expedite the process, we provided a FedEx account number to have them sent immediately. We received the CD on March 4, 2021, but a review of its contents revealed that several documents referenced in the MND which were necessary to meaningfully review the MND's conclusions and assess its impacts had been omitted. On March 8, 2021, we sent a follow-up request, specifically seeking access to the following documents:

(1) **Unlocked** (not read-only) Excel spreadsheets that support the emissions listed in Table 2 of Appendix G at pdf 311 of the Project report.[10]
(2) Design basis of the Ormat Integrated Three-Level unit, including electricity demand.[11]
(3) Design basis of the Ormat Integrated Two-Level unit including electricity demand.[12]
(4) A list of and design basis for all ancillary equipment required to support the Project.[13]
(5) Water Supply Agreement with Imperial Irrigation District.[14]
(6) Records that document emissions from all sources at the existing facility for each individual source over the period 1996–2020.
(7) Water use of Heber 1 for each year over the period 1996–2020.
(8) Air district permit for Heber 1 Geothermal Facility.[15]
(9) Application for Authority to Construct for Heber 1 Geothermal Facility.
(10) Emissions of all criteria pollutants, including fugitive emissions, for all facilities including the diesel generator and other emergency support equipment for each year over the period 1996–2020.[16]
(11) Native format ALOHA and MARPLOT files.[17]

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[10] In response to a request for similar supporting documents in another project, the County had provided *read-only* Excel spreadsheets. These were not responsive to a request for *unlocked* spreadsheets, which we made sure to specifically request.

[11] MND, pp. 10–11.

[12] MND, pp. 10–11.

[13] MND, pp. 10, 19.

[14] MND, pp. 12, 28–29, 36–37.

[15] MND, p. 18, Air Quality Analysis.

[16] MND, p. 18, Air Quality Analysis, pdf p. 309.

[17] Hazards Analysis, Appendix H, pdf pp. 314–361.

(12) Documents supporting statements that the Heber 1 and Heber 2 Geothermal facilities are physically and electrically separate, including evidence of their independent and unrelated electrical output and utility contracts such as Power Purchase Agreements, Interconnection Agreements, and Imperial County Air Pollution Control District permits.[18]

Follow-up emails[19] to obtain the status of the outstanding reference documents were sent on March 9, March 12, March 22, and March 25, 2021, but no further documents were provided by the County. We sent a second follow-up letter to the County on March 29, 2021, reiterating that several documents crucial to an independent review of the MND's analyses and conclusions remained outstanding, such as the Project's estimated emissions of isopentane and other pollutants, impacts to air quality from Project construction and operation, risks from accident involving isopentane on site, impacts to water supply, and cumulative impacts resulting from the Project when considered with other similar projects in the vicinity. We again enumerated the specific documents we sought access to.

Further follow-up emails were sent on April 6 and April 9, 2021, on which day we received an email from the County which attached three of the requested documents (ICAPCD ATC/PTO issued in 2017, Water Supply Agreement between Applicant and IID, and Application to amend the ATC), and provided an extension of the public comment period to May 10, 2021.

With regard to the remaining documents, the County asserted that it had produced all the files in its possession and that it did not have in its possession either the unlocked Excel spreadsheets containing the calculations supporting the emissions listed in Table 2 of Appendix G of the MND or the native format ALOHA and MARPLOT files in support of findings in the Hazards Assessment – documents which were obviously prepared to support the conclusions in the MND. Additional emails were sent to the County on April 20 and April 28, 2021 seeking confirmation as to whether outstanding documents would be provided. On April 29, 2021, the County sent an email indicating that it had provided all the documents in its possession. We sent a response to the County that same day inquiring whether the

[18] Imperial County Responses to ABJC Comments on Negative Declaration for Heber 2 Geothermal Repower Project.

[19] **Attachment B**: Email correspondence between ABJC and County.

County had requested the outstanding files from the consultant(s) that prepared the MND and its technical reports. On May 7, one final email was received from the County in response to our query: "The County did not hire an outside consultant. The Planning Department has provided all records responsive to your requests below."[20]

If the County's assertion that it did not use outside parties to prepare the MND were true, then County staff would have prepared and be in possession of the air quality modeling and calculations used to support the analysis and conclusions in the MND.[21] Similarly, the County must have all MND reference documents within its files if they were prepared by County staff, and there should be no need to compile supporting resources from outside parties. Even if the MND's air quality modeling and calculations were prepared by the Applicant or a third-party consultant and were not provided to the County, the County nevertheless maintains constructive possession of these reference documents and was required to produce them to the public upon request.[22]

Here, the first request for the documents referenced in the MND was sent out on February 16, 2021. The County insisted for weeks that staff was working on compiling the documents responsive to our request. If the County, as it now claims, had prepared the entire MND itself without help from outside consultants, these supporting documents would be in the possession of different County staff members. Three months passed, however, during which time the County insisted it was collecting documents which, in the end, it was never able to produce.

If the County did not, as it claims, hire an outside consultant to prepare the MND, there are two plausible explanations for its failure to provide the outstanding MND reference documents:

(1) The supporting documents do not exist, and the conclusions found in the MND therefore lack any substantial evidence to support them. This would

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[20] See **Attachment C.**

[21] Pub. Res. Code §21082.1(c) (CEQA document approved by the lead agency must reflect the lead agency's independent judgment and analysis).

[22] *Consolidated Irrigation District v. Superior Court* (2012) 205 Cal.App.4th 697; see, e.g., *Schaeffer Land Trust v. San Jose City Council* (1989) 215 Cal.App.3d 612, 623; *Perley v. Board of Supervisors* (1982) 137 Cal.App.3d 424, 429.).

be a clear violation of the requirement that an agency must support its findings of a project's potential environmental impacts with concrete evidence, with "sufficient information to foster informed public participation and to enable the decision makers to consider the environmental factors necessary to make a reasoned decision."[23]

(2) The County is relying on hidden studies or documents that were not provided to the public.[24] This would be a clear violation of CEQA's informational disclosure requirements, in particular of CEQA's requirement that all documents referenced and incorporated by reference in a negative declaration be "readily accessible to the public during the lead agency's normal working hours" during the entire public comment period, as well as a frustration of CEQA's mandate that the public be afforded the chance to meaningfully review a Project's analyses and potentially significant impacts.

In either case, the County's admission that it does not possess the calculations, files, and other outstanding evidence supporting the MND's air quality analysis demonstrates that the County failed to exercise independent judgment over the analysis and conclusions in the MND, as required by CEQA,[25] and that the County lacks substantial evidence to support the MND's conclusions regarding the Project's air quality, public health, hazards, and GHG impacts. This renders the MND inadequate as a matter of law.

As a result of the County's failure to provide evidence supporting the claims made by the MND, Citizens and other members of the public were unable to complete a meaningful review and analysis of the MND, and were thus unable to

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[23] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 516.

[24] *Santiago Cty. Water Dist. v. Cty. of Orange* (1981) 118 Cal.App.3d 818, 831 ("Whatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.").

[25] Pub. Res. Code §21082.1; *Eureka Citizens for Responsible Gov't v. City of Eureka* (2007) 147 Cal.App.4th 357, 369; *Friends of La Vina v. County of Los Angeles* (1991) 232 Cal.App.3d 1446, overturned on other grounds ("The [cases on EIR preparation] consistently confirm that the 'preparation' requirements of CEQA (§§21082.1, 21151) and the Guidelines turn not on some artificial litmus test of who wrote the words, but rather upon whether the agency sufficiently exercised independent judgment over the environmental analysis and exposition that constitute the EIR").

determine the basis for the County's significance conclusions regarding the Project's effects on the environment and public health.

III. AN EIR MUST BE PREPARED

CEQA is designed to inform decision-makers and the public about the potential, significant environmental effects of a project.[26] "CEQA's fundamental goal [is] fostering informed decision-making."[27] "The purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind."[28]

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an EIR, except in certain limited circumstances.[29] The EIR is the very heart of CEQA.[30] The EIR acts as an "environmental 'alarm bell' whose purpose is to alert the public and its responsible officials to environmental changes before they have reached the ecological points of no return."[31] The EIR aids an agency in identifying, analyzing, disclosing, and, to the extent possible, avoiding a project's significant environmental effects through implementing feasible mitigation measures.[32] The EIR also serves "to demonstrate to an apprehensive citizenry that the [agency] has analyzed and considered the ecological implications of its action."[33] Thus, an EIR "protects not only the environment but also informed self-government."[34]

An EIR is required if "there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the

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[26] 14 Cal. Code Regs. ("CEQA Guidelines") § 15002, subd. (a)(1).

[27] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 402.

[28] *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283.

[29] See, e.g., Pub. Resources Code, § 21100.

[30] *Dunn-Edwards v. Bay Area Air Quality Management Dist.* (1992) 9 Cal.App.4th 644, 652.

[31] *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1220.

[32] Pub. Resources Code § 21002.1(a); CEQA Guidelines § 15002(a), (f).

[33] *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 86.

[34] *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.

environment."[35] The EIR aids an agency in identifying, analyzing, disclosing, and, to the extent possible, avoiding a project's significant environmental effects through implementing feasible mitigation measures.[36] In very limited circumstances, an agency may avoid preparing an EIR by issuing a negative declaration, a written statement briefly indicating that a project will have no significant impact. Because "[t]he adoption of a negative declaration . . . has a terminal effect on the environmental review process" by allowing the agency to dispense with the duty to prepare an EIR, negative declarations are allowed only in cases where there is not even a "fair argument" that the project will have a significant environmental effect.[37] Under the fair argument standard, a lead agency "shall" prepare an EIR whenever substantial evidence in the whole record before the agency supports a fair argument that a project may have a significant effect on the environment.[38] The phrase "significant effect on the environment" is defined as "a substantial, or potentially substantial, adverse change in the environment."[39]In certain circumstances, a project with potentially significant impacts can be modified by the adoption of mitigation measures to reduce the impacts to a level of insignificance. In such cases, an agency may satisfy its CEQA obligation by preparing a mitigated negative declaration.[40] A mitigated negative declaration, however, is also subject to the fair argument standard. Thus, an MND is also inadequate, and an EIR is required, whenever substantial evidence in the record supports a "fair argument" that significant impacts may occur even with the imposition of mitigation measures.

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[35] Pub. Resources Code, § 21080, subd. (d) (emphasis added); CEQA Guidelines, § 15064; see also *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 927; *Mejia v. City of Los Angeles* (2005) 13 Cal.App.4th 322.

[36] Pub. Resources Code, § 21002.1, subd. (a); CEQA Guidelines, § 15002, subd. (a) & (f).

[37] *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440; Pub. Resources Code, §§ 21100, 21064.

[38] Pub. Res. Code §§21080(d), 21082.2(d); 14 Cal. Code Reg. §§ 15002(k)(3), 15064(f)(1), (h)(1); *Laurel Heights Improvement Assn. v. Regents of the Univ. of Cal.* (1993) 6 Cal.4th 1112, 1123; *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 82; *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-151; *Quail Botanical Gardens Found., Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1601-1602.

[39] Pub. Resources Code, § 21068.

[40] Pub. Resources Code, § 21064.5; CEQA Guidelines, § 15064, subd. (f)(2).

The "fair argument" standard is an exceptionally "low threshold" favoring environmental review in an EIR rather than a negative declaration.[41] The "fair argument" standard requires preparation of an EIR, if any substantial evidence in the record indicates that a project may have an adverse environmental effect.[42] As a matter of law, substantial evidence includes both expert and lay opinion.[43] Even if other substantial evidence supports the opposite conclusion, the agency nevertheless must prepare an EIR.[44] Under the "fair argument," CEQA always resolves the benefit of the doubt in favor of the public and the environment.

IV. THE MND FAILS TO PROVIDE A COMPLETE AND ACCURATE PROJECT DESCRIPTION

CEQA mandates that lead agencies must include in a project description the "whole of an action" which is being approved, including *all* components and activities that are reasonably anticipated to become part of the project.[45] This includes, but is not limited to, "later phases of the project, and any secondary, support, or off-site features necessary for its implementation."[46]

"Where an agency fails to provide an accurate project description, or fails to gather information and undertake an adequate environmental analysis in its initial study, a negative declaration is inappropriate. An accurate and complete project description is necessary to fully evaluate the project's potential environmental effects."[47] An agency may not rely on information buried in the appendices to the MND to prove that it provided an adequate project description. Decisionmakers and the public cannot be expected to "ferret out" crucial project information by poring

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[41] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928.

[42] CEQA Guidelines, § 15064, subd. (f)(1); *Pocket Protectors v. City of Sacramento, supra*, 124 Cal.App.4th at 931.

[43] Pub. Resources Code, § 21080, subd. (e)(1); CEQA Guidelines, § 15064, subd. (f)(5).

[44] *Arviv Enterprises v. South Valley Area Planning Comm.* (2002) 101 Cal.App.4th 1333, 1346; *Stanislaus Audubon v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-151; *Quail Botanical Gardens v. City of Encinitas* (1994) 29 Cal.App.4th 1597.

[45] 14 Cal. Code Regs ("CEQA Guidelines") §15378 (emphasis added).

[46] *Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 283-84.

[47] *El Dorado County Taxpayers for Quality Growth v. County of El Dorado* (2004) 122 Cal.App.4th 1591, 1597 (internal citations omitted).

over supporting references. "The data in a [CEQA document] must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project. '[I]nformation 'scattered here and there in an EIR appendices' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis.'"[48]

The MND fails to provide an adequate—or even an accurate—description of the Project. Glaring inconsistencies in descriptions of basic Project components, incoherent analyses of Project impacts, and an alarming number of conclusions for which there exists no evidentiary support all make independent assessment of the Project's impacts impossible. The Project presented in the MND is an incomplete one, its deficiencies prohibiting any meaningful public review.

A. The MND Provides Inconsistent and Incomplete Descriptions of Construction Equipment, Schedules, and Activity

The MND fails to provide a clear or accurate description of the Project's construction activities, including failing to analyze the Project's construction emissions.

As Dr. Fox explains, in evaluating impacts to air quality from construction of a proposed project, agencies often use the CalEEMod model to estimate a project's construction emissions.[49] This requires a detailed construction schedule, a list of all the construction equipment that would be used, and the horsepower rating and engine tier for each piece of construction equipment, among other inputs.[50] None of this information is provided by the MND or appendices—likely because the agency simply chose not to address emissions from construction activities at all, ignoring them and the various components of construction activities altogether.

In failing to compile a comprehensive description of Project construction, the MND also precluded the public from making its own assessment of whether construction emissions would be significant. An agency must support its findings of

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[48] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 442 (*quoting California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219, 1239.)

[49] Fox Comments, p. 4.

[50] See User's Guide for CalEEMod Version 2016.3.2; http://www.caleemod.com/.

a project's potential environmental impacts with concrete evidence, with "sufficient information to foster informed public participation and to enable the decision makers to consider the environmental factors necessary to make a reasoned decision."[51] Here, the agency's unsubstantiated determination that construction emissions were not significant enough to even address prohibited public participation as there was no evidence to consider.

In addition to failing to provide the necessary evidence to evaluate impacts, the MND also provides contradictory and inconsistent information regarding construction of the Project. Some sections of the MND state that construction would start in April 2021 and take about 6 months.[52] Elsewhere, construction—predicted to start in August 2020—is estimated to take approximately 10 months.[53] Some descriptions of equipment include a crane, boom truck, cement truck, forklift, man lifts, haul trucks, and hand tools, plus additional unidentified equipment.[54] Yet another section describes construction as follows: "Site preparation for the installation of the proposed facilities will include leveling the ground surface, excavation, backfill and soil compaction."[55] The Project Description included very few basic information at all about the Project's construction activities: for example, the area of surface disturbance was mentioned only one time in nearly 400 pages of documents, and that was buried in the Biological Technical Report, which indicated that construction of the project would result in approximately 7.67 acres of surface disturbance.[56] The erratic and inconsistent descriptions of construction activities make it impossible for the public to determine which description is the correct one, contributing further to the impracticality of attempting an independent assessment.

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[51] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 516.

[52] MND, pdf pp. 13, 32.

[53] MND, Appendix B, Biological Technical Report, pdf p. 158.

[54] MND, pdf p. 32.

[55] MND, Appendix G, pdf p. 307.

[56] MND, Appendix B, Biological Technical Report, pdf p. 173.

B. Several Conclusions Appear to Mistakenly Analyze the Wrong Environmental Impact or Describe the Wrong Reasons for the Impact

While some conclusions in the MND are unsupported by substantial evidence, others found throughout the document are clearly incorrect or use erroneous data or factual determinations in their reasoning. Consider the following:

- The MND's Mandatory Findings of Significance indicate that cumulative impacts will be "potentially significant unless mitigation incorporated."[57] The MND inexplicably fails, however, to support this conclusion with even the bare minimum required to comply with a cumulative impacts discussion under CEQA, neglecting to identify other projects whose impacts were considered or to conduct any cumulative impact analyses.[58]

- Question (c) in the Air Quality's Environmental Checklist asks agencies to consider if the project would expose sensitive receptors to substantial pollutants.[59] The response, however, discusses impacts analyzed in the Hazards Assessment, which analyzes the risk of catastrophic accidents involving hazardous substances at the Project site, not the Project's potential to expose human populations to pollutants and the attendant impacts to public health.[60] This section of the Initial Study is therefore non-responsive to the issue required to be addressed under CEQA Guidelines, Appendix G related to exposure of sensitive receptors to pollutants.[61] The MND must be recirculated as and EIR, with these inconsistencies and corrected and health risks properly evaluated and mitigated.

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[57] MND, pdf p. 40.

[58] MND, pdf p. 40.

[59] MND, pdf p. 20.

[60] MND, pdf p. 20.

[61] CEQA Appendix G, Section III.d.

- In contemplating impacts to geology and soils, the agency is asked to consider whether a project would "[b]e located on expansive soil ... creating substantial direct or indirect risk to life or property?"[62] Despite acknowledging the likelihood that the Project is situated on expansive soils, the MND concludes that impacts are less than significant, with no analysis. The MND appears to base its determination that impacts are less than significant on the nature and confinement of Project activities to a particular area within the site, despite failing to explain why or how these parameters would have any bearing on soil expansion. Instead, the MND simply claims that prior grading and development of the site, the MND contends, along with confining construction activities to the facility's footprint and Project activities that are "substantially similar to current activities onsite ... would make impacts associated with expansive soils less than significant."[63] Soils become expansive due to the presence of moisture-absorbing clay minerals.[64] Whether surface activities take place within a specific perimeter or maintain a similar nature from one land use to the next has no bearing on their potential to expand or recede.

- In that same section, the MND reaches the conclusion that "although the risk of liquefaction is present, the impact is less than significant."[65] This conclusion is unexplained, and is inconsistent with evidence in the Imperial County General Plan's Seismic and Public Safety Element, cited by the MND as the source upon which it based its finding, which reaches the opposite conclusion, that "[l]iquefaction, and related loss of foundational support, is a common hazard" in the County.[66]

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[62] MND, pdf p. 25.

[63] MND, pdf p. 25.

[64] *Id.*

[65] MND, pdf p. 25.

[66] Imperial County General Plan, Seismic and Public Safety Element, p. 12.

C. The Project Analyzed by the County is Different from the Project Presented in the Project Application to the County and the Project Application to the Air District

In both the application for an updated Conditional Use Permit ("CUP") from the County and application for Authority to Construct ("ATC") from the Air District, the Project is described as proposing the installation of six new isopentane storage tanks, in addition to the two existing tanks, to be located adjacent to new OEC-1.[67] Both documents indicate the six new tanks will contain 60,000 gallons of isopentane and will be located 12 meters (39 feet) north of new OEC-1, which will contain 67,500 gallons of isopentane. The Project also includes new OEC-2, which will contain 75,800 gallons of isopentane.[68]

The MND, however, describes and evaluates a different project entirely: one that contemplates the installation of only two new isopentane tanks, in addition to the two existing tanks. In particular, the MND's the Hazards Assessment contained in Appendix H only analyzes this smaller version of the Project, without explanation.

Under CEQA, the lead agency must analyze the project that is proposed for approval, not a speculative smaller project that is not before the agency. The Applicant requests a CUP for a project which includes the installation of six isopentane tanks, not two. The County therefore has a duty under CEQA to analyze the Project described in the CUP application.

Dr. Fox further points out that the Project's ATC and subsequent Permit to Operate, which must be obtained from the Air District, would have to be based on the actual number of tanks to be installed. If the MND is correct, then both the CUP application and the ATC application are incorrect for failing to accurately describe the Project. In that case, the Project applications must be revised and resubmitted to the County and the Air District. Alternatively, if the MND failed to analyze the entire Project (which appears to be the case), then the MND's entire

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[67] MND, application for updated CUP, pdf pp. 52–61 (see Facility Layout Figure, pdf p. 61); Air Sciences Inc., Heber 1 Application for Authority to Construct, Prepared for Ormat Nevada, Inc., December 2019, p. 3.

[68] Application for Authority to Construct.

impact analysis is invalid, including all supporting technical reports that do not reflect this substantial change to critical Project components.

The County must prepare an EIR to correct these patent inconsistencies in the MND's Project description and analysis.

V. THE MND FAILED TO ANALYZE AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS FROM BOTH CONSTRUCTION AND OPERATIONAL EMISSIONS

CEQA contains a strong presumption in favor of requiring a lead agency to prepare an EIR. This presumption is reflected in the "fair argument" standard. Under that standard, a lead agency must prepare an EIR whenever substantial evidence in the whole record before the agency supports a fair argument that a project may have a significant effect on the environment, even if other substantial evidence supports the opposite conclusion.[69]

Additionally, an MND must fully disclose all potentially significant impacts of a project and implement all feasible mitigation to reduce those impacts to less than significant levels. The lead agency's significance determination with regard to each impact must be supported by accurate scientific and factual data.[70] An agency cannot conclude that an impact is less than significant unless it produces rigorous analysis and concrete substantial evidence justifying the finding.[71] The MND fails to meet these clear legal standards.

A. Substantial Evidence Supports a Fair Argument that Impacts to Air Quality from Construction Emissions are Significant

A project's impacts from construction are typically analyzed in two ways, according to Dr. Fox. "First, emissions are estimated and compared to CEQA significance thresholds. Second, if a threshold is exceeded, or the area where the Project is located is not in compliance with ambient air quality standards (i.e.,

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[69] Pub. Res. Code § 21082.2; *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1993) ("Laurel Heights II") 6 Cal.4th 1112, 1123; *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 82; Quail Botanical, supra, 29 Cal.App.4th 1597at 1602; Stanislaus, supra, 33 Cal.App.4th 144, 150-151.)

[70] 14 CCR § 15064(b).

[71] *Kings Cty. Farm Bur. v. Hanford* (1990) 221 Cal.App.3d 692, 732.

nonattainment), the emissions are modeled to estimate ambient concentrations. The IS/MND fails to include either analysis."[72]

Impacts from construction emissions, a major source of criteria pollutants, hazardous air pollutants, and diesel particulate matter, can pose serious threats to human health—and are thus critical to the analysis of a project's impacts. The ICAPCD considers PM10 of the greatest concern, as it can cause a substantial increase in localized concentrations and could potentially lead to violations of state and federal ambient air standards.[73] Furthermore, construction emissions contribute to existing violations of ambient air quality standards[74] and, as Dr. Fox points out, "[a]ny violation of an air quality standard or contribution to an existing regional nonattainment condition, regardless of its duration, is a per se significant air quality impact."[75]

Though the region is well known for its air quality violations, the MND reaches the conclusion, without any evidence to support its finding, the MND concludes that emissions from construction activities "would not exceed any air quality threshold or significantly contribute to an existing regional nonattainment condition."[76] An analysis upon which this finding could be based is nowhere to be found anywhere in the MND. Furthermore, in announcing that construction would be "temporary," the County seems to infer that their temporary nature makes construction emissions somehow insignificant.[77] It is difficult to follow this line of reasoning: if this were the case, Dr. Fox asserts, construction impacts, which are by their very nature temporary, would never need to be evaluated.[78] ICAPCD's CEQA

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[72] Fox Comments, p. 4.

[73] Imperial County Air Pollution Control District, CEQA Guidelines, p. 12 (December 12, 2017).

[74] The Project site is situated in a region that is in violation of ambient air quality standards for PM10, PM2.5, and ozone (federal 8-hour): U.S. EPA, California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants, May 31, 2020, https://www3.epa.gov/airquality/greenbook/anayo_ca.html; CARB, Maps of State and Federal Area Designations, https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

[75] Fox Comments, p. 15.

[76] MND, pdf p. 20.

[77] *Id.*

[78] Fox Comments, p. 14.

Guidelines, in fact, state that "[i]n some cases, the emissions from construction represent the largest air quality impact associated with a given project."[79]

These common construction activities which generate emissions from: 1) Fuel combustion from mobile heavy-duty diesel and gasoline powered equipment; 2) Portable auxiliary equipment; 3) Worker commuter trips; and 4) Fugitive dust from soil disturbance.[80] Dr. Fox's analysis demonstrates that Project construction activities will emit PM2.5, PM10, and the ozone precursors ROG and NOx—all contributions to existing violations of ambient air quality standards. These impacts, she concludes, are thus significant "unless air quality modeling demonstrates the contrary and/or mitigation is imposed to reduce the emissions below the significance thresholds."[81] The MND even acknowledges that the equipment it will use for construction will emit ozone precursors, which, as Dr. Fox asserts, should have triggered an analysis of these emissions for their potential to contribute to existing ambient air quality standards violations. The MND contains no analysis of impacts to air quality from construction, no demonstration that impacts are not significant, and no mitigation.

i. Substantial Evidence Supports a Fair Argument that PM10 Emissions from Construction Are Significant and Unmitigated

There are two sources of construction PM10 emissions: (1) soil disturbance during grading and other construction activities and (2) emissions from construction equipment engines. Particulate matter emissions (PM10, PM2.5) from soil disturbance can be estimated from the EPA emission factor for construction activity of 1.2 tons per acre per month of total suspended particulate (TSP) emissions per day (lb/day).[82] Assuming that 7.67 acres are disturbed, earthmoving activities could generate up to 319 lb/day of PM10,[83] far exceeding the ICAPCD significance threshold of 150 lb/day.

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[79] ICAPCD CEQA Guidelines, p. 19.

[80] ICAPCD CEQA Guidelines, pp. 11-12.

[81] Dr. Fox Comments, p. 18.

[82] AP-42, Section 13.2.3 Heavy Construction Operations, pdf 1; https://www3.epa.gov/ttn/chief/ap42/ch13/final/c13s02-3.pdf.

[83] Earthmoving TSP emissions = (1.2 ton TSP/acre-mo)(2000 lb/ton)(7.67 acres)/(30 day/mo) = **614 lb TSP/day.** Assuming 52% of the TSP is PM10, PM10 emissions = (614 lb/day)(0.52) = **319 lb/day.**

Additional PM10 would be emitted in the exhaust of construction equipment. These additional PM10 emissions cannot be estimated because the MND does not contain any of the information required to estimate these emissions (e.g., construction fleet, engine horsepower, engine tiers, hours of operation).

Therefore, construction PM10 emissions from fugitive dust alone are significant and unmitigated. Mitigation is thus required, necessitating the preparation of an EIR for the Project. The MND does not contain any construction mitigation. Instead, the MND asserts that "[a]ir quality measures would be implemented during construction of the Proposed Project to minimize the potential for fugitive dust and particulate matter releases. Through the application of these measures, the construction of the Project would limit visible dust emissions and particulate matter emissions to be in compliance with Imperial County's approach to minimize these construction-related emissions."[84] However, the MND does not identify any construction mitigation measures. Furthermore, there is no assurance that any mitigation would be required as the MND goes on to disclose that the Applicant need only contact the Enforcement Division Manager "to discuss the **possible** need for a construction Dust Control Plan..." [emphasis added].[85] Substantial evidence supporting Dr. Fox's conclusion that construction emissions will be significant triggers the requirement for the inclusion of effective and enforceable mitigation.

ii. Substantial Evidence Supports a Fair Argument that NOx Emissions from Construction Are Significant and Unmitigated

Dr. Fox explains that the amount of pollution from construction equipment is categorized using a system of engine tiers. The higher the tier, the lower the emissions.[86] The MND not only does not disclose the construction fleet but is totally silent on the tier of the engines that would be in the construction fleet. Thus, the Applicant has no obligation to use lower-emitting, higher-tier (e.g., Tier 4 Final) equipment and is free to use high-emission Tier 1 equipment.[87]

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[84] Project Report, IS/MND, pdf 20.

[85] Project Report, IS/MND, pdf 20.

[86] See, e.g., DieselNet, Emission Standards: Nonroad Diesel Engines; https://dieselnet.com/standards/us/nonroad.php.

[87] Fox Comments, pp. 8–9.

The use of lower tier equipment, according to Dr. Fox, could result in NOx emissions that exceed the ICAPCD's threshold of 100 lb/day.[88] For example, assuming four 300-hp pieces of construction equipment operating simultaneously (dump truck, excavator, bulldozer, crane), NOx emissions would be 148 lb/day.[89]

The significant NOx emissions from construction equipment can be controlled by requiring the use of Tier 3 to 4 construction equipment or by retrofitting older Tier 1 to 2 equipment with similarly effective emissions controls, such as exhaust selective catalytic reduction (SCR).

iii. Mitigation Measures Included in the MND to Reduce Construction Emissions are Inadequate and Unenforceable

Courts have imposed several parameters for the adequacy of mitigation measures. First, the lead agency may not defer the formulation of mitigation measures until a future time unless there are specific performance standards capable of mitigating the project's impacts to a less than significant level. Deferral is impermissible where an agency simply requires a project applicant to obtain a report and then comply with any recommendations that may be made in the report. Second, a public agency may not rely on mitigation measures of uncertain efficacy or feasibility.[90] Third, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments."[91] Fourth, mitigation measures that are vague or so undefined that it is impossible to evaluate their effectiveness are legally inadequate.

Immediately following its (unsubstantiated) conclusion that construction emissions would not be significant and therefore required no analysis the MND offers the vague assertion that "[a]ir quality measures would be implemented during construction of the Proposed Project to minimize the potential for fugitive dust and particulate matter releases. Through the application of these measures,

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[88] Fox Comments, p. 9.

[89] NOx emissions = 4(7 g/bhp-hr)(300 bhp)(8 hr/day)/(454 g/lb) = **148 lb/day.** PM10 emissions = 15(0.3 g/bhp-hr)(300 bhp)(8 hr/day)/(454 g/lb) = **24 lb/day.**

[90] E.g. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available).

[91] 14 Cal. Code Reg. § 15126.4(a)(2).

the construction of the Project would limit visible dust emissions and particulate matter emissions to be in compliance with Imperial County's approach to minimizing these construction-related emissions."[92]

The MND also suggests that construction vehicles and equipment would be turned off and not left idling when not in use. Finally, a request is made to the Applicant to contact the manager of the ICAPCD Enforcement Division to discuss creating a construction dust control plan.[93] This puzzling string of resolutions, promises, and obligations was made all the more confusing for the fact that it was offered in response to a question that did not seek information regarding construction emissions at all. But perhaps most damning is the fact that all of these efforts to control dust are in fact mitigation measures—measures that would never be required if emissions were, as the County claims, less than significant. As Dr. Fox explains, mitigation "is required if construction PM10 and/or PM2.5 emissions are significant. However, the IS/MND failed to estimate construction emissions so there is no basis for developing an adequate Dust Control Plan."[94]

Moreover, these measures, while apparently intended to mitigate impacts that do not exist according to the MND's finding of less-than-significant impacts, would be inadequate and unenforceable even if they were aimed at mitigating real impacts. Dr. Fox explains that the MND's conclusory statements that impacts will be less than significant because construction equipment will not be left idling have no evidentiary support. While operation of equipment is a major source of construction emission, idling equipment is not a major source of emissions and efforts to make sure they are not left idling will not result in significant reductions in emissions. More important, Dr. Fox states, is the fact that construction emissions were not calculated to begin with, so the County has no basis to determine that they will not be significant and thus require mitigation. She points out that the mitigation measures would be ineffectual regardless because the MND "does not include a mitigation measure requiring that construction equipment be turned off when not in use and does not specify a maximum idling time."[95]

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[92] MND, pdf p. 20.

[93] *Id.*

[94] Fox Comments, p. 5.

[95] Fox Comments, p. 5.

iv. Additional Mitigation Measures Must be Implemented to Adequately Reduce Impacts from Construction Emissions

The ICAPCD recommends mitigation measures to reduce fugitive dust from emissions of PM10. Dr. Fox recommends that the Project adopt both the Standard and the Discretionary measures to ensure adequate reduction, as follows:

Standard Mitigation Measures for Fugitive PM10 Control:[96]

a. 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% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.

b. All on site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

c. All unpaved traffic areas one acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

d. The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.

e. 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.

f. Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.

g. 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

[96] ICAPCD, CEQA Guidelines, Air Quality Handbook, December 12, 2017, pp. 23-24, https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf.

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

In order to provide a greater degree of PM10 reductions, above that required by Regulation VIII, the ICAPCD recommends the following Discretionary Mitigation Measures for Fugitive PM10 Control:

a. Water exposed soil with adequate frequency for continued moist soil.
b. Replace ground cover in disturbed areas as quickly as possible
c. Automatic sprinkler system installed on all soil piles
d. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
e. Develop a trip reduction plan to achieve a 1.5 AVR for construction employees
f. Implement a shuttle service to and from retail services and food establishments during lunch hours.[97]

In addition, Dr. Fox recommends that the Project be required to use Tier 4 construction equipment or older equipment retrofitted to comply with Tier 4 standards. She points out that the Applicant has a "significant financial incentive to use lower-tier, higher-polluting equipment as it is much cheaper than the newer, better controlled Tier 4 construction equipment."[98] Using equipment with a higher potential to pollute leads to unmitigated increases in NOx, ROG, and PM10 from construction that could exceed the ICAPCD's CEQA significance thresholds. The significant NOx and PM10 emissions from construction equipment can be mitigated using the same mitigation measures required by the County for the East Brawley Geothermal project[99] during all construction activities:

a) Use alternative-fueled or catalyst-equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.

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[97] ICAPCD, CEQA Guidelines, Air Quality Handbook, December 12, 2017, pp. 23–24, https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf.
[98] Fox Comments, p. 10.

[99] County of Imperial, East Brawley Geothermal, Final Environmental Impact Report, May 2012, pp. 4.0-20 and 4.0-21. Exhibit **14**.

b) Minimize idling time either by shutting equipment off when not in use or reducing the time of idling.

c) Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.

d) Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

e) Utilize construction and well drilling equipment that meets or exceeds Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in the California Code of Regulations.

f) Provide for on-site meals for construction workers by arranging a lunch wagon to visit the construction site.

g) Suspend construction activities when the Imperial County Air Pollution Control District issues a Health Advisory Alert pursuant to District Rule 608.

h) Require the construction contractor to ensure that construction equipment is properly maintained.

In addition to these measures, the following measures, recommended to control emissions of PM10 and NOx from construction equipment, have been required in other CEQA documents and recommended by other air pollution control districts (e.g., BAAQMD[100]):

- Maintain all construction equipment in proper tune according to manufacturer's specifications and use an ASE-certified mechanic to check the equipment and determine it to be

[100] Bay Area Air Quality Management District (BAAQMD), California Environmental Quality Act (CEQA) Air Quality Guidelines, Updated May 2017, Tables 8-2 and 8-2; https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

running in proper condition before it is operated (CalAm IS/MND;[101] Chevron FEIR[102]).

- Diesel-powered equipment shall be replaced by gasoline-powered equipment whenever feasible (CalAm IS/MND, Chevron FEIR).
- The engine size of construction equipment shall be the minimum practical size (CalAm IS/MND).
- Catalytic converters shall be installed on gasoline-powered equipment (CalAm IS/MND).
- Signs shall be posted in designated queuing areas and job sites to remind drivers and operators of the idling limit (CalAm IS/MND, Chevron FEIR).
- Diesel equipment idling shall not be permitted within 1,000 feet of sensitive receptors (CalAm IS/MND).
- Engine size of construction equipment shall be the minimum practical size (CalAm IS/MND).
- Construction worker trips shall be minimized by providing options for carpooling and for lunch on site (CalAm IS/MND, Chevron FEIR).
- Use alternative diesel fuels, such as renewable diesel, Aquazole fuel, Clean Fuels Technology (water emulsified diesel fuel), or O2 diesel ethanol-diesel fuel (O2 Diesel) in existing engines (Monterey County General Plan EIR).[103]

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[101] SWCA Environmental Consultants, Draft Initial Study and Mitigated Negative Declaration for the California American Water Slant Test Well Project, Prepared for City of Marina, May 2014 (CalAm IS/MND).

[102] Chevron Refinery Modernization Project EIR, March 2014, Chapter 4.8, Greenhouse Gases, https://s3.amazonaws.com/chevron/Volume+1_DEIR_r1.pdf and Chapter 5, Mitigation Measure Monitoring and Reporting Program, https://s3.amazonaws.com/chevron/Final+EIR/5_MMRP.pdf.

[103] Monterey County General Plan EIR, Section 6.4.3.3, p. 6-14 ("The EIRs prepared for the desalination plants are expected to require that construction equipment use alternative fuels or other means to reduce their emissions of ozone precursors. Although, depending upon the intensity of construction, there is the potential for a significant impact on air quality from ozone precursors."); https://www.co.monterey.ca.us/home/showdocument?id=44010. See also Union of Concerned Scientists, Digging Up Trouble: The Health Risks of Construction Pollution in California, November 2006, pp. 23-24; https://www.ucsusa.org/sites/default/files/2019-10/digging-up-trouble.pdf.

- Modify engines with ARB verified retrofits.
- Repower engines with Tier 4 Final diesel technology.[104]
- Convert part of the construction truck fleet to natural gas.[105]
- Use new or rebuilt equipment.
- Use diesel-electric and hybrid construction equipment.[106]
- Use low rolling resistance tires on long-haul class 8 tractor-trailers.[107]
- Use idle reduction technology, defined as a device that is installed on the vehicle that automatically reduces main engine idling and/or is designed to provide services (e.g., heat, air conditioning, and/or electricity) to the vehicle or equipment that would otherwise require the operation of the main drive engine while the vehicle or equipment is temporarily parked or is stationary.[108]

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[104] Union of Concerned Scientists, November 2009, p. 23.

[105] This is a mitigation measure used by PG&E to offset NOx emissions from its Otay Mesa Generating Project. See: GreenBiz, Natural Gas Trucks to Offset Power Plant Emissions, September 12, 2000, http://www.greenbiz.com/news/2000/09/12/natural-gas-trucks-offset-power-plant-emissions.

[106] Tom Jackson, How 3 Diesel-Electric and Hybrid Construction Machines are Waging War on Wasted Energy, *Equipment World*, June 1, 2014, http://www.equipmentworld.com/diesel-electric-and-other-hybrid-construction-equipment-are-waging-war-on-wasted-energy/; Kenneth J. Korane, Hybrid Drives for Construction Equipment, Machine Design, July 7, 2009, http://machinedesign.com/sustainable-engineering/hybrid-drives-construction-equipment; Caterpillar's D7E Electric Drive Redefines Dozer Productivity, http://www.constructionequipment.com/caterpillars-d7e-electric-drive-redefines-dozer-productivity.

[107] EPA, Verified Technologies for SmartWay and Clean Diesel, Learn About Low Rolling Resistance (LRR) New and Retread Tire Technologies, https://www.epa.gov/verified-diesel-tech/learn-about-low-rolling-resistance-lrr-new-and-retread-tire-technologies; EPA, Verified Technologies for SmartWay and Clean Diesel, SmartWay Verified List for Low Rolling Resistance (LRR) New and Retread Tire Technologies, https://www.epa.gov/verified-diesel-tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire.

[108] EPA Names Idle Reduction Systems Eligible for Federal Tax Exemptions, March 2009; http://www.greenfleetmagazine.com/channel/green-operations/article/story/2009/03/epa-names-idle-reduction-systems-eligible-for-federal-excise-tax-exemptions-grn.aspx. See also: Idle Reduction, Wikipedia, https://en.wikipedia.org/wiki/Idle_reduction and Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Project Information, Working Draft Version 1.0; https://nepis.epa.gov/Exe/ZyNET.exe/P100CVIS.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2011+Thru+2015&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntr

- Implement EPA's National Clean Diesel Program.[109,110,111]
- Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of PM (BAAQMD).
- Require that all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines, i.e., Tier 4 engines.[112]
- Solicit bids that include these measures.[113]

B. Substantial Evidence Supports a Fair Argument that Impacts from Operational Emissions are Significant and Unmitigated

The Project includes multiple sources of operational emissions that are likely to have a significant effect on air quality. The primary criteria air pollutant from the Project is isopentane, which is a reactive organic gas ("ROG"). Isopentane emissions occur during maintenance, purging, and from fugitive leaks from pumps, valves, flanges, and other connectors. During maintenance, the unit is shut down and the isopentane is evacuated into tanks before the system is opened. Vapors are sent to a Vapor Recovery Mechanical Unit ("VRMU") where they are combusted. Some liquid isopentane that is collected at low points and thus cannot be completely

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[109] Northeast Diesel Collaborative, Best Practices for Clean Diesel Construction: Successful Implementation of Equipment Specifications to Minimize Diesel Pollution, August 2012; https://www.northeastdiesel.org/pdf/construction/BestPractices4CleanDieselConstructionAug2012.pdf.

[110] U.S. EPA, Cleaner Diesels: Low-Cost Ways to Reduce Emissions from Construction Equipment, March 2007; https://archive.epa.gov/sectors/web/pdf/emission_0307.pdf.

[111] NEDC Model Contract Specification, April 2008; https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf.

[112] BAAQMD, CEQA Guidelines, Updated May 2017, Table 8-3, Measure 13.

[113] Fox Comments, pp. 10–14.

drained, releases ROG emissions when the OEC units are opened. The facility also includes an emergency diesel generator. [114]

i. Estimates of Operational Emissions of Isopentane are Underestimated

The MND does not include the supporting calculations for operational emission estimates, which are complex, and our efforts over three months to obtain unlocked Excel spreadsheets containing these calculations were unsuccessful. As Dr. Fox explains, it is very likely that isopentane emissions are significantly underestimated in both the MND and application for Authority to Construct submitted to the ICAPCD:

> Daily isopentane emissions in the ATC Application are calculated based on quarterly emission reports for maintenance, purging, and fugitives. The isopentane released from maintenance, purging, and fugitive sources occur on a single day per event. However, the emission calculations in the ATC Application assume these emissions occur uniformly over an entire quarter.
>
> For example, maintenance emissions were 300 gallons or 1,551 lbs[115] of isopentane in the 3rd quarter of 2018.[116] The ATC Application divides this by the number of days in quarter (365/4 = 91.25 days) to yield 17 lb/day of ROG.[117] However, these ROG emissions were released during a single day, not uniformly over 91.25 days. The Project will increase the amount of isopentane on site from 116,800 gallons to 260,100 gallons, or by a factor of 2.2. Thus, maintenance emissions will increase by a factor of 2.2 or from 1,551 lbs/day to 3,412 lbs/day or by 1,861 lbs/day, which significantly exceeds the significance threshold of 137 lbs/day.[118]

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[114] MND, pdf p. 18-19.

[115] Maintenance emissions during 3rd quarter of 2018 = (300 gal)(5.17 lb/gal) = 1,551 lbs isopentane.

[116] ATC Application, pdf 59.

[117] ATC Application, pdf 59, Site-Specific Emission Factor Calculation, Maintenance worst-case quarter = 16.9 lbs/day.

[118] ICAPCD, CEQA Air Quality Handbook, November 2017, Table 1, p. 10.

> Further, maintenance, purging, and fugitive emissions are not measured but rather are based on estimates of unknown accuracy. During maintenance of an OEC unit, isopentane liquid and vapor are removed and held in storage tanks. The OEC units are opened to atmosphere when the isopentane vapor is less than 20% of the lower explosion limit for isopentane.[119] This isopentane would be vented directly to atmosphere. As the Project will significantly increase the amount of isopentane in the OEC units, from 96,800 gallons to 240,100 gallons, it is reasonable to assume the maintenance, purging and fugitive emissions should also increase by about a factor of 2.5, resulting in significant ROG emissions.[120]

ii. The MND Omits Operational Diesel Generator Emissions

Included in the ATC Application is an estimate of emissions from maintenance and testing of the Project's backup diesel generator, calculated at 1 hour per day. Absent from the analysis, however, are any calculations of emissions from operation of the generator in an emergency situation, the very situation for which it is intended.

Though CEQA does not obligate an agency to contemplate all possible future scenarios, it does require the analysis of all reasonably foreseeable consequences. In comments submitted last year to the California Energy Commission regarding a data center project, the California Air Resources Board ("CARB") recommended that an analysis of air quality impacts include emissions from emergency operation of diesel backup generators.[121] The sole function of a backup generator, CARB reasoned, is to provide power in an emergency—if it is foreseeable that a project may need a backup generator, then an emergency during which use of that generator is needed is equally foreseeable, particularly given the increasing regularity of power shutoffs. CEQA requires an appropriate evaluation even of foreseeable impacts otherwise imprecise in scope or contingent in occurrence: "The fact that precision may not be possible [ ] does not mean that no analysis is required."[122]

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[119] PRA Response, ATC Application, pdf 44.

[120] Fox Comments, pp. 21–23.

[121] CARB Comments on Sequoia Data Center Air Quality Analysis (Oct. 15, 2020), pp. 6–7.

[122] *Laurel Heights Improvement Assoc. v. Regents of University of California* (1998) 47 Cal.3d 376, 396.

BAAQMD, meanwhile, has adopted the presumption of 100 hours per year to calculate the potential to emit for a diesel backup generator. The District estimates that 100 hours is a reasonable worst-case assumption for the longest a facility may need to operate on backup power in any given year in the event of a major power outage.[123] In the absence of a directive from ICAPCD, 100 hours is a reasonable estimation to calculate emissions from backup generators during routine operation for the purpose of evaluating a project's impacts.[124]

Dr. Fox's calculations of emissions from the Project's backup generator are as follows:

> Assuming 100 hours of operation for the emergency generator, the maximum daily ROG emissions from the generator would be 100 x 0.73 = 7.3 lbs/day. Adding this to the IS/MND's estimate of the Project's ROG emission increase from other sources (48.0 lbs/day)[125] plus the underestimated maintenance, purging and fugitive emissions (1,861 lbs/day) yields a Project increase in ROG emissions of 1,916 lbs/day.[126]

The Imperial County APCD's operational significance threshold for ROG emissions from project operation is 137 lbs/day.[127] Thus, there is substantial evidence supporting a fair argument that the increase in ROG emissions from the Project is significant, requiring mitigation.[128]

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[123] BAAQMD, Calculating Potential to Emit for Emergency Backup Power Generators, December 2019; https://www.baaqmd.gov/~/media/files/engineering/policy_and_procedures/banking-and-offsets/calculating-pte-for-emergency-generators-06032019-pdf.pdf?la=en.

[124] Bay Area Air Quality Management District, Calculating the Potential to Emit for Emergency Generators, pp. 3-4; BAAQMD notes that including in a project analysis estimated emissions from the emergency use of backup generators is consistent with the approach used by the EPA in calculating impacts; the EPA, however, uses a highly conservative presumption of 500 hours per year.

[125] Project Report, IS/MND, Table 2, pdf 19.

[126] Increase in Project ROG emissions = 48.0 + 7.3 + 1861 = **1,916 lbs/day.**

[127] ICAPCD, CEQA Air Quality Handbook, December 12, 2017, Table 1, p. 9.

[128] Fox Comments, p. 24.

iii. Mitigation Measures to Reduce Impacts from Operational Emissions Must be Implemented

As recommended by Dr. Fox, impacts from significant ROG emissions can be mitigated through the implementation of several measures, most notably by requiring an oxidation catalyst on the diesel generator and adopting the mitigation measures proposed by Ormat Nevada, Inc. for its Casa Diablo IV Geothermal Development Project in Mono County:[129]

a) Install vapor recovery devices estimated to return at least 99% of the motive fluid back to the system.

b) Use a maintenance vapor recovery unit during OEC unit maintenance activities to capture motive fluid that could otherwise be released.

c) Lower pressure of motive fluid system compared to motive fluid used at older existing plants, thus, less potential for fugitive leaks/emissions.

d) Place isopentane-specific vapor sensors and flame detectors at strategic locations around the around the turbine, motive fluid pumps, and motive fluid storage tank and connection to power plant computer control system to quickly alert plant operators to any potentially hazardous situations, which would help to keep a check on significant leaks.

e) Perform leak checks, inspections, monitoring, and leak logging.[130]

VI. THE MND FAILS TO EVALUATE AND MITIGATE SIGNIFICANT RISKS TO PUBLIC HEALTH

An agency must support its findings of a project's potential environmental impacts with concrete evidence, with "sufficient information to foster informed public participation and to enable the decision makers to consider the environmental factors necessary to make a reasoned decision."[131] A project's health risks "must be 'clearly identified' and the discussion must include 'relevant specifics'

[129] County of Imperial, East Brawley Geothermal, Final Environmental Impact Report, May 2012.

[130] Fox Comments, pp. 24–25.

[131] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 516.

about the environmental changes attributable to the Project and their associated health outcomes."[132]

Courts have held that an environmental review document must disclose a project's potential health risks to a degree of specificity that would allow the public to make the correlation between the project's impacts and adverse effects to human health.[133] In *Bakersfield*, the court found that the EIRs' description of health risks were insufficient and that after reading them, "the public would have no idea of the health consequences that result when more pollutants are added to a nonattainment basin."[134] Likewise in *Sierra Club*, the California Supreme Court held that the EIR's discussion of health impacts associated with exposure to the named pollutants was too general and the failure of the EIR to indicate the concentrations at which each pollutant would trigger the identified symptoms rendered the report inadequate.[135] Some connection between air quality impacts and their direct, adverse effects on human health must be made. As the Court explained, "a sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the nature and magnitude of the impact."[136] CEQA mandates discussion, supported by substantial evidence, of the nature and magnitude of impacts of air pollution on public health.[137]

The failure to provide information required by CEQA makes meaningful assessment of potentially significant impacts impossible and is presumed to be prejudicial.[138] Challenges to an agency's failure to proceed in the manner required by CEQA, such as the failure to address a subject required to be covered in an EIR or to disclose information about a project's environmental effects or alternatives, are subject to a less deferential standard than challenges to an agency's factual

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[132] *Id.* at 518.

[133] *Id.* at 518–520; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184.

[134] *Id.* at 1220.

[135] *Sierra Club*, at 521.

[136] *Id.* at 519, citing *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 514–515.

[137] *Sierra Club*, 6 Cal.5th at 518–522.

[138] *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236–1237.

conclusions.[139] Courts reviewing challenges to an agency's approval of a CEQA document based on a lack of substantial evidence will "determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements."[140]

The MND fails to fulfill its obligations under CEQA to provide meaningful discussion of the nature and magnitude of the Project's risks to public health. These deficiencies make it impossible to assess the Project's impacts and their adverse effects on public health.

A. The MND Failed to Evaluate Risks to Public Health from Construction and Operational Emissions

The Office of Environmental Health Hazard Assessment's ("OEHHA") risk assessment guidelines recommend preparing a formal health risk assessment for short-term construction exposures lasting longer than 2 months.[141] The MND's estimates of construction duration are inconsistent, but it can be assumed that Project construction will last for 6 to 10 months.[142]

Construction activity will result in exposure to diesel particulate matter ("DPM"), a potent human carcinogen.[143] OEHHA has concluded that "[e]xposure to diesel exhaust can have immediate health effects," which include "inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks,"[144] particularly critical given the current

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[139] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.

[140] *Id.* (internal quotations omitted).

[141] Office of Environmental Health Hazard Assessment (OEHHA), Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, February 2015 (OEHHA 2015), Section 8.2.10: Cancer Risk Evaluation of Short Term Projects, pp. 8-17/18; https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

[142] MND, pdf pp. 13, 24, 27, 32, 158.

[143] OEHHA and the American Lung Association of California, Health Effects of Diesel Exhaust; https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf. See also: OEHHA, Diesel Exhaust Particulate; https://oehha.ca.gov/chemicals/diesel-exhaust-particulate#:~:text=Cancer%20Potency%20Information&text=Listed%20as%20Particulate%20Emissions%20from,(ug%2Fm3)%2D1.

[144] OEHHA and the American Lung Association of California, Health Effects of Diesel Exhaust; https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf.

Covid epidemic. Construction workers, workers at the existing Heber 1 facility, and nearby residents will be exposed to DPM emissions during construction,[145] a scenario that should have triggered a health risk assessment.[146]

Project operations pose additional risks to human health that the MND failed to evaluate. The MND acknowledges that the facility will emit highly toxic pollutants like benzene and hydrogen sulfide ("H_2S").[147] Benzene is a potent carcinogen and effects of exposure to H_2S, toxic to the nervous system and respiratory system, range from headaches and eye irritation to unconsciousness and death; the presence of either of these at the Project should have triggered a health risk assessment.[148]

Question (c) in the Air Quality's Environmental Checklist asks agencies to consider if the project would expose sensitive receptors to substantial pollutants.[149] The response, however, discusses impacts analyzed in the Hazards Assessment, which analyzes the risk of catastrophic accidents involving hazardous substances at the Project site, not the Project's potential to expose human populations to pollutants and the attendant impacts to public health.[150] The MND must be recirculated as and EIR, with these inconsistencies and corrected and health risks properly evaluated and mitigated.

B. The MND Fails to Evaluate or Mitigate Significant Health Risks from Valley Fever

Despite the fact that Imperial County is endemic for Valley Fever, a highly contagious infectious disease caused by inhaling the spores of *Coccidioides ssp.*, the MND is silent on this significant public health risk and fails to include any efforts to mitigate it. A fungus that becomes airborne when soil containing it is disturbed

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[145] The Application for updated Conditional Use Permit indicates that the facility will employ 30 workers, with 10 to 15 more during construction. MND, pdf p. 52.

[146] OEHHA 2015, Section 8.2.10.

[147] MND, pdf p. 19.

[148] OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary, November 4, 2019; https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary; OSHA, Hydrogen Sulfide; https://www.osha.gov/hydrogen-sulfide/hazards.

[149] MND, pdf p. 20.

[150] MND, pdf p. 20.

by activities such as digging, vehicle use, construction, dust storms, or during earthquakes, the disease's symptoms range from influenza-like illness to progressive pulmonary disease and, in 1% of infections, potentially fatal disseminated disease.[151,152,153,154] Valley Fever cases have increased significantly since the Heber 1 facility was constructed in 1985,[155] including in Imperial County, where 42% of the cases occurred in nearby El Centro.[156]

Due to its potential to contain Coccidioidomycosis spores and the heightened risk to workers disturbing soils in areas where Valley Fever is common, the Project construction site should be tested well in advance of construction to determine if spores are present. Furthermore, conventional dust control measures, such as those suggested by the MND to control fugitive dust and particulate matter releases during construction, are woefully inadequate to mitigate the risk of Valley Fever, according to Dr. Fox. These measures, she asserts, have been proven ineffective when their implementation was followed by outbreaks of Valley Fever at project sites. She recommends the following list of measures, found to be effective in response to outbreaks at different locations across the state:

1. Train all employees on the following issues:
    - The soils in Imperial County may contain cocci spores;

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[151] Cummings et al., Point-Source Outbreak of Coccidioidomycosis in Construction Workers, *Epidemiology and Infection*, v. 138, no. 4, 2010, pp. 507-511, 2010 (Exhibit 5).

[152] Two species of *Coccidioides* are known to cause Valley Fever: *C. immitis*, which is typically found in California, and *C. posadasii*, which is typically found outside California. See Centers for Disease Control, Coccidioidomycosis (Valley Fever), Information for Health Professionals; https://www.cdc.gov/fungal/diseases/coccidioidomycosis/health-professionals.html.

[153] D. R. Hospenthal, Coccidioidomycosis and Valley Fever, Medscape, Updated September 20, 2018; https://emedicine.medscape.com/article/215978-overview.

[154] California Department of Public Health, Valley Fever Fact Sheet; https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ValleyFeverFactSheet.pdf.

[155] MND, pdf 65, 366.

[156] Stephen Munday, Imperial County Public Health, Overview of Coccidioidomycosis (Valley Fever), May 21, 2013; pdf 21, 24; http://imperial.granicus.com/MetaViewer.php?view_id=2&clip_id=455&meta_id=59137.

- Inhaling cocci spores may cause Valley Fever;
- How to recognize symptoms of Valley Fever; these symptoms resemble common viral infections, and may include fatigue, cough, chest pain, fever, rash, headache, and body and joint ache;
- Work with a medical professional with expertise in cocci as you develop your training program and consult information on public health department websites;
- Workers must promptly report suspected symptoms of work-related Valley Fever to a supervisor;
- Workers are entitled to receive prompt medical care if they suspect symptoms of work-related Valley Fever. Workers should inform the health care provider that they may have been exposed to cocci;
- To protect themselves, workers should use control measures as outlined here.

2. Control dust exposure:

   – Consult with local Air Pollution Control District Compliance Assistance programs and with California Occupational Safety and Health Administration ("Cal/OSHA") compliance program regarding meeting the requirements of dust control plans and for specific methods of dust control. These methods may include wetting the soil continuously while working it and ensuring that the wetting process does not raise dust or adversely affect the construction process.

   – Provide high-efficiency particulate ("HEP")-filtered, air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs, such as turning on air conditioning prior to using the equipment and keeping windows closed.

   – Provide communication methods, such as 2-way radios, for use in enclosed cabs.

   – Employees should be medically evaluated, fit-tested, and properly trained on the use of the respirators, and a full respiratory protection

program in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144) should be in place.

- Provide National Institute for Occupational Safety and Health (NIOSH)-approved respirators for workers with a prior history of Valley Fever.
- Half-face respirators equipped with N-100 or P-100 filters should be used during digging. Employees should wear respirators when working near earth moving machinery.
- Prohibit eating and smoking at the worksite, and provide separate, clean eating areas with handwashing facilities.
- Avoid outdoor construction operations during unusually windy conditions or in dust storms.
- Consider limiting outdoor construction during the Fall to essential jobs only, as the risk of cocci infection is higher during this season.

3. Prevent transport of cocci outside endemic areas:
    - Thoroughly clean equipment, vehicles, and other items before they are moved off-site to other work locations.
    - Provide workers with coveralls daily, lockers (or other systems for keeping work and street clothing and shoes separate), daily changing and showering facilities.
    - Clothing should be changed after work every day, preferably at the work site.
    - Train workers to recognize that cocci may be transported offsite on contaminated equipment, clothing, and shoes; alternatively, consider installing boot-washing facilities.
    - Post warnings onsite and consider limiting access to visitors, especially those without adequate training and respiratory protection.

4. Improve medical surveillance for employees:

   - Employees should have prompt access to medical care, including suspected work-related illnesses and injuries.
   - Work with a medical professional to develop a protocol to medically evaluate employees who have symptoms of Valley Fever.
   - Consider preferentially contracting with 1-2 clinics in the area and communicate with the health care providers in those clinics to ensure that providers are aware that Valley Fever has been reported in the area. This will increase the likelihood that ill workers will receive prompt, proper and consistent medical care.
   - Respirator clearance should include medical evaluation for all new employees, annual reevaluation for changes in medical status, and annual training, and fit-testing.
   - Skin testing is not recommended for evaluation of Valley Fever. [157]
   - If an employee is diagnosed with Valley Fever, a physician must determine if the employee should be taken off work, when they may return to work, and what type of work activities they may perform.
   - (1) reducing dust exposure by ensuring ample and efficient water truck capacity to wet soil;
   - (2) using only heavy equipment with enclosed cabs and temperature-controlled, high efficiency particulate air–filtered air;
   - (3) providing clean coveralls daily to employees who disturb soil;
   - (4) implementing a mandatory respiratory protection program (8 CCR §5144, Respiratory Protection: https://www.dir.ca.gov/title8/5144.html) that specifically requires National Institute for Occupational Safety and Health–approved respirators be worn while performing or in the near vicinity of job activities that create airborne dust;

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[157] Short-term skin tests that produce results within 48 hours are now available. See Kerry Klein, NPR for Central California, New Valley Fever Skin Test Shows Promise, But Obstacles Remain, November 21, 2016; http://kvpr.org/post/new-valley-fever-skin-test-shows-promise-obstacles-remain.

- (5) developing effective Valley Fever training for all employees, including ways to reduce exposure, how to recognize symptoms, and where to seek care; and
- (6) tracking and reporting of all suspected Valley Fever illnesses that occur at the worksite to the Imperial County Public Health Department.
- Minimize soil disturbance through job design (e.g., avoid digging, reduce grading, maintain vegetation, install wiring in aboveground trays instead of belowground trenches);
- Limit dust generation and exposure;
- Protect operators with enclosed cabs (air conditioned with HEPA air filtration, windows closed & 2-way radio for communication, wet-clean inside cabs);
- Maintain effective cab pressurization and filtration (positive pressure, tight door seals, gaskets, holes sealed up, replace clogged filters, provide cooling & heating);
- Get employees respirator-ready;
- Use respirators with N95 or P100 (HEPA) filters;
- Develop respiratory protection program (program coordinator, medical clearance, fit testing, training, written policy on when to use respirators);
- Plan to take action when dust cannot be controlled (rules for work stoppage, monitor conditions, move indoors or into HEPA-filtered A/C, don respirators quickly);
- Valley Fever prevention training (train all supervisors, employees, & subcontractors);
- Training content to include Valley Fever awareness, symptoms, groups at greater risk, how to prevent exposure, what to do if you have symptoms;
- Preventing "take-home" dust (provide clean area to wash up, require change of clothing, provide boot cleaning stations, wet-clean tools and equipment); and
- Train workers on what to do if they're sick (inform supervisors, get medical evaluation, file workers' compensation claim).

In addition to the measures listed above, Dr. Fox recommends the following to ensure adequate protection of workers and nearby sensitive receptors:

- Continuously wet the soil before and while digging or moving the earth. Landing zones for helicopters and areas where bulldozers, graders, or skid steers operate are examples where continuously wetting the soil is necessary.
- When digging a trench or fire line or performing other soil-disturbing tasks, position workers upwind when possible.
- Place overnight camps, especially sleeping quarters and dining halls, away from sources of dust such as roadways.
- Minimize the amount of digging by hand. Instead, use heavy equipment with the operator in an enclosed, air-conditioned, HEPA-filtered cab.[158]

As Dr. Fox has indicated, the minimal, conventional dust control measures the County suggests in the MND will be entirely ineffective against Valley Fever; similar efforts at other projects have failed to control outbreaks, and even efforts of a more aggressive nature have been ineffective.[159,160]

Finally, even if all of Dr. Fox's recommended measures are implemented, and EIR is required under CEQA to analyze whether these measures can adequately mitigate the risk of Valley Fever to less-than-significant levels. Any significant impacts must be mitigated or avoided to the extent feasible.[161] As Dr. Fox contends, all of the above measures are feasible and thus, if found effective at mitigating impacts, must be implemented.

VII. THE MND'S ANALYSIS OF RISKS POSED BY HAZARDS AND HAZARDOUS MATERIALS IS FLAWED AND INADEQUATE

The MND, in its Hazards Assessment ("HA"), analyzed two scenarios in its evaluation of hazardous risks posed by the Project: (1) catastrophic failure of one of

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[158] Fox Comments, p. 40.

[159] Herman K. Trabish, Green Tech Media, Construction Halted at First Solar's 230 MW Antelope Valley Site, April 22, 2013; http://www.greentechmedia.com/articles/read/Construction-Halted-At-First-Solars-230-MW-Antelope-Valley-Site.

[160] Julie Cart, 28 Solar Workers Sickened by Valley Fever in San Luis Obispo County, *Los Angeles Times*, May 1, 2013; http://articles.latimes.com/2013/may/01/local/la-me-ln-valley-fever-solar-sites-20130501.

[161] Pub. Res. Code §§ 21002, 21002.1(b), 21081, 21080.5(d)(2)(i).

two new 10,000-gallon isopentane storage tanks, resulting in the release of 9,000 gallons of isopentane, and (2) the uncoupling of a truck transfer hose from an isopentane storage tank, resulting in the release of 46,260 lbs of isopentane during loading operations.[162] In concluding that impacts would be potentially significant unless mitigated, the HA estimated that significant impacts from a tank failure would be felt up to 0.052 miles, or 276 feet, from the tank, while impacts from a transfer hose uncoupling would be significant up to 0.032 miles, or 171 feet, from the release point.[163] In concluding that the impacted population would be zero, the HA used 2010 census tract data to determine that no receptors resided within those impact zones. As Dr. Fox points out, however,

A. Inconsistencies in the MND and Supporting Documents Make a Meaningful Review of the Hazards Assessment Impossible

As discussed above, in both the application for an updated CUP and application for ATC, the Project is described as proposing the installation of six new isopentane storage tanks, in addition to the two existing tanks, to be located adjacent to new OEC-1.[164] Both documents indicate the six new tanks will contain 60,000 gallons of isopentane and will be located 12 meters (39 feet) north of new OEC-1, which will contain 67,500 gallons of isopentane. The Project also includes new OEC-2, which will contain 75,800 gallons of isopentane.[165]

The MND, however, including the HA contained in Appendix H, describe and evaluate a different project entirely: one that contemplates the installation of only two new isopentane tanks, in addition to the two existing tanks. As the ATC and subsequent Permit to Operate, Dr. Fox points out, would have to be based on the actual number of tanks to be installed, it appears that the ATC application is invalid. This throws into question, therefore, the validity of the MND and any of its supporting technical reports that do not reflect this substantial change to critical Project components.

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[162] MND, pdf pp. 325–332.

[163] MND, pdf p. 336.

[164] MND, application for updated CUP, pdf pp. 52–61 (see Facility Layout Figure, pdf p. 61); Air Sciences Inc., Heber 1 Application for Authority to Construct, Prepared for Ormat Nevada, Inc., December 2019, p. 3.

[165] Application for Authority to Construct.

Attachment H
PC and EEC Packages

PROJECT REPORT

TO: PLANNING COMMISSION **AGENDA DATE: November 18, 2021**

FROM: PLANNING & DEVELOPMENT SERVICES **AGENDA TIME 1:30 PM/ No. 6**

PROJECT TYPE: CUP #19-0028; Heber 1 Geothermal Repower SUPERVISOR DISTRICT #2

LOCATION: 895 Pitzer Road APN: 054-250-036 & 035-000

Heber, CA PARCEL SIZE: +/- 20 Acres & 8 Acres

GENERAL PLAN (existing) Heber Specific Plan Area GENERAL PLAN (proposed) N/A

ZONE (existing) A-2-G-SPA (General Agriculture) ZONE (proposed) N/A

GENERAL PLAN FINDINGS ☒ CONSISTENT ☐ INCONSISTENT ☐ MAY BE/FINDINGS

PLANNING COMMISSION DECISION: HEARING DATE: 11/18/2021

☐ APPROVED ☐ DENIED ☐ OTHER

PLANNING DIRECTORS DECISION: HEARING DATE:

☐ APPROVED ☐ DENIED ☐ OTHER

ENVIROMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: 02/11/2021

INITIAL STUDY: #19-0033

☐ NEGATIVE DECLARATION ☒ MITIGATED NEG. DECLARATION ☐ EIR

DEPARTMENTAL REPORTS / APPROVALS:

PUBLIC WORKS	☒ NONE	☐ ATTACHED
AG	☐ NONE	☒ ATTACHED
APCD	☐ NONE	☒ ATTACHED
E.H.S.	☐ NONE	☒ ATTACHED
FIRE / OES	☐ NONE	☒ ATTACHED
SHERIFF.	☒ NONE	☐ ATTACHED
OTHER		

REQUESTED ACTION:

IT IS RECOMMENDED THAT YOU CONDUCT A PUBLIC HEARING AND THAT YOU HEAR ALL THE OPPONENTS AND PROPONENTS OF THE PROPOSED PROJECT. STAFF WOULD THEN RECOMMEND THAT YOU APPROVE CONDITIONAL USE PERMIT #19-0017 BY TAKING THE FOLLOWING ACTIONS:

a. Adopt the Notice of Exemption and approve the Findings of Fact that the Project is categorically exempt from CEQA under California Code of Regulations, title 15, sections 15301, 15302, & 15061 (CEQA Guidelines), and that no further environmental review is necessary;
b. Adopt the Mitigated Negative Declaration (MND), Errata to the MND, the Mitigation, Monitoring and Reporting Program (MMRP) and the conditions of approval contained therein, and any comments received showing that there is no substantial evidence that the Project will have a significant effect on the environment, as recommended at the Environmental Evaluation Committee (EEC) hearing on February 11, 2021;
c. Make the De Minimus Findings, as recommended at the February 11, 2021 EEC hearing, that the Project will not individually or cumulatively have an adverse effect on Fish and Wildlife Resources, as defined in Section 711.2 of the Fish and Game Codes; and
d. Adopt the Findings and Resolution(s), approving Conditional Use Permit #19-0028, subject to all the conditions of approval, and authorize the Planning & Development Services Department Director to execute the CUP agreement.

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STAFF REPORT
PLANNING COMMISSION MEETING
November 18, 2021
Conditional Use Permit #19-0028

Applicant: **Heber Geothermal Company & Ormat Nevada, Inc.**

Project Name: **Heber 1 Geothermal Repower Project**

Project Location:
The proposed project site is located at the existing Heber Geothermal Plant with Assessor's Parcel Numbers 054-250-036-000 & 054-250-035-000 with a parcel area of 20 acres and 8 acres, respectively. The town of Heber is approximately 3,500 feet to the northwest of the Heber 1 Geothermal Plant and the City of Calexico limits are located south of the proposed project site. A cattle feedlot is located to the north of the project site and the Southern Pacific right of way is located west. The property is legally described as a Portion of the East half of Tract 45, Township 16 South, Range 14 East, SBB&M.

Project Summary:
The proposed project includes the replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit (I3LU) and an Integrated two-level unit (ITLU) and the installation of ancillary equipment. The purpose of the repower project is to improve efficiency of the operations and increase the net and gross generation to 52 megawatts (net), 78.2 (gross) as initially requested under Conditional Use Permit #15-0013. The proposed project also proposes to extend the permitted life of Heber 1 to 30 years (2021-2051).

The Permittee has previously constructed and operated the existing geothermal facilities in compliance with Conditional Use Permit #15-0013, the County's General Plan, Renewable Energy & Transmission Element, Land Use Ordinance, and with all other applicable local, state, and federal laws, ordinances, regulations and standards.

Proposed CUP 19-0028 for the Heber 1 Complex authorizing the Permittee to upgrade includes:

- Repowering to 52 megawatts (net), 78.2 (gross) the existing Heber 1 geothermal plant will include replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit (I3LU) and an Integrated two-level unit (ITLU);

- Ormat Integrated three-level unit (I3LU)
  I3LU configuration would include three (3) 10-bay air coolers and one (1) 14-bay air cooler for cooling OEC Units 1 and 2, also requiring installation of two additional isopentane storage tanks (10,000 gallons each) and a new Vapor Recovery Mechanical Unit (VRMU);

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- Integrated two-level unit (ITLU)
  OEC Unit 11 and OEC Unit 13 will be converted to an ITLU, and the existing cooling tower and VRMU will be used for OEC Unit 11 and OEC Unit 13; additional modifications to OEC Unit 11 and OEC Unit 13 include replacement of some of the brine heat exchangers, replacement of the existing generator and one turbine, and replacement of a portion of the piping system and pumps. No modifications are planned to the existing cooling water system (tower, pumps, condensers, piping, etc.) and VRMU;

- The proposed repower project does not include alterations to existing units OEC 14 and OEC 12;

- Existing substation will be used without changes.

Applicant is also proposing to modify the permitted water intake from 1,800-acre feet of irrigation water to the existing water intake of 2,300-acre feet of irrigation water. On November 18, 2019, the IID issued an Amendment No. 1 to the Amended and Restated Water Supply Agreement to supply an additional 500 acre feet of water per year in addition to the 1,800-acre feet that was in the agreement, for a total of 2,300-acre feet per year. The new facilities will result in a new operational process that will not result in flashes of the geothermal brine, which means the water condensate that resulted from that process will no longer be available, to operate the Plant with the new facilities it would require an additional five hundred (500) acre-feet of water a year.

Project Background
Existing Conditional Use Permit #15-0003 for a geothermal facility expansion for a was approved by Planning Commission on September 9, 2015, the Board of Supervisors on November 10, 2015 and recorded on November 30, 2015. CUP #15-0003 superseded CUPs #06-0006 and #04-0024.

Land Use Analysis:
Applicant is requesting a Conditional Use Permit (CUP) for the proposed amendment to CUP #15-0003. Pursuant to Imperial County Land Use Ordinance, Title 9, Division 5, Section 90508.02 (y), an electrical generation plant is a permitted use with an approved Conditional Use Permit in the A-2 zone. The proposed project site is zoned A2-G-SPA per Zoning Map #12.

The proposed application is consistent with the Imperial County General Plan's designation, and the Imperial County's Land Use Ordinance. In addition, the adoption of the CEQA Initial Study for this project would be consistent with applicable County and State ordinances and regulations.

The project site designation is "Heber Specific Plan area", according to the County's General Plan Land Use Map. The proposed project does not conflict with the County's

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General Plan, and can be found consistent with the Heber Specific Plan Element's Implementation Programs, Policies, Goals and Objectives.

Surrounding Land Use Ordinance:

DIRECTION	CURRENT LAND USE	ZONING	GENERAL PLAN
Project Site	Geothermal Facility	A-2-G-SPA	Specific Plan Area
North	Cattle feed lot	A-3-G-SPA	Specific Plan Area
South	Vacant/ Agriculture	City of Calexico/ A-2-G-U	Urban Area
East	Agriculture with Residence	A-2-G-SPA	Specific Plan Area
West	Agriculture	A-2-G-SPA	Specific Plan Area

Environmental Determination:
A Mitigated Negative Declaration (MND) was prepared for Environmental Evaluation Committee's (EEC) review and their recommendation on February 11, 2021, for this proposed project in accordance with CEQA Guidelines. The EEC Committee consists of a seven (7) member panel, integrated by the Director of Environmental Health Services, Imperial County Fire Chief, Agricultural Commissioner, Air Pollution Control Officer, Director of the Department of Public Works, Imperial County Sheriff, and the Director of Planning and Development Services.

The EEC members have the principal responsibility for reviewing CEQA documents for the County of Imperial.

The project was circulated to the State Clearinghouse (SCH #2021020267) and public/agency, and all comments were received, reviewed and made part of this project. Additionally, time extensions were requested and approved at the State Clearinghouse for additional review of project, comment period started on February 12, 2020 and ended on May 10, 2021.

Following circulation of the IS/MND, the County determined that, as a modification to an existing facility with replacement or reconstruction, the Project qualified for the Class 1, Class 2, and "Common Sense" Categorical Exemptions under the California Environmental Quality Act (Pub. Resources Code § 21000 et seq. [CEQA]; Cal. Code Regs., tit. 14, § 15000 et seq. [CEQA Guidelines]; CEQA Guidelines §§ 15301, 15302, 15061) and that there were no exceptions to the exemption (CEQA Guidelines § 15300.2).

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Staff Recommendation:

It is recommended that the Planning Commission conduct a public hearing, that you hear all the opponents and proponents of the proposed project. Staff would then recommend that you take the following actions:

a. Adopt the Notice of Exemption and approve the Findings of Fact that the Project is categorically exempt from CEQA under California Code of Regulations, title 15, sections 15301, 15302, & 15061 (CEQA Guidelines), and that no further environmental review is necessary;
b. Adopt the Mitigated Negative Declaration (MND), Errata to the MND, the Mitigation, Monitoring and Reporting Program (MMRP) and the conditions of approval contained therein, and any comments received showing that there is no substantial evidence that the Project will have a significant effect on the environment, as recommended at the Environmental Evaluation Committee (EEC) hearing on February 11, 2021;
c. Make the De Minimus Findings, as recommended at the February 11, 2021 EEC hearing, that the Project will not individually or cumulatively have an adverse effect on Fish and Wildlife Resources, as defined in Section 711.2 of the Fish and Game Codes; and
d. Adopt the Findings and Resolution(s), approving Conditional Use Permit #19-0028, subject to all the conditions of approval, and authorize the Planning & Development Services Department Director to execute the CUP agreement.

Prepared By: David Black, Project Planner
Planning & Development Services

Reviewed By: Michael Abraham, AICP, Assistant Director
Planning & Development Services

Approved By: Jim Minnick, Director
Planning & Development Services

PC ORIGINAL PKG.

Attachments:

a. Location Map/Site Plan
b. Resolution for CEQA Findings
c. Resolution for MMRP
d. Resolution for Categorical Exemptions ISMND
e. Errata for Heber 1 IS-MND
f. Findings of Fact
g. Response to Comments Heber 1
h. Resolution for CUP 19-0028
i. CUP 19-0028
j. EEC Packet

DB\S:\AllUsers\APN\054\250\036\CUP19-0028\PC\CUP 19-0028 STAFF REPORT.docx

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ATTACHMENT – A

LOCATION MAP

SITE MAP

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PROJECT LOCATION MAP



IMPERIAL COUNTY CALIFORNIA

HEBER 1 REPOWER PROJECT - ORMAT NEVADA INC.
CONDITIONAL USE PERMIT #19-0028
INITIAL STUDY #19-0033
APN 054-250-035 & 036-000

HIGHWAYS
PARCELS
CITYLIMIT
PROJECT LOCATION

N

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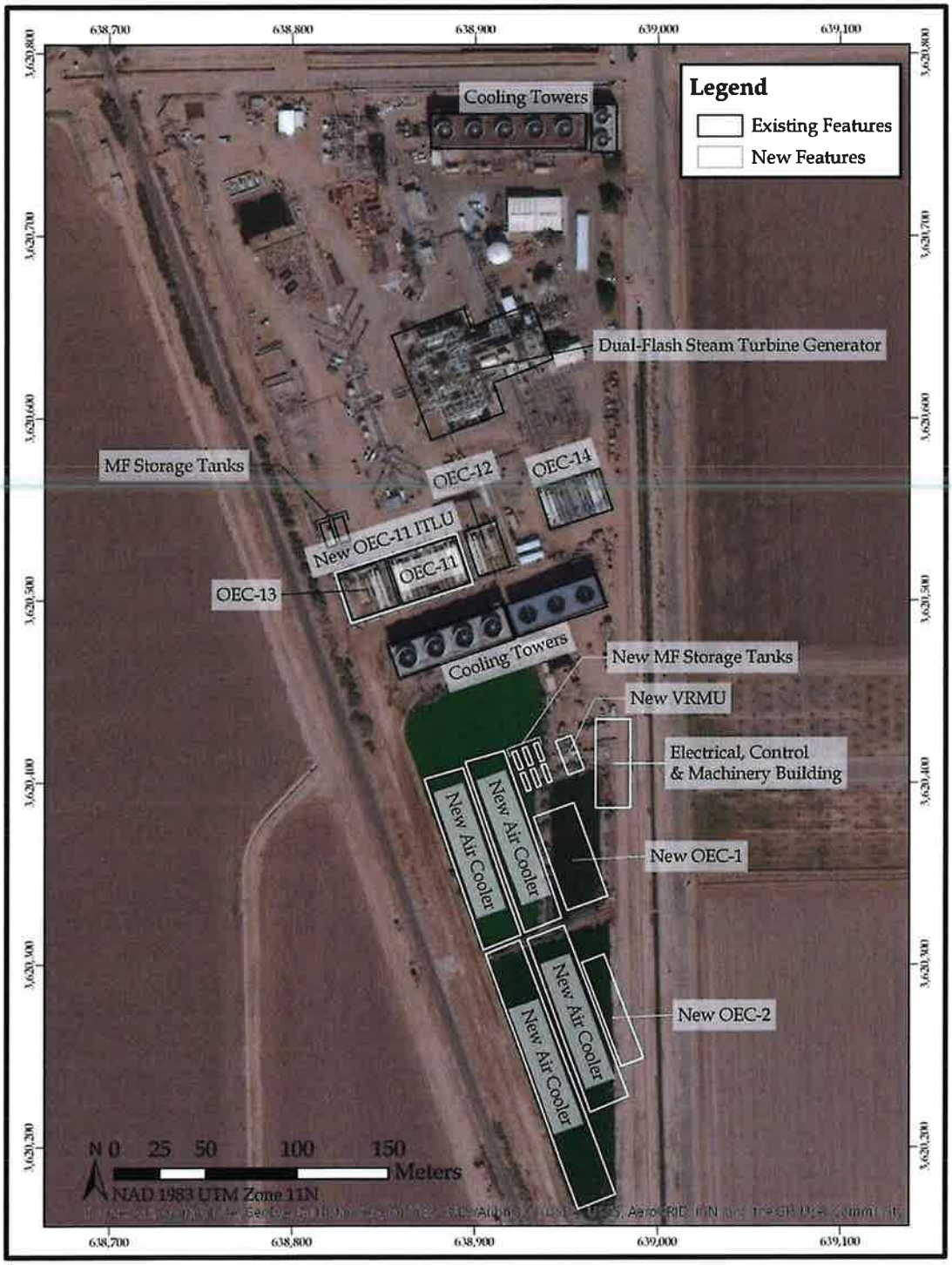
Figure 2: Project Location Map



PC ORIGINAL PKG.

ATTACHMENT – B

Resolution for CEQA Findings

PC ORIGINAL PKG.

RESOLUTION NO.

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, APPROVING CONDITIONAL USE PERMIT (CUP) #19-0028 AND MAKING CEQA FINDINGS FOR THE HEBER I GEOTHERMAL REPOWER PROJECT

WHEREAS, Heber Field Company has requested the approval of the Heber 1 Repower Project (Project) and Conditional Use Permit (CUP) #19-0028 for the continued operation of the currently operational Heber I Geothermal facility, along with the required construction to update the existing Heber I Geothermal facility; and,

WHEREAS, the Planning Commission, with the responsibility of California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) determinations, adoptions, and certifications of CEQA documents, determines this Project is categorically exempt from CEQA Review in accordance with sections 15301, 15303, and 15061 of the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.), and the County's "Rules and Regulations to Implement CEQA as Amended" with Findings; and,

WHEREAS, though the Planning Commission has determined that the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense), the Commission has also used its discretion to prepare and adopt an Initial Study/Mitigated Negative Declaration (IS/MND) to ensure the changes to the Project are fully evaluated; and,

WHEREAS, the CEQA Findings and IS/MND have been prepared in accordance with the requirements of CEQA, the CEQA Guidelines, and the County's "Rules and Regulations to Implement CEQA, as Amended"; and,

WHEREAS, the Planning Commission of the County of Imperial has reviewed and scheduled a public hearing for Conditional Use Permit # 19-0028, to approve the above permit on the APNs 054-250-035-000 and 054-250-036-000, located at 895 Pitzer Road; and,

WHEREAS, public notice of said application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning and Development Services Department and has heard, received, and considered all oral and written protests, objections, and evidence presented by interested parties at a public hearing held with respect to this item on November 18, 2021; and,

WHEREAS, timely notice of the November 18, 2021 Planning Commission hearing was given by publication in the Imperial Valley Press, a newspaper of general circulation, as well as by mailing to residents within one-half mile radius of the project and provided for review on the Department's website, www.icpds.com; and,

PC ORIGINAL PKG.

WHEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has reviewed the Project, Findings of Fact, and voluntary conditions (attached hereto as Exhibit A), and heard all arguments on the proposed Conditional Use Permit #19-0028, prior to consideration of approval and the Commission's consideration has been noticed in compliance with law.

SECTION 2. The Project complies with the requirements of the Imperial County Code and is in accordance with State Planning and Zoning law, therefore, the following Findings by the County Planning Commission are hereby confirmed on November 18, 2021, and made pursuant to Imperial County Code § 90203.09 as follows:

A. The proposed use is consistent with goals and policies of the adopted County General Plan. (Imperial County Code § 90203.09.A)

The General Plan designates the subject site as "Heber Specific Plan Area" and Section 90508.02 of the County Land Use Ordinance identify the permitted conditional uses within the A-2-G-Heber SPA Zone designation. Uses identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the Imperial County Planning Commission. Additionally, an analysis of the Project's consistency with the General Plan's goals and objectives relevant to the Project is provided in the Findings for the Notice of Exemption and IS/MND (attached hereto as Exhibit A), and the Project is considered consistent with the applicable policies of the County's General Plan.

The Planning Commission has also examined the relevant, applicable portions of the Imperial County General Plan's *Land Use Element* and the *Geothermal/Alternative Energy & Transmission Element*, and has determined that the *Land Use Element* provides that the evaluation and approval of non-agricultural uses on lands designated agriculture will occur through the implementation of zoning and the CUP review process. Further, the Land Use Compatibility Matrix in the ICGP provides that industrial uses are permissible on lands zoned A-2-G and A-2-G-SPA with a CUP.

Therefore, pursuant to Land Use Ordinance section 90508.02, electrical generation facilities are permitted with approval of a CUP for "electrical generation plants (less than 50 mw)."

The Commission finds that the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations.

The proposed Project is expected to utilize 50-60 workers for excavation and pouring of the slab foundation for the new OEC units, which will provide economic growth to the region and economic benefit to the County, in accordance with Goal 2 of the Land Use

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Element. Goal 2 of the Land Use Element states that the County should "[d]iversify employment and economic opportunities in the County"; therefore, the Project shall create jobs and other economic opportunities in the County at a time of high unemployment throughout the County.

B. The proposed use is consistent with the purpose of the zone or sub-zone within which the use will be used. (Imperial County Code § 90203.09.B)

The purpose of the Project is to decommission the dual-flash steam turbine generator, install two new ORMAT Energy Converters (OECs), reconfigure two existing OECs, install ancillary equipment including a vapor recovery maintenance unit, and install upgrades to replace aging equipment, including two new 10,000-gallon isopentane storage tanks, subject to approval of a CUP from the County. The site is zoned A-2-G-SPA, and the purpose of this zone is to designate areas that are suitable for geothermal facilities. Geothermal electrical facilities and expansion thereof are permitted with a CUP in the A-2-G-SPA Zone (Imperial County Code § 90508.02). Therefore, the proposed use is consistent with the purpose of the zone or sub-zone within which the uses will be located.

C. The proposed use is listed as a use within the zone or sub-zone or is found to be similar to a listed conditional use according to the procedures of Section 90203.00. (Imperial County Code § 90203.09.C)

The geothermal uses are allowable uses in the A-2-G General Agriculture/Geothermal Overlay zone with an approved CUP according to the County's Land Use Ordinance, Section 90508.02. Therefore, the Project's proposed continuation of existing geothermal operations is a permissible use under the County's Ordinance.

D. The proposed use meets the minimum requirements of this Title applicable to the use, and complies with all applicable laws, ordinances and regulation of the County of Imperial and the State of California. (Imperial County Code § 90203.09.D)

The Project complies with the minimum requirements of this Title by, among other things, obtaining a CUP, complying with CEQA, and participating in the public review and hearing process. (See, Exhibit A [CEQA Findings for Categorical Exemption and IS/MND].) Development standards have been established for the Project pursuant to these processes, as well as the conditions of approval imposed on CUP #19-0028. The conditions of approval will further ensure that the Project complies with all applicable regulations of the County of Imperial and the State of California. Therefore, the proposed Project will meet the minimum requirements of the Land Use Ordinance, Section 90203.00.

E. The proposed use will not be detrimental to the health, safety, and welfare of the public or to the property and residents in the vicinity. (Imperial County Code § 90203.09.E)

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Updating the existing geothermal facilities does not appear to be in, or near proximity, to very large residential areas. The Project site is substantially surrounded by agricultural uses and is south of the town site of Heber. The proposed CUP (#19-0028) does not appear to be detrimental to the health, safety, and welfare of the public, or to the property and residents in the vicinity. The proposed updates to the Heber I facility are unlikely to result in nuisance-related impacts, such as noise, glare, or access disruptions that could otherwise conflict with adjacent uses. Noise associated with operation and maintenance would also meet the County's noise ordinance requirements at the project property lines. Finally, the Permittee has agreed to conditions of approval that support and promote the protection of the health, safety, and welfare of the County's citizens and property, and ensures that the County will not be negatively impacted environmentally or fiscally. (See, Exhibit A.)

F. The proposed use does not violate any other law or ordinance. (Imperial County Code § 90203.09.F)

The proposed Project will be subject to the CUP #19-0028, the terms set forth therein, and current federal, state, and local regulations. The State Planning and Zoning Law (Cal. Govt. Code §§ 65000-66035) establishes minimum statewide standards for the regulation of local land use through planning and zoning. The County regulates local land use via Title 9 of the Imperial County Code. As found above, the proposed Project is conditioned to be consistent with the Imperial County Land Use Ordinance and therefore complies with both state and local laws and ordinances. The County is aware of no other laws or ordinances that might be implicated by the Project, and thus the finds that the proposed use does not violate any other law or ordinance.

G. The proposed use is not granting a special privilege. (Imperial County Code § 90203.09.G)

The proposed update to the Heber I geothermal facility is a permitted use subject to the approval of a Conditional Use Permit under Land Use Ordinance, Section 92508.02 *et. seq.*, and will not grant a special privilege.

NOW, THEREFORE, based on the above Findings, the Imperial County Planning Commission **DOES HEREBY APPROVE** of Conditional Use Permit (CUP) #19-0028, subject to the existing Conditions of Approval and CEQA Findings, attached hereto as Exhibit A.

Rudy Schaffner, Chairperson
Imperial County Planning Commission

PC ORIGINAL PKG.

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on November 18, 2021 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

Jim Minnick, Director of Planning & Development Services
Secretary to the Planning Commission

PC ORIGINAL PKG.

ATTACHMENT – C

Resolution for MMR&P

PC ORIGINAL PKG.

RESOLUTION NO.

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, FOR THE ADOPTION OF THE MITIGATION MONITORING & REPORTING PROGRAM FOR CONDITIONAL USE PERMIT (CUP) #19-0028 FOR THE HEBER I GEOTHERMAL REPOWER PROJECT

WHEREAS, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and the County's "Rules and Regulations to Implement CEQA," as amended; and

WHEREAS, the Planning Commission, with the responsibility of CEQA determinations, and adoptions and certifications of CEQA documents, has determined that the Heber 1 Repower Project (Project) and application for Conditional Use Permit (CUP) #19-0028 is categorically exempt from CEQA Review in accordance with sections 15301, 15303, and 15061, of the CEQA Guidelines, but has also used its discretion to prepare and adopt an Initial Study/Mitigated Negative Declaration (IS/MND) and the MMRP contained therein, to ensure the changes to the Project are fully evaluated; and,

WHEREAS, the Planning Commission has determined that, although the Project will not yield any significant environmental effects, the MMRP contains conditions of approval and voluntary mitigation measures that will ensure the changes to the Project and CUP #19-0028 are fully evaluated and adhered to; and,

WHEREAS, public notice of the application for CUP #19-0028 and the Project has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning and Development Services Department and has heard, received and considered all oral and written protests, objections and evidence presented by interested parties at a public hearing held with respect to this item on November 18, 2021 and,

WHEREAS, timely notice of the November 18, 2021 Planning Commission hearing was given by publication in the Imperial Valley Press, a newspaper of general circulation, as well as by mailing to residents within one-half mile radius of the project and provided for review on the Department's website, www.icpds.com; and,

WHEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has considered the proposed Mitigation Monitoring and Reporting Program (MMRP) prior to making a decision to approve the proposed MMRP. The Planning Commission finds and determines that the MMRP is adequate and prepared in accordance with the requirements of the California Environmental Quality Act

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(CEQA), which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with State Planning and Zoning Law and the County of Imperial regulations, the following findings for the approval and certification of the MMRP and Findings of Fact have been made as follows:

1. That the MMRP, IS/MND, and CEQA Findings for the Heber I Geothermal Repower Project (Project) and application for CUP #19-0028 have been prepared in accordance with the requirements of the California Environmental Quality Act, the State CEQA Guidelines, and the County's "Rules and Regulations to Implement CEQA, as amended."

2. That the Commission has reviewed, analyzed, and considered this MMRP, final IS/MND, the conditions of approval and voluntary measures identified therein, the CEQA Findings, and the entire Record of Proceedings prior to approving CUP #19-0028.

3. That the MMRP, final IS/MND, and CEQA Findings reflect the independent judgment of the Commission.

4. That the CEQA Findings are supported by substantial evidence and backed by information provided to the Commission by experts, including, but not limited to, the County staff and the IS/MND and MMRP preparers, on whom the Commission relies.

5. That the Commission accepts as its own, incorporates as if set forth fully herein, and makes each and every one of the findings contained in the CEQA Findings, including the feasibility of the conditions of approvals and voluntary mitigation measures contained in the MMRP, pursuant to Public Resources Code section 21081(f) and CEQA Guidelines section 15074.

6. That the MMRP is designed to ensure that during Project implementation, the Permittee and any other responsible parties implement the Project components and comply with the conditions of approval identified in the CEQA Findings, the Conditional Use Permit and related entitlements, and the MMRP, and that these measures are fully enforceable through permit conditions, agreements, and/or other measures.

7. That although the Commission finds that the Project will not yield any significant environmental effects, the conditions set forth in the MMRP are voluntary and precautionary measures that reduce any potential environmental impacts to a less than significant level, and there are no detrimental health, safety, and welfare impacts to the public or adjacent property owners.

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8. That the Project will not individually or cumulatively have an adverse effect on fish and wildlife resources, as defined in Section 711.2 of the Fish and Game Code.

9. That the Record of Proceedings consists of the CEQA Findings of Fact; the IS/MND (and all technical reports, appendices, and addendums thereto); the County staff reports; the Mitigation Monitoring and Reporting Program; all final reports, memoranda, maps, letters, and other planning documents prepared by County staff; all documents submitted by members of the public and public agencies in connection with the MND and Categorical Exemptions; minutes and transcripts of all public meetings and public hearings; all written and verbal public testimony presented during a noticed public hearing for the proposed project, which such testimony was taken and any and all other materials which constitute the record of proceeding pursuant to Public Resources Code section 21167.6(e); and matters of common knowledge to the County staff, Planning Commission, including, but not limited to, the County General Plan, the County Zoning Ordinance, County policies, which may be found at the Clerk's Office located at 940 Main Street, Suite 209, El Centro, CA, 92243, during regular business hours, and the Imperial County Planning & Development Services Department, located at 801 Main Street, El Centro, CA, 92243, during business hours; and,

10. That the Planning Commission does approve and certify the Mitigation Monitoring and Reporting Program to the IS/MND for CUP #19-0028.

NOW, THEREFORE, based on the above findings, the Imperial County Planning Commission **DOES HEREBY APPROVE** of the Mitigation Monitoring and Reporting Program for Conditional Use Permit #19-0028**,** subject to the existing Conditions of Approval and CEQA Findings, attached hereto as Exhibit A.

Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on November 18, 2021 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

PC ORIGINAL PKG.

ATTEST:

Jim Minnick, Director of Planning & Development Services
Secretary to the Planning Commission

PC ORIGINAL PKG.

ATTACHMENT – D

Resolution for Categorical Exemptions IS MND

PC ORIGINAL PKG.

RESOLUTION NO.

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, APPROVING THE CATEGORICAL EXEMPTIONS AND ADOPTING THE INITIAL STUDY/MITGATED NEGATIVE DECLARATION FOR CONDITIONAL USE PERMIT #19-0028 FOR THE HEBER I GEOTHERMAL REPOWER PROJECT

WHEREAS, on February 11, 2021, a publicly noticed Environmental Evaluation Committee Hearing was heard to discuss and review the Mitigated Negative Declaration (MND) & Initial Study (IS) (SCH #2021020267) for the Heber 1 Geothermal Repower Project (Project) and application for Conditional Use Permit (CUP) #19-0028; and,

WHEREAS, the Environmental Evaluation Committee recommended to the Planning Commission of the County of Imperial to adopt the Mitigated Negative Declaration for Conditional Use Permit #19-0028; and,

WHEREAS, the IS/MND was revised to incorporate changes to the Project and voluntary measures proposed by the Applicant to address comments. An IS/MND that incorporated the changes to the Project and the voluntary measures was circulated for agency review and public comment for 91 days from February 12, 2021, to May 10, 2021; and,

WHEREAS, following circulation of the IS/MND, the County determined that, as a modification to an existing facility with replacement or reconstruction, the Project qualified for the Class 1, Class 2, and "Common Sense" Categorical Exemptions under the California Environmental Quality Act (Pub. Resources Code § 21000 et seq. [CEQA]; Cal. Code Regs., tit. 14, § 15000 et seq. [CEQA Guidelines]; CEQA Guidelines §§ 15301, 15302, 15061) and that there were no exceptions to the exemption (CEQA Guidelines § 15300.2); and,

WHEREAS, though the County has determined that the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and 15061 (Common Sense), the County has used its discretion to also prepare and adopt the IS/MND to ensure the changes to the Project are fully evaluated; and,

WHEREAS, an IS/MND and CEQA Findings of Fact were prepared in accordance with the requirements of CEQA, the CEQA Guidelines, and the County's "Rules and Regulations to Implement CEQA, as Amended"; and,

WHEREAS, the Planning Commission of the County of Imperial has been designated with the responsibility of adoptions and certifications;

NOW, THEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

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The Planning Commission has reviewed the attached CEQA Findings supporting a Categorical Exemption and MND/IS prior to approval of Conditional Use Permit #19-0028. The Planning Commission finds and determines that:

1. That the recitals set forth herein are true, correct, and valid; and,

2. The Commission has independently reviewed, analyzed, and considered the attached CEQA Findings of Fact (Exhibit A) for CUP #19-0028, and the entire Record of Proceedings prior to recommending approval of this Project. The Findings support the County's conclusion that the Project will not individually or cumulatively have a significant effect on the environment, and is therefore categorically exempt from CEQA under CEQA Guidelines sections 15301, 15302, and 15601, and that the exceptions under Guidelines section 15300.2 do not apply; and,

3. In the alternative, and out of an abundance of caution, the Commission has also independently reviewed, analyzed, and considered the CEQA Findings of Fact (Exhibit A) for the IS/MND for CUP #19-0028. The Findings support the Commission's conclusion that the Project is subject to approval pursuant to the terms and conditions of approval set forth in the IS/MND to ensure all changes to, or created by the Project will not have significant environmental effects; and,

4. That the Findings of Fact in support of the Categorical Exemptions and IS/MND for the Project reflect the Planning Commission's independent judgment and analysis; and,

5. That the Record of Proceedings consists of the Findings of Fact; the IS/MND; the County staff reports; the Mitigation Monitoring and Reporting Program (MMRP); all final reports, memoranda, maps, letters, and other planning documents prepared by County staff; all documents submitted by members of the public and public agencies in connection with the IS/MND and Categorical Exemptions; minutes and transcripts of all public meetings and public hearings; all written and verbal public testimony presented during a noticed public hearing for the proposed project, which such testimony was taken and any and all other materials which constitute the record of proceeding pursuant to Public Resources Code section 21167.6(e); and matters of common knowledge to the County staff, Planning Commission, including, but not limited to, the County General Plan, the County Zoning Ordinance, County policies, which may be found at the Clerk's Office located at 940 Main Street, Suite 209, El Centro, CA, 92243, during regular business hours, and the Imperial County Planning & Development Services Department, located at 801 Main Street, El Centro, CA, 92243, during business hours; and

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NOW, THEREFORE, the County of Imperial Planning Commission **DOES HEREBY ADOPT** the Categorical Exemption, IS/MND, and Findings of Fact in support thereof (attached hereto as Exhibit A) for Conditional Use Permit #19-0028.

Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certified that the preceding Resolution was taken by the Planning Commission at a meeting conducted on November 18, 2021 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

Jim Minnick, Director of Planning & Development Services
Secretary to the Imperial County Planning Commission

PC ORIGINAL PKG.

ATTACHMENT – E

Errata for Heber 1 IS-MND

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ERRATA SHEET

For the Heber 1 Geothermal Repower Project & CUP #19-0028
Initial Study/Mitigated Negative Declaration
Prepared by the County of Imperial
(SCH # 2021020267)

INTRODUCTION & BACKGROUND

On February 11, 2021, the County of Imperial issued a Notice of Intent to adopt a Mitigated Negative Declaration (NOI) and distributed a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the Heber 1 Repower Geothermal Project (the Project) and application for Conditional Use Permit (CUP) #19-0028. In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, §§ 21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15000 et seq.), a 30-day public review period for the Draft IS/MND was provided from February 12, 2021, to March 15, 2021. (Pub. Resources Code, § 21091; CEQA Guidelines § 15073.) The comment period was extended twice, first to April 14, 2021, and then to May 10, 2021. Six comment letters were received during the comment period, five of which were from agency commenters that confirmed their lack of comments or non-substantive comments on the Project. One public comment was submitted by a member of the public.

In response to comments received by the County, the following errata to the IS/MND is made to correct and clarify the documents. None of these recirculation of the IS/MND as addressed below. Responses to comments that were received during the public review period are included in the "Responses to Comments" document.

PURPOSE OF ERRATA & CEQA REQUIREMENTS

CEQA Guidelines, section 15073.5, requires a lead agency to recirculate a negative declaration "when the document must be substantially revised." (CEQA Guidelines, § 15073.5, subd. (a); Pub. Resources Code, § 21080, subd. (c).) A "substantial revision" of a negative declaration includes: (1) a new, avoidable significant effect is identified, and mitigation measures or project revisions must be added in order to reduce the effect to insignificance; or (2) the lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less-than-significant levels, such that new measures or revisions are required. (CEQA Guidelines, § 15073.5, subd. (b).)

The CEQA Guidelines also specify situations where recirculation of a negative declaration is not required. Applicable situations include: (1) new revisions to the project are added in response to comments on the project's identified effects, which are not new and avoidable significant effects; (2) measures or conditions of approval that are added after circulation of the negative declaration that are not required by CEQA, do not create significant environmental effects, and not necessary to mitigate an avoidable significant effect; and (3) situations where new information is added to the negative declaration that merely clarifies, amplifies, or makes insignificant modifications to the negative declaration. (CEQA Guidelines, § 15073.5, subd. (c)(2)–(4).)

As noted below, the following revisions correct and clarify information provided in the IS/MND relative to the proposed Project. These changes do not represent substantial revisions that would

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require recirculation of the IS/MND. Specifically, the errata would not change the extent of the Project analyzed in the IS/MND and would not change the IS/MND's conclusion that the Project would result in less-than-significant impacts. Therefore, the revisions do not result in significant environmental impacts, do not constitute significant new information, and do not alter the conclusions of the environmental analysis. Rather, the following changes to the IS/MND merely clarify or correct portions of the text regarding the scope of the Project and conditions of approval. For these reasons, recirculation of the IS/MND in accordance with Guidelines section 15073.5, subdivision (c), is not required.

REVISIONS TO THE IS/MND

The following changes and edits represent revisions to information included in the IS/MND based upon: (1) additional or revised information required to prepare a response to a specific comment; (2) updated information required due to the passage of time; and/or (3) clarification or correction of typographical errors. Therefore, these revisions represent small, non-substantive changes that do not warrant recirculation of the IS/MND.

A brief description of the change or edit is provided as well as a reference to where the change or edit occurs in the document (i.e., page number, paragraph, sentence, table, etc.). Deletions of text are shown as ~~strikethrough~~ text and additions are shown in double underlined text.

. . . . . .

PROJECT SUMMARY

The following changes are made to subsection B of the Project Summary on page 12 of the final IS/MND:

Voluntary Environmental Protection Features (VEPFs)

The Applicant has proposed the following Voluntary Environmental Protection Features (VEPFs) to be incorporated into the Conditional Use Permit as Project conditions of approvals (COAs). The VEPFs include Best Management Practices (BMPs) or Project Design Features (PDFs) that are fundamentally preventative and protective measures. The VEPFs reflect the recommendations of stakeholders, including the Applicant, County Staff, and the public, and are also drawn from measures implemented by other, similarly situated, and approved projects. The VEPFs also serve to confirm generally applicable regulations that would apply to the Project that further reduce an already less-than-significant impact and in many cases improve environmental conditions when compared with the baseline conditions.

The Applicant has voluntarily adopted these conditions as preventive and protective measures. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence presented of a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

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COA-AQ-1: The Applicant shall obtain a modified Permit to Operate from the Imperial County Air Pollution Control District (ICAPCD). All Project construction activities shall comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules and the following VEPFs:

- Project equipment and worker vehicles shall be turned off when not in use and not left idling for more than 5 minutes to minimize unnecessary emissions.
- Water shall be applied to the development site during site preparation and construction to control fugitive dust.
- Earth moving work shall be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads/areas will be restricted to 10 mph to control fugitive dust.
- During windy conditions, barriers will be constructed and/or additional watering conducted to minimize wind-blown fugitive dust.
- Vehicle access would be restricted to the disturbance area via signage/fencing.
- Project construction equipment will utilize Tier 3 engines when commercially available. If a Tier 3 engine is not certified for a particular piece of equipment or not commercially available, then the equipment shall be either equipped with a Tier 2 engine or equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels.

COA-BIO-1: Prior to any construction activities commencing on site, contractors shall attend a Worker Environmental Awareness Program (WEAP) regarding sensitive biological resources potentially occurring within the Biological Survey Area (BSA). A person knowledgeable about the biology of the covered species shall present the program. At a minimum, the program shall cover the distribution of special-status species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, the penalties for violation of state and federal laws, reporting requirements, project mitigation measures, and measures to implement in the event that this species is found during construction. A fact sheet containing this information shall also be prepared and distributed. The program shall be presented to all members of the construction crew prior to the start of project construction activities. New employees shall receive formal, approved training prior to working onsite. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all protection measures. These forms shall be made available to CDFW upon request.

COA-BIO-2: Protection of nesting birds would be required in compliance with the MBTA and to avoid impacts to nesting birds. To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to February 1). If this avoidance schedule is not feasible, the alternative is to carry out the clearing of vegetation associated with construction under the supervision of a qualified biologist. This shall entail a pre-construction nesting bird survey conducted by a qualified biologist within 14 days prior to initiating ground disturbance activities. The survey shall consist of full coverage of the proposed disturbance limits and a 500-foot buffer. The buffer shall be determined by the biologist and will take into account the species nesting in the area and the habitat present. If no active nests are found, no additional measures are required. If "occupied"

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nests are found, the nest locations shall be mapped by the biologist, utilizing GPS equipment. The nesting bird species shall be documented and, to the degree feasible, the nesting stage (e.g., incubation of eggs, feeding of young, near fledging). The biologist shall establish a no disturbance buffer around each active nest. The buffer will be determined by the biologist based on the species present and surrounding habitat. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume.

COA-BIO-3: In accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012), a preconstruction take avoidance survey shall be conducted (CDFW 2012). If the burrowing owl is absent, then no actions are required. If present, the following measures shall be implemented. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, then disturbance impacts shall be minimized through the use of buffer zones, visual screens, or other measures in accordance with CDFW (2012).

Occupied burrows shall be avoided during the breeding period from February 1 through August 31. (CDFW 2012.) "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy within the last 3 years. Occupied burrows shall also be avoided during the nonbreeding season.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. (CDFW 2012.)

Measures for permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat is required such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the burrowing owl life history information provided in Staff Report on Burrowing Owl Mitigation. (CDFW 2012.) Coordination with CDFW may be necessary for the development of site-specific avoidance and measures in the unlikely event that burrowing owls are present.

COA-BIO-4: Pre-construction surveys shall be performed to determine either the presence of special status species or sensitive biological resources within 14 days prior to initiating ground disturbance activities. In addition, before any modifications to existing buildings, a focused bat survey will be performed for western mastiff bat.

COA-BIO-5: If pre-construction surveys determine either the presence of special status species or sensitive biological resources, a construction monitor will be required during construction activities that could impact any species that are identified in the surveys. If required, construction monitoring shall be conducted by a qualified biologist. The biologist shall be given authority to execute the following functions:

- Establish construction exclusion zones and make recommendations for implementing erosion control measures in temporary impact
- Ensure all construction activities stay within the staked construction zone and do not go beyond the limits of disturbance.

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- Minimize trimming/removal of vegetation to within the Project impact area.
- Restrict non-essential equipment to the existing roadways and/or disturbed areas to avoid disturbance to existing adjacent native vegetation.
- Install and maintain appropriate erosion/sediment control measures, as needed, throughout the duration of work activities.

During construction, biological monitors shall inspect and verify field conditions, as needed, to ensure that wildlife and vegetation are not harmed. The biological monitor shall coordinate with the construction supervisor and construction crew and shall have the authority to stop any activity that has the potential to affect special-status species or remove vegetation not specified in this area.

COA-PAL-1: All project-related ground disturbances that could potentially impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis.

COA-PAL-2: A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring Plan for the proposed Project, which would include the identification of any undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan will also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the Applicant and the lead agency.

COA-PAL-3: At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.

COA-PAL-4: Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).

COA-PAL-5: Any recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the San Diego Natural History Museum (SDNHM).

COA-PAL-6: The qualified paleontologist will prepare a final monitoring report to be filed with the Applicant, the lead agency, and the repository.

COA-FIRE-1: A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment will be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and

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detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

COA-FIRE-2: Concrete containment areas for isopentane storage tanks, including a blast wall between currently operational isopentane tanks shall be installed. To minimize the potential for a cascading failure event of the proposed isopentane tanks and to limit potential impacts within the existing Heber 1 Complex fence line, the proposed isopentane tanks shall be located as set forth in the attached figure #. Diking and impoundment of the proposed isopentane tanks shall be installed to minimize the magnitude and extent of a tank failure

COA-FIRE-3: All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. Each tank will be equipped with two flame detectors and one gas detector (for a total of 4 flame detectors and 2 gas detectors for the two tanks). In the case of an isopentane leak, the gas detector(s) will detect it immediately and send a notification to the operator at the control room (manned 24/7) in order to mobilize fixing the leak. In case of a fire, the flame detector(s) will detect it and immediately start the automatic fire suppression system. In case of a fire, there will also be a horn and strobe system that will turn on automatically to alert the plant employees. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

COA-FIRE-4: An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

COA-FIRE-5: Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

COA-FIRE-6: Compliance with all required sections of the fire code.

COA-FIRE-7: For the isopentane tanks, the Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

III. AIR QUALITY

The following changes are made to subsection (b) of the Air Quality Section on page 19 of the final IS/MND:

As noted in Table 2 above, isopentane emissions at the Proposed Project site are expected to increase by approximately 48.0 lbs/day for a project's estimated total of 81.3 lbs/day. Though, the isopentane levels would remain within the current authorized release amount and the expected changes to emissions from the Proposed Project include a reduction in emissions for all other permitted pollutants. ~~Addtionally,~~ Additionally, emissions from construction equipment would be temporary and not exceed any air quality thresholds or significantly contribute to an existing regional nonattainment condition. The Project Applicant has proposed the following air quality Voluntary Environmental Performance Features

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(VEPFs), which shall be implemented as conditions of approval to the CUP application. These VEPFs ~~would~~ will be implemented during construction of the Proposed Project to minimize the potential for fugitive dust and particulate matter releases. Through the application of these measures, the construction of the Project would limit visible dust emissions and particulate matter emissions to be in compliance with Imperial County's approach to minimizing these construction-related emissions. Ozone, which stems from the use of fuel-combusting equipment, would also be limited to the construction phase of the Project; vehicles and equipment would be turned off when not in use and not left idling to minimize unnecessary emissions.

Additionally, Air Pollution Control District (APDC) requested in comment letter dated January 17, 2020 that the applicant contact Mr. Emmanuel Sanchez, Enforcement Division Manager, to discuss the possible need for a Construction Dust Control Plan; the applicant must notify the Air District 10 days prior to the start of any construction activities. Applicant agreed to follow APDC requirements on response letter dated March 6, 2020. APDC has submitted no further comments on the Project. Impacts would be less than significant.

IV. BIOLOGICAL RESOURCES

The following changes are made to subsection (a) of the Biological Resources Section on page 20 of the final IS/MND:

BIOLOGICAL RESOURCES **Would the project:**	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	~~☒~~ ☐	~~☐~~ ☒	☐

a) ~~**Potentially Significant Impacts Unless Mitigation Incorporated.**~~ Less Than Significant Impact. A Chambers Group, Inc. (Chambers Group) biologist conducted the general biological reconnaissance-level survey within the Proposed Project site in 2019. The survey documented the existing biological conditions, determined the potential for occurrence (PFO) of sensitive species, and identified potentially jurisdictional waters.

The following changes are made to subsection (a) of the Biological Resources Section on page 21 of the final IS/MND:

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The analysis of the CNDDB search and field survey resulted in two species with a moderate potential to occur on the Proposed Project site:

- Burrowing owl (Athene cunicularia) – nesting and foraging – SSC, IID
- Western mastiff bat (Eumops perotis) – foraging – SSC, IID

The analysis of the CNDDB search and field survey resulted in no species with a high PFO within the Proposed Project site. The Proposed Project is not anticipated to impact any sensitive or native habitat. All impacts are anticipated to occur to previously developed areas and site operations following the completion of the Proposed Project would be substantially similar to current operations. Considering there is moderate potential for two special-status species to occur onsite and unanticipated encounters could occur, the Project Applicant has proposed the following VEPFs, which shall be implemented as conditions of approval to the CUP application. With the implementation of the VEPFs, in the unlikely event that ~~impacts to~~ sensitive and special-status species occur, the impacts ~~should be mitigated to~~ would be less than significant ~~with the incorporation of the following mitigation measures (MM)~~:

~~**MM-BIO-1:** A qualified biological monitor should conduct an environmental awareness training prior to the start of any construction- related activities. Special focus should be made on sensitive animals that have a PFO within the Survey Area (e.g. burrowing owl and western mastiff bat).~~

~~**MM-BIO-2:** If construction or vegetation removal activities are to occur during the bird breeding season (February 15-August 31) a nesting bird survey should be conducted prior to the start of construction or vegetation clearing activities. If active nests are found, an appropriate nest buffer shall be established by a qualified biologist until the nest fledges or fails naturally.~~

~~**MM-BIO-3:** Due to surrounding agricultural areas and low-quality but suitable habitat within the Survey Area a focused survey for burrowing owl is suggested before construction activities commence.~~

~~**MM-BIO-4:** If modification of the existing buildings is required a focused bat survey should be performed for western mastiff bat as this species may roost in building overhangs or within piping infrastructure located within the Survey Area.~~

COA-BIO-1: Prior to any construction activities commencing on site, contractors shall attend a Worker Environmental Awareness Program (WEAP) regarding sensitive biological resources potentially occurring within the Biological Survey Area (BSA). A person knowledgeable about the biology of the covered species shall present the program. At a minimum, the program shall cover the distribution of special-status species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, the penalties for violation of state and federal laws, reporting requirements, project mitigation measures, and measures to implement in the event that this species is found during construction. A fact sheet containing this information shall also be prepared and distributed. The program shall be presented to all members of the construction crew prior to the start of project construction activities. New employees shall receive formal, approved training prior to working onsite. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all protection measures. These forms shall be made available to CDFW upon request.

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COA-BIO-2: Protection of nesting birds would be required in compliance with the MBTA and to avoid impacts to nesting birds. To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to February 1). If this avoidance schedule is not feasible, the alternative is to carry out the clearing of vegetation associated with construction under the supervision of a qualified biologist. This shall entail a pre-construction nesting bird survey conducted by a qualified biologist within 14 days prior to initiating ground disturbance activities. The survey shall consist of full coverage of the proposed disturbance limits and a 500-foot buffer. The buffer shall be determined by the biologist and will take into account the species nesting in the area and the habitat present. If no active nests are found, no additional measures are required. If "occupied" nests are found, the nest locations shall be mapped by the biologist, utilizing GPS equipment. The nesting bird species shall be documented and, to the degree feasible, the nesting stage (e.g., incubation of eggs, feeding of young, near fledging). The biologist shall establish a no disturbance buffer around each active nest. The buffer will be determined by the biologist based on the species present and surrounding habitat. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume.

COA-BIO-3: In accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012), a preconstruction take avoidance survey shall be conducted (CDFW 2012). If the burrowing owl is absent, then no actions are required. If present, the following measures shall be implemented. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, then disturbance impacts shall be minimized through the use of buffer zones, visual screens, or other measures in accordance with CDFW (2012).

Occupied burrows shall be avoided during the breeding period from February 1 through August 31. (CDFW 2012.) "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy within the last 3 years. Occupied burrows shall also be avoided during the nonbreeding season.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. (CDFW 2012.)

Measures for permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat is required such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the burrowing owl life history information provided in Staff Report on Burrowing Owl Mitigation. (CDFW 2012.) Coordination with CDFW may be necessary for the development of site-specific avoidance and measures in the unlikely event that burrowing owls are present.

COA-BIO-4: Pre-construction surveys shall be performed to determine either the presence of special status species or sensitive biological resources within 14 days prior to initiating ground

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disturbance activities. In addition, before any modifications to existing buildings, a focused bat survey will be performed for western mastiff bat.

COA-BIO-5: If pre-construction surveys determine either the presence of special status species or sensitive biological resources, a construction monitor will be required during construction activities that could impact any species that are identified in the surveys. If required, construction monitoring shall be conducted by a qualified biologist. The biologist shall be given authority to execute the following functions:

- Establish construction exclusion zones and make recommendations for implementing erosion control measures in temporary impact
- Ensure all construction activities stay within the staked construction zone and do not go beyond the limits of disturbance.
- Minimize trimming/removal of vegetation to within the Project impact area.
- Restrict non-essential equipment to the existing roadways and/or disturbed areas to avoid disturbance to existing adjacent native vegetation.
- Install and maintain appropriate erosion/sediment control measures, as needed, throughout the duration of work activities.

During construction, biological monitors shall inspect and verify field conditions, as needed, to ensure that wildlife and vegetation are not harmed. The biological monitor shall coordinate with the construction supervisor and construction crew and shall have the authority to stop any activity that has the potential to affect special-status species or remove vegetation not specified in this area.

The following changes are made to subsection (d) of the Biological Resources Section on page 21 of the final IS/MND:

BIOLOGICAL RESOURCES **Would the project:**	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	~~☒~~ ☐	~~☐~~ ☒	☐

d) ~~Potentially Significant Impacts Unless Mitigation Incorporated.~~ Less Than Significant Impact. The Proposed Project site is highly-developed and no sensitive or native habitat would be impacted by the Proposed Project activities. The on-site biological surveys confirmed that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. This is the baseline biological condition, without any potentially occurring sensitive species or their habitats occurring on-site of the operating facility. Therefore, potential impacts would be less than

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significant. Nevertheless, the Applicant has also proposed COAs-BIO-1 through 5, which are additional protective and preventative measures that shall be incorporated as conditions of approval. With the implementation of ~~MM-BIO-2~~, COAs-BIO-1 through 5, potential impacts would be less than significant.

The following changes are made to subsection (e) of the Biological Resources Section on pages 21–22 of the final IS/MND:

BIOLOGICAL RESOURCES **Would the project:**	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
e) Conflict with any local policies or ordinance protecting biological resource, such as a tree preservation policy or ordinance?	☐	~~☒~~ ☐	~~☐~~ ☒	☐

e) ~~**Potentially Significant Impacts Unless Mitigation Incorporated.**~~ **Less Than Significant Impact.** The proposed project is not expected to conflict with any local policies or ordinance protecting biological resource. Therefore, this impact is less than significant. Nevertheless, the Applicant has voluntarily proposed VEPFs through COAs-BIO-1 through 5. With implementation of COAs-BIO-1 through 5 as conditions of approval, ~~mitigation measures MM-BIO-1 through MM-BIO-4~~ would reduce will further ensure any potential impacts to rare, sensitive, or unique plants or wildlife to less than significant.

The following changes are made to subsection (f) of the Biological Resources Section on page 22 of the final IS/MND:

BIOLOGICAL RESOURCES **Would the project:**	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	~~☒~~ ☐	~~☐~~ ☒	☐

f) ~~**Potentially Significant Impacts Unless Mitigation Incorporated.**~~ **Less Than Significant Impact.** The Proposed Project is located within the Imperial Irrigation District's (IID) Habitat Conservation Plan (HCP) area and the Desert Renewable Energy Conservation Plan (DRECP) area. The on-site biological surveys confirmed that the site is completely void of any habitat and sensitive species. These efforts were

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recorded and provided as Appendix B to the CUP. This is the baseline biological condition, without any potentially occurring sensitive species or their habitats occurring on-site of the operating facility. Therefore, this impact is less than significant. Nevertheless, the Applicant has voluntarily proposed VEPFs through COAs-BIO-1 through 5. Implementation of COAs-BIO-1 through 5 as conditions of approval ~~Though with the implementation of mitigation measures MM-BIO-1 through MM-BIO-4,~~ will further ensure ~~impacts to~~ any potential impacts to rare, sensitive, or unique plants or wildlife would be ~~reduced to~~ less than significant.

VII. GEOLOGY AND SOILS

The following changes are made to subsection (f) of the Geology and Soils Section on page 25 of the final IS/MND:

GEOLOGY AND SOILS **Would the project:**	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	~~☒~~ ☐	~~☐~~ ☒	☐

f) ~~**Potentially Significant Impacts Unless Mitigation Incorporated.**~~ **Less Than Significant Impact.** A Paleontological Report was prepared for the Proposed Project by Chambers Group, Inc. in September 2019. At the time the Report was prepared and the Initial Study for the Project was drafted, it was unknown whether the depth of excavation for the Project would be limited to previously disturbed soils. It has now been determined that the depth of excavation for the Project will be limited to previously disturbed soils and will not occur within native soils in the Lake Cahuilla Beds.

The 2019 Paleontological Report included a comprehensive review of published and unpublished literature and museum collections records maintained by the San Diego Natural History Museum (SDNHM). The purpose of the literature review and museum records search was to identify the geologic units underlying the Proposed Project area and to determine whether previously recorded paleontological localities occur either within the Proposed Project boundaries or within the same geologic units elsewhere. Using the results of museum records search and literature review, the paleontological resource potential and Potential Fossil Yield Classification (PFYC) of geologic units within the Project area was recommended in accordance with the Society of Vertebrate Paleontology (2010). As a result of the 2019 study, the late Pliocene- to Holocene-age Lake Cahuilla Beds geologic units underlying the Proposed Project area have a recommended paleontological sensitivity of high. ~~Therefore, there is a potential for impacting scientifically significant vertebrate and invertebrate fossils as a result of Proposed Project development.~~ ~~Although a~~ A review of available online museum records indicated that no paleontological resources have been found within the Proposed Project area, geologic units underlying the Project area have been known to yield significant fossils nearby; previous grading and excavation work revealed Lake Cahuilla deposits to depths of 35 to 40 feet, with fossils found as

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shallow as 5 feet. Further, the Project area is highly disturbed and will not require any major grading or earthwork.

In general, the potential for a given project to result in adverse impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the Project. The Proposed Project entails the installation of two new Ormat Energy Converter Units and modification of two existing converters. Ground disturbing activities are anticipated and the likelihood of impacting fossils is related to both the type and extent of disturbance and the geologic unit in which the disturbance occurs. Ground disturbances are proposed along areas underlain by previously disturbed Lake Cahuilla deposits, which have proven to yield vertebrate and invertebrate remains throughout the western Colorado Desert, including Imperial County. However, because the depth of excavation for Heber 1 will be limited to previously disturbed soils, ground disturbance at Heber 1 will not occur within the Lake Cahuilla Beds. As a result, there is no substantial evidence of any potentially significant effects. Nevertheless, the Applicant has proposed Voluntary Environmental Protection Features (VEPFs), which shall be incorporated as conditions of approval (COAs) into the CUP application. These measures, which are set forth below, include best management practices and protection and preventative measures that will ensure any potential impacts are less-than-significant or avoided. ~~Implementation of the mitigation measures below would reduce impacts associated with paleontological resources to a less than significant level and would also be consistent with other federal and local laws and regulations. This impact is less than significant with mitigation incorporated~~.

~~MM-PAL-1:~~ COA-PAL-1: All project-related ground disturbances that could potentially impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis~~, as these geologic units are determined to have a high paleontological sensitivity. It is anticipated that much of the proposed project site would be covered with up to eight feet of previously filled land~~.

~~MM-PAL-2~~ COA-PAL-2: A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring ~~and Mitigation~~ Plan for the proposed ~~p~~Project, which would include the identification of undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan ~~should~~ will also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the ~~client~~ Applicant and the lead agency.

~~MM-PAL-3~~ COA-PAL-3: At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.

~~MM-PAL-4~~ COA-PAL-4: Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).

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~~MM-PAL-5~~ COA-PAL-5: Any ~~R~~recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the San Diego Natural History Museum (SDNHM).

~~MM-PAL-6~~ COA-PAL-6: The qualified paleontologist will prepare a final monitoring ~~and mitigation~~ report to be filed with the ~~client~~ Applicant, the lead agency, and the repository.

IX. HAZARDS AND HAZARDOUS MATERIALS

The following changes are made to subsections (a) and (b) of the Hazards and Hazardous Materials Section on page 26 of the final IS/MND:

GEOLOGY AND SOILS Would the project:	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	~~☒~~ ☐	~~☐~~ ☒	☐
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	~~☒~~ ☐	~~☐~~ ☒	☐

a) and b) ~~**Potentially Significant Impacts Unless Mitigation Incorporated.**~~ **Less Than Significant Impact.** Risk Management Professionals, Inc. prepared a Hazard Assessment (HA) for the Proposed Project in September 2019 and updated the report in November 2020 (Appendix H of the CUP Amendment Application). The Hazard Assessment focused on the U.S. Environmental Protection Agency (EPA) regulated substance isopentane; the Project proposes to install two additional 10,000-gallon above-ground storage tanks holding isopentane to utilize as the motive fluid to generate energy from the geothermal resource. The Heber 1 facility is classified as Prevention Program 3 and is regulated by the EPA's Risk Management Program for Chemical Accidental Release Prevention in accordance with the Code of Federal Regulations, Title 40, Chapter I, Subchapter C, Part 68, Subpart B Sections 68.20 to 68.42 (40 CFR §68.20 - 68.42) for isopentane, because ii is held onsite in excess of 10,000 lbs. The HA assessed the potential effects and risks relating to the storage and use of the additional isopentane onsite. The assessment analyzed risk by identifying the worst-case scenarios and endpoints of concern (as defined by EPA RMP and 40 CFR 68.22) to then review the resulting vulnerability zone. The endpoints specified by the EPA Risk Management Program are:

- Overpressure of 1 pound per square inch (psi) for vapor cloud explosions
- Radiant heat of 5 kilowatts per square meter (kW/m2) for jet fires

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- Lower flammability limit (LFL) for flash fires

The following changes are made to subsections (a) and (b) of the Hazards and Hazardous Materials Section on page 27 of the final IS/MND:

Ormat has operated OECs utilizing isopentane within the Imperial Valley for more than 25 years without a single incident related to isopentane. Specifically, use of isopentane at four separate facilities have resulted in over 60 cumulative operating years, when all facilities within the Imperial Valley are combined. Doing so is a direct result from the development and implementation of monitoring and protective measures to ensure proper operation of Ormat's facilities, including Heber 1. These include:

- Each tank will be equipped with an automated water suppression system.
- Each tank will be equipped with two flame detectors and one gas detector (for a total of 8 flame detectors and 4 gas detectors for the six tanks).
- In the case of an isopentane leak, the gas detector(s) will detect it immediately and send a notification to the operator at the control room (manned 24/7) in order to mobilize fixing the leak.
- In the case of a fire, the flame detector(s) will detect it and immediately start the automatic fire suppression system.
- In case of a fire, there will also be a horn and strobe system that will turn on automatically to alert the plant employees.

In addition to ~~T~~these precautions, the Applicant has also proposed the following Voluntary Environmental Protection Features (VEPFs), which will be incorporated as conditions of approval (COAs) into the CUP application. These conditions are required to be followed for all incidents including fire involving hazardous materials~~.~~ in order ~~T~~to adequately protect the Imperial County Fire Department staff, facility staff, and citizens of the community of Heber ~~and Imperial County ICFD is requesting the following mitigations measures (MM)~~:

~~**MM-FIRE-1.**~~ **COA-FIRE-1:** A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment ~~to~~ will be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

~~**MM-FIRE-2.** Isopentane leak or fire will require a large scale evacuation area and create a large scale hazardous material incident with a large operational zone. To minimize potential extremely dangerous condition to firefighters and hazardous material teams. Additional equipment may be required to adequately protect the first responders, staff and citizens in an emergency incident. This condition shall be discussed among the applicant and Imperial County Fire Chief prior to issuance of the permit for the project.~~

COA-FIRE-2: Concrete containment areas for isopentane storage tanks, including a blast wall between currently operational isopentane tanks shall be installed. To minimize the potential for a cascading failure event of the proposed isopentane tanks and to limit potential impacts within the existing Heber 1 Complex fence line, the proposed isopentane tanks shall be located as set forth in the Figure

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2 to the Hazards Assessment. Diking and impoundment of the proposed isopentane tanks shall be installed to minimize the magnitude and extent of a tank failure.

~~MM-FIRE-3.~~ COA-FIRE-3: All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. Each tank will be equipped with two flame detectors and one gas detector (for a total of 4 flame detectors and 2 gas detectors for the two tanks). In the case of an isopentane leak, the gas detector(s) will detect it immediately and send a notification to the operator at the control room (manned 24/7) in order to mobilize fixing the leak. In case of a fire, the flame detector(s) will detect it and immediately start the automatic fire suppression system. In case of a fire, there will also be a horn and strobe system that will turn on automatically to alert the plant employees. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

~~MM-FIRE-4.~~ COA-FIRE-4: An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

~~MM-FIRE-5.~~ COA-FIRE-5: Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

~~MM-FIRE-6.~~ COA-FIRE-6: Compliance with all required sections of the fire code.

~~MM-FIRE-7.~~ COA-FIRE-7: For the isopentane tanks, the Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

SECTION 3. MANDATORY FINDINGS OF SIGNIFICANCE

The following changes are made to subsections (a), (b), and (c) of the Mandatory Findings of Significance Section on page 39 of the final IS/MND:

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, eliminate tribal cultural resources or eliminate	☐	~~☒~~ ☐	~~☐~~ ☒	☐

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important examples of the major periods of California history or prehistory?

a) As ~~identified~~ explained in Section IV of this IS, the Proposed Project will occur on a site that has been completely disturbed due to previous development of the existing geothermal facility. The site is completely void of any habitat and sensitive species, and Project construction will be limited to previously disturbed soils. ~~has the potential to~~ Therefore, the Project will not substantially degrade the quality of the environment, will not substantially reduce the habitat of a fish or wildlife species, will not cause a fish or wildlife population to drop below self-sustaining levels, will not threaten to eliminate a plant or animal community, and/or will not reduce the number or restrict the range of a rare or endangered plant or animal. ~~However,~~ Additionally, the Proposed Project ~~would~~ will implement ~~MM-BIO-1 through MM-BIO-4~~ VEPFs (COA-BIO-1 through 5) as conditions of approval. Additionally, the Proposed Project was determined to result in less than significant impacts associated with California history or prehistory. The ~~with the~~ implementation of ~~MM-PAL-1 through MM-PAL-6~~ VEPFs COA-PAL-1 through 6 will further ensure any potential impacts to paleontological resources are reduced or avoided.

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	~~☒~~ ☐	~~☐~~ ☒	☐

b) CEQA requires lead agencies to consider the cumulative impacts of proposals under their review. Section 15355 of the State CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact "consists of an impact which is created because of the combination of the project evaluated in the ~~EIR~~ [environmental document] together with other projects causing related impacts." (Section 15130[a][1].).

The CEQA "baseline" for the Project includes the existing operation of the Heber 1 Facility. The geographic scope of the cumulative area of analysis considers whether cumulative effects for this Project would be limited to off-site Project impacts that coincide with effects from another past, present, or reasonably foreseeable future action. This area of overlap is referred to as the "Area of Potential Effect," and is specific to each resource area as defined by the analysis in the IS. The extent of these impacts is discussed in each resource's respective section in the IS/MND and as observed, none would result in a significant impact. In order to have a cumulative effect, there would need to be

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another project that generates the effect that would be additive to the Project's effects. Imperial County performed a project review of all reasonably foreseeable future projects, and no projects occur in relative close proximity to the Heber 1 complex or Heber 1 Area of Potential Effect (including the Heber 2 project located approximately 1 mile away). Therefore, no significant cumulative effects would occur as result of the Project.

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	~~☒~~ ☐	~~☐~~ ☒	☐

c) As identified in Section IX of this IS, the Proposed Project ~~has the potential to~~ will not result in significant or substantial adverse effects on humans. The Hazard Assessment (HA) prepared for the CUP Amendment Application (Appendix H of CUP Application) and IS/MND complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program guidance for Chemical Accidental Release Prevention (40 CFR §68.20-§68.42). The HA assesses the appropriate catastrophic scenario of cascading tank failures/upsets, as supported and approved by Imperial County Fire Department. The analyzed scenario, developed in close consultation with the Imperial County Fire Department, is above-and-beyond the EPA standard for assessing only a single vessel failure, exceeding all applicable regulatory requirements. The HA assesses the entire tank system present in the Heber 1 Complex (four tanks total, with two new tanks and two existing tanks). The results of the HA demonstrated that the limited impacts from the Project would not impact any sensitive receptors. Furthermore, the explosion area of either of the new vessels will not reach any of the existing vessels, nor each other. The only overlap would be for the existing tanks 3 and 4, which are currently permitted by the County. However, as discussed above, the Applicant proposes the voluntary measure of installing a blast wall between existing tanks 3 and 4 to minimize the potential for a cascading failure, thus reducing the potential for impacts as compared to the existing baseline conditions. The additional storage capacity also increases safety and efficiency for plant maintenance by providing additional tank storage options through additional "tankage" for the volume of isopentane on site. ~~However, the Proposed Project would implement MM-FIRE-1 through MM-FIRE-7to reduce any potentially significant impacts to hazard and hazardous materials.~~

In addition to these design features and incorporation of the VEPFs COA-FIRE-1 through 7, the cessation of the use of benzene will also further reduce the potential for hazards as compared to the existing conditions. These reductions, combined with the voluntary protective measures proposed within the new isopentane storage tanks, represent a continuation of the use of isopentane onsite with reduced potential for impacts compared to the existing baselines and thus will not result in any new, significant impacts.

. . . . . .

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CONCLUSION

These changes to not change the findings of the IS/MND and do not result in significant environmental effects or a substantial increase in the severity of previously identified significant effects. The new information that was added is not significant and recirculation is not required. In conformance with CEQA and the CEQA Guidelines, the IS/MND, technical appendices and reports, together with the Errata, Responses to Comments, and the information contained in this document are intended to serve as documents that will inform the decisionmakers and the public of the Project's environmental effects.

Attachment:

- Responses to Comments on the IS/MND for the Heber 1 Repower Project

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ATTACHMENT – F

Findings of Fact

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Exhibit A

CALIFORNIA ENVIRONMENTAL QUALITY ACT
FINDINGS OF FACT
FOR THE HEBER 1 GEOTHERMAL REPOWER PROJECT
PROJECT (SCH NO. 2021020267)

1.0 INTRODUCTION

The following Findings are made for the proposed Heber 1 Geothermal Repower Project (the "Project") (application for CUP #19-0028).

On March 6, 2020, the Imperial County Planning and Development (ICPDS) Department received an application for the Heber 1 Geothermal Repower Project, submitted by Heber Field Company, a subsidiary of Ormat Nevada Inc. (hereafter referred to as "Ormat" or the "Applicant"). The Project is comprised of: (1) the renewal of the Conditional Use Permit for the existing Heber 1 Geothermal Energy Complex (Heber 1 Complex); and (2) the issuance of CUP #19-0028, which will combine, amend, and supersede the previously approved CUP (#15-0013), to replace equipment and repower the existing Heber 1 unit, and extend the permitted life to 15 years. The Project will provide for the shutdown of the dual-flash steam turbine generator, installation of two new ORMAT Energy Converters (OECs) ("OEC 1" and "OEC 2"), reconfiguration of the two existing OECs ("OEC 11" and "OEC 13"), installation of ancillary equipment including a vapor recovery maintenance unit, and upgrades to replace aging equipment including two new isopentane storage tanks. The two new OEC units (OEC 1 and OEC 2) will function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling, rather than water cooling, for the motive fluid. The existing OECs (OEC 11 and OEC 13) will collectively function as an Integrated Two-Level Unit (ITLU) and will use the existing cooling tower.

The Project does not require new production or injection wells and use of the geothermal resource will not increase. The proposed upgrades are expected to be better suited to the current and expected future conditions of the geothermal resource than the steam turbine generator, thereby improving operational efficiency and restoring net and gross generation levels to permitted levels. Specifically, the upgrades will restore the plant's generating capacities of 52-megawatt (MW) net, and 78.2 MW gross, as initially permitted by CUP #15-0013.

The Applicant also proposes modifying the facility's permitted water intake from 1,800 acre-feet of irrigation water to the existing allowable water intake of 2,300 acre-feet of irrigation water, as previously authorized by the Imperial Irrigation District (IID). Previous operations utilized flashes of geothermal brine to generate steam. The ensuing water condensation was then used in the wet cooling tower. Because changes to these existing facilities will no longer generate the requisite water condensation needed for the cooling towers, the Applicant seeks to modify the facility's permitted water intake.

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All proposed facilities contemplated by the Project are located entirely within the existing 24.90-acre Heber 1 footprint, located at 895 Pitzer Road, Heber, CA, 92249, in unincorporated Imperial County on Assessor's Parcel Numbers (APN) 054-250-035 and 054-250-036. Reconstruction and replacement activities will occur within approximately 7.67 acres of the existing disturbed site. The Project site is in an area previously filled and developed and has been utilized as an active operational geothermal energy production facility. The parcels are zoned A-2-G-SPA (General Agriculture [A-2]; Geothermal Overlay Zone [G]; Heber Specific Plan Area [SPA]). The legal description is a portion of the East half of Tract 45, Township 16 South, Range 14 East SBB&M.

1.1 Purpose of CEQA Findings & Terminology

The California Environmental Quality Act ("CEQA") (Public Resources Code, §§ 21000 et. seq.) prescribes how governmental decisions will be made whenever an agency undertakes, approves, or funds a project. Under CEQA, an agency uses "a multistep decision tree." (*Union of Medical Marijuana Patients, Inc. v. City of San Diego* (2019) 7 Cal.5th 1171, 1185 (*Medical Marijuana Patients*); see also CEQA Guidelines, § 15002, subd. (k).)[1] Once an activity is determined to be a project, the next question is whether the project is exempt from environmental review. (CEQA Guidelines, §§ 15002, subd. (k)(1), 15061, subd. (a).) If an agency concludes a particular project is exempt, it may file a notice of exemption, citing legal and factual support for its conclusion. (Pub. Resources Code, § 21152, subd. (b); CEQA Guidelines, § 15062, subd. (a).) If the project is discretionary and does not qualify for an exemption, the agency must conduct environmental review consistent with the CEQA statute and CEQA Guidelines. (*Medical Marijuana Patients*, *supra*, 7 Cal.5th at p. 1186.)

In the initial phase of the CEQA process, the lead agency generally conducts an initial study ("IS") to assess the proposed project's potential environmental impacts. (CEQA Guidelines, §§ 15002, subd. (k)(2), 15063, subd. (a).) If, after completing the IS, the agency determines there is no substantial evidence that the project may significantly affect the environment, the agency prepares a negative declaration ("ND"), which completes the CEQA process. (Pub. Resources Code, § 21080, subd. (c)(1); CEQA Guidelines, §§ 15002, subd. (k)(2), 15063, subd. (b)(2), 15070, subd. (a).) If the IS reveals potentially significant environmental effects, but the project applicant agrees to changes that would avoid or mitigate them, the agency prepares a mitigated negative declaration ("MND"), which also completes the CEQA process. (Pub. Resources Code, § 21080, subd. (c)(2); CEQA Guidelines, § 15070, subd. (b).) Finally, if the IS reveals substantial evidence that the project may have a significant environmental impact and an MND is inappropriate, the agency must prepare and certify an environmental impact report ("EIR") before approving the project. (§ 21080, subd. (d); CEQA Guidelines, §§ 15002, subd. (k)(3), 15063, subd. (b)(1); *Medical Marijuana Patients*, *supra*, 7 Cal.5th at p. 1187.)

[1] The CEQA Guidelines are codified at California Code of Regulations, Title 14, Chapter 3, Section 15000, et. seq.

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1.2 Environmental Review Process

Pursuant to the County of Imperial Guidelines for Implementing CEQA, the County of Imperial Board of Supervisors, Planning Commission and/or Planning Director is designated the Lead Agency, in accordance with Section 15050 of the CEQA Guidelines.

On December 17, 2019, Ormat submitted an application to the County of Imperial Planning & Development Services Department (ICPDSD) to amend CUP #15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project, which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility. The Project also included installation of new equipment, including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Following public comments and based on close coordination with the County of Imperial, Ormat decided to reduce the number of 10,000-gallon isopentane tanks on the Heber 1 site from 6 tanks to 2 tanks. The CUP application and accompanying CEQA documentation were updated in December 2020 to reflect these changes, including improvements to the Project's Hazard Assessment (revised in November 2020).

On February 11, 2021, the Imperial County Environmental Evaluation Committee (EEC) held a duly-noticed public hearing to consider the Heber 1 Repower Project. The EEC decided to prepare, and the County of Imperial subsequently issued, a Notice of Intent to adopt a Mitigated Negative Declaration (NOI) and distributed a Draft Initial Study/Mitigated Negative Declaration (IS/MND) to public agencies and the general public. In accordance with Public Resources Code Section 21091 and CEQA Guidelines Section 15073, a 30-day public review period for the Draft IS/MND was provided from February 12, 2021, to March 15, 2021. The comment period was extended twice, first to April 14, 2021, and then to May 10, 2021, in response to stakeholder comments and to accommodate the review process. The IS/MND was prepared in conformance with the CEQA, Section 15070 of the CEQA Guidelines, and the County of Imperial Guidelines for Implementing CEQA.

Between February 16, 2021 and May 10, 2021, the County received six (6) comment letters on the IS/MND—five of which were from agencies, and one of which was from the public. The County work with the applicant to prepare responses to all comments received. In response to comments on the Project's IS/MND, the County revised portions of the IS/MND to provide further clarification and detail, and incorporate voluntary measures/conditions of approval proposed by the Applicant. Appendix N, an Air Emissions Memorandum, was also prepared to clarify the analysis regarding construction emissions and to set forth the results of construction emissions modelling for both criteria pollutants and greenhouse gas emissions (GHGs).

Following circulation of the IS/MND, the Applicant requested the County find the Project is exempt from CEQA. After reviewing the entire record, the County determined that, as a modification to an existing facility with replacement or reconstruction, the Project qualified for Class 1 and Class 2 Categorical Exemptions under CEQA, and that there were no exceptions to the exemption.

Though the County has determined that the Project is categorically exempt from CEQA review pursuant to CEQA Guidelines sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and

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15061 (Common Sense), the County has used its discretion to also adopt the IS/MND as further evidence to the Project is fully evaluated under CEQA.

The County makes these Findings pursuant to CEQA. The Findings set forth below support the County's conclusion that the Project is categorically exempt from CEQA. In the alternative, and out of an abundance of caution, the County also sets forth Findings to support its conclusion that the Project is subject to approval pursuant to the terms and conditions of the IS/MND.

2.0 PROJECT BACKGROUND & DESCRIPTION

ORMAT Nevada, Inc. (Ormat) owns and operates the Heber 1 Facility (Heber 1), which was originally constructed as a 47 MW (net) dual flash facility in 1985 under CUP #9-80. In 2004, CUP #9-80 was amended to allow for the addition of three Ormat Energy Converters (OECs), alongside a four-cell cooling tower called "Gould 1." Gould 1 initially generated 8-12 MW from the residual heat from brine exiting Heber 1's dual flash power plan (i.e., a "bottoming unit"). This brought the nameplate of the Heber 1 complex to 52 MW. Two new cells were later added to the existing 5-cell cooling tower at Heber 1 to increase efficiency and reduce the need for Imperial Irrigation District (IID) canal water for the new tower at Gould 1, which was built in 2006. In 2017, OEC 14 began operating onsite, pursuant to CUP #15-0013.

The Heber 1 Repower Project (the Project) proposes to upgrade existing Heber 1 operations through a series of reconstruction and replacements of project structures with new, more efficient technology that result in no expansion of the existing use. The 52 MW (net) generating capacity of the power plant will remain unchanged, does not require new production or injection wells, and use of the geothermal resource will not increase.

In this process, the Project will shut down the dual-flash steam turbine generator and install two new OECs (OEC 1 and OEC 2), reconfigure two of the existing OECs (OEC 11 and OEC 13), install ancillary equipment including a vapor recovery maintenance unit and two (2) 10,000-gallon isopentane tanks. OEC 1 and 2, combined, would function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling, rather than water cooling, for the motive fluid. OEC 11 and OEC 13, combined, would function as an Integrated Two-Level Unit (ITLU), and will use the existing cooling tower.

On November 18, 2019, the Imperial Irrigation District (IID) issued "Amendment No. 1" to the Amended and Restated Water Supply Agreement (WSA) held between it and Ormat for the Heber 1 facility. The Amendment authorizes IID to supply an additional 500 acre-feet of irrigation water per year to the facility, in addition to the 1,800 acre-feet of irrigation water previously allowed under the original WSA, thereby bringing the total permitted amount to 2,300 acre-feet of irrigation water per year. Because CUP #15-0013 permits Ormat to use up to a total of 1,800 acre-feet of irrigation water per year pursuant to the original WSA, Ormat seeks to modify the CUP to account for the increase in allowable water usage under Amendment No. 1 to the WSA. Previous operations utilized flashes of geothermal brine to generate steam. The ensuing water condensation was then used in the wet cooling tower. Because changes to these existing facilities will no longer generate the requisite water condensation needed for the cooling towers, the Applicant seeks to modify the facility's permitted water intake.

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2.1 Project Purpose and Objectives

The primary objective of the Project is to upgrade outdated facilities, restore the generation capacity of the Heber 1 unit to the permitted net generation amount (78.2 gross MW, operating at an average of 52 net MW), and perform all facility retrofits within the existing fence line of the Heber 1 facility in a manner that leads to a reduction in air emissions.

The Project would assist the County with creating local employment and increase the tax base.

California currently has several initiatives, policies, and programs that set clean energy goals. In Senate Bill No. 100 (SB 100), also referred to as the "100% Clean Energy Act of 2018," the State Legislature declared that various agencies should plan for "100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045." The Project is a critical component to achieving 100% renewable energy utilization and would directly support the State's 100% renewable energy resource goal and milestones by:

- Displacing fossil fuel consumption within the state.
- Adding new, non-emitting, baseload renewable electrical generating facilities to the grid.
- Reducing air pollution, particularly criteria pollutant emissions and toxic air contaminants, in the state.
- Meeting the state's climate change goals by reducing emissions of greenhouse gases associated with electrical generation.
- Promoting stable retail rates for electric service.
- Meeting the state's need for a diversified and balanced energy generation portfolio.
- Meeting the state's resource adequacy requirements.
- Contributing to the safe and reliable operation of the electrical grid, including providing predictable electrical supply, voltage support, lower line losses, and congestion relief.
- Implementing the state's transmission and land use planning activities related to development of eligible renewable energy resources.

Furthermore, the recent Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026) before the California Public Utilities Commission (D.20-05-003), filed on May 21, 2021, proposes that at least 1,000 MW of geothermal resources be required as part of the State's procurement portfolio by no later than 2025.

2.2 Project Description

To achieve the Project's primary objective, the Project proposes replacing the facility's current steam turbine and bottoming units with Ormat-Integrated Three-Level Unit (I3LU) and Integrated Two-Level Unit (ITLU). The I3LU and the ITLU would generate 51.3 MW gross, and 36.2 MW net. The I3LU configuration would modify existing and add new air-cooled Ormat Energy Converters (OECs), which are explained in greater detail below:

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- "OEC 1" and "OEC 2" would be installed as the new air-cooled units to function as a single I3LU. The new OECs will require installation of two (2) additional 10,000-gallon isopentane storage tanks onsite, and installation of a new Vapor Recovery Mechanical Unit (VRMU).
    - OEC 1: OEC 1 is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 1 also includes a generator, vaporizer, air-cooled condensers, and preheaters and recuperators. OEC 1 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 1 is 19.85 MW and is approximately 22 feet high.
    - OEC 2: OEC 2 is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 2 also includes a generator, vaporizer, air-cooled condensers, and preheaters. OEC 2 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 2 is 17.25 MW and is approximately 22 feet high.
    - VRMU: A new VRMU will be used for purging and maintenance operations for OEC 1 and OEC 2. Vapor from the OECs is passed through a knock-out drum and condenser, which collect the majority of isopentane and other condensable gases. Condensed isopentane is returned to the MF system, while remaining gases are passed through an activated carbon *absorption* filter, which removes the remaining isopentane vapor and other organics. The overall isopentane vapor recovery efficiency for the VRMU exceeds 99%. The new VRMU is intended to primarily serve the two units, but all OEC units, tanks, and air coolers are interconnected. Therefore, the VRMU may be used with any of the existing units when appropriate and based on current operations.
    - Isopentane Tanks: To support OEC 1 and OEC 2, two (2) new above-ground storage tanks for additional isopentane supply would be installed. Each tank has a capacity to hold 10,000 gallons of isopentane. The new tanks will be sited near the new OECs. Isopentane gases from the tanks are captured and vented to the VRMU.
- "OEC 11" and "OEC 13" are currently onsite and will be converted to an ITLU. The existing cooling tower and VRMU will be used for OEC 11 and OEC 13. Other modifications include replacement of: existing brine heat exchangers, the existing generator and one turbine, and a portion of the piping system and pumps. The existing cooling water system and VRMU will not be modified.
    - OEC-11 ITLU: OEC 11 is a two-turbine bottoming unit that includes a generator, vaporizer, preheater, and condenser. The existing integrated purging units are no longer used, and purging is accomplished using the existing VRMU. With the proposed upgrades, OEC 11 will become an ITLU and be renamed OEC-11 ITLU. The upgrades include the replacement of one turbine with a new, larger unit, plus new associated vessels. OEC 11 will incorporate the condensers that are currently part of OEC 13. The gross output of the new OEC-11 ITLU will be 14.5 MW with a height of approximately 22 feet.

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- OEC 13: OEC 13 currently contains condensers that will be incorporated into OEC-11 ITLU. The rest of OEC 13 will be decommissioned.
- VRMU: Ormat will continue to operate its existing VRMU to primarily service OEC-11 ITLU and can use it with the OECs 1 and 2, and air coolers, if appropriate based on current conditions.
- Isopentane Tanks: The modifications to OEC-11 ITLU does not require the addition of isopentane tanks. The site currently relies on two existing storage tanks at the Heber 1 facility.

Project construction and replacement efforts will occur over approximately six months on approximately 3.24 acres (141,292 square feet) of the site's existing 24.9-acre (1,085,595 square feet) site disturbance in a previously-filled and developed area.

The Project also seeks to update the CUP to align with Amendment No. 1 to its Water Supply Agreement with Imperial Irrigation District (IID), which authorizes the Heber 1 facility to use up to 2,300 acre-feet of irrigation water per year as described above.

2.3 Project Location

The Project Site is entirely within the existing Heber 1 facility, which is located at 895 Pizer Road, Heber CA, on APNs 054-250-035 and 054-250-036. The site is approximately 24.9 acres (1,085,595 square feet). Within that footprint, reconstruction and replacement efforts will occur on approximately 3.24 acres (141,292 square feet) of the existing site disturbance in a previously filled and developed area. The site is bound by Pitzer Road to the east, East Jasper Road to the south, a Union Pacific right-of-way to the west, and a parcel to the north. The surrounding land uses and zoning are General Agriculture and Heavy Agriculture and currently contain active agricultural operations. The Project site serves as an operational geothermal plant, is therefore, considered heavily developed and filled, and largely void of any vegetation, habitat, or waterbodies.

The Project site is zoned as A-2-G-SPA, for General Agriculture (A-2), Geothermal Overlay Zone (G), and in the Heber Specific Plan Area (SPA). The Project Site is entirely within an Imperial County Geothermal Overlay Zone, which is intended "to allow for commercial, residential, industrial, renewable energy and other employment-oriented development in a mixed use orientation." (Land Use Element of the Imperial County General Plan, 2015.) "Major Geothermal Projects" in the overlay zone are permitted through the CUP process, as was the original Heber 1 facility. The Heber SPA is intended "to allow for commercial, residential, industrial, renewable energy and other employment-oriented development in a mixed-use orientation." (Land Use Element of the Imperial County General Plan, 2015.) The proposed Project conforms to the standards and goals set forth in the Imperial County General Plan and the Renewable Energy and Transmission Element of County of Imperial General Plan (2015).

There are currently three retention basins onsite. As part of a separate and discrete action approved by the Regional Water Quality Control Board (RWQCB), two the three retention basins are no longer necessary and are being drained. The Project will modify the stormwater retention basins to accommodate placement of the new equipment, while meeting the requirements for a 100-year storm,

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consistent with the RWQCB's approval. As the modifications to the retention basins have already been approved, the retention basins are considered filled, developed land for construction.

3.0 ENVIRONMENTAL SETTING AND BASELINE CONDITIONS SUMMARY

The existing Heber 1 flash plant was built in 1985 with a net generating capacity of 47 MW. The Gould 1 OEC was built in 2006, which resulted in an additional 8 to 12 MW of generating capacity and introduced the use of isopentane onsite. OEC 14 started operating onsite in 2017. ICPDS issued conditional use permits for all three of these iterations, with CUP #15-0013 being the most recent.

The purpose of the Heber 1 Repower Project is to improve operational efficiency, replace old and aging equipment, and restore the net and gross generating capacity to preexisting permitted levels. Under CUP #15-0013, the plant is permitted at 52 MW of net generating capacity. The Applicant does not propose to change the permitted net generation, and the Project's proposed improvements will not require new production, injection wells, or increased use of the geothermal resource. Rather, due to the age of the existing OECs and degradation of the generating equipment that has occurred over time, the Applicant proposes to decommission one OEC and install two new OECs that are more efficient. Each of the Project's OECs is customized for the specific site and designed in response to several factors such as the available geothermal resource, transmission capacity, flow velocities, and chemical characteristics of the geothermal brine at the specific location. The Applicant anticipates that while the net capacity will remain about 52 MW, the average net generation from the geothermal powerplant will be approximately 44 MW.

Neither the new OECs nor storage tanks will result in a change—expansion or otherwise–of the existing use of the Heber 1 geothermal power plant. The Heber 1 unit will generate net capacity of approximately 52 MW as a geothermal power plant, albeit one that generates renewable energy in a more efficient, safe, and reliable manner than before.

The County finds that utilizing the Heber 1 unit's current average net generating capacity[2] of 11 annual MW as an environmental baseline to evaluate potential environmental impacts from the Project is not meaningful or appropriate. Generation amounts fluctuate due to physical factors such as ambient conditions, external factors like grid system needs, outages caused by loss of transmission lines, maintenance needs, and other factors beyond the reasonable control of the powerplant. In addition, it is not representative of the Project's historical operations or impacts given the equipment degradation

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[2] "Generating capacity" describes the maximum output of electricity that a generating unit is capable of producing under specified conditions, such as manufacturer ratings and testing conditions. For power plants, generating capacity is also sometimes described in terms of "gross" versus "net" generating capacity. "Gross generating capacity" represents the amount of electricity produced under specified, standardized testing conditions, without consideration of any auxiliary loads. "Auxiliary loads," sometimes called "parasitic loads," are on-site electrical power requirements from pollution control devices, water pumps, control instruments, and other equipment needed to support the generation of electricity. "Net generating capacity" represents the difference between the gross generating capacity and auxiliary loads.

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that has occurred. The overall performance of the existing equipment has declined over time and new equipment will be more efficient. The primary objective of the Project as noted above is to recapture the expected, gradual loss of capacity that occurs over time. In fact, recapturing the lost capacity of the Project utilizing the same renewable geothermal resource will result in environmental benefits and assist the County and State in meeting clean energy goals, which is an objective of the project. Moreover, limiting the facility to its current average annual hourly net generating capacity would result in less renewable base load energy on the California grid. Therefore, utilizing the Heber 1 unit's current average net generating capacity of 11 MW would also be misleading, as it would not account for the loss of renewable energy on the California grid, and the likely corresponding increase in non-renewable energy that would make up for this loss and its environmental impacts.

In restoring the generation capacity of the Heber 1 unit to the permitted net generation amount (52 MW, operating at an average of 44 MW), the Project will assist the State and County in meeting clean energy goals. California currently has several initiatives, policies, and programs that set clean energy goals. In Senate Bill No. 100 (SB 100), also referred to as the "100% Clean Energy Act of 2018," the State Legislature declared that various agencies should plan for "100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045." The Project is a critical component to achieving 100% renewable energy utilization, and would directly support the State's 100% renewable energy resource goal and milestones as set forth in the Project Objectives by:

- Displacing fossil fuel consumption within the state.
- Adding new, non-emitting baseload renewable electrical generating facilities to the grid
- Reducing air pollution, particularly criteria pollutant emissions and toxic air contaminants, in the state.
- Meeting the state's climate change goals by reducing emissions of greenhouse gases associated with electrical generation.
- Promoting stable retail rates for electric service.
- Meeting the state's need for a diversified and balanced energy generation portfolio.
- Meeting the state's resource adequacy requirements.
- Contributing to the safe and reliable operation of the electrical grid, including providing predictable electrical supply, voltage support, lower line losses, and congestion relief.
- Implementing the state's transmission and land use planning activities related to development of eligible renewable energy resources.

Table 1 – Current, Permitted, and Proposed Conditions for the Heber 1 Repower Project

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FACTOR	CURRENT CONDITIONS	PERMITTED CONDITIONS	PROPOSED CONDITIONS
Net Generating Capacity (Megawatts)*	44 MW	52 MW	52 MW
Gross Generating Capacity (Megawatts)*	54.5 MW	78.2 MW	78.2 MW
Project Site (Acres)	24.9 acres	24.9 acres	24.9 acres
Isopentane Volume (Gallons)	96,800 gal.	96,800 gal.	240,100 gal.
Number of 10,000-Gallon Isopentane Storage Tanks Onsite	2	2	4
Irrigated Water Use (Acre-Feet/Year)	Up to 1,800 AFY	Up to 1,800 AFY	Up to 2,300 AFY

**Reflects combined capacity of Heber 1 and Goulds units*

3.1 Air Quality Setting

The Heber 1 facility operates under Imperial County Air Pollution Control District (ICAPCD) Permit to Operate (PTO) #1641B-5. The facility features and proposed project components that contribute to the air quality setting in baseline include the dual-flash steam turbine generator, which generates a gross maximum output of 52 MW and four OECs, which generate a gross combined output rating of 30 MW. Net output for the facility is currently less than 50 MW. The steam turbine generator includes a Regenerative Thermal Oxidizer (RTO) and Caustic Scrubber emission control devices. Ancillary equipment for the facility includes cooling towers, an evacuation skid/vapor recovery maintenance unit (VRMU), motive fluid (MF) isopentane storage tanks, and a diesel engine for emergency use. (Air Quality Analysis, Air Sciences, Inc., Dec. 15, 2020, p. 1.) The facility is a synthetic minor source of air pollution and operates in compliance with all applicable air quality requirements and its PTO. Implementing the Project as proposed would allow the Heber 1 Facility to maintain the same purpose and capacity, but to do so with more efficient technology. As a result, air quality emissions will decrease and, in some cases, eliminate emissions from criteria pollutants all together. (See, Table 2, below).

Greenhouse Gas Emissions

Table 2, below, provides the current permitted emission limits, actual and potential emissions, and proposed updated emissions limits for the Heber 1 facility criteria pollutants. In addition to isopentane emissions (explained below), there are particular emissions from the cooling towers, as well as NO_x, SO_2, benzene, and H_2S emissions from the steam turbine generator, all of which would be eliminated. There is a facility-wide annual benzene emission limit of 1.24 tons per year. Emissions from the emergency diesel generator are not explicitly limited in the ATC, however, the engine is limited to 40 hours per year for maintenance and testing purposes.

The proposed changes to the Heber 1 facility will not affect greenhouse gas (GHG) emissions from operations, which are generated by emergency diesel engines. The existing and proposed geothermal power generating units do not burn fuel and do not emit GHGs. After the proposed development,

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estimated emissions for the facility will remain below current permitted emissions limits. Furthermore, air emissions of other pollutants will decrease due to the decommissioning of the steam turbine generator and associated units, including the Regenerative Thermal Oxidizer (RTO), condensate line, and two cooling towers. The County further notes that that the Project will displace fossil fuel consumption within the state by providing clean renewable energy to the State energy grid and customers.

Isopentane Emissions

The proposed Project would shut down the dual-flash steam turbine generator, install two new OECs, and reconfigure two of the existing OECs at the Heber 1 site. The OECs generate power by taking geothermal energy (e.g. heat) to vaporize liquid isopentane, which is the motive fluid that powers the turbines to create electricity. The primary air pollutant from these units is isopentane, which is a VOC. Isopentane emissions occur due to maintenance, purging, and fugitive leaks. During maintenance, the unit is shut down and the isopentane is evacuated before the system is opened for the necessary work to be performed. To evacuate the system, the liquid isopentane is transferred to storage tanks, and the remaining vapors are passed through the VRMU. The overall recovery rate of isopentane during evacuation is greater than 99%. However, trace quantities of vapors as well as liquid collected at low points in the system where the liquid cannot be completely drained can result in VOC emissions when the unit is opened to the atmosphere. Purging is the process by which impurities are removed from the isopentane closed circuit. Contamination of the isopentane causes operating efficiency losses, so purging is performed on a regular basis. Vapors are passed through the VRMU and the isopentane is collected and returned to the system while other gases are removed. Fugitive losses of isopentane can occur due to failing seals, valves, flanges, etc.

With the retirement of the steam flash units, the emissions of NO_x, SO_2, H_2S, and Benzene would be completely eliminated. Isopentane emissions are a subset of the facility-wide VOC emissions. Current isopentane emissions at the facility are approximately 33.3 lbs/day, and the modeled future emissions with the new facilities are estimated to be 81.3 lbs/day. Under the existing Permit to Operate (PTO), the facility is authorized to emit up to 99.6 lbs/day of isopentane. The expected change in isopentane emissions with the new facilities would increase by approximately 48.0 lbs/day; however, as explained in Table 2, overall facility-wide VOC emissions would be reduced, -27.5 lbs/day, and remain below the current authorized release amount. Therefore, the proposed Project would not conflict with, or obstruct the implementation of the Imperial County Air Pollution Control District (ICAPCD) air quality plan.

Table 2 – Current (Actual), Permitted, and Proposed Emissions Limits for Heber 1 Facility Criteria Pollutants

EMISSION TYPE	EMISSIONS SOURCE	ACTUAL CONDITIONS	PERMITTED CONDITIONS	PROPOSED CONDITIONS	CHANGE
VOCs	*Facility-Wide*	127.2 lbs/day	194.2 lbs/day	99.7 lbs/day	-27.5 lbs/day

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EMISSION TYPE	EMISSIONS SOURCE	ACTUAL CONDITIONS	PERMITTED CONDITIONS	PROPOSED CONDITIONS	CHANGE
↳ Isopentane Emissions (subset of facility-wide VOCs)	*OECs; Storage Tanks*	33.3 lbs/day	99.6 lbs/day	99.0 lbs/day*	+48.0 lbs/day
PM_{10}	*Cooling Towers*	4.36 lbs/day	4.36 lbs/day	3.72 lbs/day	-0.64 lbs/day
NO_x	*Steam Turbine Generator/RTO (Normal Operation)*	11.66 lbs/day	11.66 lbs/day	0.00 lbs/day	-11.66 lbs/day
SO_2	*Steam Turbine Generator/RTO (Normal Operation)*	5.03 lbs/day	5.03 lbs/day	0.00 lbs/day	-5.03 lbs/day
CO	*Emergency Diesel Engine*	1.9 lbs/day	1.9 lbs/day	1.9 lbs/day	0 lbs/day

**Though this reflects the proposed permitted condition, potential emissions are projected to be less, at approximately 81.3 lbs/day* (IS/MND, Feb. 2021, p. 18.)
Source: Air Quality Analysis Summary for the ORMAT Heber 1 Re-Power Project, Air Sciences, December 15, 2020.

Table 3 – Criteria Pollutant Construction Emissions

EMISSION TYPE	CONSTRUCTION EMISSIONS	ICAPCD THRESHOLD	EXCEED THRESHOLD?
VOCs/ROG	57.95 lbs/day	100 lbs/day	**NO**
PM_{10}	7.03 lbs/day	75 lbs/day	**NO**
$PM_{2.5}$	75.13 lbs/day	150 lbs/day	**NO**
NO_x	9.83 lbs/day	---	---
SO_x	0.12 lbs/day	---	---
CO	48.76 lbs/day	550 lbs/day	**NO**

Source: Supplemental Construction Air Quality Modelling Memorandum, Vista Environmental, July 23, 2021.

3.2 Biological Setting

The proposed Project is located entirely within the existing Heber 1 power plant area, and all proposed facilities would be located within the existing fence line and permit area. As an active energy generation facility, the Project site is highly developed with existing buildings and infrastructure. The proposed development would occur to the southern portion of the existing facility. The site is immediately surrounded by agricultural operations and a Union Pacific Railroad track. The Main Canal and the Daffodil Canal—both of which are cement-lined—are located to the south and east. A few isolated residences with associated landscaping and ornamental vegetation occur primarily south and west of the existing site.

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A comprehensive record search was performed for biological resources, vegetation, special status species, and critical habitat to identify the potential biological resources that occupy the Project site and surrounding area. (Biological Technical Report for the Heber 1 Repower Project, p. 7 ("Bio Report").) After a review of the records, a qualified biologist performed a biological reconnaissance-level survey over the parcel containing the proposed Project features (Survey Area). (Bio Report, pp. 19–23.) Impacts to habitat were calculated for all proposed Project features and anticipated work areas combined (Project Area). (Bio Report, p. 7.) This on-site survey confirmed that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. The County finds that this serves as the baseline biological condition.

The proposed Project is not anticipated to impact any sensitive or native habitat. All impacts are anticipated to occur to previously developed areas and site operations following the completion of the proposed Project would be substantially similar to current operations. Therefore, because baseline conditions would remain the same, impacts are not anticipated to be significant. (Bio Report, p. 24.)

3.3 Paleontological Setting

The proposed Project is located entirely within the existing Heber 1 power plant area, and all proposed facilities would be located within the existing fence line and permit area. As an active energy generation facility, the Project site is highly developed with existing buildings and infrastructure. The depth of excavation anticipated for Project construction will be limited to previously disturbed soils.

The Initial Study observed that the Heber 1 project site fell within the Lake Cahuilla historic footprint. Lake Cahuilla was a former freshwater lake that periodically occupied a major portion of the Salton basin approximately 37,000 to 240 years ago, depositing sediments throughout the Imperial and Coachella Valleys. Generally, Lake Cahuilla sediments consist of a layered sequence of both freshwater lacustrine (lake) and fluvial (river/stream) deposits. Throughout Imperial County, Lake Cahuilla sediments have yielded well-preserved remains of freshwater clams and snails and sparse remains of freshwater fish. The paleontological resources of the Lake Cahuilla Beds are considered significant; thus, these deposits are assigned a high paleontological potential. (Paleontological Memorandum, Chambers Group, September 10, 2021, p. 1.) This area extends to the Heber 1 Project site.

Although the Heber 1 site is located within the footprint, the Project and related construction will not occur within native soils in the Lake Cahuilla Beds. As with the neighboring Heber 2 facility, which is also located within the historic footprint, the sites have been completely disturbed during previous development. Further, because the depth of excavation for Heber 1 will be limited to previously disturbed soils, ground disturbance at Heber 1 will not occur within the Lake Cahuilla Beds. Therefore, the paleontological setting will remain unchanged from, along with no significant impacts to, the baseline.

4.0 CATEGORICAL EXEMPTION FINDINGS

Sections 15300–15332 of Article 19 ("Categorical Exemptions") to the State CEQA Guidelines list classes of projects which "have been determined to not have a significant effect on the environment and which are categorically exempt from the provisions of CEQA," as required by Public Resources Code section 21084. (CEQA Guidelines, § 15300.) These categorical exemptions are assumed to "'not have significant

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impacts'" by virtue of fitting within the "class of [exempt] projects." (*Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1104–1105 (*Berkeley Hillside*); CEQA Guidelines, § 15002, subd. (a)(1); Pub. Resources Code, § 21003, subd. (b).)

The County has prepared an IS/MND for the Project. However, in preparing the CEQA Findings for the Project, the County has concurrently determined that the Project is also categorically exempt under CEQA. The County bases this conclusion on three separate grounds, each of which independently suffices to establish that the Project is exempt from CEQA review. First, the Project approvals are exempt under the "existing facilities" (i.e., "Class 1") categorical exemption set forth under Guidelines section 15301. The Project is exempt as an "existing facility" because it involves negligible or no expansion of an existing use. (Finding 4.1.) Second, the Project approvals are exempt under the "replacement or reconstruction of existing structures or facilities" (i.e., "Class 2") categorical exemption set forth under Guidelines section 15302. (Finding 4.2.) The Project qualifies for this exemption because it entails replacing and removing existing structures, reconstructing new structures on the same site as those replaced, and will serve substantially the same purpose and capacity. Third, the Project approvals are exempt under the "common sense" exemption pursuant to Guidelines section 15061, subdivision (b)(3). The Project fits within the "common sense" exemption because it can be determined with certainty that the Project will not have significant environmental effects. (Finding 4.3.) Finally, the County finds that no exceptions exist that would preclude categorically exempting the Project from CEQA review. (Finding 4.4.)

This section provides an analysis demonstrating that the Project meets the conditions for a Class 1, Class 2, and "common sense" Categorical Exemption, and that none of the possible exceptions to a Categorical Exemption listed in Guidelines section 15300.2 are applicable to this Project. The language of each condition of each categorical exemption and possible exception is shown in italics under their respective headings, which are followed by the Project analysis for each condition and exception.

4.1 Class 1 Categorical Exemption: Existing Facilities (CEQA Guidelines, § 15301)

The Project does not require new production or injection wells, and the Heber 1 facility's utilization of the geothermal resource will not increase. There will be no change to the geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. The Project will merely replace and remove existing generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect). There are no changes proposed to the permitted net generating capacity of the Heber 1 facility, the use of geothermal resources for electricity generation, the existing facility's interconnection facilities or transmission or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease, stay below permitted authorized release amounts, and in some cases, be eliminated entirely.

Conditions of the Class 1 Categorical Exemption

The Project qualifies as a "Class 1 – Existing Facilities" Categorical Exemption under CEQA, as set forth in Section 15301 of the CEQA Guidelines. "Class 1" categorically exempts projects including:

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[O]peration, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use.

Relevant examples of the types of projects listed in the Section 15301 that fall within the exception, particularly as related to the Project include, but are not limited to:

(a) Interior or exterior alterations involving such things as interior partitions, plumbing, and electrical conveyances;

(b) Existing facilities of both investor and publicly owned utilities used to provide electric power, natural gas, sewerage, or other public utility services;

(d) Restoration or rehabilitation of deteriorated or damaged structures, facilities, or mechanical equipment to meet current standards of public health and safety, unless it is determined that the damage was substantial and resulted from an environmental hazard such as earthquake, landslide, or flood;

(e) Additions to existing structures provided that the addition will not result in an increase of more than:

(1) 50 percent of the floor area of the structures before the addition, or 2,500 square feet, whichever is less; or

(2) 10,000 square feet if:

(A) The project is in an area where all public services and facilities are available to allow for maximum development permissible in the General Plan and

(B) The area in which the project is located is not environmentally sensitive.

Exemption Determination: *The Project involves operation, repair, maintenance, permitting and minor alteration of existing private structures, facilities, mechanical equipment, and topographical features, involving negligible or no expansion of existing use.*

Existing Use

Heber 1 was constructed and is operated in compliance with the County's General Plan, Renewable Energy & Transmission Element, Land Use Ordinance, CUPs (#9-80, #04-0024, #06-006, #15-0013), and with all other local, state, and federal laws, ordinances, regulations, and standards.

Existing facilities at the Heber 1 site include the entirety of the 52 MW (net) Heber 1 complex. The individual facilities that comprise this complex include: (i) the one (1) Heber 1 geothermal dual flash

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facility; (ii) the four (4) OECS (OECs 11, 12, 13, and 14 [i.e., "Gould 1"]; (iii) the two (2) motive fluid (isopentane) 10,000-gallon tanks; (iv) the existing Vapor Recovery Maintenance Unit (VRMU); (v) the existing water cooling system (including tower, pumps, condensers, piping, etc.); (vi) and the existing substation.

The existing use of the Heber 1 facility is the utilization of geothermal resources of the Heber Known Geothermal Resource Area (KGRA) to generate electrical power. Developed and operated exclusively by Ormat, the use of OECs allows for maximum sustainability by reinjecting 100% of the geothermal fluid. Specifically, the fluid is extracted from an underground reservoir and flows from the wellhead through pipelines to heat exchangers in the OEC that based on an Organic Rankine Cycle. Inside the heat exchangers, the geothermal fluid heats and vaporizes a secondary working fluid which is organic, with a low boiling point—in this case, isopentane, a fluid that Ormat has operated in its OECs for more than 25 years. The organic vapors drive the turbine and then are condensed in a condenser, which is cooled by either air or water. The turbine rotates the generator and then the Condensed fluid is recycled back into the heat exchangers by a pump, completing the cycle in a closed system. The cooled geothermal fluid is re-injected into the reservoir.

The County finds that these existing operations set the baseline for determining whether the Project will involve "negligible or no expansion" of these uses.

Effect of Project on Existing Use

The Project will include the installation of two (2) new water-cooled ORMAT OECs, which will collectively operate as an IT3U, installation of ancillary equipment including a new VRMU and two (2) 10,000-gallon isopentane tanks, the combination of two older OECs (OEC 11 and 13) into a two-level unit (OEC-11 ITLU), and the decommissioning and removal of the existing dual-flash steam turbine generator, along with requisite connective piping and pump installation. The purpose of the repower Project is to improve efficiency of Heber 1's operations and installation of tanks that facilitate safe and reliable operation and maintenance of the facility. The 52 MW (net) generating capacity of the power plant will remain unchanged from that permitted by the existing CUP #15-0013. The Project also proposes to extend the permitted life of Heber 1 to 15 years (2021-2036).

The Project will not result in an expansion of use, as the Heber 1 facility will remain a net 52 MW geothermal power plant after the replacement of the old flash units with new OEC units. The Project also does not require new production or injection wells, and the utilization of the geothermal resource will not increase. There will be no change to the geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. All proposed facilities would be developed within the existing Heber 1 footprint and fence line. Project construction will disturb approximately 7.67 acres of the 24.90-acre Project site. The area of disturbance is comprised of 6.03 acres that are already disturbed/developed and 1.64 acres of bare ground. Installation of the new equipment will occur on approximately 3.24 acres of the disturbance site. This relatively small percentage of disturbed area demonstrates that the proposed alterations are minor in comparison to the existing facilities and, therefore, represent only a negligible physical expansion of such structures.

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The Project also calls for the removal of the facility's current steam turbine generator. The turbine has become less effective as the temperature of the geothermal resource has decreased over time, therefore, the new and updated units will operate by a different process and will be better than the turbine at the currently lower-temperature of geothermal fluid. This, in turn, will improve the efficiency of operations, and bring the net and gross generating capacity outputs up to the authorized nameplate outputs of 52 MW (net) and 78.2 MW (gross). The Project, therefore, will not increase output or expand the existing facility beyond the current footprint.

The key consideration is whether the Project will expand the current "existing use." Here, the Project will not. The existing use of the Heber 1 facility is the utilization of geothermal resources of the Heber KGRA to generate electrical power. The purpose of the repower Project is to improve efficiency of Heber 1's operations and installation of tanks that facilitate safe and reliable operation and maintenance of the facility. The 52 MW (net) generating capacity of the power plant will remain unchanged from Conditional Use Permit #15-0013. The Project also does not require new production or injection wells, and the utilization of the geothermal resource will not increase. There will be no change to the geothermal resource or reservoir. There will be no expansion of the existing power plant use of the resource and no expansion of the power plant site to accommodate the Project. The Project neither uses a new technology nor utilizes new processes, as the Heber 1 power plant already utilizes OECs to generate electricity. Finally, the commercial activities at the Heber 1 Complex will continue as they have since 1985, and no additional physical expansion of facilities at the Project site would occur as a result of the Project.

Similarly, and as demonstrated in Table 2 above (Section 3.1), with the retirement of the steam flash units, the emissions of NO_x, SO_2, H_2S, and Benzene would be completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment, including two cooling towers. These figures are significantly less than the existing emissions profile of the Heber 1 facility and well under the authorized release amount, thereby resulting in a beneficial effect on air quality.

There also will be no expansion of reasonably foreseeable environmental impacts due to unusual circumstances or any other exception to reliance on the categorical exemptions. (See Section 4.4.) All proposed development would occur within the fence-line of the existing Heber 1 site and not increase the footprint of the energy facility. Because there are no habitable structures part of the Project, and the Project does not involve substantial changes in facility operations, there are no risks associated with any geologic hazards, and the Project would not introduce new populations to potential geological hazards onsite. Similarly, due to its fully developed and industrial nature, the site is void of habitats or sensitive species, therefore, the Project will not adversely impact biological resources. Construction activities and facility operations would be performed in line with the Imperial County Air Pollution Control District (ICAPCD) permit requirements as well as the County's General Plan. The final Project would be consistent with the General Plan because it is located within the geothermal energy overlay zone allowing for major geothermal projects. Environmental impacts will not be expanded beyond those associated with the existing use or those previously analyzed in prior CEQA documents and the Project would not introduce a use that is disallowed within the Project site's land use designation or zone. (See Section 3.0.)

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The Findings presented in Section 4.4 demonstrate that the Project would result in no potentially significant environmental impacts and that there would be no new significant, or substantially more severe, environmental effects than those existing under baseline conditions. For these reasons, the Project qualifies for the Class 1 "existing facilities" exemption.

Conclusion

The proposed facility upgrades and replacements contemplated by the Project will be negligible and none of the geothermal energy production activities or operations performed within the facility will be substantively expanded. The Project will merely replace aging generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect). There are no changes proposed to the net generating capacity, the use of geothermal resources for electricity generation, the existing facility's interconnection facilities or transmission or distribution systems, or water supply from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease. For these reasons, the proposed improvements, including replacement and decommissioning, will be a "like-for-like" replacement because they will utilize some of the same technology and will not result in foreseeable significant environmental effects beyond those associated with the existing uses or due to unusual circumstances. Substantial evidence shows that there would be an overall decrease in environmental effects, particularly with respect to air quality emissions when compared with baseline conditions.

Finally, consistent with the requirements of a Class 1 exemption, the Project site is located entirely within an existing, privately-owned geothermal power generating facility and no substantive changes to the existing environment are proposed. The Project reflects a minor alteration (replacement) of old facilities/mechanical equipment with new facilities/equipment. Implementation of the Project would not expand the current use of the Heber 1 site, as the Project does not propose to expand the utilization of the geothermal resource and will not change the 52 MW (net) generating capacity of the facility. As a result, and because no exceptions apply that would render the exemption unusable, the Project "falls squarely" within the terms of this exemption and is reasonable to use here. (*Bloom v. McGurk* (1994) 26 Cal.App.4th 1307, 1312 [a project that "falls squarely within the [] language of the Class 1 categorical exemption" may use the exemption]; see Section 4.4.) Therefore, the Project is categorically exempt from CEQA review under CEQA Guidelines section 15301.

4.2 Class 2 Categorical Exemption: Replacement or Reconstruction (CEQA Guidelines, § 15302)

Neither the Project's new OECs and storage tanks that will replace the existing flash units nor the reconfigured OECs storage tanks will result in a change—expansion or otherwise–of the existing use of the Heber 1 geothermal power plant to generate renewable energy. Instead, Heber 1 will remain at a net generating capacity of approximately 52 MW and will continue to operate as a geothermal power plant. In doing so, the proposed replacements and updates will allow the plant to generate renewable energy in a more efficient, safe, and reliable manner than before.

Conditions of the Class 2 Categorical Exemption

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The Project qualifies for the "Class 2 – Replacement and Reconstruction" Categorical Exemption under CEQA, as set forth in Section 15302 of the CEQA Guidelines. "Class 2" categorically exempts projects including, in relevant part:

> *[The] replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced, including but not limited to:*
>
> *(b) Replacement of a commercial structure with a new structure of substantially the same size, purpose, and capacity.*
>
> *(c) Replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity.*

Exemption Determination: *The Project involves replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.*

Existing Use

Heber 1 was constructed and is operated in compliance with the County's General Plan, Renewable Energy & Transmission Element, Land Use Ordinance, CUPs (#9-80, #04-0024, #06-006, #15-0013), and with all other local, state, and federal laws, ordinances, regulations, and standards.

Existing facilities at the Heber 1 site include the entirety of the 52 MW (net) Heber 1 complex. The individual facilities that comprise this complex include: (i) the one (1) Heber 1 geothermal dual flash facility; (ii) the four (4) OECS (OECs 11, 12, 13, and 14 [i.e., "Gould 1"]; (iii) the two (2) motive fluid (isopentane) 10,000-gallon tanks; (iv) the existing Vapor Recovery Maintenance Unit (VRMU); (v) the existing water cooling system (including tower, pumps, condensers, piping, etc.); (vi) and the existing substation.

The existing use of the Heber 1 facility is the utilization of geothermal resources of the Heber Known Geothermal Resource Area (KGRA) to generate electrical power. Developed and operated exclusively by Ormat, the use of OECs allows for maximum sustainability by reinjecting 100% of the geothermal fluid. Specifically, the fluid is extracted from an underground reservoir and flows from the wellhead through pipelines to heat exchangers in the OEC that based on an Organic Rankine Cycle. Inside the heat exchangers, the geothermal fluid heats and vaporizes a secondary working fluid which is organic, with a low boiling point—in this case, isopentane, a fluid that Ormat has operated in its OECs for more than 25 years. The organic vapors drive the turbine and then are condensed in a condenser, which is cooled by either air or water. The turbine rotates the generator and then the Condensed fluid is recycled back into the heat exchangers by a pump, completing the cycle in a closed system. The cooled geothermal fluid is re-injected into the reservoir.

The County finds this is the appropriate baseline for determining whether the Project will involve "negligible or no expansion" of capacity.

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Effect of Project on Existing Use

The Project will include the replacement and reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity. And while this is a strong indicator that the Class 2 categorical exemption applies, the determining factor is ultimately whether there is "negligible or no expansion of capacity."

Here, the proposed Project will not expand the Heber 1 Facility's current permitted net generating capacity of 52 MW. The Project will shut down the dual-flash steam turbine generator and replace it with two new OECs (OEC 1 and OEC 2). OEC 1 and 2 combined would function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling rather than water cooling for the motive fluid. The Project will also reconfigure two of the existing OECs (OEC 11 and OEC 13), that, when combined, would function as an Integrated Two-Level Unit (ITLU) and will use the existing cooling tower. The Project will also install ancillary equipment including a vapor recovery maintenance unit and two (2) 10,000-gallon isopentane tanks. Most of the time the tanks will be empty and be used when the OECs are evacuated during maintenance.

The reconstruction and replacement will occur within approximately 3.24 acres of the total 7.67-acre site disturbance area, which occurs entirely within the current 24.9-acre site and in an area previously filled and developed. As such, there will be no change to the size of the Project site. As noted above, all proposed Project activities would occur within the existing fence line of the Heber 1 facility for the sole purpose of continuing geothermal energy generation operations. Proposed Project activities would not entail any expansion in size or change of use. The Project is intended only to restore efficiency of operations and bring net and gross generation up to current authorized levels.

In sum, the replacement of the old dual flash system with new and more efficient OEC units is effectively a "like-for-like" replacement that uses the same technology and processes as those of the existing OECs at the Heber 1 facility. The Project will provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource. There are no changes proposed to the net generating capacity, the use of geothermal resources for electricity generation, the existing facility's interconnection facilities or transmission or distribution systems from the geothermal powerplant.

As explained in greater detail in Section 4.1 above, the Project will also not result in new or adverse potentially significant environmental effects. For example, some operational emissions from the geothermal power plant will decrease or be omitted entirely, while keeping other emissions (i.e., VOC emissions from isopentane) well below their permitted authorized release amount. In addition, the Project will not result in a change to the existing water intake or supply system. However, because changes to the facilities will not generate the extra water needed for the cooling towers, the Project will utilize the amount of irrigate water—2,300 acre-feet/year—that was authorized pursuant to Amendment No. 1 to the WSA with IID. Therefore, the Project will not increase, or consume more irrigated water than previously analyzed and authorized by the WSA.

There would also be no expansion of reasonably foreseeable environmental impacts due to unusual circumstances or any other exception to this categorical exemption. (See Section 4.4.) All proposed development would occur within the fence-line of the existing Heber 1 Complex and would not increase

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the footprint of the energy facility. Because there are no habitable structures part of the Project, and the Project does not involve substantial changes in facility operations, there are no risks associated with any geologic hazards, and the Project would not introduce new populations to potential geological hazards onsite. Similarly, due to its fully developed and industrial nature, the site is void of habitats or sensitive species, therefore, the Project will not adversely impact biological resources. Construction activities and facility operations would be performed in line with the Imperial County Air Pollution Control District (ICAPCD) permit requirements as well as the County's General Plan. The final Project would be consistent with the General Plan because it is located within the geothermal energy overlay zone allowing for major geothermal projects. Accordingly, environmental impacts will not be expanded beyond those associated with the existing use or those previously analyzed in prior CEQA documents, and the Project would not introduce a use that is disallowed within the Project site's land use designation or zone. (See Section 3.0.)

The Findings presented in Sections 3.0 and 4.4 demonstrate that the Project would result in no potentially significant environmental impacts and that there would be no new significant, or substantially more severe, environmental effects than those existing under baseline conditions. For these reasons, the Project qualifies for the Class 2 exemption.

Conclusion

The proposed facility upgrades and reconstruction contemplated by the Project will be negligible and none of the geothermal energy production activities or operations performed within the facility will be substantively expanded. The Project will merely replace aging generating equipment with equivalent generating capacity and provide additional tankage to facilitate maintenance and servicing of the OEC units, resulting in more efficient generation of renewable power from the same geothermal resource (a beneficial effect). There are no changes proposed to the net generating capacity, the use of geothermal resources for electricity generation, the existing facility's interconnection facilities or transmission or distribution systems from the geothermal powerplant. Operational emissions from the geothermal power plant will decrease. For these reasons, the proposed improvements, including replacement and decommissioning, will be a "like-for-like" replacement because they will utilize some of the same technology and will not result in foreseeable significant environmental effects beyond those associated with the existing uses or due to unusual circumstances. Substantial evidence shows that there would be an overall decrease in environmental effects, particularly with respect to air quality emissions when compared with baseline conditions. In turn, there are no unusual circumstances or other exceptions that exist that would preclude application of the Class 2 categorical exemption to the Project. As a result, the Project "falls squarely" within the terms of this exemption and is reasonable to use here. (*Bloom v. McGurk*, *supra*, 26 Cal.App.4th at p. 1312.) Therefore, the Project is exempt from CEQA review under the "Class 2" exemption set forth in CEQA Guidelines section 15032.

4.3 Common Sense Exemption (CEQA Guidelines, § 15061, subd. (b)(3))

The "common sense" CEQA exemption applies to projects where it can be determined with certainty that the project would not yield significant environmental effects. (CEQA Guidelines, § 15061, subd. (b)(3).) The exemption provides, in relevant part, that a project is exempt from CEQA if:

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(3) The activity is covered by the commonsense exemption that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

"Certainty" exists when there is "no possibility that [the] physical changes [of the Project] might amount to significant environmental effects." (*Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 118; see Section 3.0.).

Here, the physical changes proposed by the Project include decommissioning the dual-flash steam turbine that was originally constructed in 1985, installing two new water-cooled ORMAT OECs (OECs 1 and 2), which will operate as an I3LU to replace the dual flash steam turbine, reconfiguring OECs 11 and OEC 13 into a combined ITLU, and installing ancillary equipment including two 10,000-gallon isopentane storage tanks and a VRMU. These physical changes are assessed in the CUP application by utilizing the criteria in the Environmental Checklist of CEQA Appendix G. This analysis methodically demonstrates that the Project will not create any significant environmental effects, primarily because all construction and installation will occur on the existing site, which has been fully planned, permitted, and developed.

Other potential areas of impact not necessarily related to the physical land—such as noise, geologic hazards, biological resources, and air emissions—are shown to not approach or exceed any applicable thresholds of significance. This is, in part, due to the fully developed nature of the Project site as an existing geothermal energy complex. As to noise impacts, the facility has never received a noise complaint, the Project is within the "normally acceptable" range established by the County, and the Project is not anticipated to increase noise emissions from the existing plant.

As to geologic hazards, the Project proposes upgrades to an existing geothermal facility and does not involve substantial changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards onsite.

As to biological resources, a review of the records and a reconnaissance-level biological survey of the Project Site confirmed that the site is completely void of any habitat and sensitive species. Therefore, because the site does not contain suitable habitat and no sensitive species occur on the site in the baseline condition, substantial evidence indicates that there are no significant effects that the Project could have on biological resources.

As to air quality impacts, the Project "would *improve* [] physical conditions." (*CREED-21 v. City of San Diego* (2015) 234 Cal.App.4th 488, 512, emphasis added.) Specifically, the retirement of the steam flash units will completely eliminate the emissions of NO_x, SO_2, H_2S, and Benzene. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. Furthermore, the improvements inherent in the new equipment will reduce facility-wide VOC emissions, while keeping permitted isopentane emissions below the authorized release amount. As operational emissions are below both permitted and CEQA significance threshold levels, impacts are less than significant.

For these reasons, the Project "could have no significant effect on the environment within the meaning of CEQA" and is thereby "exempt from CEQA pursuant to the commonsense exemption (i.e., Guidelines,

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§ 15061, subd. (b)(3))." (*Ibid.*) Therefore, the Project is exempt from CEQA review under the common-sense exemption.

4.4 Exceptions to Categorical Exemptions (CEQA Guidelines, § 15300.2)

Although projects that are categorically exempt "typically do not have significant impacts,'" the exemptions are not absolute and may be negated if an exception exists. (*Berkeley Hillside*, *supra*, 60 Cal.4th at pp. 1104–1105.) CEQA Guidelines section 15300.2 sets forth exceptions that preclude application of a categorical exemption. Section 15300.2, in relevant part, sets forth the following exceptions:

> *(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.*
>
> *(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.*
>
> *(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.*
>
> *(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.*
>
> *(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.*

As discussed in detail below, substantial evidence demonstrates that these exceptions do not apply, and thus, do not preclude application of the categorical exemptions to the Project.

Exception to Exemptions Findings:

***Condition (b):* Cumulative Impacts. The cumulative impact of successive projects of the same type in the same place, over time, is significant.**

An environmental impact is considered "cumulative" if it has the potential to combine with similar impacts of other comparable, successive projects, within the same place, to become collectively significant. (See CEQA Guidelines, § 15355.) A project must "'make some contribution to the impact; otherwise it cannot be characterized as a cumulative impact of that project.'" (*North Coast Rivers Alliance v. Westlands Water Dist.* (2014) 227 Cal.App.4th 832, 874 [quoting *Sierra Club v. West Side Irrigation Dist.* (2005) 128 Cal.App.4th 690, 700, in support of finding against applicability of the cumulative impact exception].) Cumulative impacts do not exist where a project has "zero impact...then the cumulative effect of adding [projects] together would remain zero." (*Id.* at p. 875.)

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Because the Project contemplates replacing the site's currently outdated dual flash turbine with more modernized equipment—thereby resulting in an increase in renewable energy production and a reduction in air emissions—the Project will not result in significant environmental impacts. The IS identified the geographic scope of the cumulative area analyzed as the extent of potential off-site impacts. The resources with the potential to have off-site impacts include air, biological resources, geologic (paleontological) resources, human health, and traffic. Considering that the Project will improve air quality by eliminating criteria air emissions and keeping isopentane emissions below their current permitted authorized release amount, a significant adverse cumulative effect to ambient air quality in Imperial County (or beyond) would not occur and the proposed Project would not conflict with, or obstruct the implementation ICAPCD's air quality plan. In other words, because the Project will result in lower overall emissions than current baseline conditions, the adverse impact could not be considered significant when combined with another project's direct emissions.

A project review of all reasonably foreseeable future projects was performed by Imperial County, and no projects occur in relatively close proximity to the Heber 1 site (including the Heber 2 project, located approximately 1 mile away). There is no potential for an adverse significant cumulative impact in specific reference to the Heber 1 Project. As discussed above, potential cumulative impacts would be limited to those resources with the potential to have an off-site effect. For air quality, Heber 1 would improve overall air quality by removing criteria pollutants in their entirety, while keeping VOC (isopentane) emissions below the current authorized release amount), thereby representing a beneficial impact; and, therefore, could not contribute to a significant cumulative impact. Traffic impacts would be limited to localized delivery of heavy equipment and facilities and would not have overlapping traffic effects with Heber 1. Noise impacts for Heber 1 would be similar to baseline conditions and would not have overlapping noise fields with Heber 1. Geologic impacts would be similar to baseline conditions and would not have overlapping effects because the site is developed and would not introduce any seismic or geological hazards, or populations to new geological conditions. Biological resource impacts would be similar to baseline conditions, which demonstrate that the site is fully developed, void of habitat, and inhospitable to special status species. Therefore, the Heber 1 Project would not result in significant cumulative impacts with Heber 1.

The County thus finds that because there are no other projects occurring or proposed to occur in the Heber 1 Area of Potential Effect (where impacts would coincide with the effects from another past, present, or reasonably foreseeable future action), and because the Project would yield environmentally beneficial effects with respect to lowered emissions, no significant cumulative effects would occur as a result of the Project. Therefore, this exception does not apply.

Condition (c): Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

A categorical exemption may not be used where there is evidence of both: (1) an "unusual circumstance"; and (2) a causal connection between this circumstance and "a reasonable possibility of a significant environmental effect." (*Berkeley Hillside*, supra, 60 Cal.4th at p. 1105.) An unusual circumstance exists when the facts show that "the project has some feature that distinguishes it from others in the exempt class, such as its size or location." (*Id.* at pp. 1105, 1114.) If the lead agency

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determines by "substantial evidence" that an unusual circumstance exists, then it must also determine that a fair argument could be made that these unusual circumstances create "a reasonable possibility of a significant environmental effect." (*Id.* at p. 1114.)

Condition (c)(1): Unusual Circumstances. Does the Project have some feature that distinguishes it from others in the exempt class, such as its size or location?

Under the "Class 1" exemption, the Project constitutes an "[e]xisting facility[y] of both inventory and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services[.]" (CEQA Guidelines, § 15301, subd. (b).) Under the "Class 2" exemption, the Project constitutes a "commercial structure with a new structure of substantially the same size, purpose, and capacity" and an "existing utility system[] and/or facilit[y] involving negligible or no expansion of capacity." (CEQA Guidelines, § 15302, subds. (b)–(c).) For these reasons, there is nothing about the Project's location or size that distinguishes it from other utilities or commercial structures.

The Project site is zoned as A-2-G-SPA, for General Agriculture (A-2), Geothermal Overlay Zone (G), and in the Heber Specific Plan Area (SPA). The Project site is entirely within the Imperial County Geothermal Overlay Zone. "Major Geothermal Projects" in the overlay zone are permitted through the CUP process, as was the original Heber 1 facility. The Heber SPA is intended "to allow for commercial, residential, industrial, renewable energy, and other employment-oriented developed in a mixed used orientation." Therefore, the Project is consistent with the General Plan because it is located within the geothermal energy overlay zone allowing for major geothermal projects and the Imperial County General/Zoning Plan allows for "Major Geothermal" projects on the Project site. The Project will be developed within an existing power plant, will not increase the footprint of the energy facility, and the proposed facilities would blend in with the existing energy facilities. Construction activities and facility operations would be performed in line with the elements of the County's General Plan (Land Use; Housing; Circulation and Scenic Highways; Noise; Seismic and Public Safety; Conservation and Open Space; Agricultural; Geothermal and Transmission; and Water).

Several geothermal operations exist in the vicinity, including an existing system at the Project site. These systems, like the one proposed, are sized to accommodate the respective needs of their operations. "'The presence of comparable facilities in the [County] adequately supports [an] implied finding that there [are] no 'unusual circumstances' precluding a categorical exemption.'" (*Walters v. City of Redondo Beach* (2016) 1 Cal.App.5th 809, 821, quoting *Bloom v. McGurk*, *supra*, 26 Cal.App.4th at p. 1316.) Here, in addition to the existing geothermal operations on the Project site, the Project joins several other nearby geothermal facilities, including: the North Brawley Geothermal Power Plant (operated by Ormat) in the city of Brawley; the GEM and Ormesa facilities in Holtville; the Salton Sea, Del Ranch, J.J. Elmore, J.M. Leathers, Vulcan, CE Turbo LLC, and John L Featherstone (formerly Hudson Ranch) facilities in Calipatria. (Imperial County Planning Department, Imperial County Geothermal Energy Maps[3]; also see Sections 3.0, 4.1.)

[3] Available at: www.icpds.com/assets/planning/energy-maps/imperial-county-geothermal-09-15-2017.pdf.

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The County further finds that the Project's geographic location is neither unusual in nature nor susceptible to potential seismic impacts. The Heber 1 site is located within the Imperial County Geothermal Development Area and the plant area is zoned for major geothermal energy development, per the County General Plan. The plant to be repowered is located in an appropriate geographical location, with the closest residences located approximately 2/3 mile away. Significantly, geothermal energy facilities are typically sited in seismically active areas to access faults/fissures to reach a geothermal resource, and all wells and facilities are designed to account for this inherent seismic activity. As such, the County finds that it is wholly appropriate and common practice (i.e., not unusual) to site a geothermal plant in a seismically active area. Furthermore, potential earthquake damage contemplates an environmental effect on the Project, rather than the Project's potential effect on the environment, as contemplated under CEQA. The County further finds that the Project's storage and handling of isopentane is not an unusual circumstance. Energy generation of all kinds, fossil-fuel and renewable alike, rely on machines, moving parts, and chemicals/fluids, and geothermal energy generation is no exception. It is industry practice to maintain, update, and replace the machines and equipment that run as a baseload renewable energy resource. This Project removes outdated facilities, replaces in-kind old equipment with new equipment (i.e., OECs), and improves the efficiency of the plant's isopentane management.

Therefore, based on its review of the entire record, the County finds that no unusual circumstances exist.

> *Condition (c)(2): Reasonable Possibility of a Significant Environmental Effect. Can a fair argument be made that an unusual circumstance causes "a reasonable possibility of a significant environmental effect"?*

Because it is determined that no unusual circumstance exists, this second prong need not be established, as the test for "unusual circumstances" is conjunctive. (*Respect Life South San Francisco v. City of South San Francisco* (2017) 15 Cal.App.5th 449, 458.) Nevertheless, as set forth above, the Project would not cause any significant environmental effects.

Conclusion Regarding Unusual Circumstances

No unusual circumstances exist for the Project, and the Project would not result in any significant environmental effects. As a result, there is no "reasonable possibility" that a "significant environmental effect" could be caused by an unusual circumstance. Therefore, this exception does not apply.

Condition (d): Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.

There are no scenic vistas or highways present on or in the vicinity of the Project site. The Project would be developed within an existing power plant, on undeveloped lands with no scenic characteristics (i.e., the site lacks vegetation, topography, or buildings), and no State scenic highway exists in the vicinity of the Project site. Because the Project will be developed within an existing power plant, the proposed facilities would blend in with the existing energy facilities and would render no noticeable changes to the current Heber 1 site/plant to travelers in the vicinity. Because the Imperial County General/Zoning Plan allows for "Major Geothermal" projects on the Project site, and, considering the existing onsite

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power plant, the Project would not impact the visual character of the site or its surroundings. Thus, this exception does not apply.

***Condition (e):* Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.**

The Project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the Government Code, and therefore, would not create a significant hazard to the public or environment. Thus, this exception does not apply.

***Condition (f):* Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.**

The Project site does not contain historical resources. A Phase I Cultural Resources Survey for the Proposed Project was prepared by Chambers Group, Inc (Chambers Group) in September 2019. A record search with the South Coast Information Center (SCIC) for the Proposed Project determined a total of 22 cultural resource studies have been conducted within one-half mile of the Proposed Project area, with 12 studies located inside the Proposed Project area. The previous surveys identified by the SCIC occurred between 11 and 43 years ago. The earliest studies were associated with proposed geothermal testing in the Heber region. The records search identified one previously recorded cultural resource, a historic site, within one-half mile of the Proposed Project area, which is not located within the Proposed Project area. Chambers Group performed a reconnaissance level survey and identified no historic or prehistoric resources as part of the Proposed Project. The survey found that the Project area is completely disturbed and highly developed, including asphalt driveways and parking areas, piping systems, steam systems, a substation and administration buildings. No historic or prehistoric resources were identified as a result of the survey, indicating the low likelihood of encountering previously unrecorded resources.

Furthermore, there are no buildings or structures present on the Project site, such that the Project will not yield any impacts to historical resources. To this end, considering that the Project site was completely disturbed when the Heber 1 Complex was constructed in 1985, the probability of encountering an unforeseen/buried resource or remains is very low. Preexisting mitigation and the proposed conditions of approval would ensure a less-than-significant impact in the unlikely event that any resources are inadvertently uncovered during construction. Therefore, because the Project is anticipated to result in no or less than significant effects to historical resources, this exception does not apply.

5.0 IS/MND FINDINGS OF FACT

The County adopts the following CEQA Findings of Fact for its approval of the IS/MND. Although such Findings are not required because the Project approvals are exempt from CEQA, the County nevertheless adopts them out of an abundance of caution. (See, e.g., *CalBeach Advocates v. City of*

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Solana Beach (2002) 103 Cal.App.4th 529, 541 [specific findings not required to support lead agency's exemption determination]; *San Lorenzo Valley Community Advocates for Responsible Education v. San Lorenzo Valley Unified School Dist.* (2006) 139 Cal.App.4th 1356, 1385 ["there is no requirement that [an] agency put its exemption decision in writing"]; see also Findings 4.1–4.4.) In the event it is determined that the Project approvals are not exempt from CEQA, the County finds that it would still approve the Project pursuant to the IS/MND prepared for the Project and based upon the Findings set forth below. The County's decision to adopt these Findings, in the alternative, does not constitute the adoption of a "mitigated Categorical Exemption." To this end, the County's imposition of, and the Applicant's compliance with, the Voluntary Environmental Protection Features (VEPFs) set forth below (or "conditions of approval" to the CUP application) does not disqualify the Project from relying on the Categorical Exemptions described above.

Findings

The requirements under CEQA have been complied with. While the Project is exempt from CEQA, an IS/MND was prepared for the Project and circulated for public review. An MND is appropriate because the County, as lead agency, has determined that Project revisions made by, or agreed to by the Applicant would avoid any potential impacts to the point where no significant impact on the environment would occur. As explained in the detailed findings below, there is no substantial evidence in light of the whole record that the Project, as revised, may have a significant effect on the environment. When compared to baseline conditions, the IS/MND's conclusion regarding the Applicant's proposed VEPFs is not necessary because those proposed measures address impacts that are already less than significant, and in most cases, would result in improvements compared with baseline conditions. Moreover, these measures do not authorize a "mitigated Categorical Exemption." Rather, the VEPFs either require compliance with generally applicable statutes and regulations, or are voluntary measures agreed to by the Applicant that would further reduce an already less-than-significant impact, and/or result in improved conditions when compared to the baseline. While the County may occasionally refer to them as "mitigation measures," the measures are equivalent to, and likewise considered "Best Management Practices" (BMPs) or "Project Design Features" (PDFs). The VEPFs are incorporated into the CUP as "Conditions of Approval" (COAs). Ultimately, the semantics of these measures bear no weight on their function: they are fundamentally preventative/protective measures and BMPs that the Applicant has voluntarily accepted as part of the Project description.

For these reasons, the County further finds that imposing these measures as COAs to the CUP does not disqualify the Project from the Categorical Exemptions set forth above. The County notes that it is common practice to add such conditions as late as the final approval hearing, particularly when requested by the applicant. This is particularly relevant where, as here, the measures rely on generally applicable regulations to conclude an environmental impact will not be significant and therefore does not require mitigation. (See, e.g., *San Francisco Beautiful v. City and County of San Francisco* (2014) 226 Cal.App.4th 1012, 1032–1033 [agency may rely on compliance with generally applicable regulations to conclude environmental impact will not be significant and therefore not require mitigation]; *Protect Telegraph Hill v. City and County of San Francisco* (2017) 16 Cal.App.5th 261, 267–2769 [conditions imposed on a project endorsed by an agency "do not constitute mitigation, where the record shows those conditions were not the basis for the agency's conclusion that the project qualified for a categorical exemption"]; *Wollmer v. City of Berkeley* (2011) 193 Cal.App.4th 1329, 1353 [condition of

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approval to improve traffic was part of project design and never a proposed mitigation measure; condition represented a "positive effort between developers and a municipality to improve the project for the benefit of the community" rather than an "evasion of CEQA"].)

The VEPFs and Findings set forth below reflect the recommendations of stakeholders, including the Applicant, the County Staff, and the public, and are also drawn from measures implemented by other, similarly situated approved projects. The VEPFs also serve to confirm generally applicable regulations that would apply to the Project that further reduce an already less-than-significant impact and in many cases improve environmental conditions when compared with the baseline conditions. The VEPFs are not designed to reduce potentially significant impacts to less-than-significant levels—they are part of the Project's design to address the facility's ongoing operations. This is appropriate and permissible under CEQA. (See, e.g., *Citizens for Environmental Responsibility v. State ex rel. 14th Dist. Ag. Assn.* (2015) 242 Cal.App.4th 555, 568–572 [mitigation and monitoring program was part of project's "normal operations" and therefore did not preclude application of categorical exemption]; *Berkeley Hills Watershed Coalition v. City of Berkeley* (2019) 31 Cal.App.5th 880, 893, fn. 9, citing *Berkeley Hillside Preservation v. City of Berkeley* (2015) 241 Cal.App.4th 943, 961 [measures developed to comply with building codes or to address "common and typical concerns" during construction do not preclude exemption].)

5.1 Air Quality

Finding No. AQ-A

Impact: Potential impacts from fugitive vapor loss of volatile organic compounds (VOC) resulting from the increased amount of isopentane stored onsite.

Finding: The upgraded equipment that Project will install will increase the total amount of isopentane stored onsite, which, in turn, may result in an annual increase in VOC emissions. However, the anticipated increase in emissions would remain below the current release amount authorized by the facility's Permit to Operate (PTO) that was issued by the Imperial County Air Pollution Control District (ICAPCD). Because the Project will not conflict with or obstruct the ICAPCD air quality plan, the Project will not result in significant impacts to air quality.

Facts Supporting the Findings

Future VOC emissions from isopentane/motive-fluid were estimated based on actual emissions from the facility for the most recent two-year period of normal operation. Isopentane emissions are related to the size of the system, so emissions were estimated by scaling the previous actual emissions according to the change in isopentane volume at the facility. The existing four OECs have a combined volume of 96,800 gallons, and the two isopentane storage tanks have a combined capacity of 20,000 gallons. After the proposed development, the combined volume of the existing and new OECs will be 240,1000 gallons, and the total facility isopentane volume including the isopentane tanks will be 280,100 gallons.

Isopentane emissions were estimated based on several factors, including: (i) maintenance and purging emissions were estimated based on the worst-case quarterly emissions for maintenance and purging

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from two years of on-site data. These emission rates were scaled based on the ratio of the future OEC volume to the existing OEC volume; (ii) fugitive emissions were estimated based on the worst-case quarterly emission rate over the two year-period, scaled based on the total system capacity of the system including isopentane tanks.

This emission estimation method is a reasonable conservative estimate (i.e., overestimation) of future emissions. The new units will benefit from improvements in the design and technology that have occurred during the years since the existing OECs were constructed. These improvements will reduce fugitive leaks as well as emissions during isopentane evacuation for maintenance, but are not accounted for in the emission estimate. Additionally, these new units are expected to have lower emissions because the units they are replacing have higher maintenance requirements due to their age.

Table 4 – OEC Isopentane Emissions – Historical and Potential Future Emissions

Facility Total Isopentane Emissions	Pounds Emitted Per Day (lb/day)	Tons Emitted Per Year (tons/year)
Historical Actual Emissions (Q4 2016 – Q3 2018)	33.3	6.1
Estimated Potential Emissions	81.3	14.8
Estimated Emissions Increase	**48.0**	**8.8**
ICAPD Permit (PTO) Emissions Limits	**Maximum Permitted Pounds Emitted Per Day (lb/day)**	
Current Permit Emissions Limit	99.6	
Proposed Emissions Permit Limit	99.0	
Estimated Emissions Permit Limit Decrease	**-0.6**	

Source: IS/MND, Appendix G, Air Sciences Inc. – Air Quality Analysis Summary for the Ormat Heber 1 Repower Project (Dec. 15, 2020), p. 6

As explained and shown in Table 4 above, the estimated emissions for the facility after the proposed development—which are reasonably conservative—will remain below the current permitted emission limits. As explained above, the estimated emissions are reasonable conservative.

Through the improved efficiency of the new OECs, the Project would result in an overall reduction of other air pollutants due to the decommissioning of the steam turbine generator and associated units, including the RTO, condensate line, and two cooling towers. Specifically, these upgrades will eliminate emissions of NOx, SO2, H2S, and Benzene entirely. While the Project will continue to use and emit isopentane, isopentane emissions will still be within permitted limits. This, coupled with the complete elimination of other criteria air pollutants, supports the finding that the Project will result in an improvement to air quality in the Imperial Valley by eliminating criteria emissions in their entirety and reducing facility-wide VOC emissions (while keeping isopentane emissions below the current authorized release amount); therefore, potential impacts are beneficial, and less than significant.

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The County further finds that the air quality protection measures previously implemented by ORMAT will limit air emissions at the Heber 1 facility. With respect to isopentane and related VOC emissions, these measures include, but are not limited to:

- A water truck is used on site to control fugitive dust emissions
- A five mile per hour speed limit at the site further reduces dust emissions
- During windy conditions, additional watering is conducted to minimize wind-blown fugitive dust
- Equipment is operated according to best practices and maintained according to design specifications
- The OECs are inspected for leaks using specialized leak detection equipment during every shift, and leaks are repaired quickly
- Any breakdown resulting in air emissions is reported to ICAPCD and corrected promptly (within 24 hours when possible)
- The VRMU is tested annually to confirm proper function and high isopentane recovery rates.

(Source: IS/MND, Appendix G, Air Sciences Inc. – Air Quality Analysis Summary for the Ormat Heber 1 Repower Project (Dec. 15, 2020), p. 7.)

Finding No. AQ-B

Impact: Potential impacts during construction from $PM_{2.5}$ and PM_{10} in a non-attainment zone.

Finding: The Project will not result in potential impacts during construction from $PM_{2.5}$ and PM_{10} in a non-attainment zone. Further, voluntary mitigation measures have been proposed, and will be required for the Project, which will further reduce $PM_{2.5}$ and PM_{10} during construction.

Facts Supporting the Findings

The Heber 1 facility/site is within a non-attainment zone for PM_{10}/$PM_{2.5}$ and ozone. A construction emissions model was run to estimate potential emissions, and the estimates were provided as Appendix N to the IS/MND's responses to comments. These estimates were generated in accordance with ICAPCD protocols and conservative inputs were used for project equipment and operations. The results are well-substantiated and discussed in the IS/MND.

Based on the conservative modeling, construction of the Project is estimated to emit 75.13 lbs/day of PM_{10} and 9.83 lbs/day of $PM_{2.5}$ over the 6-month construction phase. These temporary emissions are well below the 150 lbs/day threshold established by the Imperial County Air Pollution Control District (ICAPCD; PM_{10} Plan and $PM_{2.5}$ Plan, 2018) and are, therefore, considered less than significant.

Moreover, the Project must comply with the Imperial County Air Pollution Control District (ICAPCD) Regulation VIII (Fugitive Dust Control), the Imperial County 2018 PM_{10} Plan, and the Imperial County 2018 PM2.5 Plan. In addition, to further minimize the already less-than-significant PM and fugitive dust emissions from construction, the Applicant has voluntarily proposed the following COA:

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COA-AQ-1: The Applicant shall obtain a modified Permit to Operate from the Imperial County Air Pollution Control District (ICAPCD). All Project construction activities shall comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules and the following VEPFs:

- Project equipment and worker vehicles shall be turned off when not in use and not left idling for more than 5 minutes to minimize unnecessary emissions.
- Water shall be applied to the development site during site preparation and construction to control fugitive dust.
- Earth moving work shall be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads/areas will be restricted to 10 mph to control fugitive dust.
- During windy conditions, barriers will be constructed and/or additional watering conducted to minimize wind-blown fugitive dust.
- Vehicle access would be restricted to the disturbance area via signage/fencing.
- Project construction equipment will utilize Tier 3 engines when commercially available. If a Tier 3 engine is not certified for a particular piece of equipment or not commercially available, then the equipment shall be either equipped with a Tier 2 engine or equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NO_x) and diesel particulate matter (DPM) to no more than Tier 2 levels.

These measures are incorporated into the Conditions of Approval for the Project as Condition of Approval (COA)-AQ-1. In addition, COA-AQ-1 requires that the Applicant comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules and that the Applicant obtain a modified Permit to Operate from the ICAPCD, which will further ensure that potential air quality emissions from the Project are less than significant. As noted above, the construction emissions are substantially under ICAPCD construction emissions thresholds before considering reductions for these measures. As documented in the IS/MND, while less-than-significant temporary construction emissions would occur to develop the proposed facilities, the overall operational air emissions will decrease because of the project. Therefore, the Project would improve air quality in the Imperial Valley. From an overall air quality perspective, the Project is beneficial.

Additional Findings Regarding Comments on Air Quality Impacts:

The law firm of Adams Joseph Broadwell and Cardozo (ABJ&C) submitted comments on behalf of their client, CRI/CURE, including comments from their retained expert, Dr. Fox. With respect to air quality emissions, their relate to the methodology by which the above estimates were calculated. Dr. Fox suggests using the EPA emission factor for Heavy Construction Operations from the fifth edition of EPA's *Compilation of Air Pollution Emission Factors*, or "AP-42." However, Dr. Fox failed to acknowledge that AP-42 states in its Introduction that: "emission factors in AP-42 are neither EPA-recommended emission limits (e.g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e.g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source

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Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance" (EPA 1995).

Additionally, the Heavy Construction Operations Section of AP-42 reports that: "only 1 set of field studies has been performed that attempts to relate the emissions from construction directly to an emission factor" and "at least 2 features limit its usefulness for specific construction sites. First, the conservative nature of the emission factor may result in too high an estimate for PM-10 to be of much use for a specific site under consideration. Second, the equation provides neither information about which particular construction activities have the greatest emission potential nor guidance for developing an effective dust control plan." (EPA 1995.) Thus, the heavy construction emissions factor is not recommended by the EPA for emission regulation compliance determinations, including PM-10 compliance during construction, because of the limitations and lack of field testing associated with the emissions factor.

Dr. Fox's comments also offer a list of suggested "mitigation measures." However, mitigation is only required where there is a potentially significant effect. Heber 1 is an existing, operating facility, unlike the Casa Diablo project Dr. Fox uses as an analogy. The current Heber 1 facility is a minor source of air pollution and operates in compliance with all applicable air quality requirements and its permit to operate (PTO #1641B-5) from the ICAPCD. As detailed in the Air Quality Analysis Summary, the Project would lead to a reduction in emissions for all permitted pollutants and in some cases, the complete elimination of certain permitted pollutants. CRI/CURE's comments focus on isopentane, a VOC. But Dr. Fox's comments fail to recognize that total permitted VOC emissions of 99.6 lbs/day are below the ICAPCD's 137 lbs/day CEQA significance thresholds for emissions of ROG/VOC. Moreover, as set forth in Table 4, the improvements inherent in the Project's new equipment are anticipated to reduce the total number of permitted pounds of isopentane emitted per day by 0.6 lbs/day, while decreasing overall facility-wide (non-isopentane) VOC emissions. Therefore, VOC emissions would remain below the current authorized release amount, such that the Project would not conflict with, or obstruct the implementation of ICAPCD's air quality plan. (See Appendix B of the ATC permit application.) Moreover, with the retirement of the steam flash units, the emissions of NO_x, SO_2, H_2S, and Benzene are completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. As operational emissions are below both permitted and CEQA significance threshold levels, impacts are less than significant and thus the "mitigation" measures are not required.

Dr. Fox's conclusion that soil-disturbing activities at the Project site have a "heightened risk" to put receptors at risk based solely on the assertion that "Imperial County is endemic for Valley Fever" is not substantiated by any facts. As explained by the U.S. Centers for Disease Control and Prevention (CDC), "endemic areas" for Valley Fever are approximate areas where the fungus causing Valley Fever is either known or suspected to occur, and the CDC considers the entire southwest United States as a potential zone. In this case, it is highly unlikely Valley Fever is present on the Project site, given the low incidence rates in Imperial County and no documented cases at the existing Heber 1 site. Based on the low

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incidence rates in Imperial County and lack of documented cases at the existing Heber 1 site, the evidence supports that the potential risks from Valley Fever to workers and the public are less than significant even with the VEPFs. While not necessary to mitigate potential impacts to less than significant, the Applicant has also confirmed that the following conditions would be included as part of its construction BMPs: conducting Valley Fever awareness training for workers; providing respirators to workers when requested, including necessary training; use of closed-cab earth-moving vehicles equipped with HEPA-filtered air systems; employee testing for Valley Fever as needed; and conducting earth-moving activities downwind of workers when possible. These conditions will further reduce the potential risk to workers from Valley Fever.

The County has reviewed recent recommendations from the CA Department of Public Health – Occupational Health Branch and the Division of Occupational Safety and Health of the Department of Industrial Relations (Cal/OSHA) to limit risk from Valley Fever and compared them to the measures required for this Project. The measures required to comply with ICAPCD Regulation VIII and proposed by the applicant are consistent with those recommended to limit risk to Valley Fever. For example, Cal OSHA recommends the adoption of site plans and work practices that reduce worker exposure. Measures include minimize the area of soil disturbed; use of water or other soil stabilizer to reduce airborne dust; stabilize all spoils piles by tarping or other methods; cleaning tools, equipment, and vehicles before transporting offsite. Because there is no evidence of Valley Fever on the Project site and a lack of documented cases during the over 20 years of operations, the County concludes the potential impacts from Valley Fever are less than significant. The County further concludes that the Applicant's proposed voluntary mitigation measures and compliance with ICAPCD Rule VIII will further reduce any possible risks from Valley Fever.

5.2 Biological Resources

Finding No. BIO-A

Impact: Potential impacts to sensitive species and/or habitat, as established by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

Finding: There is no credible evidence in the record that the Project could result in impacts to sensitive species and/or habitat. Voluntary conditions of approval have been proposed, and will be required for, the Project which will ensure that any possible impacts to sensitive species are less than significant.

Facts Supporting the Finding(s)

The record demonstrates that the site of the Heber 1 facility is currently developed for power production uses, is completely devoid of any vegetation, and is completely graded and covered by soil and gravel. (Appendix B, *Biological Technical Report*, p. 9.)

The record also demonstrates that the Project site was properly investigated for the potential presence of sensitive species and habitat. A comprehensive record search was performed for biological resources, vegetation, special status species, and critical habitat to identify the biological resources that occupy the project site and surrounding area. (*Biological Technical Report*, pp. 21–23.) All databases used in this

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research (e.g., IPac, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site. After a review of the records, a qualified biologist performed a reconnaissance-level survey of the Project site. (*Ibid.*) The biologist determined that the site is completely void of any suitable habitat for either special-status plant species or wildfire, including avian species. The biologist further determined that no wildlife or traces of wildlife, including nesting birds, were observed. (*Ibid.*) These efforts were recorded and memorialized with site photographs (Appendix A to the CUP Application).

Comments on the IS/MND submitted by ABJ&C on behalf of CRI/CURE and its expert Dr. Smallwood questioned the accuracy of the surveys and database searches. As documented through verifiable database research and a site-specific survey (as provided in Appendix B of the CUP), the site does not contain suitable habitat and no sensitive species occur on the site in the baseline condition. Moreover, preconstruction surveys of the Project site would be conducted prior to construction to verify the absence of any special status species. Dr. Smallwood's criticism of the on-site surveys speculates on the efficacy of surveys that are used by professionals in this profession.

To this end, all databases used in the Project's Biological Technical Report (e.g., CNPSEI, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site. By contrast, eBird is a publicly-sourced, privately managed database, allowing both novice and expert birders to contribute; therefore, the accuracy of the database cannot be considered reliable and in fact is not relied upon by professionals. The California Natural Diversity Database (CNDDB) and other peer-reviewed databases used by the Project carry the substantial credibility that the California Department of Fish & Wildlife affords the CNDDB process. The baseline condition is the existing Heber 1 operations, and there is no evidence in the record, and certainly no evidence offered by CRI/CURE, of any such risks being realized.

CRI/CURE's comments also asserted the Project may have impacts on avian species. As observed in the CUP Project description, no new transmission lines (or solar facilities, as volunteered in the comment letter) or changes to existing Heber 1 substation are proposed; therefore, baseline conditions would remain the same and the Project would not cause any significant impacts to avian species. Further, due to the industrialized nature of the site, avian species are likely to avoid the site. In accordance with measure, COA-BIO-2 (set forth below), if construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31), a nesting bird survey will be conducted prior to the start of construction or vegetation clearing activities. If active nests are found, an appropriate nest buffer will be established by a qualified biologist until the nest fledges or fails naturally.

As noted in the Biological Technical Report, the site is an operational energy generation station, and devoid of native vegetation and suitable habitat. These findings are substantiated by the site-specific due diligence and in-person site reconnaissance performed by a professional biologist. Even though no burrowing owls were present on the existing industrial site, it is standard practice to implement precautionary measures, like pre-construction surveys and worker education. As these measures are adopted as part of the CUP decision, they are enforceable and effective. Moreover, while not required to address the already less-than significant potential impacts to biological resources, the Applicant has proposed the COA-BIO-3 (set forth below) in response to comments submitted, which will be incorporated into the Project's conditions of approval.

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Based on the foregoing facts, the IS/MND, and all the evidence in the record, County finds there is no credible evidence in the record that the Project could result in impacts to sensitive species and/or habitat. The County further finds the following voluntary conditions of approval proposed by the applicant and included in the IS/MND as well as the Project's Conditions of Approval, will further ensure that any possible impacts to biological resources during construction and operation will be less than significant.

COA-BIO-1: Prior to any construction activities commencing on site, contractors shall attend a Worker Environmental Awareness Program (WEAP) regarding sensitive biological resources potentially occurring within the Biological Survey Area (BSA). A person knowledgeable about the biology of the covered species shall present the program. At a minimum, the program shall cover the distribution of special-status species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, the penalties for violation of state and federal laws, reporting requirements, project mitigation measures, and measures to implement in the event that this species is found during construction. A fact sheet containing this information shall also be prepared and distributed. The program shall be presented to all members of the construction crew prior to the start of project construction activities. New employees shall receive formal, approved training prior to working onsite. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all protection measures. These forms shall be made available to CDFW upon request.

COA-BIO-2: Protection of nesting birds would be required in compliance with the MBTA and to avoid impacts to nesting birds. To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to February 1). If this avoidance schedule is not feasible, the alternative is to carry out the clearing of vegetation associated with construction under the supervision of a qualified biologist. This shall entail a pre-construction nesting bird survey conducted by a qualified biologist within 14 days prior to initiating ground disturbance activities. The survey shall consist of full coverage of the proposed disturbance limits and a 500-foot buffer. The buffer shall be determined by the biologist and will take into account the species nesting in the area and the habitat present. If no active nests are found, no additional measures are required. If "occupied" nests are found, the nest locations shall be mapped by the biologist, utilizing GPS equipment. The nesting bird species shall be documented and, to the degree feasible, the nesting stage (e.g., incubation of eggs, feeding of young, near fledging). The biologist shall establish a no disturbance buffer around each active nest. The buffer will be determined by the biologist based on the species present and surrounding habitat. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume.

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COA-BIO-3: In accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012), a preconstruction take avoidance survey shall be conducted (CDFW 2012). If the burrowing owl is absent, then no actions are required. If present, the following measures shall be implemented. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, then disturbance impacts shall be minimized through the use of buffer zones, visual screens, or other measures in accordance with CDFW (2012).

Occupied burrows shall be avoided during the breeding period from February 1 through August 31. (CDFW 2012.) "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy within the last 3 years. Occupied burrows shall also be avoided during the nonbreeding season.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. (CDFW 2012.)

Measures for permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat is required such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the burrowing owl life history information provided in Staff Report on Burrowing Owl Mitigation. (CDFW 2012.) Coordination with CDFW may be necessary for the development of site-specific avoidance and measures in the unlikely event that burrowing owls are present.

COA-BIO-4: Pre-construction surveys shall be performed to determine either the presence of special status species or sensitive biological resources within 14 days prior to initiating ground disturbance activities. In addition, before any modifications to existing buildings, a focused bat survey will be performed for western mastiff bat.

COA-BIO-5: If pre-construction surveys determine either the presence of special status species or sensitive biological resources, a construction monitor will be required during construction activities that could impact any species that are identified in the surveys. If required, construction monitoring shall be conducted by a qualified biologist. The biologist shall be given authority to execute the following functions:

- Establish construction exclusion zones and make recommendations for implementing erosion control measures in temporary impact
- Ensure all construction activities stay within the staked construction zone and do not go beyond the limits of disturbance.
- Minimize trimming/removal of vegetation to within the Project impact area.
- Restrict non-essential equipment to the existing roadways and/or disturbed areas to avoid disturbance to existing adjacent native vegetation.

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- Install and maintain appropriate erosion/sediment control measures, as needed, throughout the duration of work activities.

During construction, biological monitors shall inspect and verify field conditions, as needed, to ensure that wildlife and vegetation are not harmed. The biological monitor shall coordinate with the construction supervisor and construction crew and shall have the authority to stop any activity that has the potential to affect special-status species or remove vegetation not specified in this area.

Finding No. BIO-B

Impact: Potential impacts to riparian habitat or any other sensitive natural community identified in any applicable or relevant plan/policy/program/regulation, as established by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

Finding: The Project will not substantially affect riparian habitat or any other sensitive natural community identified in any applicable or relevant plan/policy/program/regulation, as established by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. No riparian or sensitive communities are present on the site. Voluntary mitigation measures have been proposed by the Applicant and will be required for the Project, which will ensure that any possible impacts to sensitive species are less than significant.

Facts Supporting the Finding(s)

The Project site is within a working power plant setting and is maintained as such. As documented in the site photographs (Appendix A to the CUP Application) and the Biological Technical Report (Appendix B to the CUP Application), no riparian or sensitive communities are present on the site.

Based on the foregoing facts, the IS/MND, and all the evidence in the record, the County finds there is no credible evidence in the record that the Project could result in impacts to riparian habitat or any other sensitive natural community identified in any applicable or relevant plan, policy, program, regulation, as established by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. However, similar to Finding BR-A above, while there is no credible evidence of burrowing owl (a potential sensitive natural community) or any other sensitive species inhabiting the site, voluntary conditions COA-BIO-1–4 proposed by the Applicant and included in the IS/MND as well as the Project's Conditions of Approval, will further ensure that any possible impacts to sensitive natural communities during construction and operation will be less than significant.

Finding No. BIO-D

Impact: Potential impacts to species' ability to use native nursery areas or movement across natural areas.

Finding: The Project will not substantially impede wildlife species' ability to use native nursery areas or movement across natural areas. Further, voluntary conditions of approval have been proposed, and will be required for, the Project which will ensure that any possible impacts to wildlife species' ability to use native nursery areas are less than significant.

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Facts Supporting the Finding(s)

As an active power generation facility, the entire Heber 1 Geothermal facility is fenced for security with chain link fencing, and the Project does not propose any developments beyond the existing Heber 1 fence line. Therefore, the baseline conditions would not change as result of the Project, and the Project would not introduce any new restrictions to wildlife access, movement, or use to/of natural areas. Further, the Project site is devoid of vegetation and water, and is not considered suitable habitat for wildlife, as documented in the site photographs (Appendix A to the CUP Application) and Biological Technical Report (Appendix B of CUP Application).

Based on the foregoing facts, the IS/MND, and all the evidence in the record, County finds there is no credible evidence in the record that the Project could impact species' ability to use native nursery areas or movement across natural areas. However, similar to Findings BIO-A, BIO-B, BIO-C above, voluntary conditions (COA-BIO-1–4) proposed by the applicant and included in the IS/MND as well as the Project's Conditions of Approval, will ensure that any possible impacts to species' ability to use native nursery areas or movement across natural areas during construction and operation will be less than significant.

5.3 Geological & Paleontological Resources

Finding No. PAL-A

Impact: Potential impacts to the geologic unit, or substantial adverse effects, including risk of loss, injury or death involving fault rupture, seismic shaking, and/or ground-failure/liquefaction

Finding: No changes to the baseline utilization, injection, or pressure regime are proposed and the Project would not alter the existing geology and hydrogeology at the Project site. The Project will not alter existing geology and hydrogeological. The Project will not result in significant impacts to the geologic unit resulting in subsidence. Further, voluntary measures have been proposed and incorporated into the IS/MND and CUP as Conditions of Approval, which will ensure that any possible impacts involving fault rupture, seismic shaking, and/or ground-failure/liquefaction or impacts to the geologic unit will be less than significant.

Facts Supporting the Finding(s)

The Project proposes upgrades to an existing geothermal facility and does not involve substantial changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards onsite. Site preparation for the installation of the proposed facilities will include leveling the ground surface, excavation, backfill and soil compaction. The Project will comply with current California Building Code Standards that will prevent exacerbation of any existing geologic hazards. In addition, PDFs have been incorporated into the IS/MND project description which will be included in the Proposed Project's grading plan. In summary, the Project does not propose any changes from construction or operations that would result in potential geologic hazards when compared with baseline conditions.

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Finding No. PAL-B

Impact: Potential impacts from Project-related ground disturbances and excavation to paleontologically resources and geologic units, such as the Lake Cahuilla Beds.

Finding: The depth of excavation for the Project would be limited to previously disturbed soils and will not occur within native soils in the Lake Cahuilla Beds. The paleontological footprint area of the Lake Cahuilla Beds extends to the Heber 1 and Heber 2 project sites, both of which have been completely disturbed. Further, voluntary measures have been proposed and incorporated into the IS/MND and CUP as Conditions of Approval, which will ensure that protection and prevention of potential impacts to paleontological resources.

Facts Supporting the Finding(s)

When the Initial Study (IS) for the Project was drafted, it was unknown whether the depth of excavation for the project would be limited to previously disturbed soils. For this reason, the best management practice to conduct monitoring of ground disturbance within the Lake Cahuilla Beds (and outside of previously disturbed fill) was written as a measure for ease and for inclusion in the Mitigation Monitoring and Reporting Program (MMRP). It has now been determined that the depth of excavation for the Project will be limited to previously disturbed soils and will not occur within native soils in the Lake Cahuilla Beds.

Lake Cahuilla was a former freshwater lake that periodically occupied a major portion of the Salton basin approximately 37,000 to 240 years ago, depositing sediments throughout the Imperial and Coachella Valleys (Figure 1, attached). Generally, Lake Cahuilla sediments consist of a layered sequence of both freshwater lacustrine (lake) and fluvial (river/stream) deposits. Throughout Imperial County, Lake Cahuilla sediments have yielded well-preserved remains of freshwater clams and snails and sparse remains of freshwater fish. The paleontological resources of the Lake Cahuilla Beds are considered significant; thus, these deposits are assigned a high paleontological potential. This area extends throughout the Imperial Valley, including both the Heber 1 and Heber 2 project sites.

To this end, there is no material difference between the conditions at Heber 1 and Heber 2 with regard to paleontological resources. Both are located within the historic footprint of Lake Cahuilla and both Project sites have been completely disturbed during previous development. Further, because the depth of excavation for Heber 1 will be limited to previously disturbed soils, ground disturbance at Heber 1 will not occur within the Lake Cahuilla Beds. As a result, there is no substantial evidence of any potential significant effects. Mitigation is therefore not required to reduce potential impacts to paleontological resources.

Although there is no substantial evidence of any potential significant effects to paleontological resources, as explained in Finding PAL-A, the Applicant has voluntarily proposed measures COA-PAL-1 through 6 as best management practices and protection and preventative measures, which will be included in the IS/MND as well as the Project's Conditions of Approval:

COA-PAL-1: All project-related ground disturbances that could potentially impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis.

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COA-PAL-2: A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring Plan for the proposed Project, which would include the identification of any undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan will also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the Applicant and the lead agency.

COA-PAL-3: At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.

COA-PAL-4: Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).

COA-PAL-5: Any recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the San Diego Natural History Museum (SDNHM).

COA-PAL-6: The qualified paleontologist will prepare a final monitoring report to be filed with the Applicant, the lead agency, and the repository.

5.4 Hazards & Hazardous Resources

Finding No. HAZ-A

Impact: Potential impacts to public safety from a catastrophic accident.

Finding: The Project will not result in potential impacts to public safety from a catastrophic accident when compared with baseline conditions. Further, voluntary measures have been proposed, and will be incorporated as Conditions of Approval to the CUP, which will result in beneficial impacts to public safety when compared with baseline conditions.

Facts Supporting the Finding(s)

Ormat has operated OECs utilizing isopentane within the Imperial Valley for more than 25 years without a single incident related to isopentane. Specifically, use of isopentane at four separate facilities has resulted in over 60 cumulative operating years, when all facilities within the Imperial Valley are combined. Doing so is a direct result from the development and implementation of monitoring and

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protective measures to ensure proper operation of Ormat's facilities, including Heber 1, which has operated with the use of isopentane for over 15 years (i.e., since the introduction of the Gould 1 OEC in 2006). For these reasons, the focus on safety was foremost during the development of the proposed Project. Ormat engaged in early and frequent coordination with staff from Imperial County Planning and Development Services and Imperial County Fire Department. This coordination resulted in the reduction of proposed new tanks from 6 to 2. Additionally, and at the request of the County, the Project will implement concrete containment areas to prevent the spreading of isopentane in the unlikely event of an incident as well as a blast wall in between the existing tanks.

The Hazard Assessment (HA) prepared for the CUP Amendment Application (Appendix H of CUP Application) and IS/MND complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program Guidance for Chemical Accidental Release Prevention (40 CFR §§ 68.20–68.42).[4] The HA assesses the appropriate catastrophic scenario of cascading tank failures/upsets, as supported and approved by Imperial County Fire Department. The analyzed scenario, developed in close consultation with the Imperial County Fire Department, is above-and-beyond the EPA standard for assessing only a single vessel failure, exceeding all applicable regulatory requirements. The HA assesses the entire tank system present in the Heber 1 Complex (four tanks total, with two new tanks and two existing tanks). The Project's analysis of a release from a single isopentane storage tank is representative of the worst-case scenario. The OECs are not considered in the Project's HA because the equipment is comprised of isolated compartments (i.e., heat exchangers, condensers, feed pumps, etc.) monitored and maintained with individual control measures to prevent failure of one compartment from effecting the OEC as a whole. Control measures within each individual OEC include gas detectors, flame detectors, and a fire suppression system. The process is also monitored by the operator, providing the ability to detect, and added protection in the case of an isopentane leak. For these reasons, the worst-case analysis remains the explosion of one 10,000-gallon isopentane tank onsite.

The results of the HA demonstrated that the limited impacts from the Project would not impact any sensitive receptors. Furthermore, the explosion area of either of the new vessels will not reach any of the existing vessels, nor each other. The only overlap would be for the existing tanks 3 and 4, which are currently permitted by the County. However, as discussed above, the Applicant proposes the voluntary measure of installing a blast wall between existing tanks 3 and 4 to minimize the potential for a cascading failure, thus reducing the potential for impacts as compared to the existing baseline conditions. The additional storage capacity also increases safety and efficiency for plant maintenance by providing additional tank storage options through additional "tankage" for the volume of isopentane on site

In addition to these design features and voluntary measures, the cessation of the use of benzene will also further reduce the potential for hazards as compared to the existing conditions. These reductions, combined with the voluntary protective measures set forth below within the new isopentane storage tanks represent a continuation of the use of isopentane onsite with reduced potential for impacts compared to the existing baselines and thus will not result in any new, significant impacts:

[4] Consistent with the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis" published guidance, BLEVEs are generally considered unlikely events and were therefore, consistent with EPA guidance, not considered a probable event for the Offsite Consequence Analysis performed in the HA.

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COA-FIRE-1: A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment will be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

COA-FIRE-2: Concrete containment areas for isopentane storage tanks, including a blast wall between currently operational isopentane tanks shall be installed. To minimize the potential for a cascading failure event of the proposed isopentane tanks and to limit potential impacts within the existing Heber 1 Complex fence line, the proposed isopentane tanks shall be located as set forth in Figure 2 to the Hazards Assessment. Diking and impoundment of the proposed isopentane tanks shall be installed to minimize the magnitude and extent of a tank failure

COA-FIRE-3: All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. Each tank will be equipped with two flame detectors and one gas detector (for a total of 4 flame detectors and 2 gas detectors for the two tanks). In the case of an isopentane leak, the gas detector(s) will detect it immediately and send a notification to the operator at the control room (manned 24/7) in order to mobilize fixing the leak. In case of a fire, the flame detector(s) will detect it and immediately start the automatic fire suppression system. In case of a fire, there will also be a horn and strobe system that will turn on automatically to alert the plant employees. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

COA-FIRE-4: An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

COA-FIRE-5: Fire department access roads and gates shall be in accordance with the current adopted Fire Code and the facility will maintain a Knox Box for access on site.

COA-FIRE-6: Compliance with all required sections of the Fire Code.

COA-FIRE-7: For the isopentane tanks, the Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

5.5 CUMULATIVE EFFECTS & MANDATORY FINDINGS OF SIGNIFICANCE

Finding No. MFOS

CUMULATIVE EFFECTS

Impact: The Project's cumulative effects with existing or reasonably foreseeable future projects, including the retrofit and replacement of equipment at the Heber 2 geothermal plant.

Class: Class II – Less Than Significant Impact

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Finding: The Project will not result in significant cumulative effects with existing or reasonably foreseeable future projects, including the retrofit and replacement of equipment at the Heber 2 geothermal plant.

Facts Supporting the Finding(s)

The IS/MND identifies the geographic scope of the cumulative area of analysis as the extent of potential off-site impacts, including air, noise, human health, and traffic. Section 3 of the IS/MND outlines the "Mandatory Findings of Significance," as required by CEQA. As Section 3 explains, the CEQA "baseline" for the Project includes the existing operation of the Heber 1 Facility. The geographic scope of the cumulative area of analysis considers whether cumulative effects for this Project would be limited to off-site Project impacts that coincide with effects from another past, present, or reasonably foreseeable future action. This area of overlap is referred to as the "Area of Potential Effect," and is specific to each resource area as defined by the analysis in the IS. The extent of these impacts is discussed in each resource's respective section in the IS/MND and as observed, none would result in a significant impact. In order to have a cumulative effect, there would need to be another project that generates the effect that would be additive to the Project's effects. Imperial County performed a project review of all reasonably foreseeable future projects, and no projects occur in relative close proximity to the Heber 1 complex or Heber 1 Area of Potential Effect (including the Heber 2 project located approximately 1 mile away). Therefore, no significant cumulative effects would occur as result of the Project.

CRI/CURE's comments contend that the Project may yield cumulative air quality and traffic impacts. As the County's response explains, traffic impacts would be limited to localized delivery of heavy equipment and facilities and would not have overlapping traffic effects with Heber 2. Air and noise impacts for Heber 1 would be similar to baseline conditions. Permitted VOC emission limits of 99.7 lbs/day are below the ICAPCD's 137 lbs/day CEQA significance threshold for emissions of ROG/VOC. With the improvements inherent in new equipment, isopentane emissions will remain below the permitted authorized release amount. (See Appendix B of the ATC permit application.) The Proposed Project also would not have overlapping noise fields with Heber 2. Therefore, the Proposed Project would not result in significant cumulative impacts with Heber 2.

Finding No. USS

Impact: The Project's potential impacts to water supply.

Finding: The Project will not have significant impact on water supplies.

Facts Supporting the Finding(s)

The Project does not propose any new wells or any changes to the baseline utilization, injection, or pressure regime at the Heber 1 facility. Therefore, the Project would not alter the existing geology and hydrogeology and not impact any groundwater aquifers (or surface waters). Further, and as explained above, the Imperial Irrigation District has already approved an Amendment to the existing water rights contract between the parties. The Project will not require additional water to operate beyond that considered in the amended water rights contract, and no additional amendments to the Heber 1 facility's water rights are required to accommodate the Project. Therefore, the Project will not serve as a significant new source of water consumption and will not impact any water management plans.

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6.0 FINDING RELATING TO CREDIBILITY OF CRI/CURE'S COMMENTS AND COMMENTS FROM CRI/CURE'S PURPORTED EXPERTS

The County finds that CRI/CURE's comments (submitted through their attorneys at ABJ&C), including those of its purported experts, regarding the Project's IS/MND do not provide substantial evidence supporting a conclusion that the Project may have a significant effect on the environment. In particular, and as described in further detail below and based the County's review of the entire record, the County finds that ABJC's comments relating to the Project Description as well as the Project's potential impacts on air quality, hazards, biological resources, geological resources, and cumulative impacts are not credible, and comprised of argument, speculation, unsubstantiated opinion, and information that is clearly inaccurate or erroneous.

Given the existing level of development at the Heber 1 facility, which has been in operation since 1985, coupled with Project revisions that have been accepted by the Applicant to ensure that any potential impacts are less than significant, the County finds that there is no substantial evidence in light of the whole record before it that the Project, as revised, may have a significant effect on the environment. In fact, and as detailed above, the County finds the Project will actually result in improvements to air quality and further reduce risks to the public from hazardous materials when compared with baseline conditions. As detailed above, all issues raised in comments on the IS/MND were responded to, or through Project revisions or VEPFs, which were incorporated to assure the public that any possible environmental impacts were addressed.

Under Public Resources Code section 21082.2, the question is not whether any credible evidence supports a fair argument, but whether substantial evidence, in light of the whole record, supports a fair argument. Importantly, evidence that, if viewed in isolation, might seem to give rise to a "fair argument" may ultimately prove insubstantial after all if other information in the record shows that the "evidence" is merely speculation or unsubstantiated opinion, or is inaccurate or misleading. (*Friends of "B" Street v. City of Hayward* (1980) 106 Cal.App.3d 988, 1000-1003.) Speculative possibilities do not constitute substantial evidence, and pure speculation with no evidentiary support cannot trigger environmental review requirements. (*Citizens' Com. to Save Our Village v. City of Claremont* (1995) 37 Cal.App.4th 1157, 1171; see also *Assn. for Protection of Environmental Values in Ukiah v. City of Ukiah* (1991) 2 Cal.App.4th 720, 735-736 [to meet fair argument burden, "project opponents must produce some evidence, other than their unsubstantiated opinions, that a project will produce a particular adverse effect"].) While the fair argument standard may be low, it is not so low as to be non-existent as ABJC suggest. As the Court of Appeal observed in *Apartment Association of Greater L.A. v. City of L.A.* (2001) 90 Cal.App.4th 1162:

> *We do not believe an expert's opinion which says nothing more than "it is reasonable to assume" that something "potentially . . . may occur" constitutes . . . substantial evidence . . . "Substantial evidence" is defined in the CEQA guidelines to include "expert opinion supported by facts." It does not include "[a]rgument, speculation, unsubstantiated opinion or narrative."*

(*Id.* at p. 1176; see also *Brentwood Assn. for No Drilling, Inc. v. City of L.A.* (1982) 134 Cal.App.3d 491, 504 [testimony "unsupported by the facts from which it is derived" is not "substantial evidence"]; *Bowman v. City of Berkeley* (2004) 122 Cal.App.4th 572, 583 [County has "discretion to discount

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[expert's] credibility"]; *Leonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1348–1349 ["administrative agency is entitled to believe or disbelieve even uncontradicted testimony by a biased or otherwise incredible witness"]; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928–929 ["the lead agency has discretion to determine whether evidence offered by the citizens claiming a fair argument exists meets CEQA's definition of 'substantial evidence"... "mere argument, speculation, and unsubstantiated opinion, even expert opinion, is not substantial evidence for a fair argument"]; Pub. Resources Code, § 21082.2, subd. (c).)

Based on the foregoing, the County expressly finds that the comments submitted by CRI/CURE through ABJ&C and its purported experts are not credible, and comprised of argument, speculation, and unsubstantiated opinion, and thus do not give rise to a "fair argument" that the Project could result in any potential adverse environmental impacts.

7.0 RECIRCULATION FINDINGS

Legal Background

Though not mandated or required by CEQA, the County nevertheless finds that substantial evidence supports its determination that there is no new information that would require recirculation of the MND or preparation of a subsequent or supplemental EIR for the Heber 1 Project. (See *Citizens for a Megaplex-Free Alameda v. City of Alameda* (2007) 149 Cal.App.4th 91, 114–115 (*Megaplex-Free Alameda*), original emphasis ["CEQA does *not* require that findings be adopted when an agency determined that a subsequent EIR [or MND] is not required. An implied finding that a further EIR is not required under Public Resources Code § 21166 is sufficient as long as it is supported by substantial evidence"].)

Public Resources Code section 21166 prescribes when a lead agency must prepare and/or recirculate a subsequent or supplemental EIR or MND for a project. (Pub. Resources Code, § 21166; *American Canyon Community United for Responsible Growth v. City of American Canyon* (2006) 145 Cal.App.4th 1062, 1071–1072 [although section 21166 "speaks only in terms of the EIR, CEQA Guidelines apply section 21166 to project changes following an agency's adoption of a negative declaration or a mitigated negative declaration"].) As elaborated by CEQA Guidelines section 15162 (which was promulgated pursuant to section 21166), after the lead agency certifies an EIR or adopted a MND for a project, no subsequent EIR or MND shall be prepared for the project unless the lead agency determines, based on substantial evidence, that one or more of the following conditions exist:

> *(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant environmental effects;*
>
> *(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or*

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(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different than those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

(CEQA Guidelines, § 15162, subd. (a); see *Benton v. Board of Supervisors* (1991) 226 Cal.App.3d 1467, 1482–1483 (*Benton*).) To this end, if changes to a project or its circumstances occur, or new information becomes available after the lead agency adopts a negative declaration, the agency must prepare a subsequent EIR if required under the conditions set forth above. Otherwise, the agency must determine whether it should prepare a subsequent negative declaration, an addendum, or no further documentation. (CEQA Guidelines, § 15162, subd. (b).)

Similarly, where the lead agency has prepared a negative declaration (thereby signifying that a project would not a have a significant effect on the environment), recirculation is only required when the document is substantially revised after public notice of its availability but prior to its adoption. (Pub. Resources Code, § 21080, subd. (c).; CEQA Guidelines, § 15073.5, subd. (a).) A "substantial revision" of a negative declaration means: (1) a new, avoidable significant effect is identified and mitigation measures or project revisions must be added in order to reduce the effect to insignificance; or (2) the lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less-than-significant levels, such that new measures or revisions are required. (CEQA Guidelines, § 15073.5, subd. (b).) However, recirculation is not required when:

(1) Mitigation measures are replaced with equal or effective measures;

(2) New project revisions are added in response to written or verbal comments on the project's effects identified in the proposed negative declaration which are not new avoidable significant effects;

(3) Measures or conditions of project approval are added after circulation of the negative declaration, which are not required by CEQA, which do not create new significant environmental effects and are not necessary to mitigate an avoidable significant effect;

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(4) *New information is added to the negative declaration that merely clarifies, amplifies, or makes insignificant modifications to the negative declaration.*

(CEQA Guidelines, § 15073.5, subd. (c).)

For these reasons, "recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR [or MND]." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal.4th 1112, 1129–1130 (*Laurel Heights II*); see also *id.* at p. 1132 [the Legislative intent of section 21092.1 and 21166 is not to "promote endless rounds of revision and recirculation of EIRs. Recirculation was intended to be an exception, rather than the general rule"].) Therefore, the test for considering whether recirculation is required is "whether the record as a whole contains substantial evidence to support a determination that the changes in the [P]roject were not so 'substantial' as to require 'major' modifications to the EIR [or MND]." (*Bowman v. City of Petaluma* (1986) 185 Cal.App.3d 1065, 1075 (*Bowman*).) In determining that issue, all reasonable doubts are resolved in favor of the County's decision. (*Megaplex-Free Alameda, supra*, 149 Cal.App.4th at p. 112.)

Findings

The County finds that none of the factors set forth in CEQA Guidelines, sections 15162 and 15073.5, exist with respect to the Heber 1 Project. As explained in Section 3.0, *supra*, the County finds, based on substantial evidence in the record, that the Project is exempt from CEQA because its proposed modifications to the existing Heber 1 facility will not yield significant environmental effects, and instead, will improve baseline conditions—particularly as to air quality and hazards. (See, Section 3.0, *supra*.) In making this finding, the County further concludes that there is no significant new information that has been presented—either in CRI/CURE's comments or elsewhere—that suggests the Project will have significant impacts on the environment, thereby mandating preparation of an environmental impact report. (Pub. Resources Code, § 21166, subd. (c); CEQA Guidelines, § 15162, subd. (a)(3); see also Section 6.0, *supra*.)

Moreover, the County finds that its incorporation of the Applicant's voluntary conditions of approval and VEPFs will ensure that all potential impacts—including those raised by CRI/CURE—will be avoided entirely, or mitigated to less-than-significant levels. (See *Benton, supra*, 226 Cal.App.3d at pp. 1482–1483 [by adopting a mitigated negative declaration, county board of supervisors "impliedly agreed" with appellant's conclusion that impacts could be mitigated, such that an EIR was not necessary]; accord *Megaplex-Free Alameda, supra*, 149 Cal.App.4th at pp. 114–115.) The County similarly finds that the incorporation of these conditions does not substantially change the Project in a manner that would necessitate "major revisions" to the MND. (See, e.g., *Bowman, supra*, 185 Cal.App.3d at p. 1081.)

As explained above, these voluntary conditions are incorporated out of an abundance of caution, despite the County's finding that the Project will not yield significant environmental impacts. That the County concurrently adopts these measures to further improve baseline conditions does not "substantially change" to the Project. (See *Bowman, supra*, at p. 1080, original emphasis [substantial evidence supported City's finding that project would not have a significant noise impact, particularly where traffic impacts "would actually be *improved* under one of the mitigating measures" financed by the applicant].) Rather, the voluntary measures and conditions of approvals were added in response to

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comments after the MND was circulated. As the County previously explained, the measures are not required by CEQA because the County concluded that they are not necessary to mitigate an avoidable significant impact. (See CEQA Guidelines, § 15073.5, subd. (c)(3); see also *El Dorado County Taxpayers for Quality Growth v. County of El Dorado* (2004) 122 Cal.App.4th 1591, 1602–1604 [reclamation measure added after approval of negative declaration "was simply an added bonus" that would project's overall air quality impacts, and thus, "did not trigger negative declaration recirculation"].)

For these reasons, the County concludes, based on all available substantial evidence in the record, that recirculation is not required because there is no significant or new information of substantial importance that the Project will yield significant environmental impacts.

— END —

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ATTACHMENT – G

Response to Comments Heber 1

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RESPONSE TO COMMENTS FOR THE HEBER 1 REPOWER PROJECT IMPERIAL COUNTY, CALIFORNIA

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August 2021

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SECTION 1.0 – INTRODUCTION

On February 11, 2021, the County of Imperial issued a Notice of Intent to adopt a Mitigated Negative Declaration (NOI) and distributed a Draft Initial Study/Mitigated Negative Declaration (IS/MND) to upgrade the existing Heber 1 geothermal facility to public agencies and the general public. In accordance with the California Environmental Quality Act (CEQA) Section 21091 and State CEQA Guidelines Section 15073, a 30-day public review period for the Draft IS/MND was provided from February 12, 2021, to March 15, 2021. The comment period was extended twice, first to April 14, 2021, and then to May 10, 2021, in response to stakeholder comments and to accommodate the review process. Six comment letters were received during the comment period, five of which were either confirmation that commenters had no comments on the Project or were non-substantive.

Heber Field Company (HFC or Applicant)[1] has reviewed the comments submitted by the Adams Broadwell Joseph & Cardozo law firm on behalf of the Citizens for Responsible Industry (CRI) and California Unions for Reliable Energy (CURE) relating to the IS/MND. As demonstrated below in Section 3.0, the comments do not provide substantial evidence demonstrating a fair argument that the Project may have a significant effect on the environment. In many cases, the conclusions reached by the consultants retained by CRI/CURE with respect to the potential for significant impacts employ assumptions or facts that are not credible. The Applicant is also providing as Attachments N and O, information that further clarifies and amplifies the environmental analysis.

Furthermore, based on the record, the Applicant submits that the Project is categorically exempt from CEQA under the Class 1, Class 2, and common-sense exemptions. This is further discussed in Attachment O.

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[1] Heber Field Company is a subsidiary of Ormat Technologies, Inc.

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SECTION 2.0 – VOLUNTARY ENVIRONMENTAL PROTECTION FEATURES AS CONDITIONS OF APPROVAL

The following measures identified in the IS/MND are incorporated into the Project description as Voluntary Environmental Protection Features (VEPFs).

Some VEPFs are Best Management Practices (BMPs) or project design features (PDFs). The VEPFs are fundamentally preventive and protective measures. They reflect the recommendations of stakeholders, including the Applicant, the County Staff, and the public, and are also drawn from measures implemented by other, similarly situated approved projects. The VEPFs also serve to confirm generally applicable regulations that would apply to the Project that further reduce an already less-than-significant impact and in many cases improve environmental conditions when compared with the baseline conditions.

The Applicant requests that the VEPFs be included as conditions of approval (COAs) in the Conditional Use Permit (CUP). The Applicant voluntarily adopted these conditions as preventive and protective measures. The COAs are not CEQA mitigation measures. The VEPFs embodied as COAs are instead further evidence that there is no substantial evidence presented of a fair argument for finding a potentially significant effect associated with approval of the Project. Including the VEPFs as COAs in the CUP ensures that these measures are monitored and enforced.

Note: The IS/MND refers to the following revised measures as mitigation measures using the label "MM-__"; however, given that there is no substantial evidence of any significant effects, and consistent with the Applicant's request for the County to include these measures as COAs, this Response to Comments re-labels the measures conditions of approval as "COA-".

COA-AQ-1: The Applicant shall obtain a modified Permit to Operate from the Imperial County Air Pollution Control District (ICAPCD). All Project construction activities shall comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules and the following VEPFs:

- Project equipment and worker vehicles shall be turned off when not in use and not left idling for more than 5 minutes to minimize unnecessary emissions.
- Water shall be applied to the development site during site preparation and construction to control fugitive dust.
- Earth moving work shall be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads/areas will be restricted to 10 mph to control fugitive dust.
- During windy conditions, barriers will be constructed and/or additional watering conducted to minimize wind-blown fugitive dust.
- Vehicle access would be restricted to the disturbance area via signage/fencing.
- Project construction equipment will utilize Tier 3 engines when commercially available. If a Tier 3 engine is not certified for a particular piece of equipment or not commercially available, then the equipment shall be either equipped with a Tier 2 engine or equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels.

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COA-BIO-1: Prior to any construction activities commencing on site, contractors shall attend a Worker Environmental Awareness Program (WEAP) regarding sensitive biological resources potentially occurring within the Biological Survey Area (BSA). A person knowledgeable about the biology of the covered species shall present the program. At a minimum, the program shall cover the distribution of special-status species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, the penalties for violation of state and federal laws, reporting requirements, project mitigation measures, and measures to implement in the event that this species is found during construction. A fact sheet containing this information shall also be prepared and distributed. The program shall be presented to all members of the construction crew prior to the start of project construction activities. New employees shall receive formal, approved training prior to working onsite. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all protection measures. These forms shall be made available to CDFW upon request.

COA-BIO-2: Protection of nesting birds would be required in compliance with the MBTA and to avoid impacts to nesting birds. To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to February 1). If this avoidance schedule is not feasible, the alternative is to carry out the clearing of vegetation associated with construction under the supervision of a qualified biologist. This shall entail a pre-construction nesting bird survey conducted by a qualified biologist within 14 days prior to initiating ground disturbance activities. The survey shall consist of full coverage of the proposed disturbance limits and a 500-foot buffer. The buffer shall be determined by the biologist and will take into account the species nesting in the area and the habitat present. If no active nests are found, no additional measures are required. If "occupied" nests are found, the nest locations shall be mapped by the biologist, utilizing GPS equipment. The nesting bird species shall be documented and, to the degree feasible, the nesting stage (e.g., incubation of eggs, feeding of young, near fledging). The biologist shall establish a no disturbance buffer around each active nest. The buffer will be determined by the biologist based on the species present and surrounding habitat. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume.

COA-BIO-3: In accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012), a preconstruction take avoidance survey shall be conducted (CDFW 2012). If the burrowing owl is absent, then no actions are required. If present, the following measures shall be implemented. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, then disturbance impacts shall be minimized through the use of buffer zones, visual screens, or other measures in accordance with CDFW (2012).

Occupied burrows shall be avoided during the breeding period from February 1 through August 31. (CDFW 2012.) "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy within the last 3 years. Occupied burrows shall also be avoided during the nonbreeding season.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. (CDFW 2012.)

Measures for permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat is required such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the burrowing owl life history information provided in Staff Report on Burrowing Owl

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Mitigation. (CDFW 2012.) Coordination with CDFW may be necessary for the development of site-specific avoidance and measures in the unlikely event that burrowing owls are present.

COA-BIO-4: Pre-construction surveys shall be performed to determine either the presence of special status species or sensitive biological resources within 14 days prior to initiating ground disturbance activities. In addition, before any modifications to existing buildings, a focused bat survey will be performed for western mastiff bat.

COA-BIO-5: If pre-construction surveys determine either the presence of special status species or sensitive biological resources, a construction monitor will be required during construction activities that could impact any species that are identified in the surveys. If required, construction monitoring shall be conducted by a qualified biologist. The biologist shall be given authority to execute the following functions:

- Establish construction exclusion zones and make recommendations for implementing erosion control measures in temporary impact
- Ensure all construction activities stay within the staked construction zone and do not go beyond the limits of disturbance.
- Minimize trimming/removal of vegetation to within the Project impact area.
- Restrict non-essential equipment to the existing roadways and/or disturbed areas to avoid disturbance to existing adjacent native vegetation.
- Install and maintain appropriate erosion/sediment control measures, as needed, throughout the duration of work activities.

During construction, biological monitors shall inspect and verify field conditions, as needed, to ensure that wildlife and vegetation are not harmed. The biological monitor shall coordinate with the construction supervisor and construction crew and shall have the authority to stop any activity that has the potential to affect special-status species or remove vegetation not specified in this area.

COA-PAL-1: All project-related ground disturbances that could potentially impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis.

COA-PAL-2: A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring Plan for the proposed Project, which would include the identification of any undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan will also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the Applicant and the lead agency.

COA-PAL-3: At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.

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COA-PAL-4: Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).

COA-PAL-5: Any recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the San Diego Natural History Museum (SDNHM).

COA-PAL-6: The qualified paleontologist will prepare a final monitoring report to be filed with the Applicant, the lead agency, and the repository.

COA-FIRE-1: A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment will be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

COA-FIRE-2: Concrete containment areas for isopentane storage tanks, including a blast wall between currently operational isopentane tanks shall be installed. To minimize the potential for a cascading failure event of the proposed isopentane tanks and to limit potential impacts within the existing Heber 1 Complex fence line, the proposed isopentane tanks shall be located as set forth in the attached figure #. Diking and impoundment of the proposed isopentane tanks shall be installed to minimize the magnitude and extent of a tank failure

COA-FIRE-3: All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. Each tank will be equipped with two flame detectors and one gas detector (for a total of 4 flame detectors and 2 gas detectors for the two tanks). In the case of an isopentane leak, the gas detector(s) will detect it immediately and send a notification to the operator at the control room (manned 24/7) in order to mobilize fixing the leak. In case of a fire, the flame detector(s) will detect it and immediately start the automatic fire suppression system. In case of a fire, there will also be a horn and strobe system that will turn on automatically to alert the plant employees. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

COA-FIRE-4: An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

COA-FIRE-5: Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

COA-FIRE-6: Compliance with all required sections of the fire code.

COA-FIRE-7: For the isopentane tanks, the Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

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SECTION 3.0 – RESPONSE TO COMMENTS

During the public review comment period, the following comments were received from the following agencies and organizations.

Comment Letter No.	Commenting Agency or Organization	Date of Comment
1	Adams Broadwell Joseph & Cardozo PC, Attorneys at Law	May 10, 2021
2	Imperial County Air Pollution Control District	February 18, 2021
3	Imperial County Public Health Department	April 13, 2021
4	Imperial Irrigation District	February 16, 2021
5	Imperial Irrigation District	April 12, 2021
6	Quechan Tribe	February 24, 2021

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LETTER 1
Adams Broadwell Joseph & Cardozo PC, Attorneys at Law
May 10, 2021

1 The comment identifies the commenter and characterizes the commenter's understandings of the Heber 1 Repower Project. This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

2 The comment identifies Dr. Fox and Dr. Smallwood and their relationship to the commenter. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

3 The comment identifies the commenter's "statement of interest." Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

Applicant notes that it shares CRI/CURE's support of clean, renewable energy technology, which is why it has been engaged in the production of renewable energy from geothermal resources at the Heber 1 site since the 1980s. The Project offers both local- and state-wide benefits. Locally, implementing the Project assists the County in promoting its role as the state's leading producer of renewable energy and continues to offer local green jobs. Additionally, the Project supports the County in achieving the goals and objectives in the Renewable Energy and Transmission Element of the local General Plan.

On a state level, the Project assists the State of California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006 (AB 32). AB 32 requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill (SB) 32, which requires that statewide GHG emissions are reduced to at least 40 % below the statewide GHG emissions limit by 2030. Further, the Project supports California's aggressive Renewables Portfolio Standard (RPS) Program consistent with the timeline established by SB 100, which was approved by the California Legislature and signed by Governor Brown in September 2018. SB 100 increases RPS in 2030 from 50 % to 60% and establishes a goal of 100% RPS by 2045.

The recent Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026) before the California Public Utilities Commission (D.20-05-003), filed on May 21, 2021, proposes that at least 1,000 MW of geothermal resources be required as part of the State's procurement portfolio by no later than 2025. As a geothermal facility, the Project is in direct alignment with this goal.

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4 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

5 This comment provides the commenter's view of certain provisions of existing law, including the California Public Records Act and CEQA. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. Documents incorporated by reference and referenced in the Heber 1 Repower Project Mitigated Negative Declaration were provided to the public as required by applicable law.

6 Documents incorporated by reference in the Heber 1 Repower Project Mitigated Negative Declaration were provided to the County and made available to the public as required by applicable law. The County is not obligated under CEQA or any other applicable law to provide materials in the format specified in the request. We understand that the County has previously provided the emissions data requested by CRI/CURE. Further, in addition to not being required by applicable law, the provision of an unlocked Microsoft Excel spreadsheet could result in harm due to the potential distribution of information that is confidential/propriety, trade secret, and used for business purposes.

7 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. The commenters' legal arguments are noted and addressed below.

The comment generally references the "fair argument rule" under CEQA, but it does not cite to any specific IS/MND sections or analyses it claims are at issue. CRI/CURE has the burden of showing that there is substantial evidence supporting a fair argument that the Project may result in a significant effect. While substantial evidence can include both expert and lay opinion, CEQA requires that such opinion be supported by substantial evidence. Argument, speculation, unsubstantiated opinion or narrative, and evidence that is clearly inaccurate or erroneous does not constitute substantial evidence. (Pub. Resources Code § 21080(e); see also 14 C.C.R. § 15064(e)(2) ("Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.").) "Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency." (14 C.C.R. § 15384 (a).)

Substantively, the proposed Project site is entirely within the existing and permitted plant boundary of existing facilities. The site is devoid of any vegetation, habitat, and waterbodies. The purpose of the Project is to repower the Heber 1 geothermal facilities by replacing old ORMAT Energy Converters (OECs) with state-of-the-art OECs that run more efficiently and emit fewer emissions and installing two new isopentane tanks to support maintenance and operations. No facilities are proposed outside of the existing

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facility's fence line. Due to the Project's limited nature and design, there is no potential for significant environmental impacts.

8 This comment provides the commenter's view of certain provisions of existing law. The comment generally asserts that the description of the Project is not adequate, but does not cite any specific inadequacies, inaccuracies, or inconsistencies in the Project description. As the comment does not provide any specific comments or concerns regarding the environmental review and approval, the comment is noted, and no further response is necessary.

9 This comment is factually incorrect. A description of the Project's construction activities is provided on MND page 12 and a list of the diesel and gasoline-fueled equipment to be used during construction is provided on MND page 26. Construction activity emissions are addressed and analyzed at IS/MND pages 19 and 26 and Appendix G. The estimated surface disturbance is approximately 7.67 acres, comprised of which 6.03 acres are already disturbed/developed surface and 1.64 acres of bare ground. (Biological Technical Report, p. 24; IS/MND, p. 23.)

10 In response to this comment, the Project Description in the IS/MND has been clarified to provide further detail regarding expected construction activities, which include ground surface leveling, excavation, backfill, and soil compaction activities using an excavator, bulldozer, roller, crane, boom truck, forklift, man lift, haul trucks and hand tools, and the amount of surface disturbance anticipated that is described elsewhere in the MND.

Section VIII. Greenhouse Gas Emissions, question A) has been clarified to reflect that construction is anticipated to last approximately six months as stated in the Project Description on MND page 12 and throughout the remainder of the CUP Application package. In response to comments regarding the use of CalEEMod to evaluate construction emissions, Appendix N (Air Emissions Memorandum) has been included to report the results of CalEEMod modelling of construction emissions for both criterial pollutants and GHG. As observed, construction emissions for criteria pollutants and GHG emissions are less than significant because they are well below the applicable regulatory significance thresholds. Moreover, the comment notes that agencies "often" use CalEEMod, which confirms that the use of this particular model is not a regulatory requirement. This information provides clarification regarding construction activities and confirms the MND's conclusions that air quality impacts from construction are less than significant.

11 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

12 This comment is factually incorrect. The best information regarding the estimated construction start date and length of the construction period were provided in the MND. Because the application for the Heber 1 Project was filed in 2019, some adjustments to the construction start date is necessary given delays caused by COVID and the length of the environmental review process. At this time, the estimated construction start date is

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November 2021, or as soon as all required permits and approvals are granted. As set forth in comment 10, the list of required construction equipment provided for public review includes a crane, boom truck, cement truck, forklift, man lifts, haul trucks, and hand tools; and the proposed construction activities involve leveling the ground surface, excavation, backfill, soil compaction, and equipment installation. The Project Description has been clarified to include this updated information.

13 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. In any event, the CEQA "baseline" includes the operation of the Heber 1 facility. Section 3 of the IS/MND (Mandatory Findings of Significance) concludes cumulative effects as less than significant. Cumulative effects for this Project would be limited to off-site Project impacts that coincide with effects from another past, present, or reasonably foreseeable future action. This area of overlap is referred to as the Area of Potential Effect and is specific to each resource area as defined by the analysis in the IS. The extent of these impacts is discussed in each resource's respective section in the IS/MND and as observed, none would result in a significant impact. In order to have a cumulative effect, there would need to be another project that generates the effect that would be additive to the Project's effects. There are no other projects occurring or proposed in the Heber 1 Area of Potential Effect. Therefore, no significant cumulative effects would occur as result of the Project.

14 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. In any event, the CEQA "baseline" is the continuing operation of the Heber 1 facility with the existing residence near the Heber 1 site. No new residences are at issue. As discussed in the IS/MND and other Project documents, the repower Project site is approximately 1,000 feet west of a residence and would reduce criteria pollutant emissions compared with baseline conditions. For purposes of responding to comments regarding construction emissions, Appendix N (Air Emissions Memorandum) has been included to report the results of the modelling of construction emissions for both criteria pollutants and GHG using CalEEMod. As observed, construction emissions for criteria pollutants and GHG emissions are significantly less than the regulatory thresholds and would not expose sensitive receptors to substantial pollutants.

As detailed in Question (c) in the Air Quality section of the Environmental Checklist, no substantial air pollutants are expected to result from Project construction or operations. Thus, the potential for the air contaminant, isopentane, to be released is discussed. The Hazards Assessment determined that there are no sensitive receptors, referred to as impact populations, in the potential circle of influence regarding accidental isopentane release.

15 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

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The IS/MND addresses geological conditions, including the potential for expansive soils, and recognizes need for construction techniques consistent with applicable laws, ordinances, regulations, and standards, including the California Building Code and related regulations. CEQA generally does not require that public agencies analyze the impact existing environmental conditions might have on a project's future users or residents, according to the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369. Moreover, "[t]he questions in the sample checklist in appendix G to the Act's guidelines -- including, whether the project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires -- do not extend 'the [environmental impact report] requirement to situations where the environment has an effect on a project, instead of the other way around.'" (*Newtown Preservation Soc'y v. Cnty of El Dorado* (2021) 65 Cal. App. 5th 771, 279 Cal. Rptr. 3d 915, 928 (footnote omitted) (quoting *S. Orange Cnty. Wastewater Auth. v. City of Dana Point* (2011) 196 Cal. App. 4th 1604, 1615.) An agency must analyze how environmental conditions might adversely affect a project's residents or users only where the project itself might worsen existing environmental hazards in a way that will adversely affect them, or if one of the provisions of CEQA which require such an analysis for certain airport, school, and housing projects applies. (See *Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist.*, 62 Cal.4th at 392.)

The Project proposes upgrades to an existing geothermal facility. It does not involve substantial changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards onsite. There are no other projects occurring or proposed in the Heber 1 Area of Potential Effect, as discussed above. Site preparation for the installation of the proposed facilities will include leveling the ground surface, excavation, backfill and soil compaction; thus, Project Design Features (PDFs) have been incorporated into the IS/MND project description which will be included in the Proposed Project's grading plan.

16 As discussed in Response 15 above and in this response, CEQA generally does not require that public agencies analyze the impact existing environmental conditions might have on a project's future users or residents that are unrelated to the project's potential effects. The Project proposes upgrades to an existing geothermal facility and does not involve substantial changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards onsite. Site preparation for the installation of the proposed facilities will include leveling the ground surface, excavation, backfill and soil compaction; thus, PDFs have been incorporated into the IS/MND project description which will be included in the Proposed Project's grading plan.

17 This comment is vague because it fails to identify with specificity any alleged inconsistencies. From what can be discerned from these non-specific statements, the comments are incorrect. There are no inconsistencies between the application for CUP and materials submitted to any other agencies for Heber 1. The comment erroneously fails to account for the passage of time and the updating of public information that occur in the normal course of all CEQA processes. For example, Risk Management Professionals, Inc. (RMP), produced an initial Hazard Assessment for the Heber 1 Repower Project on

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September 20, 2019, to address potential hazards associated with the proposed six new isopentane tanks. Following public comments, RMP produced an updated Hazard Assessment using a second software program and incorporating a concrete containment area as passive mitigation. The Hazard Assessment was clarified in November 2020 to adjust the proposed number of isopentane vessels from six new tanks to two new tanks to address further comments from the County. Both technical assessments were conducted in compliance with the Hazard Assessment Offsite Consequence Analysis requirements of the Environmental Protection Agency (EPA) "Risk Management Plan" regulations (40 C.F.R § 68.65) and California Code of Regulations "California Accidental Release Prevention (CalARP) Program" (19 C.C.R. §§ 2750.1 to 2750.9).

The CUP application and MND were updated in December 2020 to reflect the improvements to the November 2020 Hazard Assessment, a reduction in the number of new isopentane tanks from six to two. The Authority to Construct (ATC) from the ICAPCD reflects the older Project description, proposing six new isopentane tanks instead of two, precisely because that was accurate data at the time of the ATC application was submitted in December 2019. The ATC will also be updated to reflect the new Project description, including two new isopentane tanks rather than six.

18 The IS/MND correctly analyzes the Project, which proposes installation of two new isopentane tanks instead of the six tanks originally proposed in 2019. The reduction was in response to comments from the public and the County. The ATC from the ICAPCD reflects the original 2019 Project description, which proposed six new isopentane tanks instead of two, as was accurate at the time. The ATC will be updated to reflect two new isopentane tanks rather than six.

19 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

20 In response to comments regarding construction emissions, Appendix N (Air Emissions Memorandum) was prepared to clarify the analysis regarding construction emissions. Appendix N sets forth the results of the modelling of construction emissions for both criterial pollutants and GHG using CalEEMOD and confirms the conclusions that there are no significant effects and that the Project will not cause or contribute to an exceedance of any applicable air quality standards. As observed, construction emissions for criteria pollutants and GHG emissions are less than significant, well below the applicable regulatory significance thresholds.

Moreover, as part of the plan to move toward attainment of these ambient air quality standards, Imperial County adopted the 2009 PM10 State Implementation Plan (SIP), the 2009 Ozone Air Quality Attainment Plan (AQAP) along with the 2009 Reasonably Available Control Technology (RACT) SIP and the 2013 SIP for the 2006 24-Hr PM2.5 moderate nonattainment area. To implement these plans the ICAPCD has adopted rules, regulations, and requirements to limit and reduce emissions of these air pollutants and their precursors. To comply with these ICAPCD rules, the Project has filed for and will

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obtain approval of an Authority to Construct (ATC). The Project will comply with the ICAPCD ATC and conditions of approval.

21 For purposes of responding to comments regarding construction emissions, Appendix N (Air Emissions Memorandum) has been included to report the results of the modelling of construction emissions for both criterial pollutants and GHG. Appendix N concludes that construction emissions for criteria pollutants and GHG emissions are significantly less than the regulatory significance thresholds. To comply with ICAPCD rules, the Project has filed for and will obtain approval of an ATC permit in a timely manner. The Project will comply with the ICAPCD permit conditions of approval. Specifically, the Project is required to comply with the ICAPCD Rule VIII to control PM10 emissions from fugitive dust. In addition, the Applicant has voluntarily proposed the following VEPF measures set forth in COA-AQ-12:

- Project equipment and worker vehicles would be turned off when not in use and not left idling for more than 5 minutes to minimize unnecessary emissions.
- Water would be applied to the development site and during site preparation and construction to control fugitive dust.
- Earth moving work would be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads/areas will be restricted to 10 mph to control fugitive dust.
- During windy conditions, barriers would be constructed and/or additional watering is conducted to minimize wind-blown fugitive dust.
- Vehicle access would be restricted to the disturbance area via signage/fencing.
- In addition, Project construction equipment will utilize Tier 3 engines when commercially available. If a Tier 3 engine is not certified for a particular piece of equipment or not commercially available, then the equipment shall be either equipped with a Tier 2 engine or equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels.

In addition, COA-AQ-1 requires that the Applicant comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules and that the Applicant obtain a modified Permit to Operate from the ICAPCD, which will further ensure that potential air quality emissions from the Project are less than significant. As noted above, the construction emissions are substantially under ICAPCD construction emissions thresholds before considering reductions for these measures. In this comment Dr. Fox suggests using the EPA emission factor for Heavy Construction Operations from the fifth edition of EPA's *Compilation of Air Pollution*

[2] The COAs in Section 2 above are sometimes repeated in this Section 3. To the extent there may be any inconsistencies, the COAs as drafted in Section 2 shall control.

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Emission Factors, or AP-42. However, Dr. Fox failed to acknowledge that AP-42 states in its Introduction that "emission factors in AP-42 are neither EPA-recommended emission limits (e.g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e.g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance" (EPA 1995).

Additionally, the Heavy Construction Operations Section of AP-42 reports that "only 1 set of field studies has been performed that attempts to relate the emissions from construction directly to an emission factor" and "at least 2 features limit its usefulness for specific construction sites. First, the conservative nature of the emission factor may result in too high an estimate for PM-10 to be of much use for a specific site under consideration. Second, the equation provides neither information about which particular construction activities have the greatest emission potential nor guidance for developing an effective dust control plan." (EPA 1995.) Thus, the heavy construction emissions factor is not recommended by the EPA for emission regulation compliance determinations, including PM-10 compliance during construction, because of the limitations and lack of field testing associated with the emissions factor.

22 This comment is incorrect. The Project is required to use Tier 3 engines, Tier 2 engines, or engines equipped with retrofit controls to reduce NOx and diesel particulate matter emissions to no more than Tier 2 levels. For purposes of responding to comments regarding construction emissions, Appendix N (Air Emissions Memorandum) has been included to report the results of CalEEMod modelling of construction emissions for both criterial pollutants and GHG. Appendix N sets forth the results and confirms that there are no significant effects and that the Project will not cause or contribute to an exceedance of any applicable air quality standards. The modeling confirms that construction emissions for criteria pollutants and GHG emissions are less than significant, well below the applicable regulatory significance thresholds.

23 This comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. In any event, Appendix N sets forth the results of the modelling of construction emissions for both criterial pollutants and GHG, finding no significant effects and that the Project will not cause or contribute to an exceedance of any applicable air quality standards. As part of approval of the Project's ATC permit, ICAPCD will include conditions of approval to limit emissions from Project construction activities. The Project will comply with the ATC permit conditions and conditions of approval, which are legally enforceable.

24 This comment does not provide any specifics for the statement that there is a request to contact the manager of the ICAPDC Enforcement Division. The Project will implement the

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control dust measures required by the ICAPCD, like all similarly situated projects. The comments about reduced idling time and other proposed mitigation measures and best management practices are noted. Many of the proposed measures are incorporated into the Project's construction practices either as voluntary measures or in furtherance of compliance with ICAPCD's dust control and other requirements. With respect to those measures proposed in the comment that are not included as the project's conditions of approval (e.g., use of Tier 4 equipment), they cannot be imposed as requirements under CEQA as the Project's constructions emissions are less than significant on a project and cumulative level without mitigation.

25 For purposes of responding to comments regarding construction emissions, Appendix N (Air Emissions Memorandum) has been included to report the results of the CalEEMod modelling of construction emissions for both criterial pollutants and GHG. As observed, construction emissions for criteria pollutants and GHG emissions are significantly less than the regulatory thresholds. CEQA does not require mitigation for less than significant impacts. Additionally, as part of approval of the Project's ATC permit, ICAPCD regulations include requirements to limit emissions from Project construction activities. The Project would comply with the conditions of the permit, which are legally enforceable and ensure that the Project complies with ICAPCD rules for air quality attainment. In addition, the Applicant has voluntarily proposed the VEPF measures included in COA-AQ-1, which are also legally enforceable.

26 This comment provides the commenter's view of certain operating procedures, without any citations to any authorities that their views of the Project operations are correct. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary. Moreover, total permitted VOC emissions of 99.7 lbs/day, which include isopentane emissions, are below the ICAPCD's 137 lbs/day CEQA significance thresholds for emissions of ROG/VOC. With the improvements inherent in new equipment, the expected actual isopentane emissions would be lower than current permitted isopentane emissions. (See Appendix B of the ATC permit application.) As detailed in the Air Quality Analysis Summary, consistent with ICAPCD calculation methodologies, the Project would reduce the total permitted VOCs emissions facility-wide from the current permitted level of 194.2 lbs/day to 99.7 lbs/day, an approximately 49% decrease. Expected actual VOC emissions from the Project (87.6 lbs/day) will also decrease from current levels (127.2 lbs/day) due to the elimination of benzene emissions from operation and maintenance of the steam turbine generator. (Heber 1 ATC, Appendix B). Therefore, the Project will result in an improvement in VOC emissions when compared with baseline conditions. Moreover, with the retirement of the steam flash units, the emissions of NOx, SO2, H2S, and Benzene would be completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment, including two cooling towers.

27 This comment is incorrect. Potential emission estimates are conservative because the analyzed emissions are overstated compared to the expected actual emissions. This overstating is a result of using the hypothetical worst-case quarterly emissions for each category (maintenance, purging, and fugitive) when deriving the emission factors. Further, the Project's use of superior design improvements (for example, better seals and

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design for ease of maintenance and access) in the OECs to reduce the potential for leaks and maintenance practices, which will further reduce the potential for emissions, are not accounted for or given credit in the emission estimates. This also results in estimates that overstate the potential impacts compared to the potential impacts incorporating all Project design features and maintenance activities. Moreover, consistent with ICAPCD calculation methodologies, all applicable calculations for operational emissions estimates are included in Appendix B of the ATC permit application. Further, in addition to not being required by applicable law, the provision of an unlocked digital spreadsheet could result in harm due to the potential distribution of information that is confidential/propriety, trade secret, and used for business purposes.

28 The "backup diesel generator" referenced in this comment is the diesel-engine powered fire pump. The diesel-engine powered fire pump is part of the existing Heber 1 facility and is not a newly proposed Project component. The diesel-engine powers the fire pump only in the event of an emergency. (ATC Application, pp. 13-14.) No changes to the operation of the diesel-engine powered fire pump are proposed as part of the Project. (ATC Application, pp. 13-14.) Operation of the diesel-engine powered fire pump is therefore part of the existing environmental baseline of operations of the Heber 1 facility.

The comments submitted by the California Air Resources Board regarding a data center project are not relevant to the current Project before the County. The Staff comments in that data center proceeding are not CARB "policy," as they are from the CARB Staff, not the CARB Board or even CARB management. The comments are not part of any applicable laws, ordinances, regulations, or standards. They have no regulatory effect. Further, as stated below in response to comment 29, the backup generators used to support data center operations are vastly different in both scope and purpose than the diesel-engines used to operate a fire pump during an emergency. Data centers require backup generators to provide uninterrupted power during emergency situations, such as a blackout or public safety power shutoff, where electrical power from the grid can be unavailable for significant periods of time. In contrast, "the increasing regularity of power shutoffs" does not have similar repercussions for the operation of a power plant, which does not require an uninterrupted power supply from the electrical grid or backup generators to operate.

Operation of the diesel generator is part of the existing operations of the Heber 1 facility, restricted in the ATC, and the Applicant is not proposing any changes to operations of the fire pumps or ATC conditions relating to the diesel engine as part of the Project.

29 The Bay Area Air Quality Management District ("BAAQMD") "policy" cited by the commenter is inapplicable to the Heber 1 Project. First, this is not a policy that has been adopted by the ICAPCD and is therefore not an applicable standard for the Heber 1 Project. The Project is located within the ICAPCD's jurisdiction and is not subject to BAAQMD rules. Dr. Fox's calculations are irrelevant to any decision the County has to make in this proceeding, which would apply the County and ICAPCD's rules and regulations, not those of the BAAQMD.

Second, the BAAQMD policy specifically states that it is not applicable to emergency fire pump engines, as "the assumptions about potential emergency usage are different for

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emergency engines used to fight fires as compared to emergency engines use[d] to provide backup power. The length of time that a facility may have to operate without grid power during any given year could be significantly longer than the amount of time it would take to put out a fire." (BAAQMD Policy, p. 1.) Therefore, the comment's reliance on the BAAQMD policy to support the assertion "that 100 hours is a reasonable estimation to calculate emissions from backup generators during routine operation" is misplaced. As explained in the BAAQMD policy, emergency operations of fire pump engines to put out a fire is far different than backup generators used to support operations of a data center or other facility during a power shutoff.

In fact, the BAAQMD policy statement, which is not codified in regulation, states that the 100 hours of emergency operation standard is to be used only for the determination of the applicability of that District's permitting regulations:

> "This assumption of 100 hours per year of emergency operation will be used to determine the applicability of District permitting regulations, such as New Source Review and Title V Major Facility Review. It will not be used to determine the amount of emissions offsets required for a project that triggers New Source Review. Emissions offsets represent ongoing emission reductions that continue every year, year after year, in perpetuity. As such, offsets are intended to counterbalance emissions that will occur every year, year after year, on a regular and predictable basis, to ensure Reasonable Further Progress towards attainment of the applicable ambient air quality standards. Accordingly, the PTE that a facility needs to offset is only its potential for such regular and predictable emissions – not any emissions that will only occur infrequently when emergency conditions arise."

(BAAQMD Policy, p. 1; emphasis in original.) (Available at: https://www.baaqmd.gov/~/media/files/engineering/policy_and_procedures/banking-and-offsets/calculating-pte-for-emergency-generators-06032019-pdf.pdf?la=en)

Furthermore, the BAAQMD's policy states that a project's air quality mitigation requirements should be based on the regular, predictable emissions, which is consistent with the analysis conducted in the Initial Study's air quality impact assessment.

Dr. Fox's calculations of maximum daily ROG emissions from the diesel-engine powered fire pump assume 100 hours of emergency operations. As demonstrated above, this assumption is based on an operational scenario for diesel powered fire pumps that is not credible, is inconsistent with how diesel engine powered fire pumps are operated and is not required by either the ICAPCD or any other regulatory agency, including the BAAQMD. Therefore, this comment does not provide substantial evidence supporting a fair argument that there will be a significant increase in ROG emissions from the Project.

Again, operation of the fire pump diesel generator part of the existing operations of the Heber 1 facility is restricted in the ATC permit to 40 hours per year for maintenance and testing, and the Applicant is not proposing any changes to operations of the diesel-engine powered fire pumps or ATC conditions relating to the diesel engine as part of the Project.

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30 Dr. Fox offers a list of suggested "mitigation measures." However, mitigation is only required where there is a potentially significant effect. Heber 1 is an existing, operating facility, unlike the Casa Diablo project Dr. Fox uses as an analogy. The current Heber 1 facility is a synthetic minor source of air pollution and operates in compliance with all applicable air quality requirements and its permit to operate (PTO #1641B-5) from the ICAPCD. As detailed in the Air Quality Analysis Summary, the Project would lead to a reduction in emissions for all permitted pollutants and in some cases, the complete elimination of certain permitted pollutants. CRI/CURE's comments focus on isopentane, a VOC. But Dr. Fox's comments fail to recognize that total permitted VOC emissions facility-wide actually decrease from the current permitted level of 194.2 lbs/day to 99.7 lbs/day, an approximately 49% decrease. Total permitted VOC emissions of 99.7 lbs/day, which includes isopentane emissions, are below the ICAPCD's 137 lbs/day CEQA significance thresholds for emissions of ROG/VOC. With the improvements inherent in new equipment, expected actual isopentane emissions would be lower than current isopentane emission. (See Appendix B of the ATC permit application.) Moreover, with the retirement of the steam flash units, the emissions of NOx, SO2, H2S, and Benzene are completely eliminated. The elimination of emissions is due specifically to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. As operational emissions are below both permitted and CEQA significance threshold levels, impacts are less than significant and thus the "mitigation" measures are not required.

31 This comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

32 This comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

33 The estimated length of construction associated with the Project is six months. The sole reference to 10 months in Section VIII of the IS/MND has been updated.

34 This comment incorrectly assumes that construction activities will occur unabated without implementation of best management practices and control measures on emitting sources. These assumptions are incorrect. The Applicant is required to implement control measures as part of their existing air permit. Those conditions which are relevant to construction activities include the following:

- A water truck is used on site to control fugitive dust emissions.
- A five mile per hour speed limit at the site further reduces fugitive dust emissions.
- During windy conditions, additional watering is conducted to minimize wind-blown fugitive dust.
- Equipment is operated according to best practices and maintained according to design specifications.

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Additionally, Appendix N sets forth the results of the CalEEMod modelling of construction emissions for both criterial pollutants and GHG, finding no significant effects and that the Project will not cause or contribute to an exceedance of any applicable air quality standards. Only projects that exceed the applicable thresholds require a construction health risk analysis of diesel exhaust.

35 The comment states that the MND "failed" to analyze certain risk, but notes in the next sentence that the IS/MND "acknowledges" certain risk. These statements are inconsistent and not supported by any facts or citations. As explained in the ATC, the proposed Project was evaluated to determine if there are health risks associated with the proposed changes to operations. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) requires stationary sources of toxic air contaminants to estimate the potential cancer and non-cancer risks due to toxic air emissions. The proposed changes to the facility will reduce the emissions of VOCs when compared with baseline conditions. While the total volume of isopentane on-site, which is a source of VOC emissions, increases facility-wide, VOC emissions would actually decrease. Levels of isopentane were calculated for the ATC permit. Total permitted VOC emissions in the amount of 99.7 lbs/day, which includes isopentane emissions, are below the ICAPCD's 137 lbs/day CEQA significance thresholds for emissions of ROG/VOC. With the improvements inherent in new equipment, expected actual isopentane emissions would be below the current isopentane emissions. (See Appendix B of the ATC permit application.)

The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments lists all substances for which emissions must be quantified in a risk assessment. Isopentane has no known health risks and is not included in the list. Additionally, n-pentane and other similar substances, or larger groups of substances that include isopentane such as VOCs, are also not included in the list. Moreover, the proposed Project will result in decreased levels of PM10 (which drops from permitted level of 4.36 lbs/day to 3.72 lbs/day), and the complete elimination of NOX, SO2, benzene, and H2S emissions due to the elimination of the steam flash units. Therefore, there are no quantifiable cancer or non-cancer public health risks associated with toxic air contaminant emissions from the proposed Project.

36 This comment does not specify the alleged "inconsistency" with any specificity. As discussed in Response 35 above, the Proposed Project was evaluated to determine if there are health risks associated with the proposed changes to operations. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments lists all substances for which emissions must be quantified in a risk assessment. Isopentane has no known health risks and is not included in the list of substances for which emissions must be quantified in a risk assessment. Additionally, n-pentane and other similar substances, or larger groups of substances that include isopentane such as VOCs, are also not identified in the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments as requiring quantification in a risk assessment. Therefore, there are no quantifiable cancer or non-cancer public health risks associated with toxic air contaminant emissions from the Proposed Project. Rather, by eliminating NOX, SO2, benzene, and H2S emissions, the project will reduce cancer or non-cancer public health risks.

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37 Even though Imperial County is not highly endemic for Valley Fever, and there are no documented instances of Valley Fever occurring at the Heber 1 site during the over 20-years that the plant has operated, the Applicant has voluntarily proposed the to directly incorporate the several of the recommended Valley Fever measures provided by CRI/CURE as VEPFs. For example, the following VEPFs are included to address the already less than significant impacts from Valley Fever:

- Perform watering while performing site preparation and construction;
- Provide Valley Fever awareness training for workers;
- Provide respirators to workers when requested;
- Use of closed-cab earth-moving vehicles equipped with HEPA-filters air systems;
- Provide employee testing for Valley Fever as needed; and,
- Conduct earth-moving activities downwind of workers when possible.

The Applicant is also required to comply with the ICAPCD's Regulation VIII, Fugitive Dust Rules, which also set forth additional measures to control dust that the Applicant is required to implement, including preparation of and compliance with a Dust Control Plan.

Dr. Fox's conclusion that soil-disturbing activities at the Project site have a "heightened risk" to put receptors at risk based solely on the assertion that "Imperial County is endemic for Valley Fever" is not substantiated by any facts. As explained by the U.S. Centers for Disease Control and Prevention (CDC), "endemic areas" for Valley Fever are approximate areas where the fungus causing Valley Fever is either known or suspected to occur, and the CDC considers the entire southwest United States as a potential zone. In this case, it is highly unlikely Valley Fever is present on the Project site, given the low incidence rates in Imperial County and no documented cases at the existing Heber 1 site. Based on the low incidence rates in Imperial County and lack of documented cases at the existing Heber 1 site, the evidence supports that the potential risks from Valley Fever to workers and the public are less than significant even without the VEPFs.

Dr. Fox's conclusions regarding the potential risk of Valley Fever from the Project are also not supported by the reports and studies cited in Dr. Fox's comments. The CDC source provided by CRI/CURE relies on skin testing studies performed in the 1940s and 1950s. By the paper's own admission, Valley Fever distribution/location maps are not distributed evenly nor are they representative of Valley Fever being present throughout the conceptual distribution area. Lastly, the CDC paper identifies the San Joaquin Valley (not the Imperial Valley) as the area with the highest reported rates in California.

Dr. Fox offers a list of suggested "mitigation measures." However, mitigation is only required where there is a potentially significant effect. Dr. Fox offers only speculation and conjecture, no evidence of real risk, let alone evidence of a potentially significant effect.

38 No substantive technical comment provided. The comment attempts to summarize certain portions of the Project's Hazards Assessment (HA) but provides no rationale for summarizing only a portion of the HA or for why the commenter selected those portions of the HA. The comment ends abruptly in an incomplete sentence: "As Dr. Fox points out, however,". For these reasons, the comment is noted but not further response is required.

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39 The CUP application and MND were updated in December 2020 based on comments received to evaluate installation of two new isopentane tanks instead of the six new tanks proposed in 2019. As stated in Responses 17 and 18 above, this change was in response to comments from the public and the County. The ATC from the ICAPCD includes an older version of the Project description, proposing six new isopentane tanks instead of two, as that was the most accurate description at the time the application was submitted in December 2019. Because the CUP application, MND, and all applicable supporting technical reports reflect this change, these documents are valid. In fact, the comment recognizes the update: "Figure 1 shows the Project site as it was proposed in the application for an ***updated*** Conditional Use Permit as well as an application for Authority to Construct." (CRI/CURE Comments, p. 43; emphasis added.)

Figure 1 provided in this comment shows the site plan from the CUP application submitted in December 2019. The updated CUP application submitted in December 2020 includes the updated site plan showing two new isopentane tanks instead of six (see Figure 2 of the December 2020 CUP). Thus, the two figures presented in this comment do not conflict with one another. The ATC from the ICAPCD includes an older version of the Project description, proposing six new isopentane tanks instead of two, as that was the most accurate description of the Project at the time the application was submitted in December 2019. The site layout was not substantially altered; rather, the number of proposed new isopentane tanks was simply reduced from six to two. The ATC will be updated to reflect the new Project description, including two new isopentane tanks rather than six. The suggestion that information "...is in a paragraph buried repeatedly in the MND's appendices" simply confirms that the information has been provided for public review and CRI/CURE has in fact reviewed and commented. (CRI/CURE Comments, p. 45.) Moreover, the comments that Dr. Fox finds "hard to imagine" are speculation, not evidence of a significant effect. (*Id.*)

40 This comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

Furthermore, as a factual matter, the Hazard Assessment (HA) prepared for the CUP Amendment Application (Appendix H of CUP Application) and IS/MND complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program guidance for Chemical Accidental Release Prevention (40 C.F.R. §§ 68.20-68.42). The HA assesses the appropriate catastrophic scenario of cascading tank failures/upsets, as supported and approved by Imperial County Fire Department. The County Fire Department has provided guidance regarding safety onsite, and a fire engineer will review and issue a stamped drawing to the County Fire Department before Project operations begin.

The analyzed scenario, developed in close consultation with the Imperial County Fire Department, is above-and-beyond the EPA standard for assessing only a single vessel failure, exceeding all applicable regulatory requirements. The HA assesses the entire tank system present in the Heber 1 Complex (four tanks total, with two new tanks and two

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existing tanks). In addition, the Applicant will implement the following revised measures as COAs:

COA-FIRE-1: A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment will be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

COA-FIRE-2: Concrete containment areas for isopentane storage tanks, including a blast wall between currently operational isopentane tanks shall be installed. To minimize the potential for a cascading failure event of the proposed isopentane tanks and to limit potential impacts within the existing Heber 1 Complex fence line, the proposed isopentane tanks shall be located as set forth in the attached figure #. Diking and impoundment of the proposed isopentane tanks shall be installed to minimize the magnitude and extent of a tank failure

COA-FIRE-3: All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. Each tank will be equipped with two flame detectors and one gas detector (for a total of 4 flame detectors and 2 gas detectors for the two tanks). In the case of an isopentane leak, the gas detector(s) will detect it immediately and send a notification to the operator at the control room (manned 24/7) in order to mobilize fixing the leak. In case of a fire, the flame detector(s) will detect it and immediately start the automatic fire suppression system. In case of a fire, there will also be a horn and strobe system that will turn on automatically to alert the plant employees. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

COA-FIRE-4: An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

COA-FIRE-5: Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

COA-FIRE-6: Compliance with all required sections of the fire code.

COA-FIRE-7: For the isopentane tanks, the Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

41 This comment cites to no authority for CRI/CURE's preference for additional analyses of a boiling liquid expanding vapor explosion, or BLEVE. The comment speaks in generalities only: "Specific sites, however, may find that certain other scenarios more accurately reflect a worst-case release based on the chemical nature of the substances held at the facility or other determining factors, such as environment and atmospheric conditions."

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(CRI/CURE Comments, p. 46.) That is, some sites (not Heber 1) "may" (discretionary) find "certain scenarios" (what scenarios?) "more accurate" (more accurate than EPA guidance?) based on the "nature" (what "nature?") of the substance or "other determining factors" (what other factors?). None of these platitudes are specific to Heber 1. Dr. Fox's comments create a BLEVE "straw man" in an attempt to manufacture the appearance of a regulatory gap where none exists.

Consistent with the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis" published guidance, BLEVEs are generally considered unlikely events and were therefore, consistent with EPA guidance, not considered a probable event for the Offsite Consequence Analysis performed in the HA.

42 The Project's analysis of a release from a single isopentane storage tank is representative of the worst-case scenario. The OECs are not considered in the Project's HA because the equipment is comprised of isolated compartments (i.e., heat exchangers, condensers, feed pumps, etc.) monitored and maintained with individual control measures to prevent failure of one compartment from effecting the OEC as a whole. Control measures within each individual OEC include gas detectors, flame detectors, and a fire suppression system. The process is also monitored by the operator, providing the ability to detect, and added protection in the case of an isopentane leak. For these reasons, the worst-case analysis remains the explosion of one 10,000-gallon isopentane tank onsite. Since the comment provides little detail, it is not clear, for example, if Dr. Fox assumes isopentane in both the tanks and the OECs at the same time. This condition (full tanks and full OECs) does not occur because the isopentane will be in the tanks only when it has been evacuated from the OECs, rending them without any substantial amounts of isopentane. Such speculation cannot be substituted for EPA and other relevant regulatory guidance.

The Project's HA complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program guidance for Chemical Accidental Release Prevention (40 C.F.R. §§ 68.20-68.42). Moreover, the Applicant is in coordination with the Imperial County Fire Department regarding the Project. The County Fire Department has provided guidance regarding safety onsite, and a fire engineer will review and issue a stamped drawing to the County Fire Department before Project operations begin.

43 As discussed above, the Project's analysis of a release from a single isopentane storage tank is representative of the worst-case scenario due to control measures associated with the OECs. Further, the Project's HA complies with the regulatory standard for assessing a catastrophic event, as provided by EPA's Risk Management Program guidance for Chemical Accidental Release Prevention (40 C.F.R. §§ 68.20-68.42). Moreover, the Applicant is in coordination with the Imperial County Fire Department regarding the Project. The County Fire Department has provided guidance regarding safety onsite, and a fire engineer will review and issue a stamped drawing to the County Fire Department before Project operations begin.

The comments are premised on the contention that the Hazards Assessment should have considered Dr. Fox's preferred scenario of a BLEVE, though there is no regulatory guidance to support her bare contention that such an analysis is need. (See Responses

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41-42 above.) Dr. Fox again proposed additional "mitigation" without identifying a significant effect resulting for the applicable regulatory review conducted. She further recommends additional measures "borrowed" from East Brawley.

As one example, she recommends that the project "borrow" from East Brawley and "offer to relocate the residence." (CRI/CURE Comments, p. 50.) In the case of Heber 1, there are no such residences nearby. CRI/CURE's recommendations, borrowed from a different project in a different location, are not supported by any facts.

Indeed, CEQA has no provision for the "borrowing" of mitigation measures from one project for the next. Instead, CEQA requires a project-specific analysis and findings of significant effects for the imposition of "mitigation" measures. Dr. Fox's speculation does not satisfy these substantive requirements of CEQA and other applicable law.

44 CEQA generally does not require that public agencies analyze the impact existing environmental conditions might have on a project's future users or residents, according to the California Supreme Court's decision in *California Building Industry Association v Bay Area Air Quality Management District* (2015) 62 Cal.4th 369. Moreover, "[t]he questions in the sample checklist in appendix G to the Act's guidelines -- including, whether the project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires -- do not extend 'the [environmental impact report] requirement to situations where the environment has an effect on a project, instead of the other way around.'" (*Newtown Preservation Soc'y v. Cnty. of El Dorado*, 279 Cal. Rptr. 3d 915, 928 (quoting *S. Orange Cnty. Wastewater Auth. v. City of Dana Point*, 196 Cal. App. 4th at 1615.) An agency must analyze how environmental conditions might adversely affect a project's residents or users only where the project itself might worsen existing environmental hazards in a way that will adversely affect them, or if one of the provisions of CEQA which require such an analysis for certain airport, school, and housing projects applies. (See *Cal. Bldg. Indus. Ass'n*, 62 Cal.4th at 392.)

The Project proposes upgrades to an existing geothermal facility and does not involve substantial changes in facility operations that would exacerbate the risk associated with any geologic hazards. No habitable structures are proposed as part of the Project which would introduce new populations to potential geological hazards onsite. Site preparation for the installation of the proposed facilities will include leveling the ground surface, excavation, backfill and soil compaction. The project will comply with current California Building Code Standards that will prevent exacerbation of any existing geologic hazards. In addition, PDFs have been incorporated into the project description which will be included in the Proposed Project's grading plan and include the following measures discussed in Appendix F, Geology and Soils:

- The Applicant will remove and replace soils susceptible to static settlement or liquefaction; densify these soils; utilize deep foundations; or lower the groundwater table. The extent of liquefiable soils will be evaluated by subsurface investigation and laboratory testing.

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- The Applicant will remove and/or replace soils with engineered compacted fill. The extent of soft soils and recommended removals will be evaluated by subsurface investigation and laboratory testing.
- The Applicant will shore and dewater areas of shallow groundwater.

In summary, the Project does not propose any changes from construction or operations that would result in potential geologic hazards when compared with baseline conditions.

45 The introductory paragraphs of this comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

The CEQA baseline is the existing operations of Heber 1. The site is a developed industrial complex with no existing habitat. As noted by CRI/CURE, a comprehensive records search for biological resources, vegetation, and sensitive species was performed to identify species that could occupy the Proposed Project site and surrounding area. All databases used in this research (e.g., CNPSEI, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site.

After a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site. This on-site survey confirmed that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. This is the baseline biological condition.

As documented through verifiable database research and a site-specific survey (as provided in Appendix B of the CUP), the site does not contain suitable habitat and no sensitive species occur on the site in the baseline condition. Moreover, preconstruction surveys of the Project site would be conducted prior to construction to verify the absence of any special status species. Dr. Smallwood's criticism of the on-site surveys speculates on the efficacy of surveys that are used by professionals in this profession.

46 All databases used in the Project's Biological Technical Report (e.g., CNPSEI, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site. By contrast, eBird is a publicly-sourced, privately managed database, allowing both novice and expert birders to contribute; therefore, the accuracy of the database cannot be considered reliable and in fact is not relied upon by professionals. The California Natural Diversity Database (CNDDB) and other peer-reviewed databases used by the Project carry the substantial credibility that the California Department of Fish & Wildlife affords the CNDDB process.[3] Moreover, the

[3] From the California Department of Fish and Wildlife website: "The California Natural Diversity Database (CNDDB) is an inventory of the status and locations of rare plants and animals in California. CNDDB staff work with partners to maintain current lists of rare species, as well as to maintain an ever-

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quoted assertions have no citations and are thus not subject to verification. The baseline condition is the existing Heber 1 operations, and there is no evidence in the record, and certainly no evidence offered by CRI/CURE, of any such risks being realized.

47 The baseline is the operating Heber 1 facility. As observed in the CUP project description, no new transmission lines (or solar facilities, as volunteered in the CRI/CURE comment) or changes to existing Heber 1 substation are proposed; therefore, baseline conditions would remain the same and the Project would not cause any significant impacts to avian species. Further, due to the industrialized nature of the site, avian species are likely to avoid the site. In accordance with measure, COA-BIO-2, if construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31), a nesting bird survey will be conducted prior to the start of construction or vegetation clearing activities. If active nests are found, an appropriate nest buffer will be established by a qualified biologist until the nest fledges or fails naturally. CRI/CURE speculates about the value of the possibility of some "volunteer reporting," but presents no site-specific data, only speculation that seemingly assumes no existing facilities.

48 This comment is vague. The statements made in this comment that "two species of wildlife were reported absent from the site, and shortly afterwards were reported to possess low likelihood of occurrence" and "Another species was reported with a low likelihood of occurrence, but later said to have a moderate likelihood" do not name the species that are the subject of this criticism. It is not clear to what species this comment refers as CRI/CURE does not identifying any species in this comment with any specificity. No evidence is offered, just a review of the materials provided by the Project. As such, no further response is required.

49 CRI/CURE cites to its own comments for evidence, without providing any details on how it developed the information or even where such information can be found. Table 1 provided in Dr. Smallwood's comment letter, and referenced in this comment, was compiled using eBird. eBird is a publicly-sourced, privately managed database. In contrast, CNDDB is considered the industry's best available data source. See Response 46 for additional detail.

The MND includes VEPFs COA-BIO-1 through COA-BIO-4 requiring environmental awareness training about sensitive wildlife species; nesting bird surveys, burrowing owl pre-construction surveys, and a focused bat survey if existing buildings are modified. These measures are all preventative in nature; that is, there are no significant effects identified requiring these measures and they could instead be changed to Conditions of Approval (COAs).

50 The CNDDB database was not the only tool used to confirm the absence of a species. The Project Biologists reviewed suitable habitat on the Project site using other databases (such as the U.S. Fish and Wildlife Service's Critical Habitat Mapper) and through completion of a biological reconnaissance survey where plant species were observed and

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growing database of GIS-mapped locations for these species." (See https://wildlife.ca.gov/Data/CNDDB (last visited August 2, 2021).)

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recorded. If a species is restricted to habitats or environmental conditions that were found not to occur within the Proposed Project site, the species was considered absent.

Quoting the CNDDB website, the comment notes that field verification for the presence or absence of sensitive species is important. In this case, after a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site, confirming that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. See also Response 51 below.

51 The commenter analogizes field surveys to a "game of musical chairs." Reduced to its essence, this is speculation about presence and absence. No evidence is presented for the musical chairs analogy. Moreover, the comment compares this small-footprint geothermal project to "utility-scale solar projects," located in different environments, encompassing tens, hundreds, and in some cases, thousands of mirror and solar panel-covered acres. These analogies are not evidence and are not applicable to the Heber 1 Project.

As described in Responses 45, 46, 49, and 50, a comprehensive records search for biological resources, vegetation, and sensitive species was performed to identify species that could occupy the Proposed Project site and surrounding area. All databases used in this research (e.g., CNPSEI, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site. After a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site, concurring that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. A reasonable effort was made to describe the baseline biological conditions and potentially occurring sensitive species. The Project site would be surveyed prior to construction to verify the absence of any special status species.

52 This comment cites to no laws, regulations, or statutes requiring the type of "air space" or "volant"-specific analysis the commenter seeks. No such authorities exist, and if they did, they would apply to every building, structure, and development, not just geothermal powerplants. The suggestion of the absence of evidence is not evidence. Substantively, as stated in the Biological Technical Report, all wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded during the reconnaissance-level survey. These methods fully capture the occurrence of volant species in the airspace just above the ground at the Project site.

53 This comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

Substantively, as described in Responses 45-52, a comprehensive records search for biological resources, vegetation, and sensitive species was performed to identify species that could occupy the Proposed Project site and surrounding area. All databases used in this research (e.g., CNPSEI, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site. After a

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review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site, concurring that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. As a COA, there will also be preconstruction surveys of the Project prior to construction to confirm the continuing absence of any special status species.

54 As observed in the CUP project description, no new transmission lines, fencing, or changes to existing Heber 1 fencing are proposed. Structures would be located in developed areas surrounded by existing structures. Baseline conditions would remain the same and the Project would not cause any significant impacts to avian species.

Rather than focusing on this Project, Dr. Smallwood instead focuses on large-scale solar projects. As a result, his hypothesis starts from flawed assumptions. Rather than studying this small-footprint, existing geothermal project, Dr. Smallwood uses data from utility-scale solar projects located in different environments, encompassing tens, hundreds, and in some cases, thousands of mirror and solar panel-covered acres: Desert Sunlight, McCoy, Blythe, and Genesis. These projects are not analogous.

The Desert Sunlight Solar Farm is a 550 MW photovoltaic (PV) solar power project built across 3,600 acres of land in the Chuckwalla Valley, located in Riverside County on land managed by the US Bureau of Land Management (BLM).[4] The Genesis Solar Energy Center Project is a 250 MW solar thermal power plant in east central Riverside County 25 miles west of the city of Blythe, California, on BLM-administered lands with a Right-of-Way (ROW) for approximately 4,640 acres of lands.[5] Similarly, the 750-MW McCoy Solar Energy Project in Riverside County is located on approximately 4,100 acres of public lands.[6]

In stark contrast to the Heber 1 Project, each of these projects was a "green field" development, meaning each was a new project on lands not previously uses for industrial purposes. The Genesis project uses thousands of acres of land covered with parabolic troughs. The Desert Sunlight and McCoy projects similarly use thousands of acres covered in large solar panels. Dr. Smallwood's entire exercise in this comment is premised on these projects being analogous the Heber 1. They are not, and his analysis assuming they are similar is not credible to the extent his credibility is entirely suspect. These analogies offer no evidence and are not applicable to the Heber 1 Project.

55 Pre-construction nesting bird surveys will occur prior to any construction activities or vegetation removal activities, not solely vegetation removal as this comment suggests. Nesting bird surveys are the industry standard practice and will be conducted by qualified professionals. Surveys were also conducted for the CUP Application. After a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site.

[4] https://www.firstsolar.com/en/Resources/Projects/Desert-Sunlight-Solar-Farm

[5] https://ww2.energy.ca.gov/sitingcases/genesis_solar/

[6] https://www.renewableenergyworld.com/solar/nexteras-massive-mccoy-solar-project-clears-another-hurdle/#gref

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This on-site survey confirmed that the site is completely void of any habitat and sensitive species. These efforts were recorded and provided as Appendix B to the CUP. This is the baseline biological condition, without any potentially occurring sensitive species or their habitats occurring on-site of the operating facility. The suggestion that such surveys must be performed before "CEQA review" ignores the surveys already performed and disingenuously implies that they were not performed. Moreover, while not required to address the already less-than significant potential impacts to biological resources, the Applicant has proposed the following modified VEPFs in response to the comment, which will be incorporated into the Project's conditions of approval:

COA-BIO-1: Prior to any construction activities commencing on site, contractors shall attend a Worker Environmental Awareness Program (WEAP) regarding sensitive biological resources potentially occurring within the BSA. A person knowledgeable about the biology of the covered species shall present the program. At a minimum, the program shall cover the distribution of special-status species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, the penalties for violation of state and federal laws, reporting requirements, project mitigation measures, and measures to implement in the event that this species is found during construction. A fact sheet containing this information shall also be prepared and distributed. The program shall be presented to all members of the construction crew prior to the start of project construction activities. New employees shall receive formal, approved training prior to working onsite. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all protection measures. These forms shall be made available to CDFW upon request.

COA-BIO-2: Protection of nesting birds would be required in compliance with the MBTA and to avoid impacts to nesting birds. To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to February 1). If this avoidance schedule is not feasible, the alternative is to carry out the clearing of vegetation associated with construction under the supervision of a qualified biologist. This shall entail a pre-construction nesting bird survey conducted by a qualified biologist within 14 days prior to initiating ground disturbance activities. The survey shall consist of full coverage of the proposed disturbance limits and a 500-foot buffer. The buffer shall be determined by the biologist and will take into account the species nesting in the area and the habitat present. If no active nests are found, no additional measures are required. If "occupied" nests are found, the nest locations shall be mapped by the biologist, utilizing GPS equipment. The nesting bird species shall be documented and, to the degree feasible, the nesting stage (e.g., incubation of eggs, feeding of young, near fledging). The biologist shall establish a no disturbance buffer around each active nest. The buffer will be determined by the biologist based on the species present and surrounding habitat. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume.

56 As discussed in the IS/MND, this is an existing industrial facility. The site is an operating energy generation station, and devoid of native vegetation and suitable habitat. These findings are substantiated by the site-specific due diligence and in-person site

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reconnaissance performed by a professional biologist. Even though no burrowing owls were present on the existing industrial site, it is standard practice to implement precautionary measures, like pre-construction surveys and worker education. As these measures are adopted as part of the CUP decision, they are enforceable and effective. Moreover, while not required to address the already less-than significant potential impacts to biological resources, the Applicant has proposed the following modified VEPF in response to the comment, which will be incorporated into the Project's conditions of approval:

COA-BIO-3: In accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012), a preconstruction take avoidance survey shall be conducted (CDFW 2012). If the burrowing owl is absent, then no actions are required. If present, the following measures shall be implemented. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, then disturbance impacts shall be minimized through the use of buffer zones, visual screens, or other measures in accordance with CDFW (2012).

Occupied burrows shall be avoided during the breeding period from February 1 through August 31. (CDFW 2012.) "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy within the last 3 years. Occupied burrows shall also be avoided during the nonbreeding season.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. (CDFW 2012.)

Measures for permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat is required such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the burrowing owl life history information provided in Staff Report on Burrowing Owl Mitigation. (CDFW 2012.) Coordination with CDFW may be necessary for the development of site-specific avoidance and measures in the unlikely event that burrowing owls are present.

57 This comment incorrectly labels COA-BIO-4 as a "preconstruction survey for mastiff bat." As a precautionary measure, a focused bat survey will be performed, using acoustic detectors by a qualified bat biologist if modification of the existing structures onsite were to occur. Moreover, while not required to address the already less-than significant potential impacts to biological resources, the Applicant has proposed the following modified VEPF in response to the comment, which will be incorporated into the Project's conditions of approval:

COA-BIO-4: Pre-construction surveys shall be performed to determine either the presence of special status species or sensitive biological resources within 14 days prior to initiating ground disturbance activities. In addition, before any modifications to existing buildings, a focused bat survey will be performed for western mastiff bat.

COA-BIO-5: If pre-construction surveys determine either the presence of special status species or sensitive biological resources, a construction monitor will be required during

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construction activities that could impact any species that are identified in the surveys. If required, construction monitoring shall be conducted by a qualified biologist. The biologist shall be given authority to execute the following functions:

- Establish construction exclusion zones and make recommendations for implementing erosion control measures in temporary impact
- Ensure all construction activities stay within the staked construction zone and do not go beyond the limits of disturbance.
- Minimize trimming/removal of vegetation to within the Project impact area.
- Restrict non-essential equipment to the existing roadways and/or disturbed areas to avoid disturbance to existing adjacent native vegetation.
- Install and maintain appropriate erosion/sediment control measures, as needed, throughout the duration of work activities.

During construction, biological monitors shall inspect and verify field conditions, as needed, to ensure that wildlife and vegetation are not harmed. The biological monitor shall coordinate with the construction supervisor and construction crew and shall have the authority to stop any activity that has the potential to affect special-status species or remove vegetation not specified in this area.

58 The first two paragraphs of this comment provide the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comments are noted and no further response is necessary.

Furthermore, the comment speculates that the project "may" have some undefined effect but does not provide any evidence to support the claim. Further, CURE/CRI ignores the obvious CEQA baseline: the Heber 1 and Heber 2 power plants are existing and operating power plants. They are in and define the CEQA baseline.

The IS/MND identifies the geographic scope of the cumulative area of analysis as the extent of potential off-site impacts. The resources with the potential to have off-site impacts include air, noise, human health, and traffic. Imperial County performed a project review of all reasonably foreseeable future projects, and no projects occur in relatively close proximity to the Heber 1 complex (including the Heber 2 project located approximately 1 mile away).

Traffic impacts would be limited to localized delivery of heavy equipment and facilities and would not have overlapping traffic effects with Heber 2. Air and noise impacts for Heber 1 would be similar to baseline conditions. Permitted VOC emission limits of 99.7 lbs/day, which includes isopentane emissions, are below the ICAPCD's 137 lbs/day CEQA significance threshold for emissions of ROG/VOC. With the improvements inherent in new equipment, expected actual isopentane emissions would be lower than current isopentane emissions. (See Appendix B of the ATC permit application.) The Proposed

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Project also would not have overlapping noise fields with Heber 2. Therefore, the Proposed Project would not result in significant cumulative impacts with Heber 2.

59 This comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

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ATTACHMENTS TO LETTER 1
Adams Broadwell Joseph & Cardozo
May 10, 2021

60 This comment provides the commenter's view of certain provisions of existing law. No substantive technical comment is provided. This comment goes on to summarize the Heber 1 Repower Project and the opinions of Dr. Fox. As such, the comments are noted and no further response is necessary.

61 See Responses 9, 11, 12, 15, 16, and 44.

62 See Responses 9, 10, 11, 14, 20, 21, 22, and 25.

63 See Responses 9, 10, 11, 12, 14, 15, 16, 20, 21, 22, 25, 35, 36, and 44.

64 See Responses 9, 10, 11, 14, 15, 16, 25 and 44.

65 This comment is incorrect. Construction has not begun on either Heber 1 or Heber 2. The strained readings of certain SEC filings are both inconsistent with the facts on the ground and with the plain meaning of the language in those filings and as properly understood in their context. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

66 See Responses 9, 11, 12, 15, 16, 30, 44 and 58.

67 See Responses 22, 28, and 29. See also Responses 9, 11, 12, 15, 16, and 44.

68 See Responses 13, and 58. See also Responses 9, 11, 12, 15, 16, and 44.

69 See Responses 35 and 36. See also Responses 9, 11, 12, 15, 16, and 44.

70 See Response 37. See also Responses 9, 11, 12, 15, 16, 35, 36 and 44.

71 See Responses 17, 40, 41, 42, 43, and 44. See also Responses 9, 11, 12, 15, 16, 35, and 36. Figure 7 provided in this comment shows the site plan from the CUP application submitted in December 2019. The CUP application submitted in December 2020 includes the updated site plan showing two new isopentane tanks instead of the six new isopentane tanks originally proposed in December 2019 (see Figure 2 of the December 2020 CUP). Thus, the Project's figures do not conflict with one another.

72 See Responses 41 and 43. See Responses 17, 40, 42, and 44.

73 This comment offers only speculation about a potential road accident. Moreover, on-site and off-site workers and motorists involved in a road accident on adjacent roads are not within the scope of required environmental review and are not, accordingly, considered in project analyses and modeling, given the hypothetical scenario set forth in the comments. Adjacent workers and residents under future development plans are sensitive receptors and were considered in the HA. According to California Health and Safety Code section 42705.5, "sensitive receptors" includes hospitals, schools and day care centers,

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and such other locations as the district or state board may determine, not the receptors suggested by this comment's speculation. See also Responses 17, 40, 41, 42, 43, and 44.

74 See Responses 17, 40, 41, 42, 43, and 44. See also Responses 9, 11, 12, 15, 16, 35, and 36.

75 See Response 73. See also Responses 17, 40, 41, 42, 43, and 44.

76 See Responses 41 and 43. See Responses 17, 40, 42, and 44. In addition, a Hazardous Materials Business Plan, Emergency Response Plan, and Risk Management Program have been prepared for the Proposed Project site and are updated in accordance with County and/or State regulations.

77 See Responses 15, 16, 17, 40, 42, and 44.

78 This comment provides the commenter's view of certain provisions of existing law. These comments on the commenter's view of legal issues do provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

79 This comment summarizes the commenter's views on the Heber 1 Repower Project and the opinions of Dr. Smallwood. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

80 See Responses 45, 46, 49, 50, 51, and 53.

81 See Responses 45, 46, 49, 50, 51, and 53.

82 See Responses 47, 52, and 54.

83 The comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

84 See Responses 47, 52, and 54.

85 See Responses 47, 49, 52, 54 and 56.

86 See Responses 47, 49, 52, 54 and 56. This comment incorrectly labels COA-BIO-4 as a "preconstruction survey for mastiff bat." In the IS/MND a focused bat survey utilizing acoustic detectors is proposed to be performed in the event of any modification of the existing onsite structures.

87 This comment provides the commenter's view of certain provisions of existing law. Otherwise, the comment does not provide any specific comments or concerns regarding the environmental review and approval; therefore, the comment is noted and no further response is necessary.

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LETTER 2
Imperial County Air Pollution Control District
February 18, 2021

1 The comment indicates that the Imperial County Air Pollution Control District has reviewed the Heber 1 IS/MND and has no comments on the Project. No response is required.

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LETTER 3
Imperial County Public Health Department
April 13, 2021

1 The comment indicates that the Imperial County Public Health Department has reviewed the Heber 1 IS/MND and has no comment on the Project. No response is required.

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LETTER 4
Imperial Irrigation District
February 16, 2021

1 The comment indicates that the Imperial Irrigation District (IID) reviewed the Heber 1 IS/MND and provided comments on the Project in a letter dated January 7, 2021. No response is required.

2 The comment encompasses the January 7, 2021 letter from the IID, indicating that the IID reviewed the Heber 1 IS/MND and provided comments on the Project in a letter dated January 23, 2020. No response is required.

3 The comment introduces the January 23, 2020 letter from the IID, indicating that the IID has reviewed the Heber 1 IS/MND. No response is required.

4 Changes to the electrical service at the Project site are not anticipated. If, however, they should be necessary and in accordance with the requests in this comment, the Applicant will contact Joel Lopez at the IID to initiate the customer service application process for electrical service at the Project site. Along with the formal application, the Applicant will submit a complete set of approved plans, project schedule, estimated in-service date, one-line diagram of the facility, electrical loads, panel size, voltage, and the applicable fees, permits, easements, and environmental compliance documentation pertaining to the Project.

5 The Project will not impact IID's canals or laterals. In the event that canals or laterals are affected by the Project and as the comment requests, the Applicant will contact IID Water Department Engineering Services section.

6 The Project does not propose to use IID's canal or drain banks to access the Project site.

7 The Project does not propose construction or operation on IID property or within its existing and proposed right of way or easements.

8 No new facilities are proposed to be installed adjacent to IID's facilities.

9 No new, relocated, modified, or reconstructed IID facilities are required for or by the Project.

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LETTER 5
Imperial Irrigation District
April 12, 2021

1 The comment indicates that the IID reviewed the Heber 1 IS/MND and provided comments on the Project in the letter dated February 16, 2021. No response is required.

2 The comment encompasses the February 16, 2021 letter from the IID, indicating that the IID reviewed the Heber 1 IS/MND and provided comments on the Project in a letter dated January 23, 2020. No response is required.

3 The comment compasses the January 7, 2021 letter from the IID, indicating that the IID has reviewed the Heber 1 IS/MND. No response is required.

4 The comment encompasses the January 23, 2020 letter from the IID, indicating that the IID has reviewed the Heber 1 IS/MND. Replies to the comments in this letter are provided for Letter 4, responses 4 through 9 above.

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LETTER 6
Quechan Tribe
February 24, 2021

1 The comment indicates that the Quechan Tribe has reviewed the Heber 1 IS/MND and has no comments on the Project. No response is required.

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SECTION 4.0 – REFERENCES

U.S. Environmental Protection Agency (EPA)

1995 Compilation of Air Pollutant Emissions Factors. Volume I: Stationary Point and Area Sources. Available online at: https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors

2002 Health Assessment Document for Diesel Engine Exhaust. Available online at: https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=29060

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ATTACHMENT – H

Resolution for CUP 19-0028

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RESOLUTION NO. _____

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, APPROVING CONDITIONAL USE PERMIT #19-0028 AND MAKING FINDINGS FOR THE OF APPROVAL FOR HEBER I GEOTHERMAL REPOWER PROJECT

WHEREAS, Heber Geothermal Company/ Ormat Nevada, Inc. has submitted an application and has requested the approval of Conditional Use Permit #19-0028 for the continued operations of currently operational Heber I geothermal facilities along with the required construction to upgrade the existing Heber I Geothermal facility operations; and,

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility of adoptions and certifications;

WHEREAS, public notice of said application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning & Development Services Department and other interested parties at a public hearing held with respect to this item on November 18, 2021;.

NOW, THEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has considered Conditional Use Permit #19-0028 and Conditions of Approval prior to approval; the Planning Commission finds and determines that the Conditional Use Permit and Conditions of Approval are adequate and prepared in accordance with the requirements of the Imperial County General Plan and Land Use Ordinance, and the California Environmental Quality Act (CEQA) which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with State Planning and Zoning Law and the County of Imperial, the following findings for the approval of Conditional Use Permit #19-0028 have been made as follows:

A. **The proposed use is consistent with goals and policies of the adopted County General Plan. (Imperial County Code § 90203.09.A)**

The General Plan designates the subject site as "Agriculture/Urban/Specific Plan Area" and Section 90508.02 of the County Land Use Ordinance identify the permitted conditional uses within the A-2-G & A-2-G-SPA Zone designation. Uses

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identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the Imperial County Planning Commission. Additionally, an analysis of the project's consistency with the General Plan goals and objectives relevant to the project is provided in the MND and the project is considered consistent with the applicable policies of the County's General Plan.

B. The proposed use is consistent with the purpose of the zone or sub-zone within which the use will be used. (Imperial County Code § 90203.09.B)

The purpose of the project is for taking the existing dual-flash steam turbine generator out of service and installing two new Ormat Energy Converter (OEC) geothermal power generation units. In addition, OEC-11 and OEC-13 will be reconfigured into a combined two-level unit, OEC-11 ITLU. Additional new equipment include 2 Isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. The proposed project is subject to approval of a CUP from the County. The site is zoned A-2-G and A-2-G-SPA and the purpose of this zone is to designate areas that are suitable for geothermal facilities. Geothermal electrical facilities and expansion thereof are permitted with a Conditional Use Permit in the A-2-G and A-2-G-SPA Zone (Imperial County Code § 90508.02). Therefore, the proposed use is consistent with the purpose of the zone or sub-zone within which the uses will be located.

C. The proposed use is listed as a use within the zone or sub-zone or is found to be similar to a listed conditional use according to the procedures of Section 90203.00. (Imperial County Code § 90203.09.C)

The proposed Heber 1 Repower Project is listed as a use subject to a Conditional Use Permit in Land Use Ordinance, Section 90508.02. Additionally, the project is part of the County of Imperial Geothermal Overly zone (G) and allows for the construction and operation of geothermal facilities.

D. The proposed use meets the minimum requirements of this Title applicable to the use and complies with all applicable laws, ordinances and regulation of the County of Imperial and the State of California. (Imperial County Code § 90203.09.D).

The proposed project complies with the minimum requirements of this Title by obtaining a Conditional Use Permit pursuant to Title 9, Division 5, and Section 90508.02, complying with the California Environmental Quality Act, and participating in the public review and hearing process. Development standards

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have been established for the Project pursuant to these processes, and will be enforced via imposition and enforcement of the Mitigation Monitoring and Reporting Program, as well as the conditions of approval imposed on this CUP. The Conditions of Approval will further insure that the project complies with all applicable regulations of the County of Imperial and the State of California. Therefore, the proposed project shall meet the minimum requirements of the Land Use Ordinance, Section 90203.00.

E. The proposed use will not be detrimental to the health, safety, and welfare of the public or to the property and residents in the vicinity. (Imperial County Code § 90203.09.E)

The refurbish and repower project of the existing geothermal facilities is not in near proximity to large residential areas and is project site is surrounded by agricultural uses, and a cattle feedlot is located north of the project site, and the Heber 2 Geothermal Facility is located west.

F. The proposed use does not violate any other law or ordinance. (Imperial County Code § 90203.09.F)

The current facility and upgrading of the Heber 1 facility appears to be in compliance with all local, county, state and federal laws.

G. The proposed use is not granting a special privilege. (Imperial County Code § 90203.09.G)

The proposed Project is a permitted use subject to approval of a Conditional Use Permit under Land Use Ordinance, Section 92508.02 *et. seq*. and will not grant a special privilege. Additionally, the Heber 1 Geothermal facility will require an approved Conditional Use Permit CUP #19-0028 for operation.

NOW, THEREFORE, based on the above findings, the Imperial County Planning Commission **DOES HEREBY APPROVE** Conditional Use Permit #19-0028, subject to the Conditions of Approval.

_____
Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Imperial County Planning Commission at a meeting conducted on **November 18, 2021** by the following vote:

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AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____

Jim Minnick,
Director of Planning & Development Services
Secretary to the Planning Commission

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ATTACHMENT – I

Conditional Use Permit 19-0028

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AGREEMENT FOR
CONDITIONAL USE PERMIT #19-0028
ORMAT NEVADA INC./HEBER GEOTHERMAL COMPANY
(by the Planning Commission on November 18, 2021)

This Agreement is made and entered into on this ___ day of _____, 2021, by and between ORMAT Nevada, Inc. dba Heber Geothermal Company, hereinafter referred to as Permittee, and the COUNTY OF IMPERIAL, a political subdivision of the State of California, (hereinafter referred to as "COUNTY").

RECITALS

WHEREAS, Permittee is the owner, lessee or successor-in-interest in certain land in Imperial County located south of State Highway 86, east of Dogwood Road, north of Willoughby Road, and southeast of the townsite of Heber, California, described as a portion of the East half of Tract 45, APN 054-250-036-000 & 054-250-035-000, 20 & 8 acres respectively, Township 16 South, Range 14 East, SBB&M; and,

WHEREAS, Permittee has applied to the County of Imperial for a Conditional Use Permit #19-0028 ("Project") for the following expansion project which supercedes the previous CUP #15-0013;

GENERALCONDITIONS:

The "GENERAL CONDITIONS" are shown by the letter "G". These conditions are conditions that are either routinely and commonly included in all Conditional Use Permits as "standardized conditions and/or are conditions that the Imperial County Planning Commission has established as a requirement on all CUP's for consistent application and enforcement. The Permittee is hereby advised that the General Conditions are as applicable as the SITE SPECIFIC conditions.

G-1 GENERAL LAW:

The Permittee shall comply with all local, state and/or federal laws, rules, regulations, ordinances, and/or standards as they may pertain to the Project whether specified herein or not.

G-2 PERMITS/LICENSES:

The Permittee shall obtain any and all local, state and/or federal permits, licenses, and/or other approvals for the construction and/or operation of the Project. This

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shall include, but not be limited to, local requirements for Health, Building, Sanitation, ICAPCD, Public Works, County Sheriff, Fire/Office of Emergency Services, Regional Water Quality Control Board, California Geologic Energy Management Division (CalGEM), among others. Permittee shall likewise comply with all such permit requirements and shall submit a copy of such additional permit and/or licenses to the Planning & Development Services Department within 30 days of receipt, as deemed necessary.

G-3 RECORDATION:

This permit shall not be effective until it is recorded at the Imperial County Recorders Office and payment of the recordation fee shall be the responsibility of the Permittee. If the Permittee fails to pay the recordation fee within six (6) months from the date of approval, this permit shall be deemed null and void. The Planning & Development Services Department will submit the executed CUP to the County Recorder's office for recordation purposes.

G-4 CONDITION PRIORITY:

The Project shall be constructed and operated as described in the Conditional Use Permit application, and as specified in these conditions.

G-5 INDEMNIFICATION:

As a condition of this permit, Permittee agrees to defend, indemnify, hold harmless, and release the County, its agents, officers, attorneys, and employees from any claim, action, or proceeding brought against any of them, the purpose of which is to attack, set aside, void, or annul the permit or adoption of the environmental document which accompanies it. This indemnification obligation shall include, but not be limited to, damages, costs, expenses, attorneys fees, or expert witness fees that may be asserted by any person or entity, including the Permittee, arising out of or in connection with the approval of this permit, whether there is concurrent, passive or active negligence on the part of the County, its agents, officers, attorneys, or employees. This indemnification shall include Permittee's actions involved in construction, operation or abandonment of the permitted activities.

G-6 INSURANCE:

The Permittee shall secure and maintain liability in tort and property damage, insurance at a minimum of $1,000,000 or proof of financial responsibility to protect persons or property from injury or damage caused in any way by construction and/or operation of the permitted facilities. The Permittee shall require that proper Workers' Compensation insurance cover all laborers working on such facilities, e.g. during construction and maintenance, as required by the State of California. The Permittee shall also secure liability insurance and such other insurance as may be required by the State and/or Federal Law. Evidence of such insurance shall be provided to the County prior to commencement of any activities authorized by this permit, e.g. a Certificate of Insurance is to be provided to the Planning & Development Services Department by the insurance carrier and said insurance and

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certificate shall be kept current for the life of the permitted project. Certificate(s) of insurance shall be sent directly to the Planning & Development Services Department by the insurance carrier and shall name the Department as a recipient of both renewal and cancellation notices.

G-7 INSPECTION AND RIGHT OF ENTRY:

The County reserves the right to enter the premises to make appropriate inspection(s) and to determine if the condition(s) of this permit are complied with. The owner or operator shall allow authorized County representative(s) access upon the presentation of credentials and other documents as may be required by law to:

(a) Enter at reasonable times upon the owner's or operator's premises where the permitted facilities are is located, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment, or operations regulated or required under the permit, and,

G-8 SEVERABILITY:

Should any condition(s) of this permit be determined by a Court or other agency with proper jurisdiction to be invalid for any reason, such determination shall not invalidate the remaining provision(s) of this permit.

G-9 PROVISION TO RUN WITH THE LAND/PROJECT:

The provisions of this project are to run with the land/project and shall bind the current and future owner(s), successor(s) of interest, assignee(s) and/or transferee(s) of said project. Permittee shall not without prior notification to the Planning & Development Services Department assign, sell or transfer, or grant control of project or any right or privilege therein. The Permittee shall provide a minimum of sixty (60) days written notice prior to such proposed transfer becoming effective. The permitted use identified herein is limited for use upon the permitted properties described herein and may not be transferred.

G-10 TIME LIMIT:

Unless otherwise specified within the specific conditions, this permit shall be limited to a maximum of thirty (30) years from the recordation of the CUP. The CUP may be extended for an additional ten (10) year period by the appropriate County entity (either the Planning Director, the Planning Commission or the Board of Supervisors as set forth in the applicable Imperial County Ordinances) upon a finding that the Project is in compliance with all conditions of the CUP as stated herein and any applicable Land Use regulation of the County of Imperial. If an extension is necessary, the Permittee shall file a written extension request with the Planning

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Director at least sixty (60) days prior to the expiration date of the permit. Such an extension request shall include the appropriate extension fee. Nothing stated or implied within this permit shall constitute a guarantee that an extension will be granted. An extension may not be granted if the Project is in violation of any one or all of the conditions or if there is a history of non-compliance with the permit conditions.

G-11 COST:

The Permittee shall pay any and all amounts determined by the County Planning & Development Services Department to defray any and all cost(s) for the review of reports, field investigations, monitoring, and other activities directly related to the enforcement/monitoring for compliance of this Conditional Use Permit, County Ordinance or any other applicable law as provided in the Land Use Ordinance, Section 90901.03 et. seq, General Planning fees. All County Departments, directly involved in the monitoring/enforcement of this project may bill Permittee under this provision, however said billing shall only be through and with the approval of the Planning & Development Services Department.

G-12 REPORTS/INFORMATION:

If requested by the Planning Director, Permittee shall provide any such documentation/report as necessary to ascertain compliance with the Conditional Use Permit. The format, content and supporting documentation shall be as required by the Planning Director.

G-13 DEFINITIONS:

In the event of a dispute the meaning(s) or the intent of any word(s), phrase(s) and/or conditions or sections herein shall be determined by the Planning Commission of the County of Imperial. Their determination shall be final unless an appeal is made to the Board of Supervisors within the required time, i.e. ten (10) calendar days, pursuant to the Land Use Ordinance, Title 9, Division 1, Chapter 4, Section 90104.05, Appeal from Decision.

G-14 MINOR AMENDMENTS:

The Planning Director may approve minor modifications to the Permit to accommodate minor changes or modifications to the design, construction, and/or operation of the Project provided said changes are necessary for the project to meet other laws, regulations, codes, or conditions of the CUP and provided further, that such changes will not result in any additional environmental impacts.

G-15 SPECIFICITY:

The issuance of this permit does not authorizes the Permittee to construct or operate the Project in violation of any state, federal, local law nor beyond the specified boundaries of the project as shown the application/project description/permit, nor shall this permit allow any accessory or ancillary use not

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specified herein. This permit does not provide any prescriptive right or use to the Permittee for future addition and or modifications to the Project.

G-16 NON-COMPLIANCE (ENFORCEMENT & TERMINATION):

Should the Permittee violate any condition herein, the County shall give notice of such violation. If Permittee does not act to correct the identified violation, and after having given reasonable notice and opportunity, e.g. typically at least thirty (30) days, the County may revoke the permit.

(a) If the Planning Commission finds and determines that the Permittee or successor-in-interest has not complied with the terms and conditions of the CUP, or cannot comply with the terms and conditions of the CUP, or the Planning Commission determines that the permitted activities constitute a public nuisance, the Planning Director shall provide Permittee with notice and a reasonable opportunity to comply with the enforcement or abatement order.

(b) If after receipt of the order (1) Permittee fails to comply, and/or (2) Permittee cannot comply with the conditions set forth in the CUP, then the matter shall be referred to the Planning Commission for permit modification suspension, or termination, or to the appropriate prosecuting authority.

G-17 GENERAL WELFARE:

All construction, drilling, testing, and operations shall be conducted with consistency with all laws, conditions, adopted County policies, plans and the application so that the project will be in harmony with the area and not conflict with the public health, safety, comfort, convenience, and general welfare.

G-18 PERMITS OF OTHER AGENCIES INCORPORATED:

Permits granted by other governmental agencies in connection with the Project are incorporated herein by reference. The County reserves the right to apply conditions of those permits, as the County deems appropriate; provided however, that enforcement of a permit granted by another governmental agency shall require concurrence by the respective agency. Permittee shall provide to the County, on request, copies and amendments of all such permits.

G-19 HEALTH HAZARD:

If the County Health Officer determines that a significant health hazard exists to the public, the Health Officer may require appropriate measures and the Permittee shall implement such measures to mitigate the health hazard. If the hazard to the public is determined to be imminent, such measures may be imposed immediately and may include temporary suspension of permitted activities, the measures imposed by the County Health Officer shall not prohibit the Permittee from requesting a special Planning Commission meeting, provided Permittee bears all related costs.

G-20 EMPLOYMENT:

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The Permittee shall use to the maximum extent possible local labor from Imperial County for both construction and operation of said project. Permittee shall give priority to the extent allowed by law to applicants from Imperial County. This provision shall apply to all levels of employment at the site from Senior Management, Technical to Laborer (collectively the work force). At a minimum, Permittee shall seek to secure 50% of the work force from Imperial County residents (County residents being defined as anyone who has resided within the County for at least 120 days). In the event Permittee is unable to meet this requirement due to lack of qualified applicants, a comprehensive report shall be provided to the Planning & Development Services Department. Said report shall include the description of position(s), the number and origin of all applicants, the reasons that Permittee cannot comply. In the event compliance cannot be attained, this matter shall be brought to the Planning Commission for direction and/or modification.

G-21 APPROVALS AND CONDITIONS SUBSEQUENT TO GRANTING PERMIT:

Permittee acceptance of this permit shall be deemed to constitute agreement with the terms and conditions contained herein. Where a requirement is imposed in this permit that Permittee conduct a monitoring program, and where the County has reserved the right to impose or modify conditions with which the Permittee must comply based on data obtained therefrom, or where Permittee is required to prepare specific plans for County approval and disagreement arises, the Permittee, operator and/or agent, the Planning Director or other affected party, to be determined by the Planning Director, may request that a hearing be conducted before the Planning Commission whereby they may state the requirements which will implement the applicable conditions as intended herein. Upon receipt of a request, the Planning Commission shall conduct a hearing and make a written determination. The Planning Commission may request support and advice from a technical advisory committee. Failure to take any action shall constitute endorsement of staff's determination.

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SITE SPECIFIC CONDITIONS:

The "SPECIFIC CONDITIONS" are shown by the letter "**S**". These conditions are conditions "site specific" to this Conditional Use Permit. The Permittee is advised that the Specific Conditions are as applicable as the other types of conditions within this Conditional Use Permit that are incorporated herein by reference and whether included hereinafter or not!

S-1 AUTHORIZED SCOPE OF ACTIVITIES:

The Permittee has constructed and operated the following facilities in compliance with the County's General Plan, 2015 Geothermal/Alternative & Transmission Element, Land Use Ordinance, and former CUP #15-0013, and all other applicable local, state, and federal laws, ordinances, regulations and standards:

i. The Heber Geothermal Company (Heber 1), originally 52 MW (net) geothermal power plant, consisting of flash tanks, a turbine-generator, a condenser, four (4) Ormat Energy Converters (OECs) a cooling towers, vapor recovery unit (VRMU) an electrical substation, rock muffler, and related above ground motive fluid tanks, pits, pumps, piping, ponds, and ancillary equipment;
ii. A control room, office, maintenance shop and other facilities located at the power plant site;
iii. A production island containing eleven (11) wells;
iv. Piping from the wells to the power plant and from the plant to the injection islands;
v. An injection island containing eight (8) wells and additional injection island containing two (2) wells;
vi. Pumps, tanks, valves, controls, flow monitoring, and other necessary appurtenances to the above wells and pipelines;
vii. Construct and maintain the proposed injection pipeline from Heber Geothermal Company (Heber 1) geothermal power plant to the Second Imperial Geothermal Company (Heber 2) injection facilities;
viii. Operation of pumps, valves, and other control mechanisms, associated with the pipeline, flow monitoring and other necessary appurtenances to the above.

The proposed repower project will be constructed, operated and maintained as follows:

(a) Repowering to 52MW (net) the existing Heber 1 geothermal plant will include replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit (I3LU) and an Integrated two-level unit (ITLU);

Ormat Integrated three-level unit (I3LU)

I3LU configuration would include three (3) 10-bay air coolers and one (1) 14-bay air cooler for cooling OEC Units 1 and 2, also requiring installation of two additional isopentane storage tanks (10,000 gallons each) and a new Vapor Recovery Mechanical Unit (VRMU) for maintenance and purging;

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Integrated two-level unit (ITLU)
OEC Unit 11 and OEC Unit 13 will be converted to an ITLU and the existing cooling tower and VRMU will be used for OEC Unit 11 and OEC Unit 13; additional modifications to OEC Unit 11 and OEC Unit 13 include replacement of some of the brine heat exchangers, replacement of the existing generator and one turbine, and replacement of a portion of the piping system and pumps. No modifications are planned to the existing cooling water system (tower, pumps, condensers, piping, etc.) and VRMU;

The proposed repower project does not include alterations to existing units OEC 14 and OEC 12;

Existing substation will be used without changes.

(b) Except as specifically authorized in this permit to complete the above activities, supplemental activities which require additional major equipment or facilities will require separate permits. The County, in issuing this permit, in no way assures or otherwise vests any right, with respect to the issuance of a permit(s) for any supplemental activities and Permittee shall also comply with all applicable geothermal standards in the Land Use Ordinance.

S-2 AIR QUALITY AND DUST EMISSIONS:

The Permittee shall comply with the Imperial County Air Pollution Control District's (ICAPCD) Regulation VIII, fugitive dust control. The primary pollutant controlled by this regulation is PM10, "fugitive dust". In addition, the Permittee shall obtain an Authority to Construct (ATC) prior to any construction and submit an application amending their Permit to Operate (PTO) prior to the operation of any new or modified equipment as required by Rule 207, New and Modified Source Review.

The amendment to the existing CUP and planned equipment modifications will require that the applicant contact Mr. Jesus Ramirez, Permitting & Engineering Division Manager, to discuss modifications to their current permit. The applicant should contact Mr. Emmanuel Sanchez, Enforcement Division Manager, to discuss the possible need for a Construction Dust Control Plan. Additionally, the applicant must notify the Air District 10 days prior to the start of any construction activities.

Should NOx emissions exceed the threshold of significance as found in the Imperial County CEQA Air Quality Handbook the proponent may propose an off-site measure in the form of a project to "off-set" the net excess emissions or abide by Policy 5 which allows for the payment of in-lieu fees.*

S-3 ARCHAEOLOGICAL, CULTURAL & PALEONTOLOGICAL RESOURCES:

The Permittee shall monitor the construction of expansion equipment and if any unusual specimens of bone, stone, or ceramic are discovered during construction of the permitted facilities, all construction affecting the discovery site shall cease until a qualified archaeologist retained by the Permittee and approved by the County

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reviews the specimens. The recommendations of the archaeologist shall be complied with prior to resuming construction.

S-4 BRINE CHEMISTRY:

Permittee shall conduct brine chemistry tests which shall include but not be limited to analysis for hydrogen sulfide, mercury, arsenic, fluoride, boron, ammonia, strontium, iron, zinc, barium, lithium, lead, copper, and chromium. The results of such tests shall be provided by the County upon request. To the extent information contained in test results are proprietary, such information shall not be released to the public.

S-5 CONFORMITY:

The expansion project shall be designed, constructed, and operated in substantial conformance with the application.

S-6 CONSTRUCTION STANDARDS:

The expansion facilities shall be built in accordance with the County Building Code requirement applicable to "Seismic Design D". All structures and facilities shall be designed in accordance with the publication entitled "Recommended Lateral Force Requirements and Commentary by the Structural Engineers Association of California". The structural components of the permitted facilities shall be reviewed by the Building Official/Planning Director. Building permits shall be procured for the Project from the County prior to commencement of any construction.

S-7 EMERGENCY RESPONSE PLAN:

The existing Emergency Response Plan shall be maintained covering possible emergencies, e.g. blow-outs, major fluid spills, impacts due to earthquakes, and other emergencies. At all times, there shall be at least one employee "on call", i.e., available to respond to an emergency by reaching the facility within a short period of time, with the responsibility of coordinating all emergency response measures. The Emergency Coordinator shall be thoroughly familiar with all aspects of the Emergency Response Plan and have the authority to commit the resources needed to carry out the contingency plan. Adequate personnel and equipment shall be available to respond to emergencies and to insure compliance with the conditions of the permit, to include appropriate first aid provisions during project construction and operation with appropriate first aid training for project employees. The existing Hazardous Materials Business Plan submitted to the County Environmental Health Services Division, Health Department, shall be maintained by the Permittee and any applicable amendments provided as deemed necessary for this project.

S-8 GEOTECHNICAL:

Geotechnical investigations of soil characteristics affecting the expanded facilities shall be conducted by qualified people at the permittee's expense. The report therefrom shall be made available to the County on request.

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S-9 GEOLOGIC HAZARDS:

No structure meant to be, or which actually is, regularly, habitually, or primarily, occupied by humans shall be placed across the trace of an active fault. Further, no such structure shall be placed within fifty (50) feet of the trace of an active fault, nor anywhere within a seismic special studies zone, unless a geologic report, satisfactory to the State Geologist, is prepared and shows that no undue hazard would be created by construction or placement of the structure.

S-10 NOISE:

Control measures shall include, but are not limited to, the following:

(a) Diesel equipment used for drilling within 1,000 feet of any residence shall have hospital-type mufflers. Well venting and testing at these wells shall be accompanied by the use of an effective muffling device or "silencer".

(b) Heavy truck traffic, well site preparation, and pipe stacking shall be limited to the hours of 7:00 a.m. and 7:00 p.m. for any wells within 1,000 feet of any residence.

(c) Hydroblasters used in descaling operations when used within 1,000 feet of a residence shall be limited to the hours of 7:00 a.m. to 7:00 p.m.

(d) The Permittee may propose and the Planning Director may approve modification of the above measures.

S-11 PROJECT DESIGN:

The following shall be followed in project design:

(a) All expansion loops in fluid lines shall be horizontal except where requested in writing by the owners of surface rights within five hundred (500) feet of a proposed expansion loop, or where design constraints require otherwise.

(b) Marking and lighting of drill rigs and permanent facilities shall be maintained in accordance with Federal Aviation Administration regulations.

(c) On-site parking shall be provided for all employees, customers, clients, and visitors. All facility roads and parking areas shall be constructed and surfaced to County standards.

(d) Shrubs, trees and ground cover shall be planted and maintained to compliment the appearance of the project, in accordance with a landscaping plan approved by the Planning Director.

(e) Permittee shall submit architectural and landscaping plans, as required herein, for all facilities to be constructed as part of the project to the

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Planning Director, and shall receive the approval of said Director prior to the commencement of construction. The Director shall not unreasonably withhold approval of said plans.

(f) All lights shall be directed or shield to confine any direct rays to the site, and shall be muted to the maximum extent consistent with safety and operational necessity.

(g) The location of power pole lines adjacent to County roads shall be reviewed and approved by the Public Works Department prior to construction/installation of the power poles.

(h) The Planning Director may authorize minor relocation of the well sites, lines, and other minor adjustments to insure that the final facilities comply with the conditions of this permit and those required by other governmental agencies.

S-12 PROTECTION OF WILDLIFE:

Measures approved by the Planning Director shall be employed to discourage or prevent wildlife and avian entry into brine ponds. Well cellars shall be designed to prevent wildlife entry and entrapment. Pipelines shall be constructed so as not to become a barrier to wildlife movement.

S-13 REPORTING:

The Permittee shall furnish to the County, within a reasonable time, any relevant reports/information which the County requires for monitoring purposes to determine whether cause exists for revoking this permit, or to determine compliance with this permit, i.e. relevant reports are those defined within this Permit or requested by the County. The Permittee shall submit all required reports to the Planning Director, County Planning & Development Services Department, 801 Main Street, El Centro, CA 92243.

S-14 SUBSIDENCE:

Permittee shall participate in the County's subsidence detection program and, in connection therewith, submit a plan for Department of Public Works (ICPWD) approval, showing the proposed locations of benchmarks. Monuments shall connect with the County's geothermal subsidence detection network. Benchmarks installed shall conform to County standards. Surveying shall be performed to National Geodetic Survey (NGS) standards and all field surveying shall conform to such standards.

Permittee shall evaluate whether or not the recent abnormally high annual subsidence measurements may be continuing, or whether they may be the result of some mechanism not associated with geothermal operations and shall:

(a) Review the results of the precision level survey of the Heber subsidence monitoring network;

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(b) Install and level as part of this survey, a few additional subsidence monuments in the areas of greatest subsidence (near the intersection of Dogwood Road and Willoughby Road) at locations selected in consultation with ICPWD and CalGEM.

(c) Within approximately six (6) months of this survey, a follow-up with another survey of the entire Heber subsidence monitoring network, including these new monuments;

(d) Prepare and submit to ICPBD, ICPWD, and CalGEM, a specific plan for additional monitoring and the development of potential measures to mitigate (if determined necessary), the subsidence to uplift in the Heber geothermal field area which may be attributable to Project operations to include:

- Re-surveying at least the core sections of the Heber subsidence monitoring network every six (6) months;
- Continuing to re-survey the entire Heber subsidence monitoring network annually;
- Implementing a program to monitor selected key land surface features (such as major bridges and canal structures) for evidence of changes due to subsidence or uplift; and,
- Conducting geothermal reservoir modeling to evaluate what specific changes in the operation of the geothermal wellfield could be undertaken to alter the geothermal reservoir pressure distribution with the objective of reducing the rate of geothermal subsidence and/or uplift in the areas of greatest challenge.

(e) Monitor results of future surveys as per item (d) and, based on those results, develop a long term plan for submittal to ICPBD, ICDPW, and CalGEM to reduce, or reverse if possible, any uplift in the Heber injection areas or any subsidence in the Heber production areas;

(f) Construct and operate, as soon as all the required permits and approvals have been obtained, the proposed expansion project.

S-15 INDUCED SEISMICITY:

Permittee shall participate in the County's seismic monitoring program, and in connection therewith, submit a plan for Public Works Department approval, and shall implement the plan as approved. If evidence of detrimental seismicity induced by project operations is indicated, changes in operations, including possible cessation of operations, may be ordered by the Department of Public Works after consultation with the California Geologic Energy Management Division (CalGEM) and Permittee.

S-16 SYSTEM SHUT DOWN AND SITE ABANDONMENT:

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The Permittee shall prepare and implement a plan for when the operation of the permitted facilities herein authorized has ceased, that all HGC facilities shall be dismantled, and the land involved be made compatible with the surrounding uses, or as requested by the landowner and as agreed to by the County Planning Director. A Bond, or other acceptable surety, or other forms of security acceptable to Imperial County, in the amount of **$657,110,** in addition to any amount set by CalGEM, shall be filed with the County that guarantees restoration of the land to its condition prior to the injection pipeline development. Upon completion of such site restoration, the Bond or other surety shall be released by the County.

S-17 REINJECTION:

Fluids equivalent to 86% of produced fluids by mass, and on an annual basis, shall be injected back into the reservoir subject to the requirements of CalGEM and information obtained from any monitoring programs and other sources.

If significant subsidence, loss of reservoir pressure, or other detriments attributable to this project occur, or substantial evidence of other undesirable changes in operations is revealed, corrective measures or changes may be ordered by the County. Corrective measures may be included, but are not limited to, a modified injection rate or altered injection depth, re-leveling of affected areas, or reduction or total cessation of geothermal activities.

S-18 SPILLS AND RUNOFF:

The plant site shall be designed and constructed to prevent spills from endangering adjacent properties and waterways, and to prevent runoff from any source being channeled or directed in an unnatural way so as to cause erosion, siltation, or other detriments. A system of pressure and flow sensing devices and regular inspection of all lines, capable of detecting leaks and spills, shall be instituted and maintained. Blowout prevention equipment shall be used in accordance with the requirements of CalGEM.

S-19 MAINTENANCE OF WATER QUALITY:

A water quality monitoring program, acceptable to the Regional Water Quality Control Board (RWQCB) shall be instituted and maintained. If injection fluids intrude on shallow ground waters, a modification of the injection program may be ordered by the County in consultation with RWQCB and the Permittee. Any needed sumps and holding ponds shall be constructed and maintained so that permeability does not exceed 1 X 10-6 cm/sec.

S-20 TRAFFIC SAFETY:

The Permittee shall obtain all encroachment permits and consider traffic safety in transporting equipment and materials to the permitted facilities to include temporary signs warning motorists on adjacent roadways and flagmen shall be used when equipment is being brought to and from the Project site.

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(a) The Permittee shall coordinate the movement of any required oversize loads on County roads with the DPW, on State Highways with CALTRANS as well as the El Centro CHP office and such transportation of oversized equipment should be minimized as much as possible.

(b) The Permittee shall be required to obtain any necessary rights-of-way on property under the lease and control of the Permittee and to provide any necessary road work as deemed necessary by the DPW.

(c) The Permittee shall coordinate with DPW for their requested dedication of rights-of-way needed for Pitzer Road for the consideration of existing and any future road needs.

(d) The Permittee shall file for an encroachment permit for any work or proposed work in the affected County road rights-of-way.

(e) The Permittee shall coordinate the maintenance of unpaved roads used for construction activities and obtain approvals from the County Department of Public Works.

(f) A Traffic Control Plan is to be submitted to Caltrans District 11, including the interchange at SR-111 / E. Jasper Road, at least 30 days prior to the start of any construction. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during closures, including routes and signage. Potential impacts to the highway facilities (SR-111 and SR-86) and traveling public from detour, demolition and other construction activities should be discussed and addressed before work begins. If the turbine engine that is transported is oversized, larger than the lane width on the highway, per se, then there may need to be an Caltrans encroachment permit required. Such permit would need to be filed locally at the Caltrans District 11 office in San Diego. The transportation permit to haul heavy weight/loads can be obtained in Sacramento over the phone at our HQ office.

The following measures were submitted by the County Public Works Department letter, dated June 25, 2015, and revised as of August 17th as follows:

1. The applicant shall furnish a Drainage and Grading Plan/Study to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. The Study/Plan shall be submitted to the Department of Public Works for review and approval. The applicant shall implement the approved plan. Employment of the appropriate Best Management Practices (BMP's) shall be included. (Per Imperial County Code of Ordinances, Chapter 12.10.020 B).
2. An encroachment permit shall be secured from the Department of Public Works for any and all new, altered or unauthorized existing driveway(s) to access the properties through surrounding County roads. As a minimum, a Commercial-type Driveway shall be constructed. (Per Imperial County Code of Ordinances, Chapter 12.10.020 B).
3. The applicant for Encroachment Permits in County Roads and Right-of-Way is responsible for researching, protecting, and preserving survey monuments

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per the Professional Land Surveyor's Act (8771 (b)). This shall include a copy referenced survey map and tie card(s) (if applicable) for all monuments that may be impacted.

4. The applicant for grading plans and/or improvement plans is responsible for researching, protecting and preserving survey monuments per the Professional Land Surveyor's Act (8771 (b)). This shall include a copy of the referenced survey map and tie card(s) (if applicable) for all monuments that may be impacted by the project whether if are on-site or off-site.

INFORMATIVE:

5. All solid and hazardous waste shall be disposed of in approved solid waste disposal sites in accordance with existing County, State and Federal regulations **(Per Imperial County Code of Ordinances, Chapter 8.72).**
6. All on-site traffic area shall be hard surfaced to provide all weather access for fire protection vehicles. The surfacing shall meet the Department of Public Works and Fire/OES Standards as well as those of the Air Pollution Control District (APCD) **(Per Imperial County Code of ordinances, Chapter 12.10.020 A).**
7. The project may require a National Pollutant Discharge Elimination System (NPDES) permit and Notice of Intent (NOI) from the Regional Water Quality Control Board (RWQCB) prior county approval of on-site grading plan **(40 CFR 122.28)**.

S-21 WATER COURSE CROSSINGS:

The Permittee shall provide one or more of the following techniques to decrease the potential for spills on or near Imperial Irrigation District water courses, e.g. surface water canals and/or drains, as follows:

(a) Pipes shall be constructed of industrial standard designation of "extra heavy" with a thickness of at least 50% greater than that used for other sections of pipe.

(b) An automatic injection pump shut off and check valve system to immediately stop fluid flow shall be installed on the injection pipeline.

(c) Design of facilities shall protect surface and groundwater, e.g. handling of on-site drainage shall not adversely affect adjacent properties.

(d) Other spill prevention measures approved by the County shall be implemented.

S-22 WASTE DISPOSAL:

The Permittee shall insure that any discharged wastes, liquid or solid, shall be disposed of in compliance with all appropriate local, state, and federal regulations, in effect or subsequently duly-enacted, i.e. discharge of wastes into surface water shall meet all requirements of the Regional Water Quality Control Board, e.g. National Pollution Discharge Elimination System permit restrictions, and solid

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wastes shall be disposed of in an approved solid waste disposal site in accordance with County regulations.

S-23 ODORS:

All harmful or noxious emissions and odors shall be controlled to insure that quantities of air contaminants released as a result of the facility operations do not exceed State standards, or constitute a public nuisance.

S-24 WATER USAGE:

The Permittee may use up to a total of 2,300 acre feet of irrigation water per year for thirty (30) years from Imperial Irrigation District. Any extension beyond this period must be agreed to in writing by the Imperial Irrigation District. If the amount of water available to Imperial County is reduced by the Central Arizona project, the right to the irrigation water for this permit granted herein may be terminated. Permittee shall diligently pursue the development of alternate sources to replace the use of irrigation water.

S-25 FIRE PROTECTION

(a) A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment to be performed to evaluate the current system's performance and coverage of protection. Evaluate proposed fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

(b) Isopentane leak or fire will require a large scale evacuation area and create a large scale hazardous material incident with a large operational zone. To minimize potential extremely dangerous condition to firefighters and hazardous material teams, additional equipment may be required to adequately protect the first responders, staff and citizens in an emergency incident. This condition shall be discussed among the applicant and Imperial County Fire Chief prior to issuance of the permit for the project.

(c) All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

(d) An approved automatic fire detection system shall be installed as per the California Fire Code as adopted by Imperial County. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

(e) Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

(f) Compliance with all required sections of the Imperial County Fire Code.

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(g) Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.***

S-25 IMPERIAL IRRIGATION DISTRICT

(a) For electrical service for the proposed project, the applicant should contact Joel Lopez, IID Customer Project Development Planner, at (760) 482-3444 or email Mr. Lopez at jflopez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the IID website https://www.iid.com/home/showdocument?id=12923, the applicant will be required to submit a complete set of approved plan (including CAD files), project schedule, estimated in-service date, one-line diagram of facility, electrical loads, panel size, voltage, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures (if any) related to providing electrical service to the project.

(b) IID facilities that may be impacted include the Daffodil Canal (the project site is located adjacent to and west of the Daffodil Canal), Daffodil Lateral 1 and Dogwood Canal. However, it appears that the expansion project will not affect IID's canals or laterals. If this should occur, the applicant will be required to contact IID Water Department Engineering Services section prior to final project design. IID Water Dept. ESS can be contacted at (760) 339-9265 for further information.

(c) The applicant may not use IID's canal or drain banks to access the project site. Any abandonment of easements or facilities will be approved by IID based on systems (irrigation, drainage, power, etc.) needs.

(d) Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water or any other above ground or underground utilities; will require an encroachment permit or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions are available at the district website http://www.iid.com/departments/real-estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

(e) In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.

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(f) **Any and all improvements necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.******

S-26 IMPERIAL COUNTY DIVISION OF ENVIRONMENTAL HEALTH

(a) Permittee must contact the Water Regional Board regarding any potential discharge of any processed water.

(b) As per the Isopentane above ground tanks, the applicant must contact the Department of Toxic Substances Control to be regulated by the Imperial County Certified Unified Program Agency (CUPA).*****

S-27 IMPERIAL COUNTY CERTIFIED UNIFIED PROGRAM AGENCY (CUPA)

When this retrofit is completed they need to update their CERS information if there are any changes in Hazardous Materials, ASTs with petroleum, USTs, or CalARP thresholds, and they need to notify the DTSC Imperial CUPA at that time.******

S-28 PARTICIPATION IN GEOTHERMAL COMMITTEE

Permittee shall participate in the "Geothermal Industrial Committee" formed by the County.

S-29 CALGEM

Applicant shall provide an authorization letter for the proposed project from California Geologic Energy Management Division (CalGEM).

S-30 ACCEPTANCE:

Acceptance of this permit shall be deemed to constitute agreement by Permittee with all terms and conditions herein contained.

* Air Pollution Control District comment letter dated January 17, 2020.
** Caltrans comment letter dated January 28, 2020 and email dated January 30, 2020.
*** Imperial County Fire Department comment letter dated January 14, 2021.
**** Imperial Irrigation District comment letter dated January 23, 2020.
***** Imperial County Environmental Health Department comment letter dated May 27, 2020.
****** Imperial County Certified Unified Program Agency comment email dated January 9, 2020.

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NOW THEREFORE, County hereby issues the Conditional Use Permit #19-0028 and Permittee hereby accepts such upon the terms and conditions set forth herein.

IN WITNESS THEREOF, the parties hereto have executed this Agreement the day and year first written.

PERMITTEE

_____ _____

Elizabeth Helms, Secretary Date
ORMAT Nevada, Inc.
Managing Member, Heber Geothermal Company, LLC

COUNTY OF IMPERIAL, a political subdivision of the STATE OF CALIFORNIA

_____ _____

James A. Minnick Date
Planning Director
Planning & Development Services
Department

DRAFT COPY

PERMITTEE NOTARIZATION

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 _____} S.S.

On_____ before me, _____ a Notary Public in and for said County and State, personally appeared _____, who proved to 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_____

_____

_____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document_____
Number of Pages_____ Date of Document_____
Signer(s) Other Than Named Above_____

Dated_____

PC ORIGINAL PKG.

COUNTY NOTARIZATION

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 IMPERIAL} S.S.

On_____ before me, _____ a Notary Public in and for said County and State, personally appeared _____, 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_____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document_____
Number of Pages_____ Date of Document_____
Signer(s) Other Than Named Above_____

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ATTACHMENT – J

EEC Package 02/11/21

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PROJECT REPORT

TO: ENVIRONMENTAL EVALUATION COMMITTEE

AGENDA DATE:February 11, 2021

FROM: PLANNING & DEVELOPMENT SERVICES

AGENDA TIME 1:30 PM/ No. 6

PROJECT TYPE: CUP #19-0028; Heber 1 Geothermal Repower Project SUPERVISOR DISTRICT #2

LOCATION: 895 Pitzer Road APN: 054-250-036 & 035-000

Heber, CA PARCEL SIZE: +/- 20 Acres & 8 Acres

GENERAL PLAN (existing) Heber Specific Plan Area GENERAL PLAN (proposed) N/A

ZONE (existing) A-2-G-SPA (General Agriculture) ZONE (proposed) N/A

GENERAL PLAN FINDINGS ☒ CONSISTENT ☐ INCONSISTENT ☐ MAY BE/FINDINGS

PLANNING COMMISSION DECISION: HEARING DATE: _____

☐ APPROVED ☐ DENIED ☐ OTHER

PLANNING DIRECTORS DECISION: HEARING DATE: _____

☐ APPROVED ☐ DENIED ☐ OTHER

ENVIROMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: 02/11/2021

INITIAL STUDY: 19-0033

☐ NEGATIVE DECLARATION ☒ MITIGATED NEG. DECLARATION ☐ EIR

DEPARTMENTAL REPORTS / APPROVALS:

PUBLIC WORKS	☒ NONE	☐ ATTACHED
AG	☐ NONE	☒ ATTACHED
APCD	☐ NONE	☒ ATTACHED
E.H.S.	☐ NONE	☒ ATTACHED
FIRE / OES	☐ NONE	☒ ATTACHED
SHERIFF.	☒ NONE	☐ ATTACHED

OTHER IID, Fort Yuma Quechan Indian Tribe, CUPA, Caltrans, HPUD

REQUESTED ACTION:

(See Attached)

☐ NEGATIVE DECLARATION
☒ MITIGATED NEGATIVE DECLARATION

Initial Study & Environmental Analysis
For:

Heber 1 Geothermal Repower Project
CUP No. 19-0028

Prepared By:

COUNTY OF IMPERIAL
Planning & Development Services Department
801 Main Street
El Centro, CA 92243
(442) 265-1736
www.icpds.com

February 2021

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SECTION 1
INTRODUCTION

A. PURPOSE

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

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

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

☐ According to Section 15065, an **EIR** is deemed appropriate for a particular proposal if the following conditions occur:

- The proposal has the potential to substantially degrade quality of the environment.
- The proposal has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- The proposal has possible environmental effects that are individually limited but cumulatively considerable.
- The proposal could cause direct or indirect adverse effects on human beings.

☐ According to Section 15070(a), a **Negative Declaration** is deemed appropriate if the proposal would not result in any significant effect on the environment.

☑ According to Section 15070(b), a **Mitigated Negative Declaration** is deemed appropriate if it is determined that though a proposal could result in a significant effect, mitigation measures are available to reduce these significant effects to insignificant levels.

This Initial Study has determined that the proposed applications will not result in any potentially significant environmental impacts and therefore, a Negative Declaration is deemed as the appropriate document to provide necessary environmental evaluations and clearance as identified hereinafter.

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

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

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

C. INTENDED USES OF INITIAL STUDY AND NEGATIVE DECLARATION

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

The Initial Study and Negative Declaration, prepared for the project will be circulated for a period of 20 days (*30-days if submitted to the State Clearinghouse for a project of area-wide significance*) for public and agency review and comments. At the conclusion, if comments are received, the County Planning & Development Services Department will prepare a document entitled "Responses to Comments" which will be forwarded to any commenting entity and be made part of the record within 10-days of any project consideration.

D. CONTENTS OF INITIAL STUDY & NEGATIVE DECLARATION

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

SECTION 1

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

SECTION 2

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

PROJECT SUMMARY, LOCATION AND EVIRONMENTAL SETTINGS describes the proposed project entitlements and required applications. A description of discretionary approvals and permits required for project implementation is also included. It also identifies the location of the project and a general description of the surrounding environmental settings.

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

SECTION 3

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

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

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

VI. NEGATIVE DECLARATION – COUNTY OF IMPERIAL

VII. FINDINGS

E. SCOPE OF ENVIRONMENTAL ANALYSIS

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

1. **No Impact:** A "No Impact" response is adequately supported if the impact simply does not apply to the proposed applications.

2. **Less Than Significant Impact:** The proposed applications will have the potential to impact the environment. These impacts, however, will be less than significant; no additional analysis is required.

3. **Less Than Significant With Mitigation Incorporated:** This applies where incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact".

4. **Potentially Significant Impact:** The proposed applications could have impacts that are considered significant. Additional analyses and possibly an EIR could be required to identify mitigation measures that could reduce these impacts to less than significant levels.

F. POLICY-LEVEL or PROJECT LEVEL ENVIRONMENTAL ANALYSIS

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

G. TIERED DOCUMENTS AND INCORPORATION BY REFERENCE

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

1. Tiered Documents

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

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

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

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

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

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

(1) Were not examined as significant effects on the environment in the prior EIR; or

(2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means."

2. Incorporation By Reference

Incorporation by reference is a procedure for reducing the size of EIRs/MND and is most appropriate for including long, descriptive, or technical materials that provide general background information, but do not contribute directly to the specific analysis of the project itself. This procedure is particularly useful when an EIR or Negative Declaration relies on a broadly-drafted EIR for its evaluation of cumulative impacts of related projects (*Las Virgenes Homeowners Federation v. County of Los Angeles* [1986, 177 Ca.3d 300]). If an EIR or Negative Declaration relies on information from a supporting study that is available to the public, the EIR or Negative Declaration cannot be deemed unsupported by evidence or analysis (*San Francisco Ecology Center v. City and County of San Francisco* [1975, 48 Ca.3d 584, 595]). This document incorporates by reference appropriate information from the "Final Environmental Impact Report and Environmental Assessment for the "County of Imperial General Plan EIR" prepared by Brian F. Mooney Associates in 1993 and updates.

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

- The incorporated document must be available to the public or be a matter of public record (CEQA Guidelines Section 15150[a]). The General Plan EIR and updates are available, along with this document, at the County of Imperial Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 Ph. (442) 265-1736.

- This document must be available for inspection by the public at an office of the lead agency (CEQA Guidelines Section 15150[b]). These documents are available at the County of Imperial Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 Ph. (442) 265-1736.

- These documents must summarize the portion of the document being incorporated by reference or briefly describe information that cannot be summarized. Furthermore, these documents must describe the relationship between the incorporated information and the analysis in the tiered documents (CEQA Guidelines Section 15150[c]). As discussed above, the tiered EIRs address the entire project site and provide background and inventory information and data which apply to the project site. Incorporated information and/or data will be cited in the appropriate sections.

- These documents must include the State identification number of the incorporated documents (CEQA

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Guidelines Section 15150[d]). The State Clearinghouse Number for the County of Imperial General Plan EIR is SCH #93011023.

- The material to be incorporated in this document will include general background information (CEQA Guidelines Section 15150[f]). This has been previously discussed in this document.

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II. Environmental Checklist

1. **Project Title**: Conditional Use Permit #19-0028 Heber 1 Repower Project
2. **Lead Agency**: Imperial County Planning & Development Services Department
3. **Contact person and phone number**: Mariela Moran, Planner II, (442) 265-1736
4. **Address**: 801 Main Street, El Centro CA, 92243
5. **E-mail**: marielamoran@co.imperial.ca.us
6. **Project location**: 895 Pitzer Road, Heber, CA
7. **Project sponsor's name and address**: Ormat Nevada Inc. 6140 Plumas St, Reno, NV 89519
8. **General Plan designation**: Heber Specific Plan Area
9. **Zoning**: A-2-G-SPA, General Agriculture (A-2), Geothermal Overlay Zone (G), and in the Heber Specific Plan Area (SPA).

10. **Description of project**: The Project's sponsor (Ormat Nevada Inc.) proposes upgrades to their existing Heber 1 geothermal facility (Proposed Project) amending their existing Conditional Use Permit (CUP) #15-0013. Conditional Use Permit #19-0028 would supersede existing CUP #15-0013. The upgrades are discussed in detail below in the Project Summary section.

11. **Surrounding land uses and setting**: The Proposed Project site is located within the Heber Specific Plan Area, which is designated for commercial, residential, industrial, and renewable energy land uses in mixed-use development (Imperial County 2015). Land surrounding the Proposed Project is zoned General Agriculture/Specific Plan Area (A2G-SPA). Two residences are located within a 2,000 feet radius of the proposed project site. The town of Heber is approximately 3,500 feet to the northwest of the Heber 1 Complex and the City of Calexico limits are located south of the proposed project site. A cattle feed lot is located to the north of the project site and the Southern Pacific right of way is located west.

12. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement.):
Regional Water Quality Control Board
Imperial County Air Pollution Control District

13. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentially, etc.?
The AB 52 Notice of Opportunity to consult on the proposed project letter was mailed via certified mail on January 8, 2020 to President Jordan D. Joaquin, from the Quechan Indian Tribe. On January 10, 2020 we received an email from the Quechan Historic Preservation Officer stating that they did not have comments on this project.

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

ENVIRONMENTAL EVALUATION COMMITTEE (EEC) DETERMINATION

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

☐ Found that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ Found that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ Found that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ Found that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ Found that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

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

EEC VOTES	YES	NO	ABSENT
PUBLIC WORKS	☑	☐	☐
ENVIRONMENTAL HEALTH SVCS	☑	☐	☐
OFFICE EMERGENCY SERVICES	☑	☐	☐
APCD	☑	☐	☐
AG	☑	☐	☐
SHERIFF DEPARTMENT	☐	☐	☑
ICPDS	☑	☐	☐

for

Jim Minnick, Director of Planning/EEC Chairman

2-11-2021

Date:

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PROJECT SUMMARY

A. Project Location:

The Proposed Project site is located in Heber, CA, Imperial County. The Proposed Project would occur entirely within the existing Heber 1 facility, and located at 895 Pitzer Road, Heber, CA (Figure 1). The Proposed Project site is located within Assessor's Parcel Numbers (APN) 054-250-035 and 054-250-036. The Proposed Project site is zoned General Agriculture within the Heber Specific Plan Area (A-2-G-SPA). The Proposed Project site is generally bound by APNs 054-250-014 to the north, Pitzer Road to the east, East Jasper Road to the south, and a Union Pacific right-of-way and APN 054-250-027 and 054-250-026 to the west; the surrounding land uses and zoning are General Agriculture and Heavy Agriculture and currently contain active agricultural operations.

B. Project Summary:

Ormat proposes to upgrade the existing Heber 1 geothermal facility, which is owned by the subsidiary Heber Field Company, by shutting down the dual-flash steam turbine generator, and installing two new OECs (OEC 1 and OEC 2), reconfiguring two of the existing OECs (OEC 11 and OEC 13), including the installation of ancillary equipment. These updates are referred to herein as the Proposed Project. OEC 1 and 2 combined would function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling rather than water cooling for the motive fluid. OEC 11 and OEC 13 combined would function as an Integrated Two-Level Unit (ITLU) and will use the existing cooling tower. The proposed new setup is expected to be better suited to the current and expected future conditions of the geothermal resource than the steam turbine generator, improving efficiency of the operations and bringing net and gross generation levels.

Applicant is also proposing to modify the permitted water intake from 1,800 acre feet of irrigation water to the existing water intake of 2,300 acre feet of irrigation water. The purpose of the repower project is to improve efficiency of the operations and increase the net and gross generation to 52MW (net), 78.2 (gross) as initially requested under Conditional Use Permit #15-0013. This proposed project also proposes to extend the permitted life of Heber 1 to 30 years (2020-2050).

The Proposed Project includes the following improvements and additions to the existing Heber 1 facility include (Figure 2):

- Replacing the Steam Turbine and Bottoming units with Ormat Integrated three-level unit (I3LU) and Integrated two-level unit (ITLU)
    - The I3LU and ITLU would generate 51.3 megawatts (MW) gross and 36.2 MW net
- The I3LU configuration would include new air cooled OECs (Ormat Energy Converter)
    - New air cooled OECs will be OEC 1 and OEC 2
        - New OECs will require installation of two additional isopentane storage tanks (10,000 gallons each) on-site
        - New VRMU (Vapor Recovery Mechanical Unit)
    - OEC 11 and OEC 13 will be converted to an ITLU
    - The existing cooling tower and VRMU will be used for OEC 11 and OEC 13
- Additional modification to OEC 11 and OEC 13 includes
    - Some of the brine heat exchangers will be replaced
    - Replace the existing generator and one Turbine
    - Replace a portion of the piping system and pumps
    - No modifications are planned to the existing cooling water system (tower, pumps, condensers, piping etc.) and VRMU
- The Proposed Project does not include alterations to existing units OEC 14 and OEC 12
- Existing substation will be used without changes
- New Electrical, Control & Machinery Building

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Ormat Energy Converter 1

Ormat Energy Converter 1 (OEC 1) is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 1 also includes a generator, vaporizer, air cooled condensers, and preheaters and recuperators. OEC 1 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 1 is 19.85 MW and the height of the I3LU is approximately 22 feet. OEC-1 in combination with OEC-2 (below) will function as a single I3LU.

Ormat Energy Convertor 2

Ormat Energy Converter 2 (OEC 2) is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 2 also includes also includes a generator, vaporizer, air cooled condensers, and preheaters. OEC 2 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 2 is 17.25 MW. As mentioned above, OEC-2 in combination with OEC-1 will function as a single I3LU with a height of approximately 22 feet.

Air Coolers

Cooling for OEC-1 and OEC-2 will be accomplished without the use of cooling water. The MF will be cooled using air coolers. The air coolers operate by passing the MF through an air heat exchanger with airflow generated by a large fan. There will be three 10-bay air coolers and one 14-bay air cooler. The air coolers will be purged to remove non-condensable gases, and the purge gas will pass through the new VRMU to capture isopentane and VOC emissions before being released to the atmosphere.

Ormat Energy Converter-11 Integrated Two-Level Unit (OEC-11 ITLU)

OEC-11 is a two-turbine bottoming unit which includes a generator, vaporizer, preheater, and condenser. The existing integrated purging units are no longer used, and purging is accomplished using the existing VRMU. With the proposed upgrades, OEC-11 will become an ITLU and will be renamed OEC-11 ITLU. The upgrades include the replacement of one turbine with a new, larger unit plus new vessels associated with the larger turbine. In addition to these changes, OEC-11 will incorporate the condensers that are currently part of OEC-13, and the rest of OEC-13 will be decommissioned. The gross output of the new OEC-11 ITLU will be 14.5 MW. and will reach a height of approximately 22 feet.

Vapor Recovery Maintenance Unit (VRMU)

A new VRMU will be used for purging and maintenance operations for OEC-1 and OEC-2. Vapor from the OEC's are passed through a knock-out drum and condenser, which collect the majority of the isopentane and other condensable gases. Condensed isopentane is returned to the MF system, while remaining gases are passed through an activated carbon adsorption filter which removes remaining isopentane vapor and other organics. The overall isopentane vapor recovery efficiency for the VRMU exceeds 99%. The new VRMU is intended to primarily service the new units: OEC-1, OEC-2, and the air coolers. However, all of the OEC units, air coolers, and tanks are interconnected, and the new VRMU may be used with any of the existing units when appropriate based on current operations.

ORMAT will continue to operate its existing VRMU to primarily service OEC-11 ITLU, OEC-12 and OEC-14, and can use it with the new OECs and air coolers if appropriate based on current operations.

Two Additional Isopentane (Motive-Fluid) Above Ground Storage Tanks

To support the new OEC units, two new above ground storage tanks for additional isopentane supply would be installed. There are two existing storage tanks at Heber 1. The new tanks will be sited near the new OECs, each tank has a capacity of 10,000 gallons. Isopentane gases from the tanks are captured and vented to the VRMUs.

On-site Retention Basins

There are currently three retention basins onsite; as part of a separate and discrete action currently approved by the Regional Water Quality Control Board, two of the three ponds that currently occupy that location are no longer

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necessary and are currently being drained. The stormwater retention pond will be modified to accommodate placement of the new equipment while meeting requirements for a 100-year storm . For the purposes of this analysis, the retention basins will be considered filled, developed land for construction.

Water Usage

Per the original CUP (15-0013), the permittee may use up to a total of 1,800 acre feet of irrigation water per year for 30 years from Imperial Irrigation District (IID). On November 18, 2019, the IID issued an Amendment No. 1 to the Amended and Restated Water Supply Agreement to supply an additional 500 acre feet of water per year in addition to the 1,800 acre feet that was in the agreement, for a total of 2,300 acre feet per year. The purpose of this increase is the original operational process utilized flashes of geothermal brine to make steam, which made water condensate that was then used in the wet cooling tower. Changes to these existing facilities will no longer generate the extra water needed for the cooling towers. In 1985, the IID supplied 5,000 acre feet per year, so over time with equipment modifications and changes in the geothermal resource, water consumption has fluctuated. There will be no change to the existing water intake.

Construction Schedule

Construction of the Proposed Project would start April 2021 and would take approximately 6 months to construct. Construction of OEC 1 and OEC 2 would be initial phase of construction. Approximately two months prior to the end of the construction timeline, construction on OEC 11 and OEC 13 would begin.

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Exhibit "A"
Vicinity Map

PROJECT LOCATION MAP



IMPERIAL COUNTY CALIFORNIA

HEBER 1 REPOWER PROJECT - ORMAT NEVADA INC.
CONDITIONAL USE PERMIT #19-0028
INITIAL STUDY #19-0033
APN 054-250-035 & 036-000

HIGHWAYS
PARCELS
CITYLIMIT
PROJECT LOCATION

N

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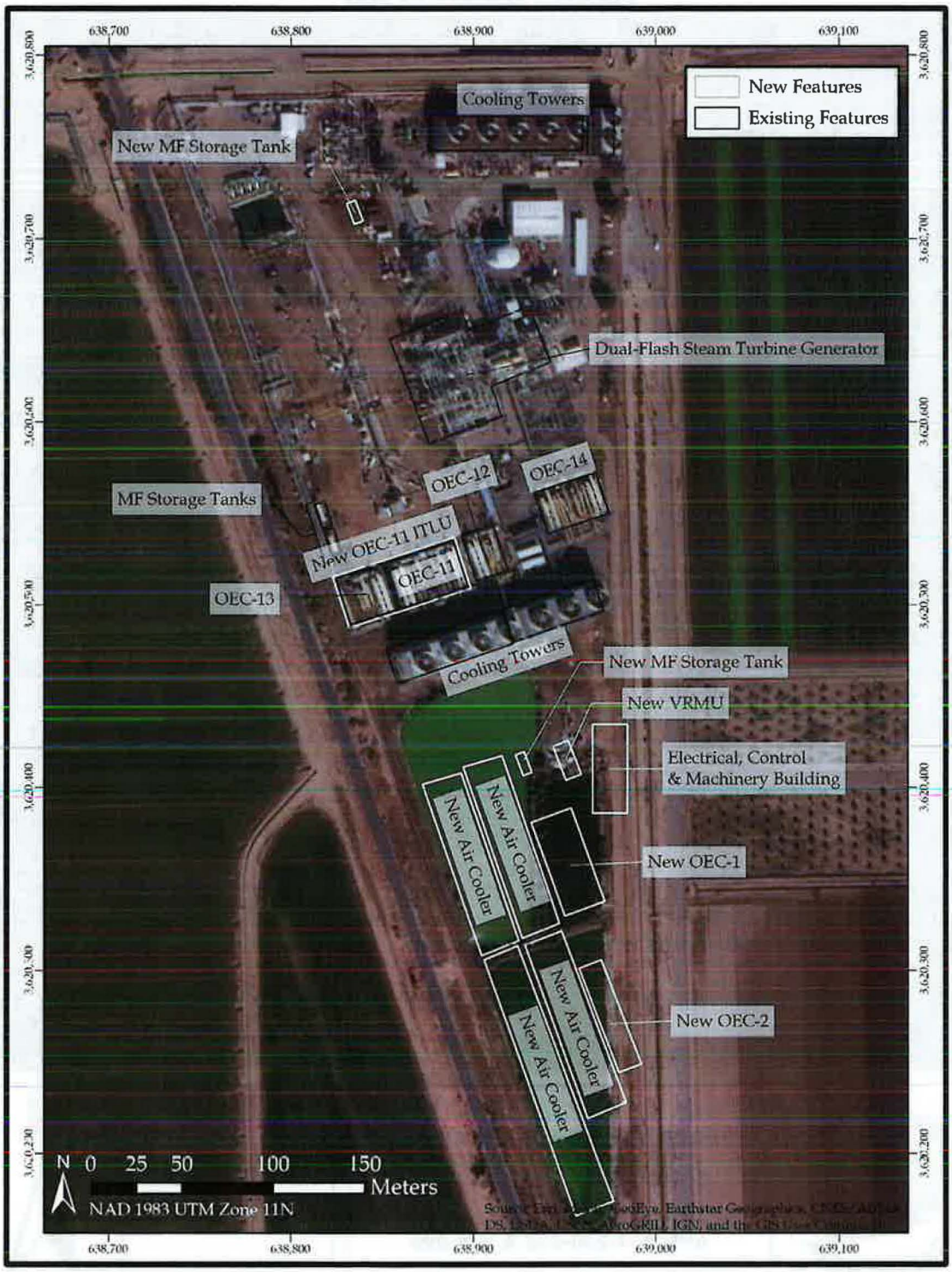
Exhibit "B"
Heber 1 Facility Layout Showing Existing and Proposed Equipment



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EVALUATION OF ENVIRONMENTAL IMPACTS:

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

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

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

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

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

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

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

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

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

9) The explanation of each issue should identify:

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

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

I. *AESTHETICS*

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

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

a) No impact. The Proposed Project site is located within the Heber Specific Plan Area, which is designated for commercial, residential, industrial, and renewable energy land uses in mixed-use development. Land surrounding the Proposed Project is zoned General Agriculture/Specific Plan Area (A2G-SPA) (Imperial County 2015). The Proposed Project site is directly north of Jasper Road, east of the Southern Pacific Railroad tracks, and west of Pitzer Road. The Imperial County General Plan does not specifically designate any areas surrounding or within the Heber Specific Plan Area site as a scenic vista (Imperial County 2015). Additionally, the Proposed Project site is not within an area identified as containing a short- or long-range views. The area is fully developed, and implementation of the Proposed Project would not result in an impact to a scenic vista. No impact would occur.

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

b) No Impact. The Proposed Project site is approximately 1 mile west of State Route (SR)-111, 2.5 miles north of SR-98, and 1.5 miles south of SR-86. SR-111 is eligible for future Scenic Highway Designation between Bombay Beach (on the Salton Sea) to the County Line however, this section of SR-111 is approximately 45 miles north of the Proposed Project site (Imperial County 2008). Further, none of the above identified State Routes are not visible from the Proposed Project site. The Proposed Project site is currently developed, and construction activities and modifications associated with the Proposed Project would occur within the existing facility boundary. Additionally, the surrounding area is zoned General Agriculture/Specific Plan Area (Imperial County 2015). Therefore, implementation of the Proposed Project would not damage scenic resources within a state scenic highway. No impact would occur.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surrounding? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? ☐ ☐ ☒ ☐

c) Less Than Significant Impact. The Proposed Project site is not located within an urbanized area of Imperial County. Construction activities associated with the Proposed Project would occur entirely within the footprint of the existing facility boundary. The visual character of the Proposed Project site would be slightly altered due to the construction of OEC 1 and OEC 2; however, the design of the new energy converters would be similar in nature to the energy converters currently on-site. The siting and construction of OEC 1 and OEC 2 would not substantially alter the visual character of the Proposed Project site, as the features associated with the Proposed Project are similar in nature to features currently located within the Proposed Project site. Therefore, implementation of the Proposed Project would result in a less than significant impact associated with the existing visual character or quality of the Proposed Project site.

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

d) Less Than Significant Impact. The Proposed Project would not include the installation of any new sources of substantial nighttime lighting or glare, and potential impacts associated with construction would be minor and temporary. All light and glare impacts associated with implementation of the Proposed Project would be similar in nature to existing light and glare produced at the Proposed Project site. Therefore, potential impacts on daytime and/or nighttime views in the area associated with light or glare would be less than significant.

II. *AGRICULTURE AND FOREST RESOURCES*

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

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		Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

a) No Impact. The Proposed Project site is located within the Heber Specific Plan Area, which is designated for commercial, residential, industrial, and renewable energy land uses in mixed-use development (Imperial County 2015). The Project Site is zoned General Agriculture/Specific Plan Area (A2G-SPA) according to the Imperial County Planning/Building Department, with geothermal exploration listed as a permitted use under this zoning area under the Imperial County Land Use Ordinance (Imperial County 1998a; 1998b). According to the California Department of Conservation, the Proposed Project site is classified as Urban and Built-Up Land and does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2019a). Therefore, implementation of the Proposed Project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impact would occur.

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

b) No Impact. The Proposed Project site does not contain any lands under a Williamson Act contract (DOC 2016); therefore, no impact would occur.

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

c) No impact. The Proposed Project site is not zoned as forestland, timberland, or timberland zoned Timberland Production (Imperial County 2015). No impact would occur.

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

d) No impact. As described in Impact c), no forest land exists on the Proposed Project site (Imperial County 2015). No impact would occur.

e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

e) No impact. The Proposed Project site is located on an existing developed parcel. As described in Impacts a) and c), no farmland or forest land is located on or adjacent to the site (Imperial County 2015). No impact would occur.

III. *AIR QUALITY*

Air Sciences Inc. prepared an air quality analysis for the Proposed Project.(Appendix G). The results of this analysis are summarized below, but for further information regarding methods and results, refer to Appendix G.

The Proposed Project is located in southern El Centro in the community of Heber, which is an unincorporated area located in the southwestern portion of Imperial County. The Proposed Project location is within the Salton Sea Air Basin (Air Basin) and air quality regulation is administered by the Imperial County Air Pollution Control District (ICAPCD).

Existing Air Emissions

The Proposed Project would shut down the dual-flash steam turbine generator, install two new OECs, and reconfigure two of the existing OECs at the Heber 1 site. The OECs generate power by taking geothermal energy (e.g. heat) to vaporize liquid isopentane, which is the motive fluid that powers the turbines to create electricity. The primary air pollutant from these units is isopentane, which is a VOC. Isopentane emissions occur due to maintenance, purging, and fugitive leaks. During maintenance, the unit is shut down and the isopentane is evacuated before the system is opened for the necessary work to be performed. To evacuate the system, the liquid isopentane is transferred to storage tanks, and

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the remaining vapors are passed through the VRMU. The overall recovery rate of isopentane during evacuation is greater than 99%. However, trace quantities of vapors as well as liquid collected at low points in the system where the liquid cannot be completely drained result in VOC emissions when the unit is opened to the atmosphere.
Purging is the process by which impurities are removed from the isopentane closed circuit. Contamination of the isopentane causes operating efficiency losses, so purging is performed on a regular basis. Vapors are passed through the VRMU and the isopentane is collected and returned to the system while other gases are removed. Fugitive losses of isopentane can occur due to failing seals, valves, flanges, etc.

Current permitted emission limits for the facility are provided in Table 1. In addition to isopentane emissions, there are particulate emissions from the cooling towers as well as NO_x, SO_2, benzene, and H_2S emissions from the steam turbine generator. There is a facility-wide annual benzene emission limit of 1.24 tons per year. Emissions from the emergency diesel generator are not explicitly limited in the ATC, however the engine is limited to 40 hours per year for maintenance and testing purposes.

Table 1. Facility-wide Isopentane Emissions Limits

		Emission Limits (lbs/day)					
Emission Source		PM_{10}	NO_x	SO_2	Isopentane	Benzene	H_2S
Steam Turbine Generator/RTO (normal operation)			11.66	5.03		2.33	2.74
Steam Turbine Generator during RTO maintenance						93.12	250
Steam Turbine Generator Condensate Line						0.75	18.73
OECs & MF Tanks (total)					99.6		
	Purging & Fugitive				59.6		
	Maintenance				40.0		
Cooling Towers		4.36					

*Isopentane emissions are calculated on a quarterly average basis.

Potential Emissions Summary for Proposed Development

Previous actual isopentane emissions, estimated potential emissions, as well as emission limits in PTO #1641B-5 for the Heber 1 facility are given below in Table 2. Note that the estimated emissions for the facility after the proposed development remain below the current permitted emission limits. The estimated emissions are reasonably conservative.

Table 2. Actual and Potential Emissions for Heber 1 Facility

	Facility Total Emissions	
Isopentane Emissions	lbs/day	tons/year
Actual Emissions (Q4 2016 – Q3 2018)	33.3	6.1
Estimated Potential Emissions	81.3	14.8
Emissions Increase	48.0	8.8
Current Permit Limit	99.6	
Proposed Permit Limit	99.0	

Air emissions of other pollutants will decrease due to the decommissioning of the steam turbine generator and associated units including the RTO, condensate line, and two cooling towers. The proposed updated emission limits for the facility are presented in Table 3.

Table 3. Heber 1 Proposed Updated Emissions Limits

		Emission Limits (lbs/day)	
Emissions Source		PM_{10}	Isopentane
OECs & MF Tanks (total)			99.0
Cooling Towers		3.72	

Would the project:

a)	Conflict with or obstruct implementation of the applicable air	☐	☐	☒	☐

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

quality plan?

a) Less Than Significant. The Proposed Project site is located within the ICAPCD, and the Heber 1 facility has an existing Permit to Operate (PTO) issued by ICAPCD. The expected changes to emissions from the proposed development include a reduction in emissions for all permitted pollutants except isopentane. The reduction in emissions is due to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. Actual isopentane emissions from the OECs are expected to increase, but would remain within currently permitted limits. Current isopentane emissions at the Heber 1 site are approximately 33.3 lbs/day, and the modeled future emissions with the new facilities are estimated to be 81.3 lbs/day (Table 2). Under the existing PTO, the Heber 1 facility is authorized to emit up to 99.6 lbs/day of isopentane. The expected change in isopentane emissions with the new facilities would increase by approximately 48.0 lbs/day or 8.8 tons/year, however emissions would remain below the current authorized release amount. Therefore, the Proposed Project would not conflict with or obstruct the implementation of the ICAPCD air quality plan. Impacts would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? ☐ ☐ ☒ ☐

b) Less Than Significant Impact. Significant adverse cumulative air quality impacts could occur if the Proposed Project resulted in a cumulatively considerable net increase of a criteria pollutant for which ICAPCD exceeds federal and state ambient air quality standards and has been designated as an area of non-attainment by the USEPA and/or CARB. The ICAPCD is a non-attainment area for ozone and fine particulate matter.

As noted in Table 2 above, isopentane emissions at the Proposed Project site are expected to increase by approximately 48.0 lbs/day for a project's estimated total of 81.3 lbs/day. Though, the isopentane levels would remain within the current authorized release amount and the expected changes to emissions from the Proposed Project include a reduction in emissions for all other permitted pollutants. Addtionally, emissions from construction equipment would be temporary and not exceed any air quality thresholds or significantly contribute to an existing regional nonattainment condition. Air quality measures would be implemented during construction of the Proposed Project to minimize the potential for fugitive dust and particulate matter releases. Through the application of these measures, the construction of the Project would limit visible dust emissions and particulate matter emissions to be in compliance with Imperial County's approach to minimizing these construction-related emissions. Ozone, which stems from the use of fuel-combusting equipment, would also be limited to the construction phase of the Project; vehicles and equipment would be turned off when not in use and not left idling to minimize unnecessary emissions.

Additionally, Air Pollution Control District (APDC) requested in comment letter dated January 17, 2020 that the applicant contact Mr. Emmanuel Sanchez, Enforcement Division Manager, to discuss the possible need for a Construction Dust Control Plan; the applicant must notify the Air District 10 days prior to the start of any construction activities. Applicant agreed to follow APDC requirements on response letter dated March 6, 2020. Impacts would be less than significant.

c) Expose sensitive receptors to substantial pollutants concentrations? ☐ ☐ ☒ ☐

c) Less Than Significant Impact. The Hazards Assessment identified two residences, housing an estimated six people, as sensitive receptors within the circle of influence of the Project Site. As discussed in Appendix G of the CUP Amendment Application, air emissions from the Heber 1 facility would be limited to isopentane, which is a VOC. The Hazards Assessment (Appendix H) identified no impact populations within the circle of influence associated with the Project Site. The Heber 1 site is permitted to release 99.6 lbs/day and the proposed Permit Limit is 99.0 lbs/day (Table 2). Isopentane emissions with the new facilities are estimated to increase, but the Proposed Project would not exceed the release limits established in the PTO; therefore, any exposure of pollutant concentrations would be less than significant.

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people? ☐ ☐ ☒ ☐

d) Less Than Significant. Isopentane has a petroleum-like odor; however as noted previously, the Proposed Project isopentane emissions would remain within release limits established in the PTO (Table 2). The additional facilities onsite are not expected to produce a significant odor. Further, the Project site is located in an agrarian area that is not densely populated. During construction, diesel emissions from construction equipment may be sources of odor. These emissions would be temporary and minor based on the small number of heavy vehicles that would be required for Proposed Project construction. Therefore, Project-related odors would be limited to the temporary construction phase and would not result in a significant source of odor to a substantial number of people; impacts are less than significant.

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

IV. ***BIOLOGICAL RESOURCES*** ***Would the project:***

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

a) Potentially Significant Impacts Unless Mitigation Incorporated. A Chambers Group, Inc (Chambers Group) biologist conducted the general biological reconnaissance-level survey within the Proposed Project site in 2019. The survey documented the existing biological conditions, determined the potential for occurrence (PFO) of sensitive species, and identified potentially jurisdictional waters.

All plant species observed within the Proposed Project site were recorded. Vegetation communities within the Proposed Project site were identified and qualitatively described. Plant communities were determined in accordance with the Manual of California Vegetation, Second Edition (2009). Plant nomenclature follows that of The Jepson Manual (Baldwin et. al. 2012). A comprehensive list of the plant species observed during the survey is provided in Appendix B of the CUP Amendment Application.

All wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (native vegetation, wildlife trails, etc.) or in habitats with the potential to support state- and/or federal-listed or otherwise sensitive species. Notes were made on the general habitat types, species observed, and the conditions of the Project site. A comprehensive list of the wildlife species observed during the survey is provided in Appendix B of the CUP Amendment Application.

Sensitive Vegetation Communities

Six vegetation communities were observed within and adjacent to the Proposed Project site: Sparse Disturbed habitat, Landscape/Ornamental vegetation, Developed lands, Bare Ground, Pavement, and Agricultural areas. A map showing the vegetation communities observed and other areas within the Proposed Project site is provided in Appendix A of the Biological Technical Report, Figure 5a, and the communities are described in the following subsections.

Current database searches (CDFW 2019, CNPSEI 2019, and USFWS 2019) resulted in a list of four federal- and/or state-listed threatened and endangered, rare, or Imperial Irrigation District (IID)-covered (collectively, "special status") plant species documented to occur within five miles of the Proposed Project site. After the literature review and the biological reconnaissance-level survey, it was determined that all four species were considered absent from the survey area based on the assessment of the various habitat types observed and subsequent lack of habitat suitability.
The following four plant species are considered Absent from the Proposed Project site due to lack of suitable habitat of the Proposed Project site:

- Chaparral sand-verbena (Abronia villosa var. aurita) –List 1B.1
- Gravel milk-vetch (Astragalus sabulonum) – List 2B.2
- Abrams' spurge (Euphorbia abramsiana) –List 2B.2
- California satintail (Imperata brevifolia) –List 2B.1

Sensitive Wildlife Species

A current database search (CDFW 2019 and USFWS 2019) resulted in a list of nine federal- and/or state-listed endangered or threatened, BCC, SSC, or IID-covered wildlife species known to occur in the vicinity of the Proposed Project site. After a literature review and the assessment of the various habitat types within the Proposed Project site, it was determined that five sensitive wildlife species are considered absent from the Proposed Project site, five species have a low PFO, two species have a moderate PFO, and no species have a high PFO, within the Proposed Project site. Factors used to determine PFO included the quality of habitat and the location of prior CNDDB records of occurrence.

The following five wildlife species are considered absent from the Proposed Project site due to lack of suitable habitat on the Proposed Project site:

- American badger (Taxidea taxus)- SSC
- Western yellow bat (Lasiurus xanthinus) – roosting - SSC
- Flat-tailed horned lizard (Phrnosoma macallii) – SSC, IID
- Northern leopard frog (Lithobates pipens) – SSC, IID
- Yellow warbler - nesting (Setophaga petechia) – BCC, SSC, IID

The following five wildlife species have a low PFO on the Proposed Project site due to low-quality habitat (e.g. Developed areas such as buildings and pipping) on the Proposed Project site:

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- Big free-tailed bat (Nyctinomops macrotis) – SSC, IID
- Pocketed free-tailed bat (Nyctinomops femorosaccus) – SSC, IID
- Western yellow bat (Lasiurus xanthinus) – foraging - SSC
- Yellow warbler - foraging – BCC, SSC, IID

The analysis of the CNDDB search and field survey resulted in two species with a moderate potential to occur on the Proposed Project site:

- Burrowing owl (Athene cunicularia) – nesting and foraging – SSC, IID
- Western mastiff bat (Eumops perotis) – foraging – SSC, IID

The analysis of the CNDDB search and field survey resulted in no species with a high PFO within the Proposed Project site. The Proposed Project is not anticipated to impact any sensitive or native habitat. All impacts are anticipated to occur to previously developed areas and site operations following the completion of the Proposed Project would be substantially similar to current operations. Considering there is moderate potential for two special-status species to occur onsite and unanticipated encounters could occur, impacts to sensitive and species-status species should be mitigated to less than significant with the incorporation of the following mitigation measures (MM):

MM-BIO-1: A qualified biological monitor should conduct an environmental awareness training prior to the start of any construction-related activities. Special focus should be made on sensitive animals that have a PFO within the Survey Area (e.g. burrowing owl and western mastiff bat).

MM-BIO-2: If construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31) a nesting bird survey should be conducted prior to the start of construction or vegetation clearing activities. If active nests are found, an appropriate nest buffer shall be established by a qualified biologist until the nest fledges or fails naturally.

MM-BIO-3: Due to surrounding agricultural areas and low-quality but suitable habitat within the Survey Area a focused survey for burrowing owl is suggested before construction activities commence.

MM-BIO-4: If modification of the existing buildings is required a focused bat survey should be performed for western mastiff bat as this species may roost in building overhangs or within piping infrastructure located within the Survey Area.

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

b) Less Than Significant Impact. No jurisdictional features such as drainages or swales were observed within the Proposed Project area. Two irrigation canals, associated with the IID, are located along the eastern and southern edge of the Survey Area. Three retention ponds are located within the Proposed Project area; however, these are closed, man-made systems and for the purposes of this report are considered developed areas. Therefore, the Proposed Project would not result in substantial adverse effects to riparian habitats and impacts would be less than significant.

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

c) Less Than Significant Impact. As described above, no jurisdictional features such as drainages or swales were observed within the Proposed Project area, any impact would be less than significant.

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

d) Potentially Significant Impacts Unless Mitigation Incorporated. The Proposed Project site is highly-developed and no sensitive or native habitat would be impacted by the Proposed Project activities. With the implementation of MM-BIO-2, potential impacts would be less than significant.

e)	Conflict with any local policies or ordinance protecting biological resource, such as a tree preservation policy or	☐	☒	☐	☐

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

ordinance?

e) Potentially Significant Impacts Unless Mitigation Incorporated. The proposed project is not expected to conflict with any local policies or ordinance protecting biological resource. Implementation of mitigation measures MM-BIO-1 through MM-BIO-4 would reduce any potential impacts to rare, sensitive, or unique plants or wildlife to less than significant; therefore, this impact is potentially significant unless mitigation is incorporated.

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

f) Potentially Significant Impacts Unless Mitigation Incorporated. The Proposed Project is located within the Imperial Irrigation District's (IID) Habitat Conservation Plan (HCP) area and the Desert Renewable Energy Conservation Plan (DRECP) area. Though with the implementation of mitigation measures MM-BIO-1 through MM-BIO-4, impacts to any potential impacts to rare, sensitive, or unique plants or wildlife would be reduced to less than significant; thus, this impact is potentially significant unless mitigation is incorporated.

V. *CULTURAL RESOURCES Would the project:*

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

a) No Impact. A Phase I Cultural Resources Survey for the Proposed Project was prepared by Chambers Group, Inc (Chambers Group) in September 2019. A record search with the South Coast Information Center (SCIC) for the Proposed Project determined a total of 22 cultural resource studies have been conducted within one-half mile of the Proposed Project area, with 12 studies located inside the Proposed Project area. The previous surveys identified by the SCIC occurred between 11 and 43 years ago. The earliest studies were associated with proposed geothermal testing in the Heber region.

The records search identified one previously recorded cultural resource, a historic site, within one-half mile of the Proposed Project area, which is not located within the Proposed Project area. Chambers Group performed a reconnaissance level survey and identified no historic or prehistoric resources as part of the Proposed Project. No impacts would occur.

b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒

b) No Impact. As noted above, a Phase I Cultural Resources Survey identified no cultural resources, archeological or historical, within the Proposed Project area; therefore, there are no impacts associated with archeological resources.

c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

c) Less Than Significant Impact. There is no publicly available information indicating the that human remains may occur within the Proposed Project area; however, it remains possible to uncover human remains. If the discovery of human remains occurs during ground-disturbing activities, the following regulations must be followed. California State law (California Health and Safety Code 7050.5) and federal law and regulations (Archaeological Resources Protection Act [ARPA], 16 United States Code [U.S.C.] 470 and 43 Code of Federal Regulations, [CFR] 7, Native American Graves Protection and Repatriation Act [NAGPRA] 25 U.S.C. 3001 and 43 CFR 10, and Public Lands, Interior 43 CFR 8365.1-7) require a defined protocol if human remains are discovered in the state of California regardless if the remains are modern or archaeological. Upon discovery of human remains, all work within a minimum of 200 feet of the remains must cease immediately, and the County Coroner must be notified. The appropriate land manager/owner or the site shall also be notified of the discovery. If the human remains are determined by the Coroner to be prehistoric, the appropriate federal archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA 43 CFR 10.6 Inadvertent Discoveries must be followed. Therefore, impacts would be less than significant.

VI. *ENERGY Would the project:*

a)	Result in potentially significant environmental impact due to	☐	☐	☒	☐

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

a) Less Than Significant Impact. Construction of the Proposed Project would result in the need for energy resources. The amount of energy resources required for the construction include those necessary to power a crane, boom truck, fork lift, man lift, haul trucks, and hand tools. This energy use would be minimal and temporary in nature, as the Project would be complete in 6 months. Additionally, once in operation, the new OEC units would not require significantly more energy resources than previous requirements for plant operation. This impact is less than significant.

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

b) Less Than Significant Impact. The County of Imperial prepared a Renewable Energy and Conservation Element (Element) that provides objectives in innovating renewable energy systems within the County. The Proposed Project would not conflict or obstruct a renewable energy or energy efficiency plan because implementation of the Project would be consistent with the Element and energy requirements would be substantially similar to current, existing conditions. Therefore, impacts would be less than significant regarding energy usage and renewable energy plans.

VII. *GEOLOGY AND SOILS Would the project:*

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

a) **Less Than Significant Impact**. The proposed project is located in a developed parcel and it is not expected to directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death associated with geology and soils, provided that the project complies with applicable Codes and regulations including the current Title 24 standards of the California Building Code; therefore, less than significant impacts are expected.

1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42? ☐ ☐ ☒ ☐

1) Less Than Significant Impact. A Geology and Soils evaluation was conducted by Ninyo & Moore to evaluate the potential risks associated with the geology and soils at the Proposed Project site. The evaluation was conducted through reviewing published and non-published reports, Ninyo & Moore's in-house datasets, aerial photographs, and geologic hazard assessments. Information from this evaluation will be included in Impact a) through Impact f).

Although all of southern California is prone to ground shaking associated with earthquake activity, and the Imperial Valley is one of the most tectonically active regions in the United States, the Proposed Project site is not located within an active Alquist-Priolo Earthquake Fault Zone. The Proposed Project site is approximately 6 miles to the west of the closest fault line, with two other faults located approximately 9 miles to the west and north respectively (Imperial County 1993b; DOC 2019b). Though, the entirety of the Proposed Project would be located within the existing Ormat Heber 1 facility footprint, and construction activities and modifications would occur on heavily disturbed ground. Additionally, design and construction of the new facilities would be required to comply with all seismic-safety development requirements, including the Title 24 standards of the current California Building Code. Therefore, implementation of the Proposed Project would result in a less than significant impact associated with rupture of a known earthquake fault.

2) Strong Seismic ground shaking? ☐ ☐ ☒ ☐

2) Less Than Significant Impact. As noted above in Impact a) 1), the Proposed Project site is subject to potential ground shaking due to nearby faults. Impacts associated with strong seismic ground shaking would be minimized due to compliance with existing building regulations. Design and construction of the new facilities would comply with all seismic-safety development requirements, including the Title 24 standards of the current California Building Code. A comprehensive geotechnical evaluation, including subsurface exploration and laboratory testing, should also be performed prior to design and construction of structural improvements. Therefore, implementation of the Proposed Project would result in a less than significant impact associated with strong seismic ground shaking.

3) Seismic-related ground failure, including liquefaction and seiche/tsunami? ☐ ☐ ☒ ☐

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

3) Less Than Significant Impact. The geology that makes up Imperial County includes young, unconsolidated sediments of the Salton Trough that are subject to failure during earthquakes, especially throughout the irrigated portions of Imperial Valley where the soil is generally saturated. Liquefaction, and related loss of foundation support, is a common hazard in these areas (Imperial County 1993b). The Proposed Project area is located within the irrigated portion of Imperial Valley; however, the Proposed Project site is currently heavily developed, and the proposed construction activities would occur within the existing Ormat Heber 1 facility footprint. Additionally, design and construction of the new facilities would comply with all seismic-safety development requirements, including the Title 24 standards of the current California Building Code.

The most likely location for a significant seiche to occur near the Proposed Project site is the Salton Sea, which is approximately 29 miles north of the Proposed Project site. While there have been a number of seismic events since the formation of the Salton Sea, no significant seiches have occurred to date (Imperial County 1993b). However, per the Geology and Soils Evaluation document for the Heber 1 Repower Project, based on the generally loose nature of the subsurface materials and shallow historic groundwater, the potential for liquefaction within sand layers in the alluvium is a design consideration; therefore, with these design implementations, impacts associated with seismic-related ground failure, including liquefaction and seiche/tsunami are less than significant.

4)	Landslides?	☐	☐	☒	☐

4) Less Than Significant Impact. The Proposed Project site is flat and is within an area categorized as having "nil" landslide activity in the Imperial County General Plan (Imperial County 1993b). Additionally, the Proposed Project site is currently heavily developed and the proposed construction activities would occur within the existing Ormat Heber 1 facility footprint. Therefore, implementation of the Proposed Project would result in less than significant impacts associated with landslides.

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

b) Less Than Significant Impact. The Proposed Project site has been previously graded and is heavily developed. In addition, the Proposed Project site is flat, limiting the opportunity for rapid stormwater runoff that could exacerbate erosion potential and the Proposed Project would require the preparation of a Storm Water Pollution Prevention Plan (SWPPP) to identify best management practices (BMPs) to further reduce soil erosion during construction. Therefore, implementation of the Proposed Project would result in less than significant impacts associated with soil erosion or the loss of topsoil.

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

c) Less Than Significant Impact. As discussed in Impacts a) 1) through a) 3), the Proposed Project site is not located within an active or potentially active fault zone or in an area at risk of landslide and although the risk of liquification is present, the impact is less than significant (Imperial County 1993b). Moreover, all construction activities and modifications associated with the Proposed Project would occur within previously developed portions of the Ormat Heber 1 geothermal facility. However, per the proposed project Geotechnical Soils Report, the alluvial soils underlying the project site may be subject to static settlement or liquefaction during a nearby seismic event; with the implementations of all applicable regulations including the California Building Code, it is expected that the proposed Project would result in less than significant impacts associated with landslides, lateral spreading, subsidence, liquefaction, or collapse.

d)	Be located on expansive soil, as defined in the latest Uniform Building Code, creating substantial direct or indirect risk to life or property?	☐	☐	☒	☐

d) Less Than Significant Impact. Expansive soils are commonly associated with clay-rich soils that expand when water is added and shrink when they dry out. This continuous change in soil volume can cause structures built on this soil to move unevenly and crack. The soils underlaying the Proposed Project site are primarily silty clay loams or very fine sandy loams, which have the potential to be expansive (USDA 2019). Though, the Proposed Project site has been previously graded and is heavily developed and neither land use designation nor zoning would change as result of the implementation of the Proposed Project. Furthermore, construction would occur entirely within the existing footprint of the Ormat Heber 1 facility and facility activities would be substantially similar to current activities onsite. Additionally, compliance with all required regulations including the California Building Code would make impacts associated with expansive soils are less than significant.

e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste	☐	☐	☐	☒

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		Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

water?

e) No Impact. The Proposed Project would not involve activities that would require the installation of septic tanks or alternative wastewater disposal systems. No impact would occur.

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

f) Potentially Significant Impact Unless Mitigation Incorporated. A Paleontological Report was prepared for the Proposed Project by Chambers Group, Inc. in September 2019.

The 2019 Paleontological Report included a comprehensive review of published and unpublished literature and museum collections records maintained by the San Diego Natural History Museum (SDNHM). The purpose of the literature review and museum records search was to identify the geologic units underlying the Proposed Project area and to determine whether previously recorded paleontological localities occur either within the Proposed Project boundaries or within the same geologic units elsewhere. Using the results of museum records search and literature review, the paleontological resource potential and Potential Fossil Yield Classification (PFYC) of geologic units within the Project area was recommended in accordance with the Society of Vertebrate Paleontology (2010).

As a result of the 2019 study, the late Pliocene- to Holocene-age Lake Cahuilla Beds geologic units underlying the Proposed Project area have a recommended paleontological sensitivity of high. Therefore, there is a potential for impacting scientifically significant vertebrate and invertebrate fossils as a result of Proposed Project development. Although a review of available online museum records indicated that no paleontological resources have been found within the Proposed Project area, geologic units underlying the Project area have been known to yield significant fossils nearby; previous grading and excavation work revealed Lake Cahuilla deposits to depths of 35 to 40 feet, with fossils found as shallow as 5 feet. Further, the Project area is highly disturbed and will not require any major grading or earthwork.

In general, the potential for a given project to result in adverse impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the Project. The Proposed Project entails the installation of two new Ormat Energy Converter Units and modification of two existing converters. Ground disturbing activities are anticipated and the likelihood of impacting fossils is related to both the type and extent of disturbance and the geologic unit in which the disturbance occurs. Ground disturbances are proposed along areas underlain by previously disturbed Lake Cahuilla deposits, which have proven to yield vertebrate and invertebrate remains throughout the western Colorado Desert, including Imperial County. Implementation of the mitigation measures below would reduce impacts associated with paleontological resources to a less than significant level and would also be consistent with other federal and local laws and regulations. This impact is less than significant with mitigation incorporated.

MM-PAL-1: All project-related ground disturbances that could potential impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis, as these geologic units are determined to have a high paleontological sensitivity. It is anticipated that much of the proposed project site would be covered with up to eight feet of previously filled land.

MM-PAL-2: A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring and Mitigation Plan for the proposed project, which would include the identification of undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan should also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the client and the lead agency.

MM-PAL-3: At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.

MM-PAL-4: Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).

MM-PAL-5: Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the SDNHM.

MM-PAL-6: The qualified paleontologist will prepare a final monitoring and mitigation report to be filed with the client, the lead agency, and the repository.

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

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

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

a) Less Than Significant Impact. The construction of the Proposed Project involves diesel and gasoline fueled equipment, such as trucks, excavators, and powered hand tools. These tools emit greenhouse gases, but these emissions would be minor, temporary (approximately ten months), and well under the 10,000 CO_2e lb/day threshold established by AB 32.

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

b) Less Than Significant Impact. The Proposed Project would not contribute a significant amount of greenhouse gases, with most being emitted during the temporary construction phase. Long-term emissions from the Heber 1 facility would remain substantially similar to the existing emissions profile. Therefore, impacts would be less than significant.

IX. ***HAZARDS AND HAZARDOUS MATERIALS*** ***Would the project:***

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

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

a) and b) Potentially Significant Unless Mitigation Incorporated. Risk Management Professionals, Inc. prepared a Hazard Assessment (HA) for the Proposed Project in September 2019 and updated the report in November 2020 (Appendix H of the CUP Amendment Application). The Hazard Assessment focused on the U.S. Environmental Protection Agency (EPA) regulated substance isopentane; the Project proposes to install two additional 10,000-gallon above-ground storage tanks holding isopentane to utilize as the motive fluid to generate energy from the geothermal resource. The Heber 1 facility is classified as Prevention Program 3 and is regulated by the EPA's Risk Management Program for Chemical Accidental Release Prevention in accordance with the Code of Federal Regulations, Title 40, Chapter I, Subchapter C, Part 68, Subpart B Sections 68.20 to 68.42 (40 CFR §68.20 - 68.42) for isopentane, because it is held onsite in excess of 10,000 lbs. The HA assessed the potential effects and risks relating to the storage and use of the additional isopentane onsite. The assessment analyzed risk by identifying the worst-case scenarios and endpoints of concern (as defined by EPA RMP and 40 CFR 68.22) to then review the resulting vulnerability zone. The endpoints specified by the EPA Risk Management Program are:

- Overpressure of 1 pound per square inch (psi) for vapor cloud explosions
- Radiant heat of 5 kilowatts per square meter (kW/m2) for jet fires
- Lower flammability limit (LFL) for flash fires

Using these criteria, the HA assessed the worst-case scenario of a catastrophic failure of one of the two new 10,000-gallon isopentane tanks. As modeled in the HA, the worst-case scenario event would have an impact of up to 0.052 miles, or 276 feet. There are no residences within the 0.052-mile circle of concern, thus the estimated impacted population is zero. The model predicts in both the worst case scenario and the alternative scenario, an accidental release of isopentane is not expected to affect adjacent residents.

In addition, per comment letter dated January 14, 2021 Imperial County Fire Department has the following comments and/or requirements for the updated site plan and project description for Heber 1 Ormat Geothermal facility:

Information received is requesting (2) additional 10,000 gallon isopentane above ground storage tanks and will be installed near the new OEC units. Total amount of storage on site will be (4) 10,000 gallon tanks.
Isopentane is highly flammable liquid that fire behavior can be highly volatile and vapors may explode when mixed with air. The amount

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of propose storage and the locations rises concerns for Imperial County Fire Department, surrounding residents, and the surrounding community of Heber. The Emergency Response Guide:

Excerpt from ERG Guide 128 [Flammable Liquids (Water-Immiscible):
As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet).
FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.
(ERG, 2016)
Firefighting
Fire Extinguishing Agents Not to Be Used: Water may be ineffective
Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide (USCG, 1999)

These precautions are required to be followed for all incidents including fire involving hazardous materials. To adequately protect the Imperial County Fire Department staff, facility staff, and citizens of the community of Heber and Imperial County ICFD is requesting the following mitigations measures (MM):

MM-FIRE-1. A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment to be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

MM-FIRE-2. Isopentane leak or fire will require a large scale evacuation area and create a large scale hazardous material incident with a large operational zone. To minimize potential extremely dangerous condition to firefighters and hazardous material teams. Additional equipment may be required to adequately protect the first responders, staff and citizens in an emergency incident. This condition shall be discussed among the applicant and Imperial County Fire Chief prior to issuance of the permit for the project.

MM-FIRE-3. All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

MM-FIRE-4. An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

MM-FIRE-5. Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

MM-FIRE-6. Compliance with all required sections of the fire code.

MM-FIRE-7. Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

Imperial County Fire Department, Imperial County Planning and Development Service, and the applicant has reviewed and addressed multiple concerns in Appendix H for Hazards Assessment to help mitigate potential impacts and hazards associated with the project. Imperial County Fire Department reserves the right to comment and request additional requirements pertaining to this project regarding fire and life safety measures, California building and fire code, and National Fire Protection Association standards at a later time as we see necessary.

Lastly, per DTSC Imperial CUPA comment email dated January 9, 2020, when this retrofit is completed, applicant will need to update their CERS information if there are any changes in Hazardous Materials, Hazardous Waste, ASTs with petroleum, USTs, or CalARP thresholds, applicant will need to notify the DTSC Imperial CUPA at that time.

Compliance with ICFD conditions and DTSC Imperial CUPA requirements would bring any impact to less than significant.

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

c) Less than significant. There are no schools within a quarter-mile of the Proposed Project site. The closest school is Heber Dogwood Elementary School, which is approximately 2 miles north of the Project site. The HA does not identify any schools as public receptors within the modeled distance to endpoint. Therefore, impacts are considered less than significant.

d)	Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code	☐	☐	☒	☐

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

d) Less than significant. The existing retention basins on the Proposed Project site are registered as a Land Disposal Site, which includes sites with solid and/or liquid wastes discharged to the land (SWRCB 2019). However, as described in the Project Description above, the retention basins are being treated as separate action under the discretion of the Colorado River Regional Water Quality Control Board. There are no other hazardous material sites pursuant to Government Code Section 65962.5 therefore, less than significant impacts would occur.

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

e) No Impact. The closest airport to the Proposed Project site is the Calexico International Airport (Airport), located approximately 3 miles south. The Project site is not within the Airport's area of influence, and therefore would not result in a safety hazard or excessive noise for people working in the Proposed Project area (Imperial County 1996). No impact would occur.

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

f) Less than significant. The Proposed Project would be located within the existing Heber 1 site and would not interfere with any emergency response or evacuation plans. Construction equipment delivering large components of the proposed facilities may temporarily block Pitzer Road to ensure safe delivery of the components, but these blockages are expected to be temporary and are not expected to significantly impede traffic flow. Therefore, less than significant impacts to emergency response or evacuation plans would occur.

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

g) Less than significant. The Proposed Project site is in a Moderate severity zone in the Imperial County Local Responsibility Area and the closest Very High Fire Severity Zone (VHFSZ) is approximately 30 miles to the west (CAL FIRE 2007). Moreover, implementation of the Proposed Project at the existing Ormat Heber 1 facility would not result in hiring of additional employees or the construction of buildings that would increase public access to the site. Operations at the Heber 1 facility following completion of the Proposed Project would also remain substantially similar to current operations. The Project Site is not located in areas considered wildlands and is fully developed and the vast majority of the vicinity is cultivated farmlands and agricultural operations. Therefore, the Proposed Project would not increase or be subject to the risk of wildland fire, therefore, impacts are considered less than significant.

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

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

a) Less Than Significant Impact. No known or reasonably expected surface water quality issues are anticipated to result from implementation of the Proposed Project; however, because ground-disturbing activities will occur in an area greater than one acre, a Storm Water Pollution Prevention Plan (SWPPP) will be developed that implements BMPs that sufficiently control degradation of water quality on site. In addition, the SWPPP would be implemented such that stormwater discharges would not adversely impact human health or the environment, nor contribute to any exceedances of any applicable water quality standard contained in the Water Quality Control Plan for the Colorado River Basin Region (RWQCB 2019).
In addition, per Imperial County Environmental Health Department (EHS) comment letter dated May 27, 2020, for any potential discharge of any processed water, the applicant must contact the Water Regional Board. Compliance with EHS and implementation of a SWPPP would bring impacts to less than significant.

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

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

b) Less Than Significant Impact. Construction of the Proposed Project would not require the use of substantial amounts of water. Additionally, the Proposed Project is not in an area identified as a groundwater recharge area, and all construction activities would occur within the existing Heber 1 footprint. The Proposed Project is not expected result in decreased groundwater supplies and it is not expected to interfere with groundwater recharge; therefore, the Proposed Project would result in less than significant impacts associated with groundwater depletion.

c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
	(i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
	(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or;	☐	☐	☒	☐
	(iv) impede or redirect flood flows?	☐	☐	☒	☐

c) i-iv) Less Than Significant Impact. As previously discussed, the construction of the Proposed Project would result in ground-disturbing activities in an area greater than one acre; therefore, a SWPPP would be required. The SWPPP would be developed to identify BMPs that sufficiently avoid any onsite or offsite erosion and runoff from areas proposed for ground disturbance. Operation of the Proposed Project would not have an impact of a stormwater drainage system as the Project would not result in an increase in the amount of runoff from the Proposed Project site. Impacts would, therefore, be less than significant.

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

d) No Impact. As discussed previously, the Proposed Project is not located in an area at risk of tsunami or seiche (County of Imperial 1997). No impact would occur.

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

e) Less than significant. As discussed above, the Proposed Project would be compliant with all County, state, and federal regulations, including compliance with the NPDES permits with the implementation of BMPs; compliance with the referenced regulations would reduce any potential impact associated with a water quality control plan. Additionally, as discussed above, implementation of the Proposed Project would not require substantial water supplies. Less than significant impacts are expected.

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

a)	Physically divide an established community?	☐	☐	☐	☒

a) No Impact. The Proposed Project would occur entirely within the footprint of the existing Ormat Heber 1 geothermal facility. The Proposed Project site is within a parcel established as built-up, urban land (DOC 2019a). Additionally, implementation of the Proposed Project would not result in a change in land use or zoning; therefore, construction activities implemented during the Project, would not physically divide an established community. No impact would occur.

b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the	☐	☐	☒	☐

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purpose of avoiding or mitigating an environmental effect?

b) Less than significant. The Proposed Project would not result in any changes to the existing land use at the site. The project site is zoned as A-2-G-SPA, for General Agriculture (A-2), Geothermal Overlay Zone (G), and in the Heber Specific Plan Area (SPA), which is under the County-designated Geothermal Overlay Zone (Imperial County 2015). Activities at the Proposed Project site would be substantially similar to existing activities onsite. Less than significant impacts are expected to occur.

XII. *MINERAL RESOURCES Would the project:*

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

a) No impact. Imperial County contains diverse mineral resources including gold, lime, gravel, gypsum, sand, clay, and stone. Mining areas occur throughout the County, but according to the Imperial County General Plan the Proposed Project site contains no mineral resources. Furthermore, there are no mining activities occurring within the vicinity of, or on, the Proposed Project site; therefore, no impact would occur (Imperial County 2016).

b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

b) No impact. As noted above in Impact a), there is no potential for mineral resource extraction or other mining operations within or adjacent to the Proposed Project site. No impact would occur.

XIII. *NOISE*

This section describes the existing noise setting and potential noise and vibration effects from project implementation on the site and its surrounding area. Construction noise modeling was performed through use of the Roadway Construction Noise Model (RCNM) Version 1.1. The model output is provided in Appendix J of the CUP Amendment Application.

1.1.1 Environmental Setting

The Proposed Project site is located south of the town of Heber, in an unincorporated area of Imperial County. The primary sources of noise within the study area consists of noise generated from the existing Heber 1 Geothermal Plant as well as from vehicle noise Pitzer Road and train noise on the railroad located along the west side of the Proposed Project site.

County of Imperial Noise Standards

The General Plan Noise Element (County of Imperial, 2015) provides the applicable noise standards for the Proposed Project. The Noise Element limits the noise level from any noise generating property to 50 dBA between 7 a.m. and 10 p.m. and to 45 dBA between 10 p.m. and 7 a.m. at the nearest home.
The Noise Element exempts construction noise from these standards, provided construction activities occur between 7 a.m. and 7 p.m. Monday thru Friday and between 9 a.m. and 5 p.m. on Saturday and construction noise does not exceed 75 dBA Leq averaged over 8 hours.

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

a) Less than Significant. The Proposed Project would include the replacing the existing steam turbine electrical generators with air cooled energy converter units as well as installation of new above ground storage tanks, a vapory recovery maintenance unit and a new emergency fire water pump. The proposed new equipment would be located on the south side of the existing facility, at the current location of the three water detention basins. Two of the three water detention basins are going to be filled in since they are utilized for the steam turbines that are being decommissioned as part of the Project, however the removal of the two retention basins would be analyzed as a separate project. Both construction and operation of the Proposed Project would have the potential to generate noise in excess of standards and have been analyzed separately below.

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Construction-Related Noise

Construction activities for the Proposed Project are anticipated to begin in April 2021 and take approximately 6 months to complete. Construction of OEC 1 and OEC 2 would be the initial phase of construction. Construction of OEC 11 and OEC 13 would occur in the last two months of construction. The construction equipment would include a crane, a boom truck, forklifts, man lifts, haul trucks and hand tools.

The General Plan Noise Element exempts construction activities from the applicable noise standards, provided that construction activities are limited to between 7 a.m. and 7 p.m. Monday thru Friday and between 9 a.m. and 5 p.m. on Saturday and do not exceed 75 dBA Leq at the nearby homes. All construction activities that have the potential to exceed noise ordinances would occur within the allowable times for construction.

In order to determine the construction noise impacts at the nearest home that is located as near as 900 feet east of the proposed construction activities, the construction equipment noise levels compiled by the Federal Highway Administration (FHWA) have been utilized according to Chambers Group. The FHWA compiled noise level data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table 4 below provides a list of the construction equipment that would be utilized during construction of the Proposed Project, along with the associated measured noise emissions and measured percentage of typical equipment use per day. From this acquired data, FHWA developed the Roadway Construction Noise Model (RCNM). The RCNM, has been used to calculate the construction equipment noise emission levels at the nearest home (see Appendix J of the CUP Amendment Application).

Table 4: Construction Equipment Noise Characteristics and Noise Levels at Nearest Home

Equipment	Acoustical Use Factor[1] (Percent)	Maximum Sound Level at 50 feet (dBA Lmax)	Maximum Sound Level at Nearest Home[2] (dBA Lmax)
Crane	16	81	55
Boom Truck (Flatbed Truck)	40	74	49
Forklift (Gradall)	40	83	58
Man Lift	20	75	50
Haul Truck (Dump Truck)	40	77	51
Hand Tools (Jackhammer)	20	89	64

1 Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.

2 The nearest home is located as near as 900 feet to the east of the proposed construction activities.

Source: RCNM Version 1.1 (see Appendix J of the CUP Amendment Application).

Table 4 shows that a jackhammer would create the highest noise level of all anticipated equipment to be used during construction of the Proposed Project, with a maximum noise level of 64 dBA Lmax at the nearest home. The proposed construction activities would be below the County's 75 dBA noise standard at the nearest home. Therefore, through adherence to allowable construction times as detailed in the General Plan Noise Element, the construction activities for the Proposed Project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Operation-Related Noise

The Proposed Project consists of installation and operation of the following noise producing equipment:

- OEC-1 – Two turbine combined cycle binary unit (includes a generator, two turbines, vaporizers, air-cooled condensers, preheaters and recuperators);
- OEC-2 – Single turbine binary unit (includes a generator, a turbine, vaporizers, air-cooled condenser, and preheaters);
- Air Coolers – Three 10-bay air coolers and one 14-bay air cooler (each bay includes a heat exchanger and large fan);
- OEC-11 Integrated Two-Level Unit (ITLU) – Conversion of OEC 13 and OEC 11 into a two turbine bottoming unit (new equipment includes replacement of one of the turbines with a new larger unit and will incorporate the OEC 13 condensers and decommission the rest of OEC-13);
- Evacuation Skid/Vapor Recovery Maintenance Unit (VRMU) – (includes a liquid motive fuel removal pump, a knock-out drum, a vacuum pump, a condenser, a tank, a pressure-controlled vent valve and activated carbon adsorption unit); and
- Emergency Fire Water Pump – Additional fire pump to service the new equipment.

The General Plan Noise Element (County of Imperial, 2015) limits the noise level from any noise generating property to 50 dBA between 7 a.m. and 10 p.m. and to 45 dBA between 10 p.m. and 7 a.m. at the nearest home.

According to the Project applicant the noise level created from OEC-1, OEC-2 and OEC-11 ITLU would not exceed 90 dB at one meter

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from any location of these units. Per Chambers Group, according to The Design of Quiet Air-Cooled Heat Exchangers (Hudson Products Corporation, 1993) air coolers produce a maximum noise level of 85 dBA at one meter from the units. The primary noise source for the VRMU would be the vacuum pump and according to Diaphragm Vacuum Pumps and Compressors Data Sheet (KNF, 2017) the proposed vacuum pump will create a noise level of 49 dB at one meter. Per Chambers Group, according to Firefighter Noise Exposure during training activities and general equipment use (National Institute of Health, 2013) an emergency fire pump creates a noise level of 85 dB at one meter.

Table 5 provided by Chambers Group shows the calculated noise levels from each noise source at the nearest home, based on a soft site attenuation rate of 7.5 dB per doubling of distance. The soft site attenuation rate was utilized to account for the agricultural fields located between the Project site and nearest home.

Table 5: Operational On-Site Noise Impacts to the Nearest Home

Noise Source	Reference Noise Measurement		Project Impacts at Nearest Home	
	Distance of Receptor to Source (feet)	Noise Level (dBA L_{eq})	Distance from Source to Home (feet)	Noise Level[1] (dBA L_{eq})
OEC-1	4	90	1,000	30
OEC-2	4	90	1,100	29
Air Cooler 1	4	85	1,100	24
Air Cooler 2	4	85	1,200	23
Air Cooler 3	4	85	1,100	24
Air Cooler 4	4	85	1,200	23
OEC-11 ITLU	4	90	1,300	27
VRMU	4	90	1,000	30
Emergency Fire Pump	4	85	1,000	25
			Combined Noise Level	**37**
			County Noise Standard (day/night)[2]	50/45
			Exceed County Standards (day/night)?	No/No

Notes:

[1] Project noise impacts calculated based on soft site noise propagation rates of 7.5 dB per doubling of distance per Chambers Group, Inc.

[2] From General Plan Noise Element.

The data provided in Table 5 shows that anticipated worst-case noise levels created from the simultaneous operation of the proposed equipment to be installed as part of the Proposed Project would create a noise level of 37 dBA Leq at the nearest home, which is within County's residential noise standards of 50 dB during the daytime and 45 dB during the nighttime. As such, operations-related onsite noise impacts to the nearby homes would be less than significant for the Proposed Project.

Accordingly, the Proposed Project would not expose persons to noise levels in excess of standards established by Imperial County.

b) Generation of excessive groundborne vibration or groundborne noise levels? ☐ ☐ ☒ ☐

b) Less than Significant Impact. Construction activities would require the operation of off-road equipment and trucks that are known sources of vibration. Construction activities may occur as near as 1000 feet from the nearest home.

Per Chambers Group, Caltrans guidance has been utilized to define the threshold of perception from transient sources at 0.25 inch-per-

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second peak particle velocity (PPV). Table 6 provided by Chambers Group shows the typical PPV produced from some common construction equipment.

Table 6: Typical Construction Equipment Vibration Emissions

Equipment	Peak Particle Velocity in inches per second at 25 feet	Vibration Level (L_v) at 25 feet
Loaded truck (off road)	0.076	86
Jackhammer	0.035	79

Notes: The equipment list provided by the applicant and the equipment list provided by the FTA were cross-referenced and the only equipment that would be used onsite that also create known vibration levels, include a loaded truck operating on dirt roads and a jackhammer.
Source: Chambers Group referencing Federal Transit Administration 2006.

From the list of equipment shown in Table 6, a loaded truck with a vibration level of 0.076 inch-per-second PPV would be the source of the highest vibration levels of all equipment utilized during construction activities for the Proposed Project. Based on typical propagation rates this would result in a vibration level of 0.001 inch-per-second PPV at the nearest home to construction activities (1,000 feet away). The construction-related vibration levels would be within the 0.25 inch-per-second PPV threshold detailed above. Construction-related vibration impacts would be less than significant.

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

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

c) For a project located within the vicinity of a private airstrip or an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? ☐ ☐ ☐ ☒

c) No Impact. The Proposed Project site is not located within two miles of a public airport and is not in the vicinity of a private airstrip. The nearest airport is Calexico International Airport, which is located approximately 2.9 miles south of the Proposed Project site. The Project site is located outside of the 65 dBA CNEL noise contours of Calexico International Airport. The Proposed Project would not expose people residing or working in the surrounding area to excessive levels of airport-generated noise. As such, there would be no impact from airport and airstrip noise.

XIV. ***POPULATION AND HOUSING*** ***Would the project:***

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

a) No Impact. The Proposed Project site is within the existing Ormat Heber 1 geothermal facility footprint, which is established as built-up, urbanized land (DOC 2019a). Construction activities would not result in the generation of temporary construction jobs as construction activities would be completed by current Ormat employees. Therefore, there would be no resulting relocation of any population. The number of employees at the Ormat Heber 1 facility would not increase and activities at the Proposed Project site would be substantially similar to existing activities. Therefore, the Proposed Project would not induce population growth, causing no impact.

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

b) No Impact. As described above in Impact a), the Proposed Project site is within the existing Ormat Heber 1 geothermal facility footprint, which is established as built-up, urbanized land (DOC 2019). The existing Ormat Heber 1 facility is completely developed and does not contain any housing units. All of the proposed construction activities would occur entirely within the footprint of the existing Ormat Heber 1 facility. As such, the Proposed Project would not displace a substantial number of existing housing units or people, necessitating the construction of replacement housing elsewhere. Therefore, no impact would occur.

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XV. *PUBLIC SERVICES*

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

a) Less Than Significant Impact. The proposed project is not expected to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services. It is expected that compliance with Imperial County Fire Department requirements would bring impacts to less than significant.

1) Fire Protection? ☐ ☐ ☒ ☐

1) Less Than Significant Impact. Considering that the existing environment is an operating geothermal energy plant, the Project would not significantly increase the demand for public services; although, additional fire response could be needed in the instance of a catastrophic event with an isopentane tank. A Hazard Assessment (Appendix H of the CUP Amendment Application) was prepared for the Project and concluded that the likelihood of a catastrophic event is highly unlikely. Additionally, compliance with Imperial County Fire Department conditions would bring any potentially significant impacts to less than significant.

2) Police Protection? ☐ ☐ ☐ ☒

3) Schools? ☐ ☐ ☐ ☒

4) Parks? ☐ ☐ ☐ ☒

5) Other Public Facilities? ☐ ☐ ☐ ☒

2-5) No Impact. As previously noted, the Proposed Project would not result in an increase in employees at the Ormat Heber 1 facility. Furthermore, the Proposed Project would not induce population growth in any way that could increase the demand on public services such as fire and police protection or other public facilities. The Proposed Project would not result in any changes to the existing land use at the site, which is designated for commercial, residential, industrial, and renewable energy land uses currently under the Heber Specific Plan Area (Imperial County 2015). Activities at the Proposed Project site would occur entirely within the existing Ormat Heber 1 facility footprint and would be substantially similar to existing activities onsite. Consequently, no impacts would occur.

XVI. *RECREATION*

a) Would the project increase the use of the existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? ☐ ☐ ☐ ☒

a) No Impact. The Proposed Project would not increase the number of employees, substantially alter existing industrial operations at the Ormat Heber 1 facility, or induce population growth in the surrounding area. The Proposed Project would not introduce features that would lead to the deterioration of recreational facilities through increased use. No impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment? ☐ ☐ ☐ ☒

b) No Impact. No recreational facilities would be constructed during the implementation of the Proposed Project; therefore, there would be no impact.

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

XVII. ***TRANSPORTATION***

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

a) Less Than Significant Impact. Linscott Law & Greenspan Engineers prepared a Trip Generation Letter (Letter) for the Proposed Project in October 2019 (Appendix K of the CUP Amendment Application). The Letter is referenced in Impacts a) through d).

Per Linscott Law & Greenspan Engineers Trip Generation Letter, the Project will not generate any additional traffic upon full build-out. During the short-term interim construction period, up to 254 daily trips and a maximum of 22 total peak hour trips area calculated, which is fewer than the 800 daily trips or 200 peak hour trips described by the County criteria. According to the Trip Generation Letter, this level of traffic is unlikely to degrade any existing intersection below LOS C, and in any case, the effects of Project construction traffic is expected to be temporary.
Per the proposed project's Trip Generation Letter, given these Project characteristics and the estimated construction period trip generation, a traffic report would not be required. However, Linscott Law & Greenspan Engineers mentions that these general criteria are not complete or exhaustive and the Department of Public Works reserves the right to make the final decision on the need for additional traffic impact studies as a condition of development.

Additionally, per Caltrans comment letter dated January 28, 2020, Caltrans has the following comments:
The California Department of Transportation (Caltrans) has discretionary authority with respect to highways under its jurisdiction and may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination vehicle or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transpiration Permits Issuance Branch is responsible for the issuance of these special transporation permits for oversize/overweight vehicles on the State Highway System. Additional information is provided online at: https://dot.ca.gov/programs/traffic-operations/transportation-permits.

A traffic Control Plan is to be submitted to Caltrans District 11, including the interchange at SR-111/ E. Jasper Road, at least 30 days prior to start of any construction. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during closures, including routes and signage.

Potential impacts to the highway facilities (SR-111 and SR-86) and traveling public from the detour, demolition and other construction activities should be discussed and addressed before work begins. If the turbine engine that is transported is oversized, larger than the width on the highway, per se, then there may need to be a Caltrans encroachment permit required, such permit would need to be filled locally at the Caltrans District 11 office in San Diego. The transportation permit to haul heavy weight/loads can be obtained in Sacrament over the phone at Caltrans HQ office.

Therefore, per Trip Generation Letter and project's compliance with Caltrans any impacts are expected to be less than significant.

b) Would the project conflict or be inconsistent with the CEQA Guidelines section 15064.3, subdivision (b)? ☐ ☐ ☒ ☐

b) Less Than Significant Impact. As noted in Impact a), any increase in traffic would be short-term and temporary, and the traffic volumes generated by construction would be minor; therefore, the potential for the Proposed Project to cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system is not expected to be substantial provided the project complies with Caltrans requirements as per letter dated January 28, 2020. Impacts would be less than significant.

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

c) No Impact. The Proposed Project does not include any alteration to the existing public road network and does not require the construction of access roads. All Proposed Project features would be constructed within the existing Heber 1 site and would not introduce any transportation hazards, design features, or incompatible uses with surrounding roadways. Any impacts are expected to be less than significant.

d) Result in inadequate emergency access? ☐ ☐ ☒ ☐

d) No Impact. All Proposed Project features would be located within the existing Heber 1 site and would not alter any public transit facilities. The construction of the Proposed Project would not involve blocking or restricting any access routes. The Project would not

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interfere with emergency response plans or operations near the Proposed Project area. Any impacts are expected to be less than significant.

XVIII. *TRIBAL CULTURAL RESOURCES*

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

a) No impact. As stated previously under item V "Cultural Resources", the records search presented by Chambers Group, Inc. did not find historic or prehistoric resources in this area, therefore, the proposed project is not expected to cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American tribe.

(i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as define in Public Resources Code Section 5020.1(k), or ☐ ☐ ☐ ☒

(i) No Impact. Chambers Group found that one previously recorded historic site was recorded within 0.5 mile of the Proposed Project site, though it is not located within the Project site. Activities surrounding the Proposed Project would be temporary and within the footprint of the Heber 1 facility, and the operations at the Heber 1 site following the completion of the Proposed Project would remain substantially similar to current operations.

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

(ii) No Impact. In June 2019 Chambers Group requested that the Native American Heritage Commission (NAHC) conduct a search of its Sacred Lands File to determine if cultural resources significant to Native Americans have been recorded within the Proposed Project area and/or buffer area. Chambers Group received a response from NAHC stating that the search of its Sacred Lands File did not indicate the presence of Native American cultural resources within 0.5 mile of the Proposed Project area or surrounding vicinity. The NAHC provided a list of ten Native American tribal governments that may have knowledge of cultural resources near the project area, tribes were including during the Project's Request for review and comment letter, no comments were received. Additionally, the AB 52 Notice of Opportunity to consult on the proposed project letter was mailed via certified mail on January 8, 2020 to President Jordan D. Joaquin, from the Quechan Indian Tribe. On January 10, 2020 we received an email from the Quechan Historic Preservation Officer stating that they did not have comments on this project.

XIX. *UTILITIES AND SERVICE SYSTEMS Would the project:*

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects? ☐ ☐ ☒ ☐

a) Less than significant. Project construction is not expected to generate any wastewater and, according to response letter dated January 28, 2020, on November 18, 2019, the IID issued an Amendment No. 1 to the Amended and Restated Water Supply agreement to supply an additional 500 acre feet of water a year in addition to the 1,800 acre feet that was in the agreement for a total of 2,300

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acre feet of water a year, therefore, no additional water consumption is anticipated. Portable toilets would be brought onsite per California Code of Regulations, Title 8, Section 1526, Subchapter 4, Construction Safety Orders Article 3, General §1526, Toilets at Construction Jobsites and disposed of at the appropriate wastewater facility, resulting in no impact to RWQCB requirements. Heber 1 facility employees have permanent bathrooms in the existing facilities, and no new wastewater would be generated from the operation of the proposed facilities. As described previously, a SWPPP would be prepared to address stormwater drainage, although the Proposed Project does not include plans to construct new or modify drainage facilities. Therefore, the project would not result in any impacts to utilities that would cause a significant environmental effect. Any impact would be less than significant.

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

b) Less than significant. As noted in Impact a), the Proposed Project would not require a significant amount of water. Water use associated with Heber 1 plant operations following the completion of the Project would be substantially similar to existing water usage onsite currently.

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

c) No Impact. As noted in Impacts a) and b), the Proposed Project would not generate wastewater that would need to be treated by a wastewater treatment facility. Onsite wastewater needs will be accommodated by the use of portable toilets that would be removed from the site once construction is complete. No impact would occur.

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

d) Less than significant. Proposed Project construction waste generation would likely be limited to packaging for equipment and supplies, and construction personnel waste. No hazardous wastes would be generated as result of Project construction or operation. Operation of the proposed facilities would not generate any solid wastes. All construction wastes shall be disposed of at the appropriate receiving facility, and there are three active waste disposal facilities/landfills operating in Imperial County that can service the Proposed Project; Mesquite Regional Landfill is approximately 5 miles northwest , Republic Services Allied Imperial Landfill is approximately 10 miles northeast and the Salton City Landfill is approximately 60 miles northwest of the proposed project. Permits shall be acquired for solid waste disposal in accordance with County ordinances as applicable. Therefore, the Proposed Project is not expected violate any federal, state, or local solid wastes statutes or regulations. Impacts are considered less than significant.

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

e) Less than significant. As described above, construction waste generation associated with the Proposed Project would likely be limited to packaging for equipment and supplies and construction personnel waste. All construction wastes would be disposed of at the appropriate receiving facility, and there are two active waste disposal facilities/landfills operating in Imperial County that can service the Proposed Project. A waste disposal permit would be acquired in accordance with County ordinances as applicable. Therefore, the Project would not violate any federal, state, or local solid wastes statutes or regulation and impacts are expected to be less than significant.

XX. *WILDFIRE*

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? ☐ ☐ ☒ ☐

a) Less Than Significant Impact. The Proposed Project site is in a Moderate severity zone in the Imperial County Local Responsibility Area and the closest Very High Fire Severity Zone (VHFSZ) is approximately 30 miles to the west (CAL FIRE 2007). Moreover, implementation of the Proposed Project at the existing Ormat Heber 1 facility would not result in hiring of additional employees and construction activities that exacerbate the risk of wildfires. Land use at the Proposed Project site would not change causing facility operations to remain substantially similar to existing operations following implementation of the Proposed Project. Although additional fire response could be needed in the instance of a catastrophic event with an isopentane tank, a Hazard Assessment (Appendix H of the CUP Amendment Application) was prepared for the Proposed Project and concluded that the likelihood of a catastrophic event is

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highly unlikely. Additionally, the project shall comply with Hazards and Hazardous Materials Mitigation Measures MM-FIRE-1 to MM-FIRE-7. Therefore, potential impacts to public services are less than significant.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? ☐ ☐ ☒ ☐

b) Less Than Significant Impact. In the Imperial County General Plan the County is characterized as mainly flat terrain with large temperature differentials that produce moderate winds (Imperial County 1993a). The Proposed Project site is in a Moderate severity zone and construction activities would not introduce features that exacerbate the risk of wildfires. Land use at the Proposed Project site would not change causing facility operations to remain substantially similar to existing operations following implementation of the Proposed Project. Tanks housing flammable isopentane would be installed as a result of the Proposed Project, but a HA was prepared for the Proposed Project and concluded that the likelihood of a catastrophic event related to isopentane is highly unlikely and as stated under item a) above, the project shall comply with mitigation measures MM-FIRE-1 to MM-FIRE-7. Therefore, the Proposed Project would lead to less than significant impact.

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

c) Less Than Significant Impact. As mentioned above in Impact a) and Impact b), the Proposed Project site is not within a VHFSZ and construction activities would not introduce features that exacerbate the risk of wildfires. Additionally, land use on site would not change and Ormat Heber 1 facility operations would remain substantially similar to existing operations following implementation of the Proposed Project. Tanks housing flammable isopentane would be installed as a result of the Proposed Project, but a HA was prepared and mitigation measures MM-FIRE-1 to MM-FIRE-7 shall be incorporated for the Proposed Project and concluded that the likelihood of a catastrophic event related to an isopentane tank is highly unlikely. Impacts would be less than significant.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? ☐ ☐ ☒ ☐

d) Less Than Significant Impact. As mentioned in Impacts a) through c), the Proposed Project site is not within a VHFHSZ and implementation of the Proposed Project would not exacerbate wildfire risk or alter the drainage at the Proposed Project site. Additionally, land use on site would not change and facility operations would remain substantially similar to existing operations following implementation of the Proposed Project. Additionally, the Hazard Assessment identified no impacted populations in the effected area from a catastrophic event from an isopentane tank malfunction, the assessment concluded the catastrophic event is the worst case-scenario and highly unlikely. Implementation of the Proposed Project would expose people or structures to major risk associated with fire, thus impacts would be less than significant.

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

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

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	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

SECTION 3
III. MANDATORY FINDINGS OF SIGNIFICANCE

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

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

a) As identified in Section IV of this IS, the Proposed Project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, and/or reduce the number or restrict the range of a rare or endangered plant or animal. However, the Proposed Project would implement MM-BIO-1 through MM-BIO-4 to reduce any potentially significant impacts to biological resources. Additionally, the Proposed Project was determined to result in less than significant impacts associated with California history or prehistory with the implementation of MM-PAL-1 through MM-PAL-6.

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

b) CEQA requires lead agencies to consider the cumulative impacts of proposals under their review. Section 15355 of the State CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact "consists of an impact which is created because of the combination of the project evaluated in the EIR together with other projects causing related impacts (Section 15130[a][1]).

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

c) As identified in Section IX of this IS, the Proposed Project has the potential to result in significant or substantial adverse effects on humans. However, the Proposed Project would implement MM-FIRE-1 through MM-FIRE-7 to reduce any potentially significant impacts to hazard and hazardous materials.

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IV. PERSONS AND ORGANIZATIONS CONSULTED

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

A. COUNTY OF IMPERIAL

- Jim Minnick, Director of Planning & Development Services
- Michael Abraham, AICP, Assistant Director of Planning & Development Services
- Mariela Moran, Project Planner
- Imperial County Air Pollution Control District
- Department of Public Works
- Fire Department
- Ag Commissioner
- Environmental Health Services
- Sheriff's Office

B. OTHER AGENCIES/ORGANIZATIONS

- Imperial Irrigation District
- Caltrans

C. CONSULTANT

- Chambers Group, Inc.

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V. REFERENCES

CAL FIRE

2007 Draft Fire Hazard Severity Zones in LRA. Available at: https://osfm.fire.ca.gov/media/6682/fhszl06_1_map13.pdf

California Lighting Technology Center (CLTC)

2014 Outdoor Lighting. Available at: http://cltc.ucdavis.edu/sites/default/files/files/publication/2013-title-24-outdoor-lighting-guide-dec14_0.pdf

California Department of Conservation (DOC)

2016 Imperial County Williamson Act 2016/2017. Available Online at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Imperial_County_w_16_17_WA.pdf

2019a California Important Farmland Finder. Available Online at: https://maps.conservation.ca.gov/DLRP/CIFF/

2019b Earthquake Zones of Required Investigation. Available Online at: https://maps.conservation.ca.gov/cgs/EQZApp/app/

Imperial County

1993b General Plan – Seismic/Public Safety Element. Available at: http://www.icpds.com/CMS/Media/Seismic-and-Public-Safety-Element.pdf

1993a General Plan – Overview. Available at: http://www.icpds.com/CMS/Media/GENERAL-PLAN--(OVERVIEW).pdf

1996 Airport Land Use Compatibility Maps. Accessed October 2019. Available at: http://www.icpds.com/?pid=1195

2003 Heber Urban Plan

2008 General Plan – Circulation and Scenic Highways Element. Available at: http://icpds.com/CMS/Media/Circulation-Scenic-Highway-Element-(2008).pdf

2016 General Plan – Conservation and Open Space Element. Available at: http://www.icpds.com/CMS/Media/Conservation-&-Open-Space-Element-2016.pdf

2015 General Plan – Land Use Element. Available at: http://www.icpds.com/CMS/Media/Land-Use-Element-(2015).pdf

1998a Division 5: Zoning Areas Established. Available at: http://www.icpds.com/CMS/Media/TITLE-9-DIVISION-5-AMENDED-10-24-17.pdf

1998b Heber Area. Available at: http://www.icpds.com/CMS/Media/ZONE12-062915.pdf

Regional Water Quality Control Board (RWQCB)

2019 Water Quality Control Plan for the Colorado River Basin Region. Available at: https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/basin_planning/docs/bp032014/r7_bp2019fullbp.pdf

SWRCB

2019 Geotracker Database. Accessed October 2019. Available at: https://geotracker.waterboards.ca.gov/

United States Department of Agriculture (USDA)

2019 Web Soil Survey. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

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MITIGATED NEGATIVE DECLARATION – County of Imperial

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

Project Name: Heber 1 Repower Project

Project Applicant: Heber Geothermal Company / Ormat Nevada Inc.

Project Location: 895 Pitzer Road, Heber, CA

Description of Project: Ormat proposes to upgrade the existing Heber 1 geothermal facility, which is owned by the subsidiary Heber Field Company, by shutting down the dual-flash steam turbine generator, installing two new OECs (OEC 1 and OEC 2), reconfiguring two of the existing OECs (OEC 11 and OEC 13), install ancillary equipment and paving and/or replacing new access roads. These updates are referred to herein as the Proposed Project. OEC 1 and 2 combined would function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling rather than water cooling for the motive fluid. OEC 11 and OEC 13 combined would function as an Integrated Two-Level Unit (ITLU) and will use the existing cooling tower. The proposed new setup is expected to be better suited to the current and expected future conditions of the geothermal resource than the steam turbine generator, improving efficiency of the operations.

Applicant is also proposing to modify the permitted water intake from 1,800 acre feet of irrigation water to the existing water intake of 2,300 acre feet of irrigation water. The purpose of the repower project is to improve efficiency of the operations and increase the net and gross generation to 52MW (net), 78.2 (gross) as initially requested under Conditional Use Permit #15-0013. This proposed project also proposes to extend the permitted life of Heber 1 to 30 years (2020-2050).

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VI. FINDINGS

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

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

☐ The Initial Study identifies potentially significant effects but:

(1) Proposals made or agreed to by the applicant before this proposed Mitigated Negative Declaration was released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur.

(2) There is no substantial evidence before the agency that the project may have a significant effect on the environment.

(3) Mitigation measures are required to ensure all potentially significant impacts are reduced to levels of insignificance.

A NEGATIVE DECLARATION will be prepared.

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

NOTICE

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

2-11-2021 for

Date of Determination — Jim Minnick, Director of Planning & Development Services

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

Melissa Wendt — Applicant Signature

2/11/21 — Date

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SECTION 4

VIII. RESPONSE TO COMMENTS

(ATTACH DOCUMENTS, IF ANY, HERE)

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March 4, 2020

Ms. Mariela Moran
Imperial County Planning & Development Services
801 Main Street
El Centro, CA 92243

RE: Response to Request for Additional Information and Agency Comment Letters
Heber 1 Repower – CUP #19-0028

Dear Ms. Moran:

Heber Geothermal Company, a subsidiary of Ormat Nevada, Inc. (Ormat), submits this letter and additional information in response to an email dated January 8, 2020 with specific questions regarding the CUP application and project details. In addition, this letter also responds to additional comments received from various agencies forwarded via e-mail on January 10, 2020 and January 30, 2020.

CUP Comments

Comment #1 - *On item #1, according to County Assessor Office information the property is owned by the Heber Field Company. Please provide documentation for Ormat Nevada Inc. as property owner of this parcel.*

Response #1 – Heber Field Company, a subsidiary of Ormat Nevada, Inc., is the actual owner of the property as shown on the deed. This has been corrected on CUP application form and the deed is attached for reference.

Comment #2 - *On item #6, your project includes the installation of an OEC-11 ITLU; please provide a revised application to include APN 054-250-035.*

Response #2 – A revised CUP application is attached with both parcel numbers listed.

Comment #3 - *Provide a site plan that includes the proposed project property lines, proposed and existing structures, and include the distance from the proposed structures to the property lines.*

Response #3 – A revised site plan has been attached per CUP application requirements (including 20 hard copies). The project property lines will not change and all facilities will be within the existing parcels. In addition, an updated figure that better shows existing and proposed equipment is attached.

ORMAT NEVADA, INC.
6140 Plumas St, Reno, NV 89519, USA • +1-775-356-9029 • ormat.com

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Comment #4 - *Water: Per CUP 15-0013, Permittee may use up to a total of 1,800 acre feet of irrigation water per year for thirty (30) years from Imperial Irrigation District. Please clarify if there are any proposed changes to the water usage.*

Response #4 – On November 18, 2019, the IID issued an Amendment No. 1 to the Amended and Restated Water Supply Agreement to supply an additional 500 acre feet of water per year in addition to the 1,800 acre feet that was in the agreement for a total of 2,300 acre feet per year. The purpose of this increase is the original operational process utilized flashes of geothermal brine to make steam, which made water condensate that was then used in the wet cooling tower. Changes to these existing facilities will no longer generate the extra water needed for the cooling towers. In 1985, the IID supplied 5,000 acre feet per year, so over time with equipment modifications and changes in the geothermal resource, water consumption has fluctuated. There will be no change to the existing water intake or supply system to accommodate this change.

Comment #5 - *Energy: Per CUP 15-0013, Permittee is authorized to operate a 47 MW (net) geothermal power plant. Please clarify if there are any proposed changes to the energy production. In addition, please provide the proposed project and the Heber 1 facility total output (MW) net and gross.*

Response #5 – The purpose of the repower project is to improve efficiency of the operations and bringing net and gross generation up to existing authorized levels. The CUP #19-0028 application did have an error in reporting approved net and gross output. Based on our records, the 2015 amendment to CUP No. 04-0024 to add OEC-14 added 16 gross MW to the existing 62.5 gross MW, which equated to bring the facility net output to 52MW. Although the final CUP permit (attached) does not specify the final modified MWs specifically, the application does detail this in the project description (attached). **Therefore, the repower project is not proposing to increase the authorized nameplate gross or net output: 52MW (net), 78.2 (gross).**

Department of Toxic Substances Control Comment Letter, January 9, 2020

Comment #1 - *When this retrofit is completed they need to update their CERS information if there are any changes in Hazardous Materials, Hazardous Waste, ASTs with petroleum, USTs, or CalARP thresholds, and they need to notify the DTSC Imperial CUPA at that time.*

Response #1 – Ormat will update the CERS information to include the additional motive fluid tanks and send a notification to the CUPA at that time.

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Department of Transportation Letter, January 28, 2020

Comment #1 – *Traffic Control Plan/Hauling - The California Department of Transportation (Caltrans) has discretionary authority with respect to highways under its jurisdiction and may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transportation Permits Issuance Branch is responsible for the issuance of these special transportation permits for oversize/overweight vehicles on the State Highway System.*

Response #1 – Ormat will determine with its contractors the need to submit an application for a special permit to operate well in advance of planned equipment mobilization and hauling of materials to the project site.

Comment #2 - *A Traffic Control Plan is to be submitted to Caltrans District 11, including the interchange at SR-111 / E. Jasper Road, at least 30 days prior to the start of any construction. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during closures, including routes and signage. Potential impacts to the highway facilities (SR-111 and SR-86) and traveling public from the detour, demolition and other construction activities should be discussed and addressed before work begins.*

Response #2 – Ormat has contracted a traffic engineer to develop a Traffic Control Plan for the project and will submit the plan at least 30 days prior to construction and coordinate with Caltrans.

Imperial County Air Pollution Control District Letter, January 17, 2020

Comment #1 - *The Imperial County Air Pollution Control District ("Air District") would like to thank you for the opportunity to review Conditional Use Permit (CUP) 19-0028 and Initial Study 19-0033 (collectively called "Project"). The Project would remove from service the existing dual-flash steam turbine generator and install two new Ormat Energy Converters (OEC) geothermal power generation units. In addition, the OEC-11 and OEC-13 power generators will be reconfigured into a combined two- level unit called OEC-11. Additional equipment including motive fluid (isopentane) storage tanks, an evacuation skid/vapor recovery maintenance unit (VRMU), and a diesel engine for emergency use will be added to the facility. The Project will extend the permitted life of Heber 1 to 30 years (2020 through 2050). The Project location is located at 895 Pitzer Road in Heber, California (APN 054-250-036-000). The Project applicant is Ormat Nevada, Inc.*

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Response #1 – For the general project description, Ormat would like to clarify that an additional emergency diesel generator will not be added to the facility. The existing diesel generator is sufficient to support the repower project.

Comment #2 - *Upon review, the Air District requests that the applicant contact Mr. Emmanuel Sanchez, Enforcement Division Manager, to discuss the possible need for a Construction Dust Control Plan.*

Response #2 – Ormat will contract Mr. Sanchez to discuss the possible need for a Dust Control Plan.

Comment #3 - *Additionally, the applicant must notify the Air District 10 days prior to the start of any construction activities.*

Response #3 – Ormat will notify the APCD 10 days prior to the start of any construction activities.

Comment #4 - *Finally, the Air District requests a copy of the Draft CUP prior to recording.*

Response #4 – Ormat will work with the County and our consultants to ensure a complete Draft CUP application is ready for preliminary review by the APCD prior to recording.

Imperial Irrigation District Letter, January 23, 2020

Comment #1 - *For electrical service for the project, the applicant should be advised to contact Joel Lopez, IID Customer Project Development Planner, at (760) 482-3444 or e-mail Mr. Lopez at jflopez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the IID website http://www.iid.com/home/showdocument?id=12923), the applicant will be required to submit a complete set of approved plans (including CAD files), project schedule, estimated in-service date, one-line diagram of facility, electrical loads, panel size, voltage, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures related to providing electrical service to the project.*

Response #1 – No changes to electrical services are required as a part of the repower project. The existing Demand Agreement would not require modification.

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Comment #2 - *IID facilities that may be impacted include the Daffodil Canal (the project site is located adjacent to and west of the Daffodil Canal), Daffodil Lateral 1 and Dogwood Canal. However, it appears that the expansion project will not affect IID's canals or laterals. If this should occur, the applicant will be required to contact IID Water Department Engineering Services section prior to final project design. IID Water Dept. ESS can be contacted at (760) 339-9265 for further information.*

Response #2 – The repower project will not affect IID's canals or laterals. No changes to the existing water intake are proposed.

Comment #3 - *The applicant may not use IID's canal or drain banks to access the project site. Any abandonment of easements or facilities will be approved by IID based on systems (irrigation, drainage, power, etc.) needs.*

Response #3 – The project site will be accessed by existing roads and access points and within existing easements.

Comment #4 - *Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions are available at the district website http://www.iid.com/departments/real estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.*

Response #4 – No construction or operations are planned within existing easements or rights-of-way.

Comment #5 - *In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.*

Response #5 – It appears that the Daffodil Canal easement is the only easement that will have new facilities adjacent. Ormat will contact the IID Real Estate Department to see if an encroachment permit is needed.

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Comment #6 - *Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.*

Response #6 – Ormat will be submitting a material modification analysis to IID in the coming weeks, however, it is not anticipated that any new, relocated, modified or reconstructed IID facilities will be required since power generation will not change beyond what was previously analyzed by IID. Ormat will work with IID to expeditiously gain confirmation on the material modification as soon as possible so it will not delay the CEQA process.

Closing

Thank you for your quick response to our application. Please let me know if you have any questions or require additional information to deem the application complete and schedule the Environmental Evaluation Committee meeting.

Respectfully submitted,

Melissa R. Wendt
Director, Project Development

Enclosures:
1 – Updated CUP Application Form
2 – Land Deed
3 – Updated Site Plan (20 hard copies)
4 – 2015 CUP Amendment (Permit and Application)

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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 HEBER FIELD COMPANY		EMAIL ADDRESS mwendt@ormat.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 6140 PLUMAS STREET, RENO NV	ZIP CODE 89519	PHONE NUMBER 775-356-9029	
3. APPLICANT'S NAME HEBER GEOTHERMAL COMPANY / ORMAT NEVADA, INC.		EMAIL ADDRESS mwendt@ormat.com	
4. MAILING ADDRESS (Street / P O Box, City, State) 6140 PLUMAS STREET, RENO, NV	ZIP CODE 89519	PHONE NUMBER 775-356-9029	
4. ENGINEER'S NAME SHLOMI HUBERMAN	CA. LICENSE NO.	EMAIL ADDRESS Shuberman@ormat.com	
5. MAILING ADDRESS (Street / P O Box, City, State) 6140 PLUMAS STREET, RENO, NV	ZIP CODE 89519	PHONE NUMBER 775-356-9029	

6. ASSESSOR'S PARCEL NO. 054-250-035, 054-250-036	SIZE OF PROPERTY (in acres or square foot) 27 acres	ZONING (existing) A-2-G/SPA
7. PROPERTY (site) ADDRESS 875 PITZER ROAD		
8. GENERAL LOCATION (i.e. city, town, cross street) HEBER, CA		
9. LEGAL DESCRIPTION Track 44, Township 16 South, Range 14 East, SBBM		

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

10. DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail) Facility refurbishment, equipment installation, removal of existing facilities? See attached.	
11. DESCRIBE CURRENT USE OF PROPERTY	MAJOR GEOTHERMAL POWER PLANT
12. DESCRIBE PROPOSED SEWER SYSTEM	No additional sewer service proposed
13. DESCRIBE PROPOSED WATER SYSTEM	No additional water system, same IID intake.
14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM	Expansion of existing fire system.
15. IS PROPOSED USE A BUSINESS? ☒ Yes ☐ No	IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE? 30, 10-15 more during construction

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

Connie Stechman — 3-2-2020
Print Name — Date

Connie Stechman
Signature

Print Name — Date

Signature

REQUIRED SUPPORT DOCUMENTS

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

APPLICATION RECEIVED BY:		DATE		REVIEW / APPROVAL BY OTHER DEPT'S required.	
APPLICATION DEEMED COMPLETE BY:		DATE		☐ P. W.	
APPLICATION REJECTED BY:		DATE		☐ E. H. S.	
TENTATIVE HEARING BY:		DATE		☐ A. P. C. D.	
FINAL ACTION: ☐ APPROVED ☐ DENIED		DATE		☐ O. E. S.	
				☐	
				☐	

CUP #

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WHEN RECORDED RETURN TO:

Ogden Energy Inc.
3211 Jermantown Rd.
Fairfax, VA 22030

Attn: DALE DAILEADER

COUNTY RECORDER
BOOK 2018 PAGE 772
'30 JUN 16 PM 2 59
OFFICIAL RECORDS
IMPERIAL COUNTY, CA

RF	7
MC	1
IX	1
TF	2
NL	
PY	
PR	

QUITCLAIM DEED

Mail Tax Statement To Below Address Above

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EEC ORIGINAL PKG

RECORDING REQUESTED BY:
AND WHEN RECORDED MAIL TO:
Pillsbury Madison & Sutro LLP
50 Fremont Street
San Francisco, CA 94105
Attn: Robert J. Spjut, Esq.

Tax Due: ~~$115.50~~ $16,643.00 RED
Computed on full value of property conveyed
Richard E. Dyer
Signature of Declarant
UNINCORPORATED

QUITCLAIM DEED

FOR VALUABLE CONSIDERATION, the receipt and sufficiency of which are hereby acknowledged, U.S. TRUST COMPANY OF CALIFORNIA, N.A., not in its individual capacity but solely as owner trustee under that certain Trust Agreement dated as of December 18, 1991, between Aircraft Services Corporation, a Nevada corporation, and U.S. Trust Company of California, N.A. ("GRANTOR"), hereby grants to HEBER FIELD COMPANY, a California partnership, that certain real property located in the County of Imperial, State of California, APN 054-250-30-01, APN 054-250-35-01, and APN 054-250-36-01, as more particularly described in Exhibit A attached hereto and incorporated herein by this reference.

IN WITNESS WHEREOF, GRANTOR has caused its corporate name and seal to be affixed hereto and this Quitclaim Deed to be duly executed by its authorized officer on this ___ day of February, 2000.

U.S. TRUST COMPANY OF CALIFORNIA, N.A., not in its individual capacity but solely as owner trustee under that certain Trust Deed dated as of December 18, 1991 between Aircraft Services Corporation, a Nevada corporation, and U.S. Trust Company of California, N.A.

By: M Ciccarelli
Name: Margaret Ciccarelli
Title: AUTHORIZED SIGNATORY

MAIL TAX STATEMENTS TO:
Heber Field Company
c/o Richard E. Dyer
3211 Jermantown Road
Fairfax, VA 22030

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EEC ORIGINAL PKG

State of New York)
) ss.
County of New York)

On this the 25th day of ~~December~~ April, 2000, before me, Christine C. Collins, the undersigned Notary Public, personally appeared Margaret Ciemniewska, personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is subscribed to the within instrument, and acknowledged to me that she executed the same in her authorized capacity(ies), and that by her signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Christine C. Collins
Notary's Signature

[redacted]

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A1-1:

COUNTY OF IMPERIAL, STATE OF CALIFORNIA

PARCEL 2 OF PARCEL MAP NO. M-1106, RECORDED NOVEMBER 28, 1978 IN BOOK 4 OF PARCEL MAPS AT PAGE 63 OF OFFICIAL RECORDS OF SAID COUNTY OF IMPERIAL, BEING A PORTION OF THE SOUTH HALF OF TRACT 44, TOWNSHIP 16 SOUTH, RANGE 14 EAST, SAN BERNARDINO MERIDIAN, ACCORDING TO THE UNITED STATES GOVERNMENT PLAT OF RE-SURVEY APPROVED FEBRUARY 6, 1909 AND ON FILE IN THE UNITED STATES LAND OFFICE.

EXCEPTING THEREFROM MINERALS, EITHER IN SOLID OR LIQUID FORM, GEOTHERMAL STEAM, NATURALLY HEATED WATER, AND THERMAL ENERGY BELOW A DEPTH OF 500 FEET FROM THE SURFACE OF SAID LAND, WITHOUT RIGHT OF SURFACE ENTRY, AS EXCEPTED IN THE DEED RECORDED SEPTEMBER 26, 1979 IN BOOK 1441 PAGE 935 OF OFFICIAL RECORDS.

PC ORIGINAL PKG.

EEC ORIGINAL PKG

A1-2,3:

COUNTY OF IMPERIAL, STATE OF CALIFORNIA

PARCEL 1:

THAT PORTION OF THE EAST HALF OF TRACT 45, TOWNSHIP 16 SOUTH, RANGE 14 EAST, SAN BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING EASTERLY OF THE EAST LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY RIGHT OF WAY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF SAID TRACT 45 AND SAID EASTERLY LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY RIGHT OF WAY, AS SAID INTERSECTION IS SHOWN ON RECORD OF SURVEY FILED IN BOOK 6, PAGES 32 AND 33 OF RECORDS OF SURVEY IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE SOUTH 18° 48' 34" EAST, 46.49 FEET, MEASURED ALONG SAID EASTERLY LINE, TO A FOUND ONE INCH IRON PIPE WITH TAG, STAMPED RCE 13484 AND BEING THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE CONTINUING SOUTH 18° 48' 34" EAST, 1053.83 FEET TO A FOUND ONE INCH IRON PIPE, WITH TAG, STAMPED RCE 13484; THENCE NORTH 71° 10' 23" EAST, 345.93 FEET TO A FOUND ONE INCH IRON PIPE, WITH TAG, STAMPED RCE 13484; THENCE NORTH 18° 48' 21" WEST, 195.71 FEET TO THE BEGINNING OF A TANGENT CURVE, CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 70 FEET; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE ANGLE OF 45°, AN ARC DISTANCE OF 54.97 FEET; THENCE NORTH 63° 48' 21" WEST, 70.71 FEET TO THE BEGINNING OF A TANGENT CURVE, CONCAVE NORTHEASTERLY AND HAVING A RADIUS OF 70 FEET; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 45°, AN ARC DISTANCE OF 54.97 FEET; THENCE NORTH 18° 48' 21" WEST, 96.37 FEET TO THE BEGINNING OF A TANGENT CURVE, CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 70 FEET; THENCE NORTHERLY AND NORTHEASTERLY ALONG SAID CURVE, THROUGH A CENTRAL OF 45°, AN ARC DISTANCE OF 54.97 FEET; THENCE NORTH 26° 11' 39" EAST, 70.71 FEET TO THE BEGINNING OF A TANGENT CURVE, CONCAVE NORTHWESTERLY AND HAVING A RADIUS OF 70 FEET; THENCE NORTHEASTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 45°, AN ARC DISTANCE OF 54.97 FEET; THENCE NORTH 18° 48' 21" WEST, 187.71 FEET TO A FOUND ONE INCH IRON PIPE, WITH TAG, STAMPED RCE 28447; THENCE NORTH 89° 57' 59" WEST, 57.77 FEET; THENCE NORTH 45° 02' 12" WEST, 56.64 FEET; THENCE NORTH 0° 01' EAST, 189.76 FEET TO A FOUND ONE INCH IRON PIPE, WITH TAG, STAMPED RCE 28447; THENCE SOUTH 89° 58' 30" WEST, ALONG A LINE THAT IS PARALLEL WITH AND 44 FEET SOUTHERLY, MEASURED AT RIGHT ANGLES FROM SAID NORTHERLY LINE OF TRACT 45, A DISTANCE OF 318.67 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPTING AND RESERVING THEREFROM, ALL URANIUM, THORIUM AND OTHER FISSIONABLE MATERIALS, GEOTHERMAL RIGHTS INCLUDING ALL WATER, BRINE, STEAM, SALT AND CHEMICALS, ALL OIL, GAS, PETROLEUM, ASPHALTUM, AND OTHER HYDROCARBON SUBSTANCES AND OTHER MINERALS AND MINERAL ORES OF EVERY KIND AND CHARACTER, WHETHER SIMILAR TO THOSE HEREIN SPECIFIED OR NOT, WITHIN OR UNDERLYING, OR WHICH MAY BE PRODUCED FROM THE HEREINBEFORE DESCRIBED LAND, TOGETHER WITH THE RIGHT TO USE THAT PORTION ONLY OF SAID LAND WHICH UNDERLINES A PLANE PARALLEL TO AND FIVE HUNDRED (500) FEET BELOW THE PRESENT SURFACE OF SAID LAND, FOR THE PURPOSE OF PROSPECTING FOR, DEVELOPING AND/OR EXTRACTING SAID URANIUM, THORIUM, AND OTHER FISSIONABLE MATERIALS, WATER, BRINE, STEAM, SALT, CHEMICALS, OIL, GAS, PETROLEUM, ASPHALTUM, AND OTHER MINERAL OR HYDROCARBON SUBSTANCES FROM SAID LAND, AS RESERVED BY EL TORO LAND AND CATTLE CO., A CORPORATION, BY DEED RECORDED APRIL 21, 1960, IN BOOK 1450, PAGE 478 OF OFFICIAL RECORDS, IT BEING EXPRESSLY UNDERSTOOD AND AGREED THAT SAID EL TORO LAND AND CATTLE CO., ITS SUCCESSORS AND ASSIGNS, SHALL HAVE NO RIGHT TO ENTER UPON THE SURFACE OF SAID LAND, OR TO USE SAID LAND OR ANY PORTION THEREOF TO SAID DEPTH OF FIVE HUNDRED (500) FEET, FOR ANY PURPOSE WHATSOEVER.

PC ORIGINAL PKG.

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PARCEL 2:

AN EASEMENT FOR ROADWAY PURPOSES AND INCIDENTAL PURPOSES, OVER, UPON AND ACROSS THAT PORTION OF THE EAST HALF OF TRACT 45, TOWNSHIP 16 SOUTH, RANGE 14 EAST, SAN BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING EASTERLY OF THE EAST LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY RIGHT OF WAY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF SAID TRACT 45 AND SAID EASTERLY LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY RIGHT OF WAY, AS SAID INTERSECTION IS SHOWN ON RECORD OF SURVEY FILED IN BOOK 6, PAGES 32 AND 33 OF RECORDS OF SURVEY IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE SOUTH 18° 48' 34" EAST, 46.49 FEET, MEASURED ALONG SAID EASTERLY LINE, TO A FOUND ONE INCH IRON PIPE WITH TAG, STAMPED RCE 13484; THENCE NORTH 89° 58' 30" EAST, ALONG A LINE THAT IS PARALLEL WITH AND 44.00 FEET SOUTHERLY, MEASURED AT RIGHT ANGLES FROM SAID NORTHERLY LINE, A DISTANCE OF 318.67 FEET TO A FOUND ONE INCH IRON PIPE, WITH TAG, STAMPED RCE 28447; THENCE NORTH 0° 01' EAST, 9.00 FEET TO A LINE THAT IS PARALLEL WITH AND 35.00 FEET SOUTHERLY, MEASURED AT RIGHT ANGLES FROM SAID NORTHERLY LINE; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE, NORTH 89° 58' 30" EAST, 628.37 FEET TO THE WESTERLY LINE OF THE LAND CONVEYED TO THE COUNTY OF IMPERIAL, BY DEED RECORDED IN BOOK 470, PAGE 507 OF OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE NORTHERLY, ALONG SAID WESTERLY LINE, 35.00 FEET TO SAID NORTHERLY LINE OF TRACT 45; THENCE SOUTH 89° 58' 30" WEST, 961.55 FEET, MEASURED ALONG SAID NORTHERLY LINE, TO THE POINT OF BEGINNING.

PARCEL 3:

THAT PORTION OF THE EAST HALF OF TRACT 45, TOWNSHIP 16 SOUTH, RANGE 14 EAST, SAN BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING EASTERLY OF THE EAST LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY RIGHT OF WAY, DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND ONE INCH IRON PIPE, WITH TAG STAMPED RCE 28447, AT THE EASTERLY TERMINUS OF THAT CERTAIN COURSE IN PARCEL 1 DESCRIBED AS HAVING A BEARING AND DISTANCE OF "SOUTH 89° 58' 30" WEST, ALONG A LINE THAT IS PARALLEL WITH AND 44.00 FEET SOUTHERLY, MEASURED AT RIGHT ANGLES FROM SAID NORTHERLY LINE OF TRACT 45, 318.67 FEET" IN THAT CERTAIN GRANT DEED TO CHEVRON GEOTHERMAL COMPANY OF CALIFORNIA, RECORDED FEBRUARY 15, 1983 IN BOOK 1497, PAGE 722 OF OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID IMPERIAL COUNTY; THENCE ALONG THE EASTERLY BOUNDARY LINE OF SAID PARCEL 1, SOUTH 00° 01' 00" WEST, 109.76 FEET; THENCE SOUTH 45° 02' 12" EAST, 56.64 FEET; THENCE SOUTH 89° 57' 59" EAST, 57.77 FEET TO A FOUND ONE-INCH IRON PIPE, WITH TAG, STAMPED RCE 28447; THENCE LEAVING SAID EASTERLY BOUNDARY LINE AND ALONG THE NORTHERLY PROLONGATION OF THAT CERTAIN COURSE DESCRIBED AS "NORTH 18° 48' 21" WEST, 187.71 FEET" IN SAID PARCEL 1, NORTH 18° 48' 21" WEST, 65.24 FEET; THENCE NORTH 00° 00' 01" EAST, 97.09 FEET TO A LINE THAT IS PARALLEL WITH AND 35.00 FEET SOUTHERLY, MEASURED AT RIGHT ANGLES FROM THE NORTHERLY LINE OF SAID TRACT 45, SAID LAST MENTIONED PARALLEL LINE ALSO BEING THE SOUTHERLY LINE OF THE ROAD EASEMENT DESCRIBED AND DESIGNATED AS PARCEL 2 IN SAID CERTAIN GRANT DEED; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE, SOUTH 89° 58' 30" WEST, 76.79 FEET; THENCE SOUTH 00° 01' 00" WEST, 9.00 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM, ALL URANIUM, THORIUM AND OTHER FISSIONABLE MATERIALS, GEOTHERMAL RIGHTS INCLUDING ALL WATER, BRINE, STEAM, SALT AND CHEMICALS, ALL OIL, GAS, PETROLEUM, ASPHALTUM, AND OTHER HYDROCARBON SUBSTANCES AND OTHER MINERALS AND MINERAL ORES OF EVERY KIND AND CHARACTER, WHETHER SIMILAR TO THOSE HEREIN SPECIFIED OR NOT, WITHIN OR UNDERLYING, OR WHICH MAY BE PRODUCED FROM THE HEREINBEFORE DESCRIBED LAND, TOGETHER WITH THE RIGHT TO USE THAT PORTION ONLY OF SAID LAND WHICH UNDERLINES A PLANE PARALLEL TO AND FIVE HUNDRED (500) FEET BELOW THE PRESENT SURFACE OF SAID LAND, FOR THE PURPOSE OF PROSPECTING FOR, DEVELOPING AND/OR EXTRACTING SAID URANIUM, THORIUM, AND OTHER FISSIONABLE MATERIALS, WATER, BRINE, STEAM, SALT, CHEMICALS, OIL, GAS, PETROLEUM,

EEC ORIGINAL PKG
PC ORIGINAL PKG.

ASPHALTUM, AND OTHER MINERAL OR HYDROCARBON SUBSTANCES FROM SAID LAND, AS RESERVED BY EL TORO LAND AND CATTLE CO., A CORPORATION, BY DEED RECORDED APRIL 21, 1980, IN BOOK 1450, PAGE 478 OF OFFICIAL RECORDS, IT BEING EXPRESSLY UNDERSTOOD AND AGREED THAT SAID EL TORO LAND AND CATTLE CO., ITS SUCCESSORS AND ASSIGNS, SHALL HAVE NO RIGHT TO ENTER UPON THE SURFACE OF SAID LAND, OR TO USE SAID LAND OR ANY PORTION THEREOF TO SAID DEPTH OF FIVE HUNDRED (500) FEET, FOR ANY PURPOSE WHATSOEVER.

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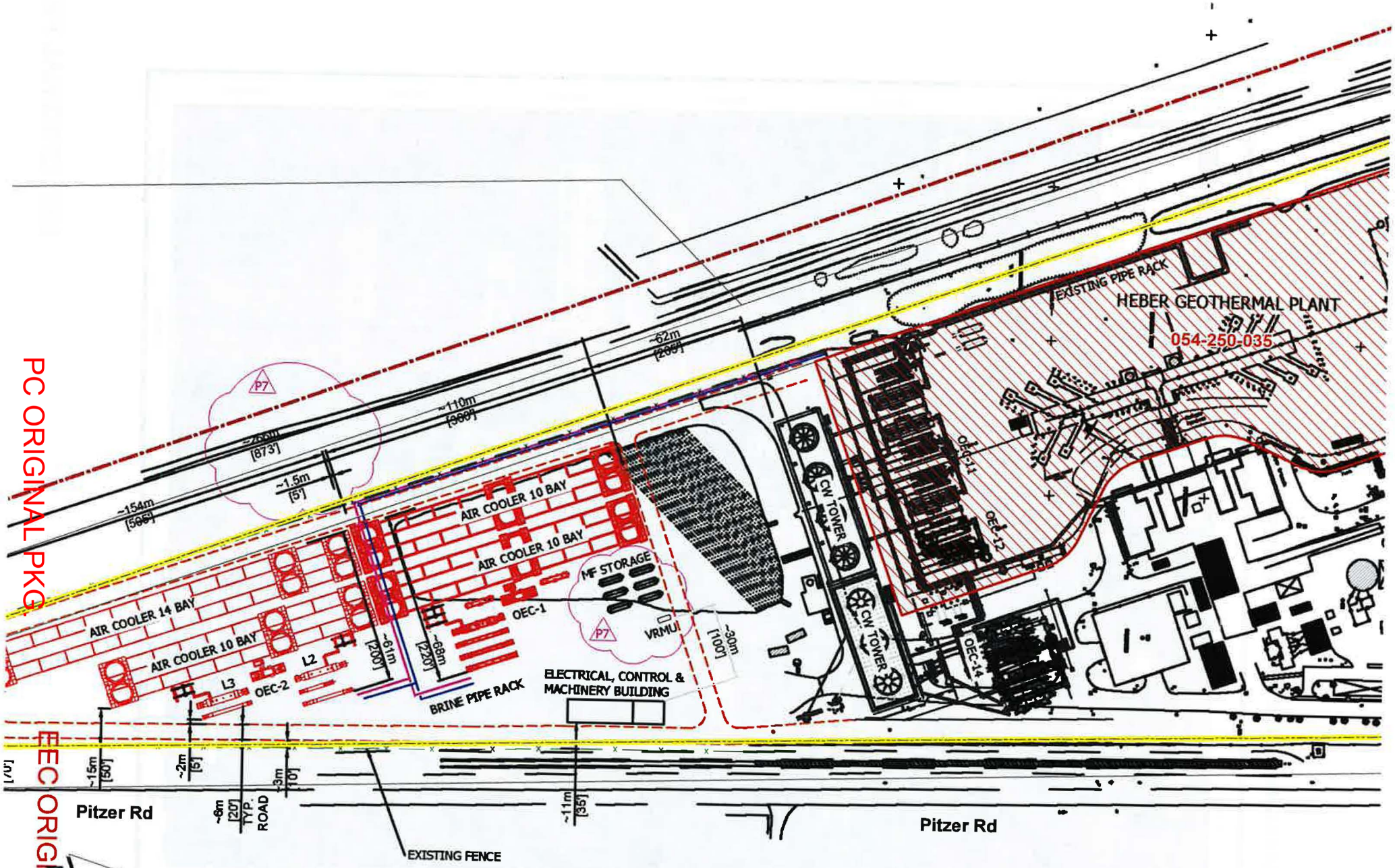
REMAIN.



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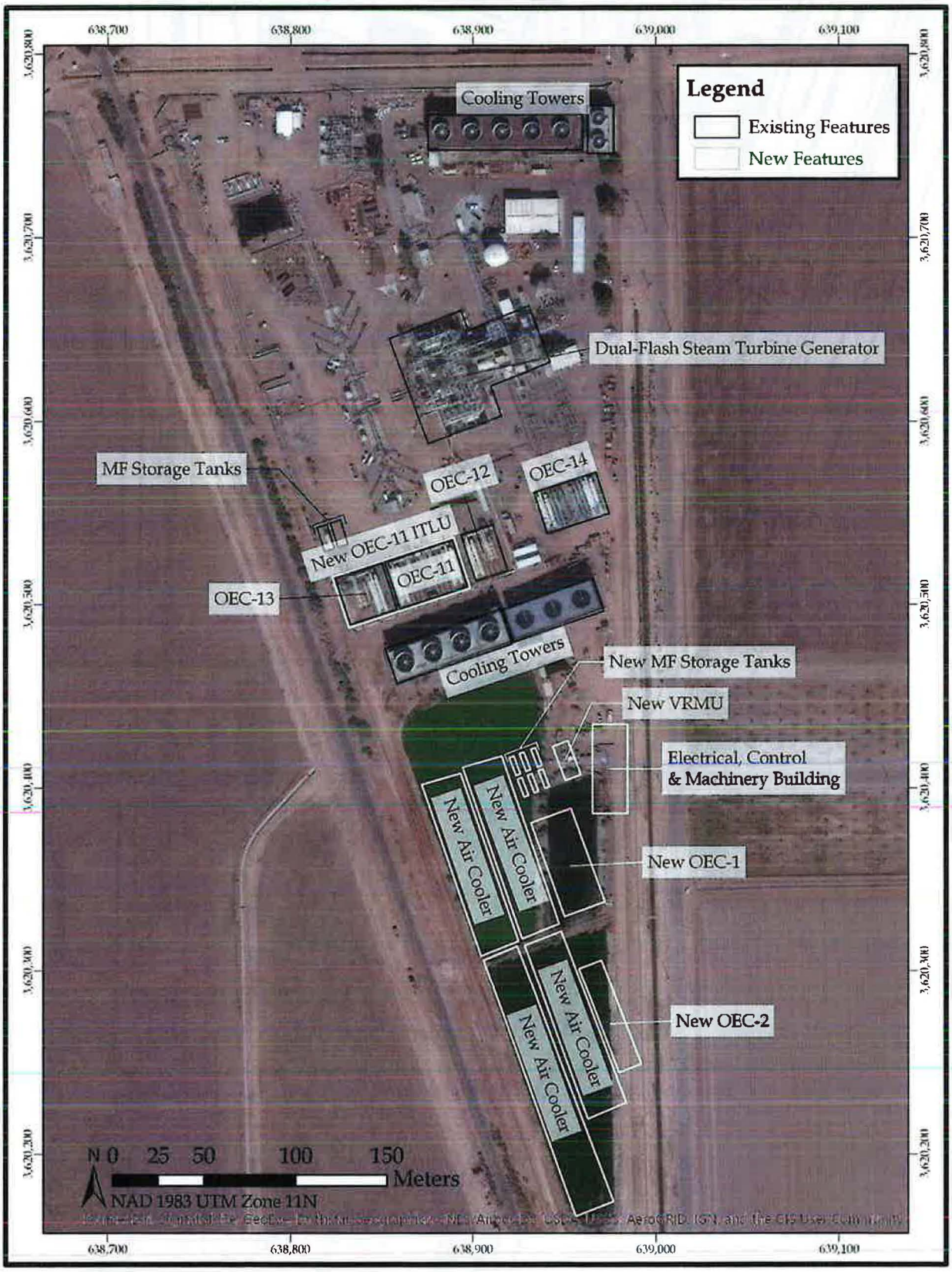
Company

R 45 16-14 20AC LY ELY OF RR

PREPARED BY:

CHAMBERS

Heber 1 Facility Layout Showing Existing and Proposed Equipment



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ORMAT®

May 7, 2015

Mr. Jim Minnick, Director
County of Imperial
Planning & Development Services Department
801 Main Street
El Centro, CA 92243-2811

Subject: Heber 1 CUP #04-0024 – Request to Amend

Dear Mr. Minnick:

Heber Geothermal Company, Ormat Nevada Inc., owns and operates the Heber 1 facility that includes the Heber 1 flash plant and the Gould 1 binary unit added in 2006. Ormat now proposes to add one (1) Ormat Energy Converter, also binary, and a 3 cell cooling tower adjacent to Gould 1. Modifications to both the brine and isopentane piping will also be required on Gould 1 to accommodate the new unit. This is being done to increase the efficiency and output of the plant. The enclosed CUP application to amend #04-0024 includes the following:

1. Completed CUP Application Form (1 copy and 4 CDs);
2. Project Description (1 copy and 4 CDs);
3. Site Plant (20 sets);
4. Completed ICPDSD Notice and General Indemnificaton forms: and
5. Ormat's check in the amount of $10,500 in payment of the CUP amendment application fee and deposit.

Thank you for your consideration. Please contact me at 775-336-0155 if you have any questions or need more information.

Sincerely,

Charlene L Wardlow

Charlene L. Wardlow
Director Business Development

Enclosures

cc: Sergio Cabanas, Ormat Nevada Inc.
Shlomi Huberman, Ormat Nevada Inc.

RECEIVED
MAY 08 2015
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

ORMAT NEVADA INC.
6225 NEIL ROAD, RENO, NEVADA 89511

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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 Heber Geothermal Company		EMAIL ADDRESS cwardlow@ormat.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 947 Dogwood Rd, Heber, CA		ZIP CODE 92249	PHONE NUMBER 775-356-9029
3. APPLICANT'S NAME Ormat Nevada Inc.		EMAIL ADDRESS Cwardlow@ormat.com	
4. MAILING ADDRESS (Street / P O Box, City, State) 6225 Neil Road, Reno NV		ZIP CODE 89511	PHONE NUMBER 775-356-9029
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. 054-250-36-01	SIZE OF PROPERTY (in acres or square foot) 20 acres	ZONING (existing) A-2-G/SPA
7. PROPERTY (site) ADDRESS 895 Pitzer Road, Heber, CA		
8. GENERAL LOCATION (i.e. city, town, cross street) South of Heber, Pitzer and Willoughby Roads		
9. LEGAL DESCRIPTION East half of tract 45, Township 16 South, Range 14 East		

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

10. DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail) expand existing geothermal facility with 2 new Ormat Energy Converters, an additional 3 cell cooling tower and modify one of the existing OECs at Gould 1	
11. DESCRIBE CURRENT USE OF PROPERTY Geothermal Power Plant	
12. DESCRIBE PROPOSED SEWER SYSTEM existing - no new	
13. DESCRIBE PROPOSED WATER SYSTEM existing - no new	
14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM gas detectors, flame detectors, sprinklers for	
15. IS PROPOSED USE A BUSINESS? ☒ Yes ☐ No	IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE? water no new employees

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

Connie Stechman — March 26, 2015
Print Name — Date
Connie Stechman
Signature

Print Name — Date

Signature

REQUIRED SUPPORT DOCUMENTS

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

APPLICATION RECEIVED BY:		DATE		REVIEW / APPROVAL BY OTHER DEPT'S required	
APPLICATION DEEMED COMPLETE BY:		DATE		☐ P. W	
APPLICATION REJECTED BY:		DATE		☐ E. H. S	
TENTATIVE HEARING BY:		DATE		☐ A. P. C. D	
FINAL ACTION ☐ APPROVED ☐ DENIED		DATE		☐ O E S	
				☐	
				☐	

CUP #

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HEBER 1 ENHANCEMENT

CUP #04-0024 AMENDMENT

May 2015

PROJECT DESCRIPTION

LOCATION

The proposed Heber Geothermal Company's (HGC) dual-flash power plant/Gould 1 binary unit enhancement project is located south of State Highway 86, east of Dogwood Road, north of Willoughby Road and southeast of the town site of Heber, California. The existing CUP #04-0024 added the Gould 1 Ormat Energy Converter to the project. The property is described as a portion of the East half of Tract 45, township 16 South, Range 14 East SBB&M, and further identified as Assessor's parcel number 054-250-36-01. HGC is owned and operated by Ormat Nevada Inc. The General Plan designates this area as "Agriculture," "Urban," and "Specific Plan Area." It is zoned "A-2-G/A-2-G-SPA," is considered consistent with the County's General Plan and the Geothermal/Transmission Element and the Land Use Ordinance.

THE PROJECT

Ormat proposes to expand the existing facility by adding one additional Ormat Energy Converter (OEC 14) that will add 16 gross megawatts to the existing 62.5 gross (~42 net) megawatt facility and modify one of the existing Gould 1 Ormat Energy Converter's (OEC 12). The new net will be approximately 52 megawatts. The existing flash plant, Heber 1, is not running at full load due to temperature declines in the resource over the 30 years of operations. The additional load will be used to increase the plant to the original installed capacity. Related equipment includes an additional storage tank for iso-pentane of (30,000 gallons), modification to the existing brine and iso-pentane piping at the existing OEC called Gould 1 and a new three cell cooling tower. Water will be supplied from the Imperial Irrigation District under the existing Water Supply Agreement for the facility of 1800 acre-feet per year.

Construction of OEC 14 will require approximately eight (8) weeks with an estimated 50-60 workers for excavation and pouring of the slab foundation for the OEC. The new OEC will utilize brine from the existing Heber 1 and Gould 1 units via existing pipelines except for piping modifications to connect the new OEC 14 to the Gould 1 OEC 12.

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1. POWER PLANT ADDITIONS FOR THE HEBER 1 FACILITY

The Heber 1 facility, owned by the Heber Geothermal Company a subsidiary of Ormat Nevada Inc., consists of the Heber 1 geothermal power plant, a 47 megawatt (net) dual flash facility built in 1985 under CUP # 9-80. Due to a limit in summertime output of only 37 MW a 5-cell replacement cooling tower was installed in February 2002 raising output in the summer by S MW to 44 MW. In 2004 in an amendment to CUP 9-80, CUP 04-0024, allowed for the addition of three Ormat Energy Converters (OECs) with an associated four cell cooling tower called Gould 1. Gould 1 initially generated 8-12 MW from the residual heat from the brine exiting the dual flash power plant and is called a bottoming unit. This brought the nameplate of the Heber 1 complex to S2 MW. Additionally, two new cells were added to the existing 5 cell cooling tower at Heber 1 to increase efficiency and reduce the need for Imperial Irrigation District canal water for the new tower at Gould 1. Gould 1 was built in 2006. Heber Geothermal Company proposes to make the following modifications to its Heber 1 Facilities:

- 1 - Ormat Energy Converter called OEC 14 (16 gross megawatts) immediately east of the Gould 1 unit (see enclosed pictures and drawings) including an additional storage tank for iso-pentane of (30,000 gallons).
- 3 - cell cooling tower adjacent to the existing 4 cell Gould 1 tower. Each cooling tower cell will be approximately 55 feet wide, 55 feet long and 50 feet tall. The additional cooling tower water flow will be approximately 36,000 gpm.
- Modifications to the existing brine and iso-pentane piping to connect OEC 14 to Gould 1's OEC 12 such as at the heat exchangers and pumps.

OEC 14 will utilize residual heat in the brine from the production wells which will be piped to the new OEC. This additional unit will add approximately 10 net megawatts to the Heber 1 complex bringing its salable output to 52 MW. The new cooling tower will utilize 36,000 gallons of water/minute and utilize water under the existing IID contract for the Heber 1 facility. The tower will be built to best available control technology (BACT) for circulating water flow drift loss (.0005) as well as water consumption. Cooling tower blowdown will be injected into one of the existing blowdown wells. There is no cooling blowdown discharge from the Heber 1 complex, no NPDES permit.

The new OEC will be inside the fence of the existing Heber 1 complex. No modifications are required to the existing Permit to Operate (#1641B-3) from the Imperial County Air Pollution Control District except to add the new cooling tower and OEC to the equipment list. The plant will continue to operate under the existing permit limit for fugitive emissions of iso-pentane. The cooling tower will meet the District's requirements for cooling tower drift.

Building and grading permits would be obtained from the Imperial County Building Department and/or Public Works Departments as required for the various phases of construction.

Construction equipment will be delivered via I-8 to Highway 111 south to Jasper Road and then west to Pitzer Road in order to enter the construction gate on the south end of Heber 1 and exit the main gate on Pitzer using all right turns. All of the construction will take place within the Heber 1 fence.

Visually the plant will not change except for the new equipment being closer to the fence on the eastside of the power plant. The picture below shows the current view from Pitzer Road.

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The fire prevention will be similar to the existing Gould 1 unit with flammable gas vapor and flame detectors at strategic locations around the new OEC and iso-pentane tank. It will be connected to the power plant computer system to detect a potentially hazardous situation. It will be connected to the existing fire suppression and fire water supply system. Water nozzles/monitors would be place around the new OEC.

The project would obtain required site access encroachment permits from the Imperial County Department of Public Works and would consider traffic safety in transporting equipment and materials to the project site. The Project would coordinate the movement of any required oversize loads on County roads with Public Works and/or on State highways with Caltrans and the California Highway Patrol.

The existing Heber 1 Emergency Response Plan, Hazardous Materials Business Plan, Risk Management Program, and any other plans applicable to the project will be updated as necessary.

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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 final determination on how to best defend the case and may defend it with in-house counsel, or by retaining outside counsel. In either case applicant shall be fully responsible for all costs incurred. Applicant may request to provide his or her own counsel to defend the case, however prior written approval of the County shall be obtained, and said independent counsel shall work with County Counsel to provide a joint defense.

Executed at Reno, Nevada ~~California~~ on March 26, 2015

Project Name: Heber 1 Expansion Project ID # CUP 04-0024

APPLICANT	***REAL PARTY IN INTEREST*** (If different from Applicant)
Name: Ormat Nevada Inc.	Name _____
By Connie Stechman	By _____
Title Assistant Secretary	Title _____
Mailing Address:	Mailing Address:
6225 Neil Road	_____
Reno, NV 89511	_____
_____	_____

ACCEPTED/RECEIVED BY _____ Date _____

PROJECT ID NO _____ APN ___-___-___

lh /S /forms_lists/general indemnification form

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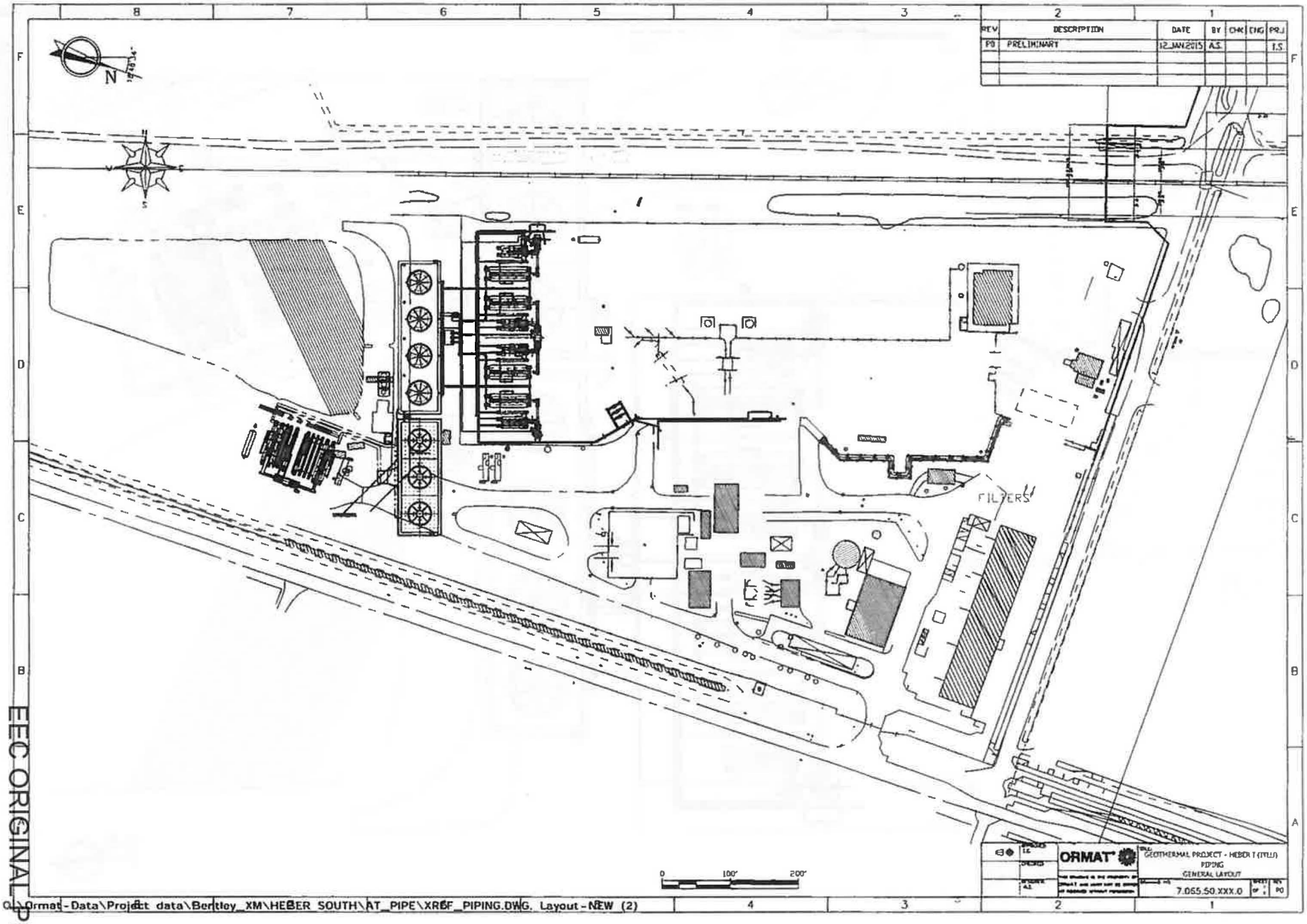

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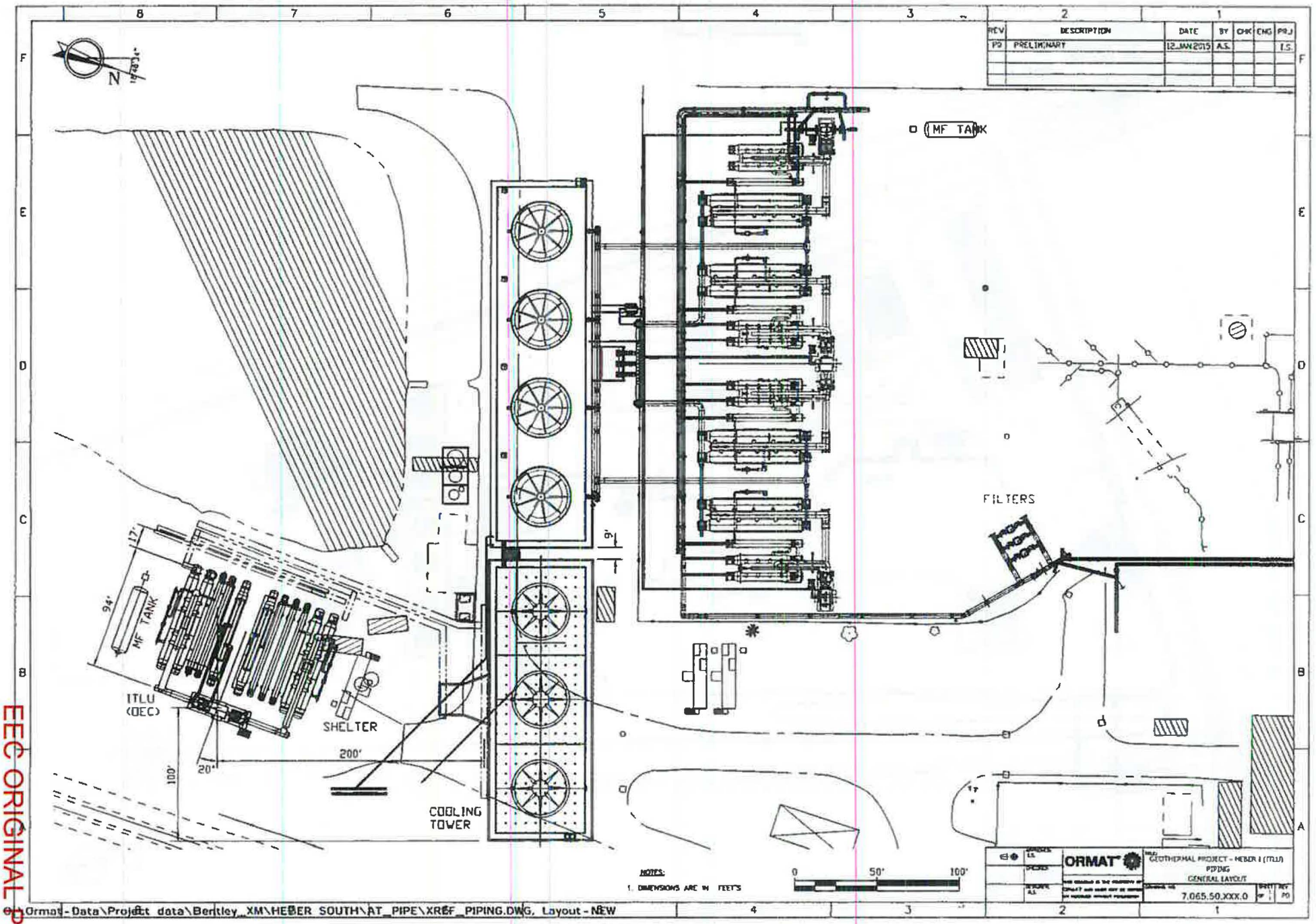
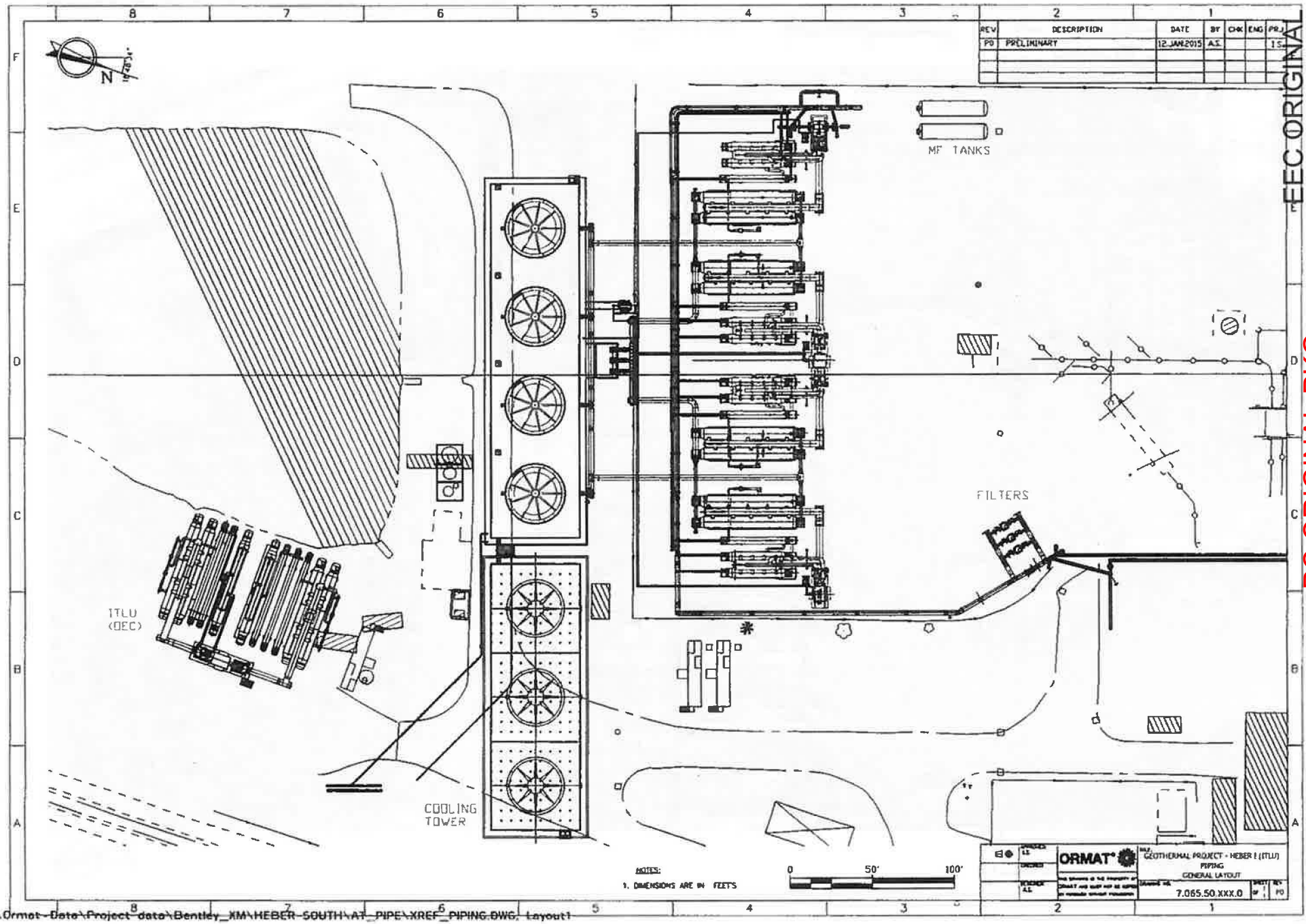


EEC ORIGINAL PKG

PC ORIGINAL PKG.



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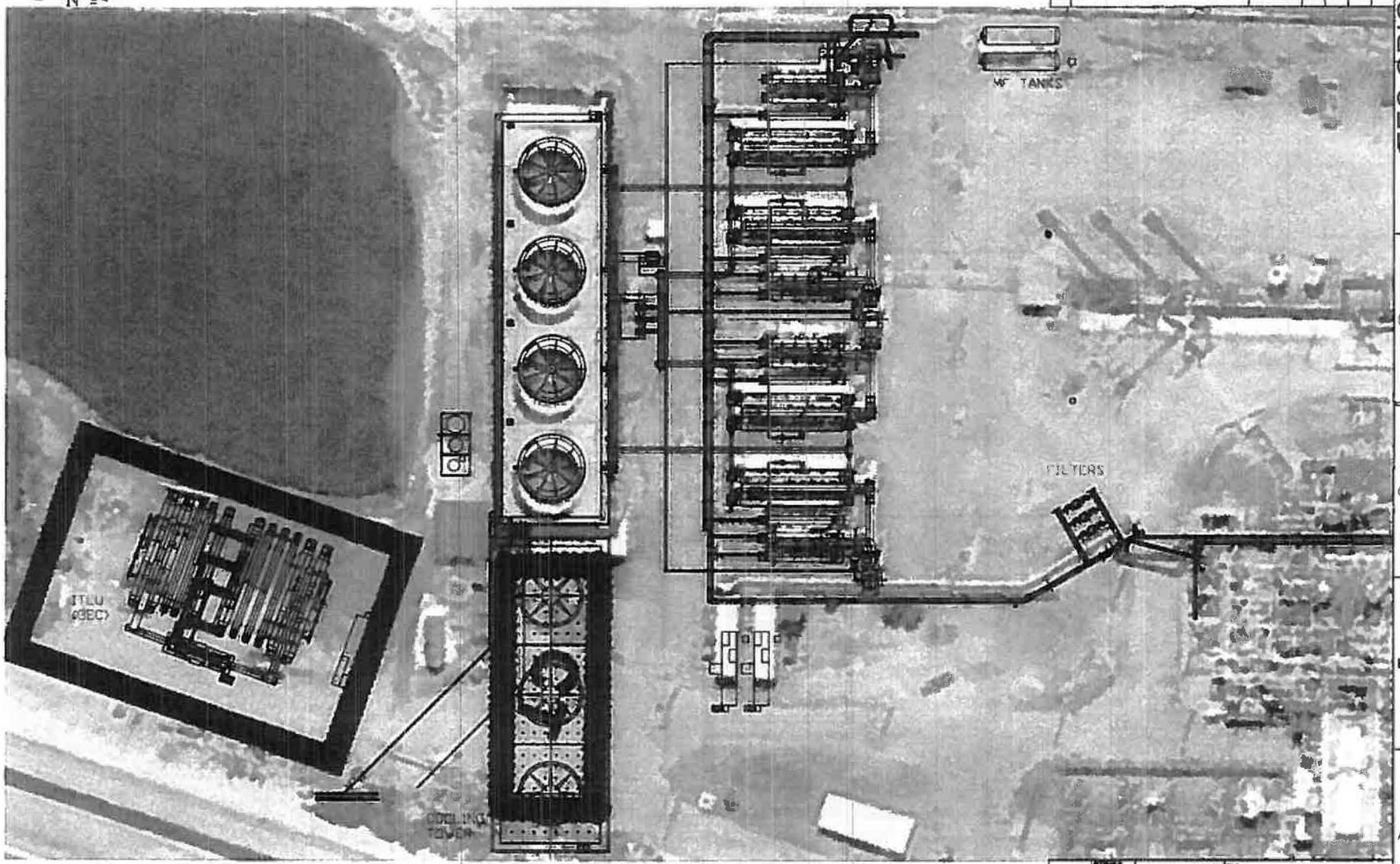
REV	DESCRIPTION	DATE	BY	CHK	ENG	PRJ
P0	PRELIMINARY	12-JAN-2015	A.S.			I.S.



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ORMAT

GEOTHERMAL PROJECT - HEBER I (ITLU)
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GENERAL LAYOUT

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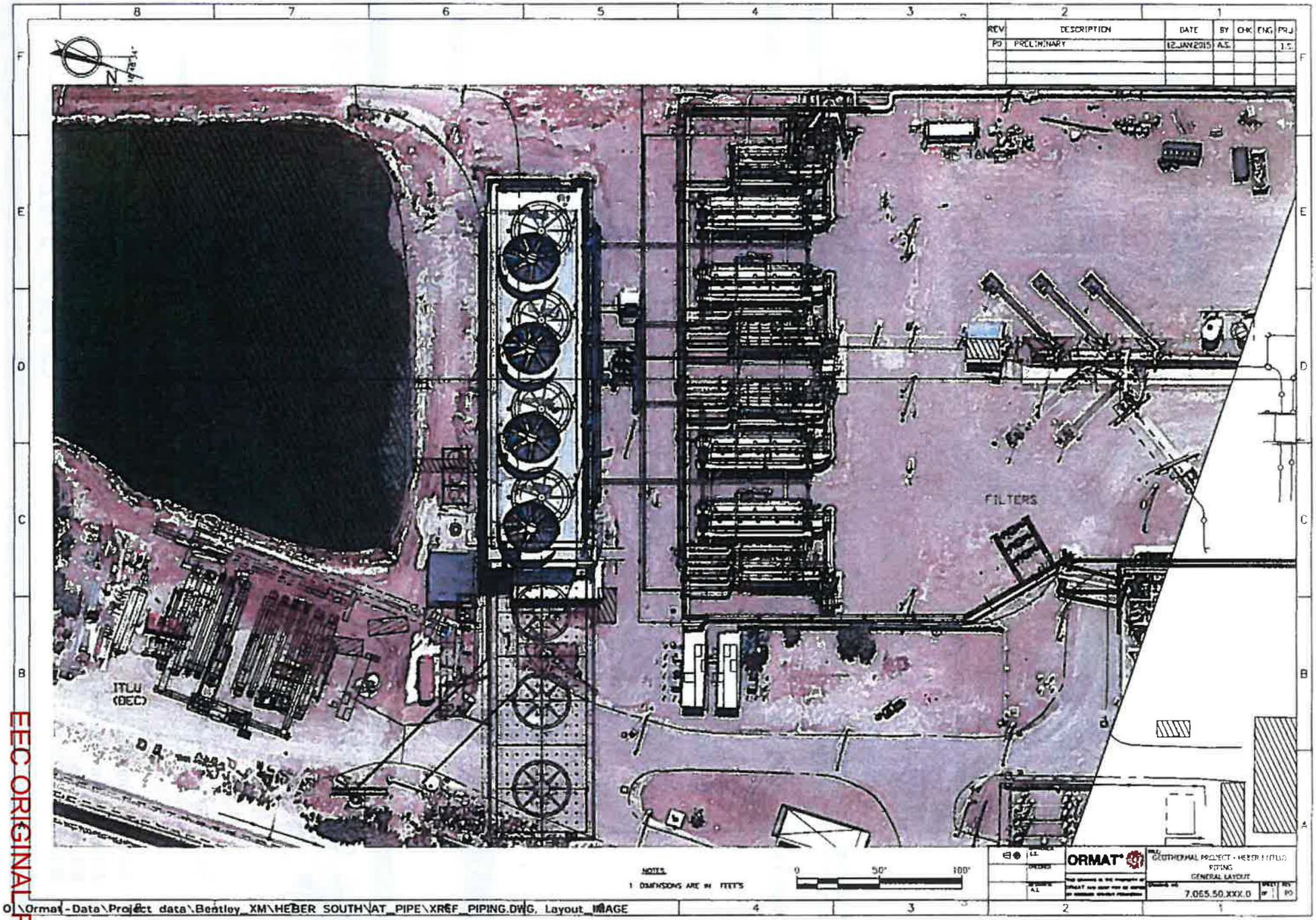

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RECEIVED
MAY 08 2015
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

Vendor No: 2016348
Name : Imperial County Planning

Date: 26-Mar-15
Check Total : 10,000.00

IMAT NEVADA INC. 6225 NEIL ROAD • RENO, NV 89511-1136 087384 DATE

CHECK NO | VENDOR KEY

INVOICE #	INVOICE DATE	AMOUNT	DISCOUNT	VOUCHER #	NET AMOUNT
ICPDS 03-20-15	20-Mar-15	10,000.00	.00		10,000.00
TOTAL		10,000.00	.00		10,000.00

ORIGINAL CHECK HAS A COLORED BACKGROUND PRINTED ON CHEMICAL REACTIVE PAPER

ORMAT NEVADA INC.
GENERAL ACCOUNT
6225 NEIL ROAD
RENO, NV 89511-1136
(775) 356-9029

UNION BANK OF CALIFORNIA
POWER UTILITIES DEPOSITS SOUTH
LOS ANGELES, CA 90071-1602
11-49/1210

087384

DATE: 26-Mar-15
CHECK NO.: 87384

Ten Thousand Dollars And Zero Cents**********

AMOUNT: **10,000.00

PAY TO THE ORDER OF
Imperial County Planning
& Development Services
801 Main Street
El Centro, CA 92243

MP
MP

RED CHECK NUMBERING IMAGES THROUGH TO BACK OF SHEET

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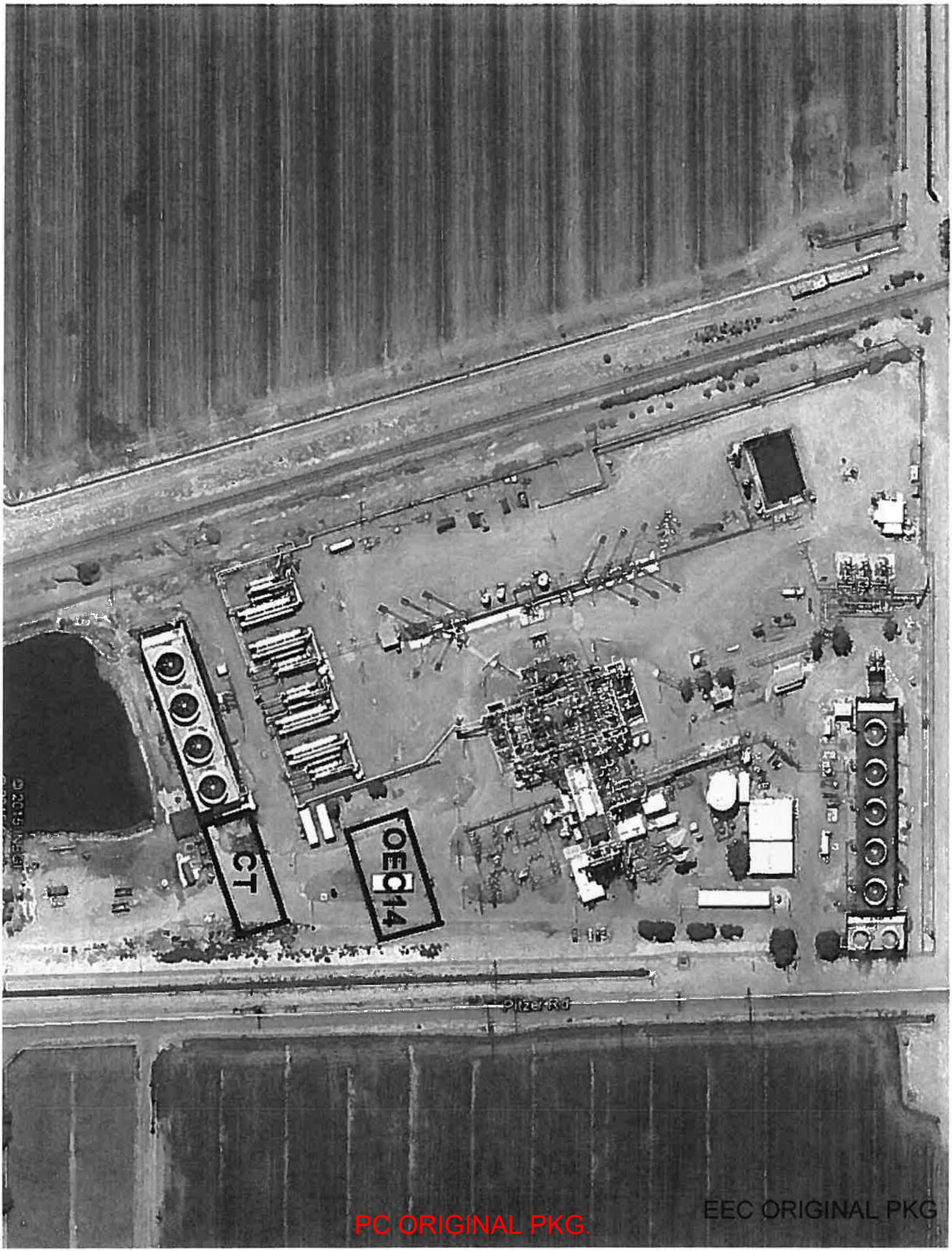

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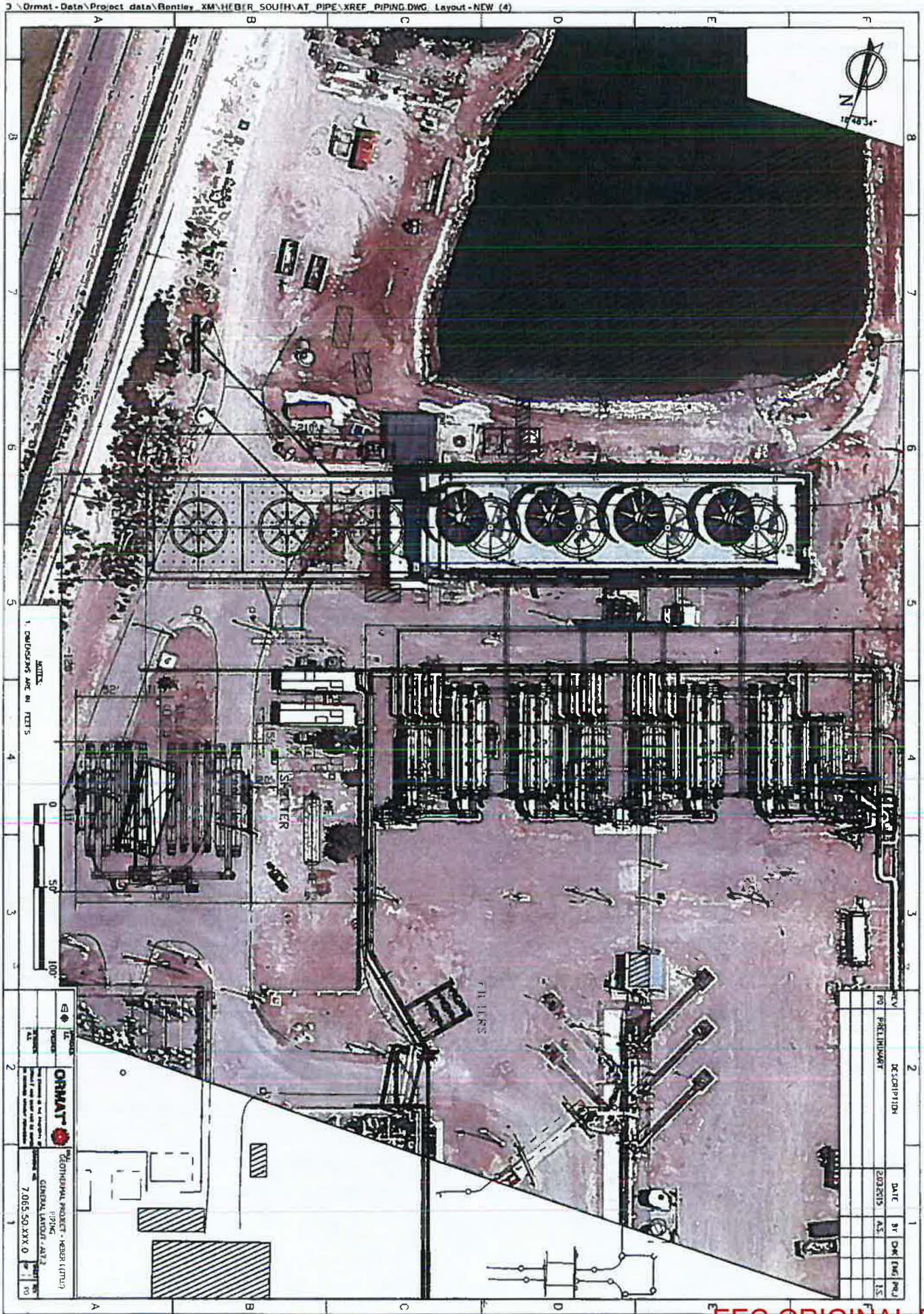

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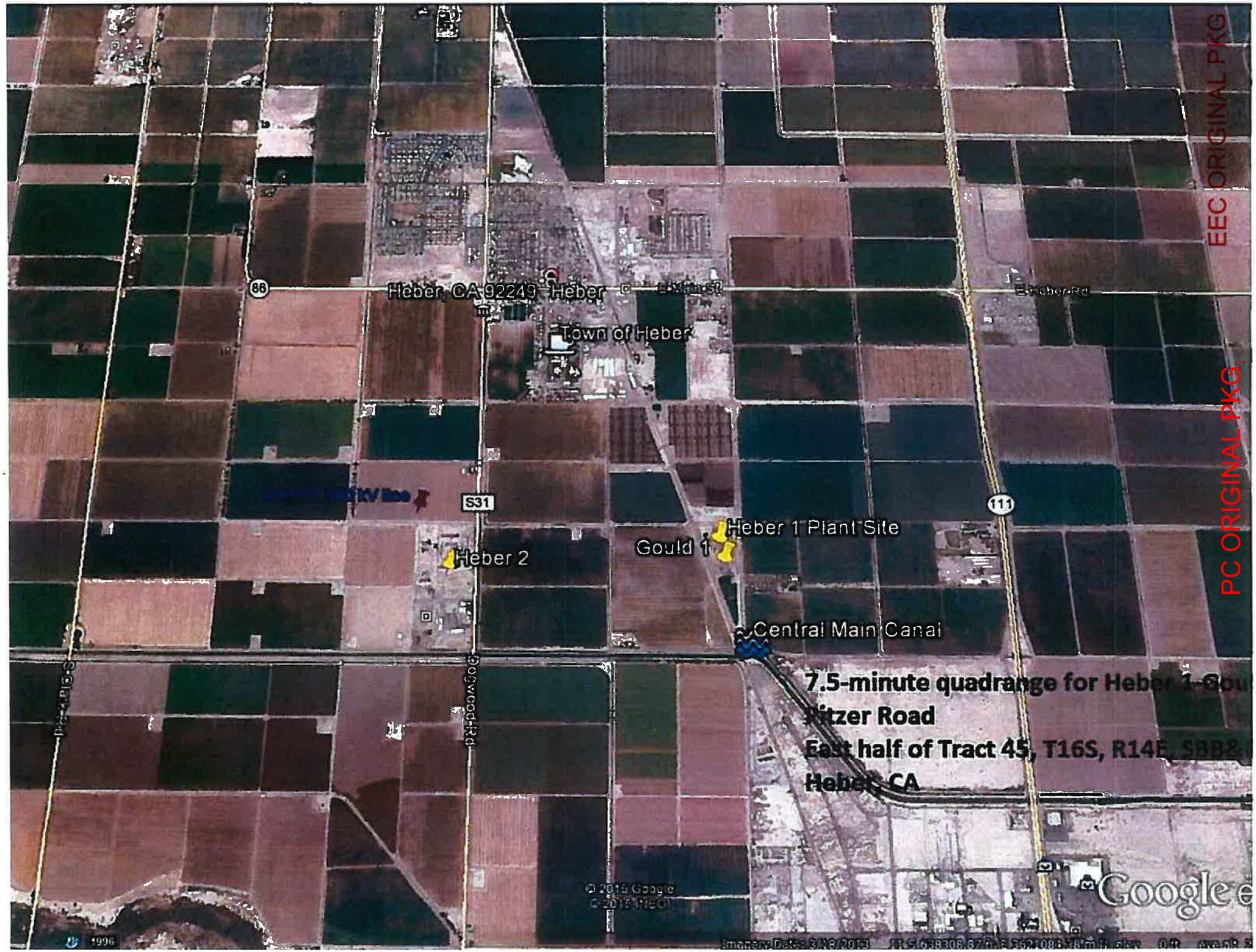
Heber, CA 92249
Heber
Town of Heber
S31
111
Heber 1 Plant Site
Gould 1
Heber 2
Central Main Canal
Dogwood Rd
7.5-minute quadrange for Heber 1-Gou
Fitzer Road
East half of Tract 45, T16S, R14E, SBB&
Heber, CA
© 2015 Google
Google
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PC ORIGINAL PKG.

ORMAT
GEOTHERMAL PROJECT - HERER I (TMU)
PIPING
GENERAL LAYOUT - ALT 2
7,065.50.XXX.0
DESCRIPTION
PRELIMINARY
DATE
2.03.2015
BY
A.S.
CHK
ENG
PRJ
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REV
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NOTES:
1. DIMENSIONS ARE IN FEETS
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Recorded in Official Records,
IMPERIAL COUNTY
Doc#: 2015024813
11/30/2015 02:50 PM

Please return to:

Imperial County Planning & Dev. Services Department
801 Main Street
El Centro, California 92243

RECORDED

NOV 30 2015

Chuck Storey
Imperial County Clerk-Recorder
California

AGREEMENT FOR CONDITIONAL USE PERMIT #15-0013 ORMAT NEVADA INC./HEBER GEOTHERMAL COMPANY

(Approved by the Planning Commission on September 9, 2015)
(Approved by the Board of Supervisors on November 10, 2015)

This Agreement is made and entered into on this 30th day of NOVEMBER, 2015, by and between ORMAT Nevada, Inc. dba Heber Geothermal Company, hereinafter referred to as Permittee, and the COUNTY OF IMPERIAL, a political subdivision of the State of California, (hereinafter referred to as "COUNTY").

RECITALS

WHEREAS, Permittee is the owner, lessee or successor-in-interest in certain land in Imperial County located south of State Highway 86, east of Dogwood Road, north of Willoughby Road, and southeast of the townsite of Heber, California, described as a portion of the East half of Tract 45, APN 054-250-036-000, 20 acres, Township 16 South, Range 14 East, SBB&M; and,

WHEREAS, Permittee has applied to the County of Imperial for a Conditional Use Permit #15-0013 ("Project") for the following expansion project which supercedes the previous CUPs #06-0006 and #04-0024);

GENERALCONDITIONS:

The "GENERAL CONDITIONS" are shown by the letter "G". These conditions are conditions that are either routinely and commonly included in all Conditional Use Permits as "standardized conditions and/or are conditions that the Imperial County Planning Commission has established as a requirement on all CUP's for consistent application and enforcement. The Permittee is hereby advised that the General Conditions are as applicable as the SITE SPECIFIC conditions.

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EEC ORIGINAL PKG

G-1 GENERAL LAW:

The Permittee shall comply with all local, state and/or federal laws, rules, regulations, ordinances, and/or standards as they may pertain to the Project whether specified herein or not.

G-2 PERMITS/LICENSES:

The Permittee shall obtain any and all local, state and/or federal permits, licenses, and/or other approvals for the construction and/or operation of the Project. This shall include, but not be limited to, local requirements for Health, Building, Sanitation, ICAPCD, Public Works, County Sheriff, Fire/Office of Emergency Services, Regional Water Quality Control Board, California Division of Oil, Gas and Geothermal Resources (CDOGGR), among others. Permittee shall likewise comply with all such permit requirements and shall submit a copy of such additional permit and/or licenses to the Planning & Development Services Department within 30 days of receipt, as deemed necessary.

G-3 RECORDATION:

This permit shall not be effective until it is recorded at the Imperial County Recorders Office and payment of the recordation fee shall be the responsibility of the Permittee. If the Permittee fails to pay the recordation fee within six (6) months from the date of approval, this permit shall be deemed null and void. The Planning & Development Services Department will submit the executed CUP to the County Recorder's office for recordation purposes.

G-4 CONDITION PRIORITY:

The Project shall be constructed and operated as described in the Conditional Use Permit application, and as specified in these conditions.

G-5 INDEMNIFICATION:

As a condition of this permit, Permittee agrees to defend, indemnify, hold harmless, and release the County, its agents, officers, attorneys, and employees from any claim, action, or proceeding brought against any of them, the purpose of which is to attack, set aside, void, or annul the permit or adoption of the environmental document which accompanies it. This indemnification obligation shall include, but not be limited to, damages, costs, expenses, attorneys fees, or expert witness fees that may be asserted by any person or entity, including the Permittee, arising out of or in connection with the approval of this permit, whether there is concurrent, passive or active negligence on the part of the County, its agents, officers, attorneys, or employees. This indemnification shall include Permittee's actions involved in construction, operation or abandonment of the permitted activities.

PC ORIGINAL PKG.

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G-6 INSURANCE:

The Permittee shall secure and maintain liability in tort and property damage, insurance at a minimum of $1,000,000 or proof of financial responsibility to protect persons or property from injury or damage caused in any way by construction and/or operation of the permitted facilities. The Permittee shall require that proper Workers' Compensation insurance cover all laborers working on such facilities, e.g. during construction and maintenance, as required by the State of California. The Permittee shall also secure liability insurance and such other insurance as may be required by the State and/or Federal Law. Evidence of such insurance shall be provided to the County prior to commencement of any activities authorized by this permit, e.g. a Certificate of Insurance is to be provided to the Planning & Development Services Department by the insurance carrier and said insurance and certificate shall be kept current for the life of the permitted project. Certificate(s) of insurance shall be sent directly to the Planning & Development Services Department by the insurance carrier and shall name the Department as a recipient of both renewal and cancellation notices.

G-7 INSPECTION AND RIGHT OF ENTRY:

The County reserves the right to enter the premises to make appropriate inspection(s) and to determine if the condition(s) of this permit are complied with. The owner or operator shall allow authorized County representative(s) access upon the presentation of credentials and other documents as may be required by law to:

(a) Enter at reasonable times upon the owner's or operator's premises where the permitted facilities are is located, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment, or operations regulated or required under the permit, and,

G-8 SEVERABILITY:

Should any condition(s) of this permit be determined by a Court or other agency with proper jurisdiction to be invalid for any reason, such determination shall not invalidate the remaining provision(s) of this permit.

G-9 PROVISION TO RUN WITH THE LAND/PROJECT:

The provisions of this project are to run with the land/project and shall bind the current and future owner(s), successor(s) of interest, assignee(s) and/or transferee(s) of said project. Permittee shall not without prior notification to the Planning & Development Services Department assign, sell or transfer, or grant control of project or any right or privilege therein. The Permittee shall provide a minimum of sixty (60) days written notice prior to such proposed transfer becoming effective. The permitted use identified herein is limited for use upon the permitted properties described herein and may not be transferred.

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G-10 TIME LIMIT:

Unless otherwise specified within the specific conditions, this permit shall be limited to a maximum of thirty (30) years from the recordation of the CUP. The CUP may be extended for an additional ten (10) year period by the appropriate County entity (either the Planning Director, the Planning Commission or the Board of Supervisors as set forth in the applicable Imperial County Ordinances) upon a finding that the Project is in compliance with all conditions of the CUP as stated herein and any applicable Land Use regulation of the County of Imperial. If an extension is necessary, the Permittee shall file a written extension request with the Planning Director at least sixty (60) days prior to the expiration date of the permit. Such an extension request shall include the appropriate extension fee. Nothing stated or implied within this permit shall constitute a guarantee that an extension will be granted. An extension may not be granted if the Project is in violation of any one or all of the conditions or if there is a history of non-compliance with the permit conditions.

G-11 COST:

The Permittee shall pay any and all amounts determined by the County Planning & Development Services Department to defray any and all cost(s) for the review of reports, field investigations, monitoring, and other activities directly related to the enforcement/monitoring for compliance of this Conditional Use Permit, County Ordinance or any other applicable law as provided in the Land Use Ordinance, Section 90901.03 et. seq, General Planning fees. All County Departments, directly involved in the monitoring/enforcement of this project may bill Permittee under this provision, however said billing shall only be through and with the approval of the Planning & Development Services Department.

G-12 REPORTS/INFORMATION:

If requested by the Planning Director, Permittee shall provide any such documentation/report as necessary to ascertain compliance with the Conditional Use Permit. The format, content and supporting documentation shall be as required by the Planning Director.

G-13 DEFINITIONS:

In the event of a dispute the meaning(s) or the intent of any word(s), phrase(s) and/or conditions or sections herein shall be determined by the Planning Commission of the County of Imperial. Their determination shall be final unless an appeal is made to the Board of Supervisors within the required time, i.e. ten (10) calendar days, pursuant to the Land Use Ordinance, Title 9, Division 1, Chapter 4, Section 90104.05, Appeal from Decision.

G-14 MINOR AMENDMENTS:

The Planning Director may approve minor modifications to the Permit to accommodate minor changes or modifications to the design, construction, and/or operation of the Project provided said changes are necessary for the project to meet other laws, regulations, codes, or conditions of the CUP and provided further, that such changes will not result in any additional environmental impacts.

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G-15 SPECIFICITY:

The issuance of this permit does not authorizes the Permittee to construct or operate the Project in violation of any state, federal, local law nor beyond the specified boundaries of the project as shown the application/project description/permit, nor shall this permit allow any accessory or ancillary use not specified herein. This permit does not provide any prescriptive right or use to the Permittee for future addition and or modifications to the Project.

G-16 NON-COMPLIANCE (ENFORCEMENT & TERMINATION):

Should the Permittee violate any condition herein, the County shall give notice of such violation. If Permittee does not act to correct the identified violation, and after having given reasonable notice and opportunity, e.g. typically at least thirty (30) days, the County may revoke the permit.

(a) If the Planning Commission finds and determines that the Permittee or successor-in-interest has not complied with the terms and conditions of the CUP, or cannot comply with the terms and conditions of the CUP, or the Planning Commission determines that the permitted activities constitute a public nuisance, the Planning Director shall provide Permittee with notice and a reasonable opportunity to comply with the enforcement or abatement order.

(b) If after receipt of the order (1) Permittee fails to comply, and/or (2) Permittee cannot comply with the conditions set forth in the CUP, then the matter shall be referred to the Planning Commission for permit modification suspension, or termination, or to the appropriate prosecuting authority.

G-17 GENERAL WELFARE:

All construction, drilling, testing, and operations shall be conducted with consistency with all laws, conditions, adopted County policies, plans and the application so that the project will be in harmony with the area and not conflict with the public health, safety, comfort, convenience, and general welfare.

G-18 PERMITS OF OTHER AGENCIES INCORPORATED:

Permits granted by other governmental agencies in connection with the Project are incorporated herein by reference. The County reserves the right to apply conditions of those permits, as the County deems appropriate; provided however, that enforcement of a permit granted by another governmental agency shall require concurrence by the respective agency. Permittee shall provide to the County, on request, copies and amendments of all such permits.

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G-19 HEALTH HAZARD:

If the County Health Officer determines that a significant health hazard exists to the public, the Health Officer may require appropriate measures and the Permittee shall implement such measures to mitigate the health hazard. If the hazard to the public is determined to be imminent, such measures may be imposed immediately and may include temporary suspension of permitted activities, the measures imposed by the County Health Officer shall not prohibit the Permittee from requesting a special Planning Commission meeting, provided Permittee bears all related costs.

G-20 EMPLOYMENT:

The Permittee shall use to the maximum extent possible local labor from Imperial County for both construction and operation of said project. Permittee shall give priority to the extent allowed by law to applicants from Imperial County. This provision shall apply to all levels of employment at the site from Senior Management, Technical to Laborer (collectively the work force). At a minimum, Permittee shall seek to secure 50% of the work force from Imperial County residents (County residents being defined as anyone who has resided within the County for at least 120 days). In the event Permittee is unable to meet this requirement due to lack of qualified applicants, a comprehensive report shall be provided to the Planning & Development Services Department. Said report shall include the description of position(s), the number and origin of all applicants, the reasons that Permittee cannot comply. In the event compliance cannot be attained, this matter shall be brought to the Planning Commission for direction and/or modification.

G-21 APPROVALS AND CONDITIONS SUBSEQUENT TO GRANTING PERMIT:

Permittee acceptance of this permit shall be deemed to constitute agreement with the terms and conditions contained herein. Where a requirement is imposed in this permit that Permittee conduct a monitoring program, and where the County has reserved the right to impose or modify conditions with which the Permittee must comply based on data obtained therefrom, or where Permittee is required to prepare specific plans for County approval and disagreement arises, the Permittee, operator and/or agent, the Planning Director or other affected party, to be determined by the Planning Director, may request that a hearing be conducted before the Planning Commission whereby they may state the requirements which will implement the applicable conditions as intended herein. Upon receipt of a request, the Planning Commission shall conduct a hearing and make a written determination. The Planning Commission may request support and advice from a technical advisory committee. Failure to take any action shall constitute endorsement of staff's determination.

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SITE SPECIFIC CONDITIONS:

S-1 AUTHORIZED SCOPE OF ACTIVITIES:

The Permittee has constructed and operated the following facilities in compliance with the County's General Plan, 2006 Geothermal/Alternative & Transmission Element, Land Use Ordinance, and former CUP #06-0006, and all other applicable local, state, and federal laws, ordinances, regulations and standards:

(a) The Heber Geothermal Company (Heber 1), originally 47 MW (net) geothermal power plant, consisting of flash tanks, a turbine-generator, a condenser, a cooling tower, an electrical substation, rock muffler, and related tanks, pits, pumps, piping, ponds, and related ancillary equipment;

(b) A control room, office, maintenance shop and other facilities located at the power plant site;

(c) Construct, operate and maintain three (3) Ormat Energy Converter (OEC) Units, each consisting of vaporizers, turbines, condensers, preheaters, pumps and piping; two (2) OEC Units with generators to generate additional electrical energy and one (1) OEC Unit to power a brine injection pump; with associated ancillary equipment, motive fluid storage facilities, motive fluid vapor recovery system and four-cell cooling tower with associated pumps, piping and electrical equipment;

(d) Connect the three (3) OEC Units to the Heber 1 geothermal power plant brine injection piping and electrical transmission equipment and the new cooling tower to the Heber 1 plant ancillary systems;

(e) Construct, connect, operate and maintain two (2) additional cells to the existing Heber 1 geothermal power plant 5-cell cooling tower;

(f) A production island containing eleven (11) wells;

(g) Piping from the wells to the power plant and from the plant to the injection islands;

(h) An injection island containing eight (8) wells and additional injection island containing two (2) wells;

(i) Pumps, tanks, valves, controls, flow monitoring, and other necessary appurtenances to the above wells and pipelines;

(j) Construct and maintain the proposed injection pipeline from Heber Geothermal Company (Heber 1) geothermal power plant to the Second Imperial Geothermal Company (Heber 2) injection facilities;

(k) Operation of pumps, valves, and other control mechanisms, associated with the pipeline, flow monitoring and other necessary appurtenances to the above.

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The proposed expansion project will be constructed, operated and maintained as follows:

(a) The expansion to the existing Heber 1/Gould 1 geothermal plant will include the adding of one new OEC Unit, three (3) cell cooling towers to the existing cooling tower facility, modify one of the existing Gould 1 OECs with additional piping, and adding an additional iso-pentane tank;

(b) Except as specifically authorized in this permit to complete the above activities, supplemental activities which require additional major equipment or facilities will require separate permits. The County, in issuing this permit, in no way assures or otherwise vests any right, with respect to the issuance of a permit(s) for any supplemental activities and Permittee shall also comply with all applicable geothermal standards in the Land Use Ordinance.

S-2 AIR QUALITY AND DUST EMISSIONS:

The Permittee shall comply with the Imperial County Air Pollution Control District's (ICAPCD) Regulation VIII, fugitive dust control. The primary pollutant controlled by this regulation is PM10, "fugitive dust". In addition, the Permittee shall obtain an Authority to Construct (ATC) prior to any construction and submit an application amending their Permit to Operate (PTO) prior to the operation of any new or modified equipment as required by Rule 207, New and Modified Source Review.

The following mitigation measures were acknowledged as stated within in the Imperial County Air Pollution Control District letter, dated July 19, 2015, as follows:

Mitigation Measures:

Summary – the project will need to do the following:

a. Submit a revised application for an Authority to Construct well in advance of any construction activities.
b. Adhere to all conditions of the Authority to Construct, including but not limited to compliance with all review design conditions for system operations which insure compliance with federal and state standards, testing and verification of compliance. Hydrogen sulfide, other non-condensable emissions, and all harmful and noxious odors, shall be controlled according to the ATC/PTO conditions to ensure that quantities released as a result of plant operations do not exceed federal or state standards. Finally, the Permittee shall comply with all offset requirements in the event that potential emissions exceed Rule 207 thresholds.
c. Develop a Construction Dust Control Plan and submit to the APCD for verification prior to any earthmoving activity.
d. In order to confirm that NOx emissions are less than significant the applicant must submit to the Imperial County Air Pollution Control District a complete list of all off-road equipment planned for use and/or used for the construction of the wells and the facility by Make, Model, Year, Horsepower, and hours of operation prior to any earthmoving activity.

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e. Should NOx emissions exceed the threshold of significance as found in the Imperial County CEQA Air Quality Handbook the proponent may propose an off-site measure in the form of a project to "off-set" the net excess emissions or abide by Policy 5 which allows for the payment of in-lieu fees.

S-3 ARCHAEOLOGICAL, CULTURAL & PALEONTOLOGICAL RESOURCES:

The Permittee shall monitor the construction of expansion equipment and if any unusual specimens of bone, stone, or ceramic are discovered during construction of the permitted facilities, all construction affecting the discovery site, shall cease until a qualified archaeologist retained by the Permittee and approved by the County, reviews the specimens. The recommendations of the archaeologist shall be complied with prior to resuming construction.

S-4 BRINE CHEMISTRY:

Permittee shall conduct brine chemistry tests which shall include but not be limited to analysis for hydrogen sulfide, mercury, arsenic, fluoride, boron, ammonia, strontium, iron, zinc, barium, lithium, lead, copper, and chromium. The results of such tests shall be provided by the County upon request. To the extent information contained in test results are proprietary, such information shall not be released to the public

S-5 CONFORMITY:

The expansion project shall be designed, constructed, and operated in substantial conformance with the application.

S-6 CONSTRUCTION STANDARDS:

The expansion facilities shall be built in accordance with the County Building Code requirement applicable to "Seismic Design D". All structures and facilities shall be designed in accordance with the publication entitled "Recommended Lateral Force Requirements and Commentary by the Structural Engineers Association of California". The structural components of the permitted facilities shall be reviewed by the Building Official/Planning Director. Building permits shall be procured for the Project from the County prior to commencement of any construction.

S-7 EMERGENCY RESPONSE PLAN:

The existing Emergency Response Plan shall be maintained covering possible emergencies, e.g. blow-outs, major fluid spills, impacts due to earthquakes, and other emergencies. At all times, there shall be at least one employee "on call", i.e., available to respond to an emergency by reaching the facility within a short period of time, with the responsibility of coordinating all emergency response measures. The Emergency Coordinator shall be thoroughly familiar with all aspects of the Emergency Response Plan and have the authority to commit the resources needed to carry out the contingency plan. Adequate personnel and equipment shall be

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available to respond to emergencies and to insure compliance with the conditions of the permit, to include appropriate first aid provisions during project construction and operation with appropriate first aid training for project employees. The existing Hazardous Materials Business Plan submitted to the County Environmental Health Services Division, Health Department, shall be maintained by the Permittee and any applicable amendments provided as deemed necessary for this project.

S-8 GEOTECHNICAL:

Geotechnical investigations of soil characteristics affecting the expanded facilities shall be conducted by qualified people at the applicant's expense. The report therefrom shall be made available to the County on request.

S-9 GEOLOGIC HAZARDS:

No structure meant to be, or which actually is, regularly, habitually, or primarily, occupied by humans shall be placed across the trace of an active fault. Further, no such structure shall be placed within fifty (50) feet of the trace of an active fault, nor anywhere within a seismic special studies zone, unless a geologic report, satisfactory to the State Geologist, is prepared and shows that no undue hazard would be created by construction or placement of the structure.

S-10 NOISE:

Control measures shall include, but are not limited to, the following:

(a) Diesel equipment used for drilling within 1,000 feet of any residence shall have hospital-type mufflers. Well venting and testing at these wells shall be accompanied by the use of an effective muffling device or "silencer".

(b) Heavy truck traffic, well site preparation, and pipe stacking shall be limited to the hours of 7:00 a.m. and 7:00 p.m. for any wells within 1,000 feet of any residence.

(c) Hydroblasters used in descaling operations when used within 1,000 feet of a residence shall be limited to the hours of 7:00 a.m. to 7:00 p.m.

(d) The Permittee may propose and the Planning Director may approve modification of the above measures.

S-11 PROJECT DESIGN:

The following shall be followed in project design:

(a) All expansion loops in fluid lines shall be horizontal except where requested in writing by the owners of surface rights within five hundred (500) feet of a proposed expansion loop, or where design constraints require otherwise.

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(b) Marking and lighting of drill rigs and permanent facilities shall be maintained in accordance with Federal Aviation Administration regulations.

(c) On-site parking shall be provided for all employees, customers, clients, and visitors. All facility roads and parking areas shall be constructed and surfaced to County standards.

(d) Shrubs, trees and ground cover shall be planted and maintained to compliment the appearance of the project, in accordance with a landscaping plan approved by the Planning Director.

(e) Permittee shall submit architectural and landscaping plans, as required herein, for all facilities to be constructed as part of the project to the Planning Director, and shall receive the approval of said Director prior to the commencement of construction. The Director shall not unreasonably withhold approval of said plans.

(f) All lights shall be directed or shield to confine any direct rays to the site, and shall be muted to the maximum extent consistent with safety and operational necessity.

(g) The location of power pole lines adjacent to County roads shall be reviewed and approved by the Public Works Department prior to construction/installation of the power poles.

(h) The Planning Director may authorize minor relocation of the well sites, lines, and other minor adjustments to insure that the final facilities comply with the conditions of this permit and those required by other governmental agencies.

S-12 PROTECTION OF WILDLIFE:

Measures approved by the Planning Director shall be employed to discourage or prevent wildlife and avian entry into brine ponds. Well cellars shall be designed to prevent wildlife entry and entrapment. Pipelines shall be constructed so as not to become a barrier to wildlife movement.

S-13 REPORTING:

The Permittee shall furnish to the County, within a reasonable time, any relevant reports/information which the County requires for monitoring purposes to determine whether cause exists for revoking this permit, or to determine compliance with this permit, i.e. relevant reports are those defined within this Permit or requested by the County. The Permittee shall submit all required reports to the Planning Director, County Planning & Development Services Department, 801 Main Street, El Centro, CA 92243.

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S-14 SUBSIDENCE:

Permittee shall participate in the County's subsidence detection program and, in connection therewith, submit a plan for Department of Public Works (ICPWD) approval, showing the proposed locations of benchmarks. Monuments shall connect with the County's geothermal subsidence detection network. Benchmarks installed shall conform to County standards. Surveying shall be performed to National Geodetic Survey (NGS) standards and all field surveying shall conform to such standards.

Permittee shall evaluate whether or not the recent abnormally high annual subsidence measurements may be continuing, or whether they may be the result of some mechanism not associated with geothermal operations and shall:

(a) Review the results of the precision level survey of the Heber subsidence monitoring network;

(b) Install and level as part of this survey, a few additional subsidence monuments in the areas of greatest subsidence (near the intersection of Dogwood Road and Willoughby Road) at locations selected in consultation with ICPWD and CDOGGR.

(c) Within approximately six (6) months of this survey, a follow-up with another survey of the entire Heber subsidence monitoring network, including these new monuments;

(d) Prepare and submit to ICPBD, ICPWD, and CDOGGR, a specific plan for additional monitoring and the development of potential measures to mitigate (if determined necessary), the subsidence to uplift in the Heber geothermal field area which may be attributable to Project operations to include:

- Re-surveying at least the core sections of the Heber subsidence monitoring network every six (6) months;
- Continuing to re-survey the entire Heber subsidence monitoring network annually;
- Implementing a program to monitor selected key land surface features (such as major bridges and canal structures) for evidence of changes due to subsidence or uplift; and,
- Conducting geothermal reservoir modeling to evaluate what specific changes in the operation of the geothermal wellfield could be undertaken to alter the geothermal reservoir pressure distribution with the objective of reducing the rate of geothermal subsidence and/or uplift in the areas of greatest challenge.

(e) Monitor results of future surveys as per item (d) and, based on those results, develop a long term plan for submittal to ICPBD, ICDPW, and CDOGGR to reduce, or reverse if possible, any uplift in the Heber injection areas or any subsidence in the Heber production areas;

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(f) Construct and operate, as soon as all the required permits and approvals have been obtained, the proposed expansion project.

S-15 INDUCED SEISMICITY:

Permittee shall participate in the County's seismic monitoring program, and in connection therewith, submit a plan for Public Works Department approval, and shall implement the plan as approved. If evidence of detrimental seismicity induced by project operations is indicated, changes in operations, including possible cessation of operations, may be ordered by the Department of Public Works after consultation with the California Department of Oil, Gas and Geothermal Resources (CDOGGR) and Permittee.

S-16 SYSTEM SHUT DOWN AND SITE ABANDONMENT:

The Permittee shall prepare and implement a plan for when the operation of the permitted facilities herein authorized has ceased, that all HGC facilities shall be dismantled, and the land involved be made compatible with the surrounding uses, or as requested by the landowner and as agreed to by the County Planning Director. A Bond, or other acceptable surety, or other forms of security acceptable to Imperial County, in the amount of $500,000, in addition to any amount set by the California Division of Oil, Gas and Geothermal Resources, shall be filed with the County that guarantees restoration of the land to its condition prior to the injection pipeline development. Upon completion of such site restoration, the Bond or other surety shall be released by the County.

S-17 REINJECTION:

Fluids equivalent to 86% of produced fluids by mass, and on an annual basis, shall be injected back into the reservoir subject to the requirements of CDOGGR and information obtained from any monitoring programs and other sources.

If significant subsidence, loss of reservoir pressure, or other detriments attributable to this project occur, or substantial evidence of other undesirable changes in operations is revealed, corrective measures or changes may be ordered by the County. Corrective measures may be included, but are not limited to, a modified injection rate or altered injection depth, re-leveling of affected areas, or reduction or total cessation of geothermal activities.

S-18 SPILLS AND RUNOFF:

The expanded plant site shall be designed and constructed to prevent spills from endangering adjacent properties and waterways, and to prevent runoff from any source being channeled or directed in an unnatural way so as to cause erosion, siltation, or other detriments. A system of pressure and flow sensing devices and regular inspection of all lines, capable of detecting leaks and spills, shall be instituted and maintained. Blowout prevention equipment shall be used in accordance with the requirements of CDOGGR.

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S-19 MAINTENANCE OF WATER QUALITY:

A water quality monitoring program, acceptable to the Regional Water Quality Control Board (RWQCB) shall be instituted and maintained. If injection fluids intrude on shallow ground waters, a modification of the injection program may be ordered by the County in consultation with RWQCB and the Permittee. Any needed sumps and holding ponds shall be constructed and maintained so that permeability does not exceed 1 X 10-6 cm/sec.

S-20 TRAFFIC SAFETY:

The Permittee shall obtain all encroachment permits and consider traffic safety in transporting equipment and materials to the permitted facilities to include temporary signs warning motorists on adjacent roadways and flagmen shall be used when equipment is being brought to and from the Project site.

(a) The Permittee shall coordinate the movement of any required oversize loads on County roads with the DPW, on State Highways with CALTRANS as well as the El Centro CHP office and such transportation of oversized equipment should be minimized as much as possible.

(b) The Permittee shall be required to obtain any necessary rights-of-way on property under the lease and control of the Permittee and to provide any necessary road work as deemed necessary by the DPW.

(c) The Permittee shall coordinate with DPW for their requested dedication of rights-of-way needed for Pitzer Road for the consideration of existing and any future road needs.

(d) The Permittee shall file for an encroachment permit for any work or proposed work in the affected County road rights-of-way.

(e) The Permittee shall coordinate the maintenance of unpaved roads used for construction activities and obtain approvals from the County Department of Public Works.

The following mitigation measures were submitted by the County Public Works Department letter, dated June 25, 2015, and revised as of August 17th as follows:

Mitigation Measures:

1. The applicant shall furnish a Drainage and Grading Plan/Study to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. The Study/Plan shall be submitted to the Department of Public Works for review and approval. The applicant shall implement the approved plan. Employment of the appropriate Best Management Practices (BMP's) shall be included. (Per Imperial County Code of Ordinances, Chapter 12.10.020 B).

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2. An encroachment permit shall be secured from the Department of Public Works for any and all new, altered or unauthorized existing driveway(s) to access the properties through surrounding County roads. As a minimum, a Commercial-type Driveway shall be constructed. (Per Imperial County Code of Ordinances, Chapter 12.10.020 B).
3. The applicant for Encroachment Permits in County Roads and Right-of-Way is responsible for researching, protecting, and preserving survey monuments per the Professional Land Surveyor's Act (8771 (b)). This shall include a copy referenced survey map and tie card(s) (if applicable) for all monuments that may be impacted.
4. The applicant for grading plans and/or improvement plans is responsible for researching, protecting and preserving survey monuments per the Professional Land Surveyor's Act (8771 (b)). This shall include a copy of the referenced survey map and tie card(s) (if applicable) for all monuments that may be impacted by the project whether if are on-site or off-site.

INFORMATIVE:

5. All solid and hazardous waste shall be disposed of in approved solid waste disposal sites in accordance with existing County, State and Federal regulations **(Per Imperial County Code of Ordinances, Chapter 8.72).**
6. All on-site traffic area shall be hard surfaced to provide all weather access for fire protection vehicles. The surfacing shall meet the Department of Public Works and Fire/OES Standards as well as those of the Air Pollution Control District (APCD) **(Per Imperial County Code of ordinances, Chapter 12.10.020 A).**
7. The project may require a National Pollutant Discharge Elimination System (NPDES) permit and Notice of Intent (NOI) from the Regional Water Quality Control Board (RWQCB) prior county approval of on-site grading plan **(40 CFR 122.28).**

S-21 WATER COURSE CROSSINGS:

The Permittee shall provide one or more of the following techniques to decrease the potential for spills on or near Imperial Irrigation District water courses, e.g. surface water canals and/or drains, as follows:

(a) Pipes shall be constructed of industrial standard designation of "extra heavy" with a thickness of at least 50% greater than that used for other sections of pipe.

(b) An automatic injection pump shut off and check valve system to immediately stop fluid flow shall be installed on the injection pipeline.

(c) Design of facilities shall protect surface and groundwater, e.g. handling of on-site drainage shall not adversely affect adjacent properties.

(d) Other spill prevention measures approved by the County shall be implemented.

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S-22 WASTE DISPOSAL:

The Permittee shall insure that any discharged wastes, liquid or solid, shall be disposed of in compliance with all appropriate local, state, and federal regulations, in effect or subsequently duly-enacted, i.e. discharge of wastes into surface water shall meet all requirements of the Regional Water Quality Control Board, e.g. National Pollution Discharge Elimination System permit restrictions, and solid wastes shall be disposed of in an approved solid waste disposal site in accordance with County regulations.

S-23 ODORS:

All harmful or noxious emissions and odors shall be controlled to insure that quantities of air contaminants released as a result of the facility operations do not exceed State standards, or constitute a public nuisance.

S-24 WATER USAGE:

The Permittee may use up to a total of 1,800 acre feet of irrigation water per year for thirty (30) years from Imperial Irrigation District. Any extension beyond this period must be agreed to in writing by the Imperial Irrigation District. If the amount of water available to Imperial County is reduced by the Central Arizona project, the right to the irrigation water for this permit granted herein may be terminated. Permittee shall diligently pursue the development of alternate sources to replace the use of irrigation water.

S-25 PARTICIPATION IN GEOTHERMAL COMMITTEE:

Permittee shall participate in the "Geothermal Industrial Committee" formed by the County.

S-26 ACCEPTANCE:

Acceptance of this permit shall be deemed to constitute agreement by Permittee with all terms and conditions herein contained.

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NOW THEREFORE, County hereby issues the Conditional Use Permit #15-0013 and Permittee hereby accepts such upon the terms and conditions set forth herein.

IN WITNESS THEREOF, the parties hereto have executed this Agreement the day and year first written.

PERMITTEE

Connie Stechman — November 11, 2015

Connie Stechman
Assistant Secretary, Ormat Nev. Inc.
Managing Member, ORTP LLC
Sole Member, OrCal Geo. LLC
Managing Member, Heber Geo. Co. LLC

Date

COUNTY OF IMPERIAL, a political subdivision of the STATE OF CALIFORNIA

11/30/15

Jim Minnick
Planning Director
Planning & Development Services Department

Date

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EEC ORIGINAL PKG

FOR PERMITTEES NOTARIZATION

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.

Dated_____

STATE OF ~~CALIFORNIA~~ Washoe Nevada

COUNTY OF Washoe } S.S.

On November 16, 2015 before me, Connie Stechman / Casey Fleischer a Notary Public in and for said County and State, personally appeared Connie Stechman, 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.

CASEY FLEISCHER
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 02-78271-2 - Expires January 17, 2017

WITNESS my hand and official seal

Signature _____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document CUP# 15-0013

Number of Pages 19 Date of Document 11/30/2015

Signer(s) Other Than Named Above CONNIE STECHMAN

Dated_____

PC ORIGINAL PKG.

EEC ORIGINAL PKG

FOR COUNTY NOTARIZATION

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 IMPERIAL } S.S.

On 11/30/2015 before me, JOSE M. HERNANDEZ a Notary Public in and for said County and State, personally appeared JAMES ALVIN MINNICK, 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 Jose M. Hernandez

JOSE M. HERNANDEZ
Commission # 2082123
Notary Public - California
Imperial County
My Comm. Expires Oct 16, 2018

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document_____

Number of Pages_____ Date of Document_____

Signer(s) Other Than Named Above_____

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IX. MITIGATION MONITORING & REPORTING PROGRAM (MMRP)

(ATTACH DOCUMENTS, IF ANY, HERE)

S:\AllUsers\APN\054\250\036\CUP19-0028\EEC\IS 19-0033- Heber I Expansion_IS_Draft - Final_REVISED_2021.docx

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MITIGATION, MONTORING AND REPORTING PROGRAM

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MITIGATION, MONTORING AND REPORTING PROGRAM

MITIGATION MEASURES
PURSUANT TO THE ENVIRONMENTAL EVALUATION COMMITTEE
February 11, 2021
Heber 1 Geothermal Repower Project
[CUP#19-0028, IS #19-0033]
(APN 054-250-036 & 035-000)
(CEQA – Mitigated Negative Declaration)

Pursuant to the review and recommendations of the Imperial County Environmental Evaluation Committee (EEC) on February 11, 2021, the following Mitigation Measures are hereby proposed for the project:

BIOLOGICAL RESOURCES

MM-BIO-1: Awareness Training
A qualified biological monitor should conduct an environmental awareness training prior to the start of any construction-related activities. Special focus should be made on sensitive animals that have a PFO within the Survey Area (e.g. burrowing owl and western mastiff bat).

MM-BIO-2: Nesting Bird Survey
If construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31) a nesting bird survey should be conducted prior to the start of construction or vegetation clearing activities. If active nests are found, an appropriate nest buffer shall be established by a qualified biologist until the nest fledges or fails naturally.

MM-BIO-3: Burrowing Owl Survey
Due to surrounding agricultural areas and low-quality but suitable habitat within the Survey Area a focused survey for burrowing owl is suggested before construction activities commence.

MM-BIO-4: Bat Survey
If modification of the existing buildings is required a focused bat survey should be performed for western mastiff bat as this species may roost in building overhangs or within piping infrastructure located within the Survey Area.

(Monitoring Agency: Imperial County Planning and Development Services; Timing: Prior to permit approval and During Construction)

GEOLOGY AND SOILS

MM-PAL-1: Paleontological Monitor
All project-related ground disturbances that could potential impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis, as these geologic units are determined to have a high paleontological sensitivity. It is anticipated that much of the proposed project site would be covered with up to eight feet of previously filled land.

MM-PAL-2: Paleontological Monitoring and Mitigation Plan
A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring and Mitigation Plan for the proposed project, which would include the identification of undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan should also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the client and the lead agency.

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MM-PAL-3: Field Data Forms
At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.

MM-PAL-4: Testing for Microfossils
Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).

MM-PAL-5: Recovered Fossils
Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the SDNHM.

MM-PAL-6: Final Monitoring and Mitigation Report to be filed
The qualified paleontologist will prepare a final monitoring and mitigation report to be filed with the client, the lead agency, and the repository.

(Monitoring Agency: Imperial County Planning and Development Services; Timing: Prior to permit approval, During Construction and After Construction)

HAZARDS AND HAZARDOUS MATERIALS

MM-FIRE-1: Certified Fire Protection Engineer Survey and Analysis
A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment to be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review.

MM-FIRE-2: Large Scale Evacuation Area
Isopentane leak or fire will require a large scale evacuation area and create a large scale hazardous material incident with a large operational zone. To minimize potential extremely dangerous condition to firefighters and hazardous material teams. Additional equipment may be required to adequately protect the first responders, staff and citizens in an emergency incident. This condition shall be discussed among the applicant and Imperial County Fire Chief prior to issuance of the permit for the project.

MM-FIRE-3: Automatic Fire Suppression Equipment
All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.

MM-FIRE-4: Automatic Fire Detection System
An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.

MM-FIRE-5: Fire Department Access Gates and Roads
Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.

MM-FIRE-6: Fire Code
Compliance with all required sections of the fire code.

MM-FIRE-7: Product Containment Areas
Applicant shall provide product containment area(s) for both product and water run-off in case of fire applications and retained for removal.

(Monitoring Agency: Imperial County Fire Department; Timing: Prior to permit approval, During Construction and After Construction)

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COMMENT LETTERS

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ADMINISTRATION / TRAINING
1078 Dogwood Road
Heber, CA 92249

Administration
Phone: (442) 265-6000
Fax: (760) 482-2427

Training
Phone: (442) 265-6011

OPERATIONS/PREVENTION
2514 La Brucherie Road
Imperial, CA 92251

Operations
Phone: (442) 265-3000
Fax: (760) 355-1482

Prevention
Phone: (442) 265-3020

January 14, 2021

RE: Conditional Use Permit #19-0028
895 Pitzer Road, Heber CA 92249

Imperial County Fire Department would like to thank you for the chance to review and comment on CUP #19-0028 for facility refurbishment, equipment installation, and removal of existing facilities.

Imperial County Fire Department has the following comments and/or requirements for the updated site plan and project description for Heber 1 Ormat Geothermal facility.

Information received is requesting (2) additional 10,000 gallon isopentane above ground storage tanks and will be installed near the new OEC units. Total amount of storage on site will be (4) 10,000 gallon tanks.
Isopentane is highly flammable liquid that fire behavior can be highly volatile and vapors may explode when mixed with air. The amount of propose storage and the locations rises concerns for Imperial County Fire Department, surrounding residents, and the surrounding community of Heber. The Emergency Response Guide:
Excerpt from ERG Guide 128 [Flammable Liquids (Water-Immiscible):
As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet).
FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.
(ERG, 2016)
Firefighting
Fire Extinguishing Agents Not to Be Used: Water may be ineffective
Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide (USCG, 1999)
These precautions are required to be followed for all incidents including fire involving hazardous materials. To adequately protect the Imperial County Fire Department staff, facility staff, and citizens of the community of Heber and Imperial County ICFD is requesting the following mitigations measures:

- A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review

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ADMINISTRATION / TRAINING
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- Isopentane leak or fire will require a large scale evacuation area and create a large scale hazardous material incident with a large operational zone. To minimize potential extremely dangerous condition to firefighters and hazardous material teams. Additional equipment may be required to adequately protect the first responders, staff, and citizens in an emergency incident. This condition shall be discussed among the applicant and Imperial County Fire Chief prior to the issuance of the permit for the project.
- All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.
- An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.
- Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.
- Compliance with all required sections of the fire code.
- Applicant shall provide product containment areas(s) for both product and water run-off in case of fire applications and retained for removal.

~~Imperial County Fire Department is requesting further discussion with Ormat, and ICFD Fire Code Officials with regards to the Appendix H for Hazards Assessment portion of the submitted package.~~ Imperial County Fire Department, Imperial County Planning and Development Service, and the applicant has reviewed and addressed multiple concerns in Appendix H for Hazards Assessment to help mitigate potential impacts and hazards associated with the project.

Imperial County Fire Department reserves the right to comment and request additional requirements pertaining to this project regarding fire and life safety measures, California building and fire code, and National Fire Protection Association standards at a later time as we see necessary.

If you have any questions, please contact the Imperial County Fire Prevention Bureau at 442-265-3020 or 442-265-3021.

Sincerely
Andrew Loper
Lieutenant/Fire Prevention Specialist
Imperial County Fire Department
Fire Prevention Bureau

PC ORIGINAL PKG.
EEC ORIGINAL PKG

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

January 12, 2021

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

SUBJECT: Recirculation Conditional Use Permit 19-0028 Heber 1 Project

Dear Mr. Minnick,

The Imperial County Air Pollution Control District ("Air District") appreciates the opportunity to review and comment on the Recirculation of Conditional Use Permit 19-0028 for the Heber 1 Repower Project ("Project"). The Project will install two new Ormat Energy Converters, an Evacuation-Skid Vapor Recovery Unit and two (2) Isopentane Tanks instead of the originally planned six tanks.

Upon review the Air District has no comment.

The Air District's rules and regulations are available via the web at https://apcd.imperialcounty.org. Please feel free to call should you have questions at (442) 265-1800.

Respectfully,

Curtis Blondell
APC Environmental Coordinator

Reviewed by,
Monica N. Soucier
APC Division Manager

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

PC ORIGINAL PKG.

EEC ORIGINAL PKG

Imperial County Planning & Development Services
Planning / Building

January 6, 2021

Jim Minnick
DIRECTOR

RECIRCULATION - SECOND REQUEST FOR REVIEW AND COMMENT LETTER

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

To: County Agencies	State Agencies/Other	Cities/Other
☒ AG – Carlos Ortiz/Sandra Mendivil	☒ Native American Heritage Commission – Katy Sanchez	☒ Fort Yuma Quechan Indian Tribe- Jordan D. Joaquin
☒ APCD-Matt Dessert/Monica Soucier	☒ CalTrans-District 11-Melina Pereira/Maurice Eaton / Mario H. Orso	☒ Inter-Tribal Cultural Resource Protection Council-Frank Brown
☒ Public Works – John Gay/Carlos Yee	☒CA Regional Water Quality Control Board- Nadim-Shukry Zeywar/Doug Wylie / Karl Dunn	☒ Kumeyaay Cultural Repatriation Committee
☒ EHS Office – Jeff Lamoure\Jorge Perez/Alphonso Andrade/ Mario Salinas/Vanessa R. Martinez	☒Augustine Band of Cahuilla Mission Indians – Amanda Vance/Karen Kupcha	☒ Union Pacific RR – No Email
☒ IC Sheriff's Office – Thomas Garcia / Robert Benavidez	☒ Colorado River Indian Tribe-Dennis Patch	☒ Division of Oil, Gas & Geothermal Resources – John Huff
☒ IC Fire/OES Office – Alfredo Estrada Jr. / Andrew Loper	☒ Campo Band of Mission Indians-Ralph Goff	☒ Department of Toxic Substance Control Region 1 – Dave Kereazis
☒ Heber Union Elementary School District – Juan Cruz	☒ Chemehuevi Reservation-Charles Wood	☒ Imperial County Applicators – Byron Nelson
☒ County Executive Office – Tony Rouhotas / Esperanza Colio Warren	☒ Cocopah Indian Tribe-Sherry Cordova	☒Dept. of the Army Corps of Engineers-Michelle Lynch
☒ BOS District #2 – Luis Plancarte	☒ Ewiiaapaayp Tribal Office-Will Micklin	☒Manzanita Band of Kumeyaay Nation – Angela Elliot Santos
☒ IID Energy Dept.- Donald Vargas/Rudy Leal	☒ Dept. of Fish & Wildlife – Magdalena Rodriguez	☒La Posta Band of Mission Indians – Gwendolyn Parada
☒ McCabe Union Elementary District – Laura Dubbe	☒Torres-Martinez Desert Cahuilla Indians – Thomas Tortez	☒Torres-Martinez Indian Tribe – Joseph Mirelez
☒ Assessor's – Robert Menvielle	☒ Heber Public Utility District – Laura Fischer	☒ City of Calexico – David Dale
☒ CUPA – Robert Krug	☒ CHP – Arturo Proctor	☒ CalTrans-District 11 – Roger Sanchez
☒ Jamul Indian Village – Lisa Cumber	☒ Viejas Band of Kumeyaay Indians – John A. Christman	☒ Sycuan Band of the Kumeyaay Nation – Cody J. Martinez
☒ Jamul Indian Village – Erica Pinto	☒ Ewiiaapaayp Band of Jumeyaay Indians – Michael Garica	☒ Ewiiaapaayp Band of Jumeyaay Indians – Roberto Pinto

From: Mariela Moran, Planner II - (442) 265-1736 extension 1747 or via-email at ICPDScommentletters@co.imperial.ca.us

Project ID: Conditional Use Permit (CUP) #19-0028 Heber 1 Project – Ormat Nevada, Inc

Project Location: APN 054-250-036-000, 895 Pitzer Road, Heber CA 92249, Portion of East ½ of Tract 45, Township 16 South, Range 14 East, SBB&M.

Project Description: The applicant proposes to amend the existing **CUP #15-0013** and expand the Heber 1 facility by taking the existing dual-flash steam turbine generator out of service and installing two new Ormat Energy Converter (OEC) geothermal power generation units. In addition, OEC-11 and OEC-13 will be reconfigured into a combined two-level unit, OEC-11 ITLU. Additional new equipment include 2 Isopentane storage tanks and an evacuation skid/vapor recovery maintenance units. This application also proposes to extend the permitted life of the Heber 1 to 30 years (2020-2050).

Applicant: Ormat Nevada, Inc. 6140 Plumas Street, Reno, NV 89519

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

NO COMMENT

Name: Margo Sanchez Signature: Margo Sanchez Title: Deputy Ag Commissioner

Date: 1/12/2021 Telephone No.: 442-265-1500 E-mail: margosanchez@co.imperial.ca.us

Comments due by: January 18, 2021 **EEC Meeting:** TBD

801 Main St. El Centro, CA. 92243 (442) 265-1736 Fax (442) 265-1735 planninginfo@co.imperial.ca.us www.icpds.com

EEC ORIGINAL PKG
PC ORIGINAL PKG.

Kimberly Noriega

From: Mario Salinas
Sent: Thursday, January 7, 2021 10:36 AM
To: Kimberly Noriega
Cc: Michael Abraham; Mariela Moran; Carina Gomez; Gabriela Robb; John Robb; Maria Scoville; Rosa Soto; Valerie Grijalva
Subject: RE: Recirculation of Request for Comments CUP#19-0028 PART 1

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Kimberly,

Pertaining to CUP #19-0028, Division of Environmental Health does not have any comments at this time.

Thank you,

Mario Salinas, MBA
Environmental Health Compliance Specialist I
Imperial County Public Health Department
Division of Environmental Health
797 Main Street Suite B, El Centro, CA 92243
mariosalinas@co.imperial.ca.us
Phone: (442) 265-1888
Fax: (442) 265-1903
www.icphd.org

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JAN 07 2021
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

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From: Kimberly Noriega <KimberlyNoriega@co.imperial.ca.us>
Sent: Wednesday, January 6, 2021 4:02 PM
To: Carlos Ortiz <CarlosOrtiz@co.imperial.ca.us>; Sandra Mendivil <SandraMendivil@co.imperial.ca.us>; Jolene Dessert <JoleneDessert@co.imperial.ca.us>; Matt Dessert <MattDessert@co.imperial.ca.us>; Monica Soucier <MonicaSoucier@co.imperial.ca.us>; Luis Plancarte <LuisPlancarte@co.imperial.ca.us>; Tony Rouhotas <TonyRouhotas@co.imperial.ca.us>; Esperanza Colio <EsperanzaColio@co.imperial.ca.us>; Vanessa Ramirez <VanessaRamirez@co.imperial.ca.us>; Alphonso Andrade <AlphonsoAndrade@co.imperial.ca.us>; Jorge Perez <JorgePerez@co.imperial.ca.us>; Jeff Lamoure <JeffLamoure@co.imperial.ca.us>; Mario Salinas <MarioSalinas@co.imperial.ca.us>; Alfredo Estrada Jr <AlfredoEstradaJr@co.imperial.ca.us>; Andrew Loper <AndrewLoper@co.imperial.ca.us>; John Gay <JohnGay@co.imperial.ca.us>; Carlos Yee <CarlosYee@co.imperial.ca.us>; rbenavidez@icso.org; 'Vargas, Donald A' <DVargas@IID.com>; rzleal@iid.com; ddale@calexico.ca.gov; jcruz@hesdk8.org; jdubbe@mccabeschool.net; smoorhouse@chp.ca.gov; Maurice.Eaton@dot.ca.gov;

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beth.landrum@dot.ca.gov; Roger Sanchez <roger.sanchez-rangel@dot.ca.gov>; Robert Krug <Robert.Krug@dtsc.ca.gov>; kal.dunn@waterboards.ca.gov; magdalena.rodriguez@wildlife.ca.gov; dave.kereazls@dtsc.ca.gov; john.c.huff@conservation.ca.gov; hhaines@augustinetribe.com; marcusuero@campo-nsn.gov; chairman@cit-nsn.gov; cocotcsec@cocopah.com; tashina.harper@crit-nsn.gov; wmicklin@leaningrock.net; Quechan Historic Preservation Officer <historicpreservation@quechantribe.com>; frankbrown6928@gmail.com; tribalsecretary@quechantribe.com; ljbirdsinger@aol.com; lp13boots@aol.com; thomas.tortez@torresmartinez-nsn.gov; joseph.mirelez@torresmartinez-nsn.gov; katy.sanchez@nahc.ca.gov; sha-lcr-webcomments@usbr.gov
Cc: Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Mariela Moran <MarielaMoran@co.imperial.ca.us>; Carina Gomez <CarinaGomez@co.imperial.ca.us>; Gabriela Robb <GabrielaRobb@co.imperial.ca.us>; John Robb <JohnRobb@co.imperial.ca.us>; Maria Scoville <mariascoville@co.imperial.ca.us>; Rosa Soto <RosaSoto@co.imperial.ca.us>; Valerie Grijalva <ValerieGrijalva@co.imperial.ca.us>
Subject: Recirculation of Request for Comments CUP#19-0028 PART 1

Good Afternoon,

Please see attached Recirculation Request for Comments Packet for **CUP#19-0028** Heber 1 Project – Ormat Nevada, Inc. Comments are due by **January 18, 2021 at 5:00 PM.**

Recirculated to review revised Heber 1 Repower Project Application; the project description was updated to include the addition of only two (2) 10,000 gallons isopentane tanks instead of six (6) tanks, a revised Air Quality Analysis Summary and a Revised Hazards Assessment.

In an effort to increase the efficiency at which information is distributed and reduce paper usage, the Request for Comments Packet is being sent to you via this email.

Should you have any questions regarding this project, please feel free to contact Planner Mariela Moran at (442)265-1736 ext. 1747 or submit your comment letters to icpdscommentletters@co.imperial.ca.us

(Due to attachment size, files continue on a 2nd & 3rd email; PART 1/3)

Kimberly Noriega
Office Assistant III

Imperial County
Planning and Development Services
801 Main St.
El Centro, CA 92243
☎**Phone:** (442) 265-1736
☎**Fax:** (442) 265-1735

The preceding e-mail message (including any attachments) contains information that may be confidential, be protected by the attorney-client or other applicable privileges, or constitute non-public information. It is intended to be conveyed only to the designated recipient(s). If you are not an intended recipient of this message,

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January 7, 2021

Ms. Mariela Moran
Planner II
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

SUBJECT: Heber 1 Geothermal Expansion Project CUP Application No. 19-0028 (Recirculated)

Dear Ms. Moran:

On January 6, 2021, the Imperial Irrigation District received from the Imperial County Planning & Development Services Dept. a second request for agency comments on Conditional Use Permit application no. 19-0028. The applicant, Ormat Nevada, Inc.; proposes to amend CUP no. 15-0013 to expand the Heber 1 geothermal facility located at 895 Pitzer Road, Heber, California, by taking the existing dual-flash steam turbine generator out of service and installing two (2) new Ormat Energy Converter geothermal power generation units as well as storage tanks and an evacuation skid/vapor recovery maintenance unit. The application also proposes to extend the term of the CUP to 30 years, from 2020 to 2050.

The application is being recirculated because the project description was revised to include only two (2) 10,000 gallons isopentane tanks instead of six (6) tanks, and the Air Quality Analysis Summary and a Revised Hazards Assessment have been updated.

The IID has reviewed the project documents and finds that the comments provided in the January 23, 2020 district letter (see attached letter) continue to apply.

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

Respectfully,

Donald Vargas
Compliance Administrator II

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PLANNING & DEVELOPMENT SERVICES

Enrique B. Martinez – General Manager
Mike Pacheco – Manager, Water Dept.
Marilyn Del Bosque Gilbert – Manager, Energy Dept.
Sandra Blain – Deputy Manager, Energy Dept.,
Constance Bergmark – Mgr. of Planning & Eng./Chief Elect. Engineer, Energy Dept.
Jamie Asbury – Assoc. General Counsel
Vance Taylor – Asst. General Counsel
Michael P. Kemp – Superintendent, Regulatory & Environmental Compliance
Laura Cervantes. – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.

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January 23, 2020

Ms. Mariela Moran
Planner II
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

SUBJECT: Heber 1 Geothermal Expansion Project CUP Application No. 19-0028

Dear Ms. Moran:

On January 8, 2020, the Imperial Irrigation District received from the Imperial County Planning & Development Services Dept. a request for agency comments on Conditional Use Permit application no. 19-0028. The applicant, Ormat Nevada, Inc.; proposes to amend CUP no. 15-0013 to expand the Heber 1 geothermal facility located at 895 Pitzer Road, Heber, California, by taking the existing dual-flash steam turbine generator out of service and installing two (2) new Ormat Energy Converter geothermal power generation units as well as storage tanks and an evacuation skid/vapor recovery maintenance unit. The application also proposes to extend the term of the CUP to 30 years, from 2020 to 2050.

The Imperial Irrigation District has reviewed the information and has the following comments:

1. For electrical service for the project, the applicant should be advised to contact Joel Lopez, IID Customer Project Development Planner, at (760) 482-3444 or e-mail Mr. Lopez at jflopez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the IID website http://www.iid.com/home/showdocument?id=12923), the applicant will be required to submit a complete set of approved plans (including CAD files), project schedule, estimated in-service date, one-line diagram of facility, electrical loads, panel size, voltage, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures related to providing electrical service to the project.

2. IID facilities that may be impacted include the Daffodil Canal (the project site is located adjacent to and west of the Daffodil Canal), Daffodil Lateral 1 and Dogwood Canal. However, it appears that the expansion project will not affect IID's canals or laterals. If this should occur, the applicant will be required to contact IID Water Department Engineering Services section prior to final project design. IID Water Dept. ESS can be contacted at (760) 339-9265 for further information.

3. The applicant may not use IID's canal or drain banks to access the project site. Any abandonment of easements or facilities will be approved by IID based on systems (irrigation, drainage, power, etc.) needs.

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4. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions are available at the district website http://www.iid.com/departments/real-estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

5. In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.

6. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. **Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.**

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

Respectfully,

Donald Vargas
Compliance Administrator II

Enrique B. Martinez – General Manager
Mike Pacheco – Manager, Water Dept.
Marilyn Del Bosque Gilbert – Manager, Energy Dept.
Jamie Asbury – Deputy Manager, Energy Dept., Operations
Enrique De Leon – Asst. Mgr., Energy Dept., Distr., Planning, Eng. & Customer Service
Vance Taylor – Asst. General Counsel
Robert Laurie – Outside Counsel
Michael P. Kemp – Superintendent, Regulatory & Environmental Compliance
Laura Cervantes, – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.

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ADMINISTRATION / TRAINING
1078 Dogwood Road
Heber, CA 92249

Administration
Phone: (442) 265-6000
Fax: (760) 482-2427

Training
Phone: (442) 265-6011

IMPERIAL COUNTY CRASH RESCUE FIRE

OPERATIONS/PREVENTION
2514 La Brucherie Road
Imperial, CA 92251

Operations
Phone: (442) 265-3000
Fax: (760) 355-1482

Prevention
Phone: (442) 265-3020

May 11, 2020

RE: Conditional Use Permit #19-0028
895 Pitzer Road, Heber CA 92249

Imperial County Fire Department would like to thank you for the chance to review and comment on CUP #19-0028 for facility refurbishment, equipment installation, and removal of existing facilities.

Imperial County Fire Department has the following comments and/or requirements for the Heber 1 Ormat Geothermal facility.

Information received is requesting (6) additional 10,000 gallon isopentane above ground storage tanks and will be installed near the new OEC units. Total amount of storage on site will be (8) 10,000 gallon tanks.
Isopentane is highly flammable liquid that fire behavior can be highly volatile and vapors may explode when mixed with air. The amount of propose storage and the locations rises concerns for Imperial County Fire Department, surrounding residents, and the surrounding community of Heber. The Emergency Response Guide:
Excerpt from ERG Guide 128 [Flammable Liquids (Water-Immiscible):
As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet).
FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2016)
Firefighting
Fire Extinguishing Agents Not to Be Used: Water may be ineffective
Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide (USCG, 1999)
These precautions are required to be followed for all incidents including fire involving hazardous materials. To adequately protect the Imperial County Fire Department staff, facility staff, and citizens of the community of Heber and Imperial County ICFD is requesting the following mitigations measures:

- A certified fire protection engineer survey and analysis of current and proposed fire suppression and detection equipment be performed to evaluate the current systems performance and coverage of protection. Evaluate propose fire suppression and detection equipment in conjunction with existing equipment. A full report of findings must be provided to Imperial County Fire Department for review

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ADMINISTRATION / TRAINING
1078 Dogwood Road
Heber, CA 92249

Administration
Phone: (442) 265-6000
Fax: (760) 482-2427

Training
Phone: (442) 265-6011

OPERATIONS/PREVENTION
2514 La Brucherie Road
Imperial, CA 92251

Operations
Phone: (442) 265-3000
Fax: (760) 355-1482

Prevention
Phone: (442) 265-3020

- Isopentane leak or fire will require a large scale evacuation area and create a large scale hazardous material incident with a large operational zone. To minimize potential extremely dangerous condition to firefighters and hazardous material teams. Additional equipment may be required to adequately protect the first responders, staff, and citizens in an emergency incident. This condition shall be discussed among the applicant and Imperial County Fire Chief prior to the issuance of the permit for the project.
- All isopentane above ground storage tanks shall be protected by approved automatic fire suppression equipment. All automatic fire suppression shall be installed and maintained to the current adapted fire code and regulation.
- An approved automatic fire detection system shall be installed as per the California Fire Code. All fire detection systems shall be installed and maintained to the current adapted fire code and regulations.
- Fire department access roads and gates will be in accordance with the current adapted fire code and the facility will maintain a Knox Box for access on site.
- Compliance with all required sections of the fire code.
- Applicant shall provide product containment areas(s) for both product and water run-off in case of fire applications and retained for removal.

Imperial County Fire Department is requesting further discussion with Ormat, and ICFD Fire Code Officials with regards to the Appendix H for Hazards Assessment portion of the submitted package.

Imperial County Fire Department reserves the right to comment and request additional requirements pertaining to this project regarding fire and life safety measures, California building and fire code, and National Fire Protection Association standards at a later time as we see necessary.

If you have any questions, please contact the Imperial County Fire Prevention Bureau at 442-265-3020 or 442-265-3021.

Sincerely
Andrew Loper
Lieutenant/Fire Prevention Specialist
Imperial County Fire Department
Fire Prevention Bureau

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150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

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MAY 27 2020
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

May 27, 2020

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

SUBJECT: Second Review of Condition Use Permit 19-0028 & Initial Study 19-0033—Heber 1 Project (Ormat)

Dear Mr. Minnick:

Following the second review of Conditional Use Permit 19-0028 and Initial Study 19-0033 (collectively called "Project"), the Imperial County Air Pollution Control District ("Air District") thanks the applicant for the correction in the previous comments dated January 17, 2020. The Air District understands that no new diesel generator will be added to the existing system. The amendments to the existing CUP and planned equipment modifications will require that the applicant contact Mr. Jesus Ramirez, Permitting & Engineering Division Manager, to discuss modifications to their current permit. The applicant should contact Mr. Emmanuel Sanchez, Enforcement Division Manager, to discuss the possible need for a Construction Dust Control Plan. Additionally, the applicant must notify the Air District 10 days prior to the start of any construction activities. Finally, the Air District requests a copy of the Draft CUP prior to recording.

The Air District's rule book can be accessed via the internet at http://www.co.imperial.ca.us/AirPollution. Click on "Rules & Regulations" under "Resources" on the left side of the page. Should you have questions, please call our office at (442) 265-1800.

Sincerely,

Curtis Blondell
APC Environmental Coordinator

Reviewed by,
Monica Soucier
APC Division Manager

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May 27, 2020

Ms. Mariela Moran
Planner II
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

SUBJECT: Heber 1 Geothermal Expansion Project CUP Application No. 19-0028 (Revised)

Dear Ms. Moran:

On May 19, 2020 the IID received from the Imperial County Planning & Development Services Dept., a request for agency comments on revised Conditional Use Permit application no. 19-0028. The applicant, Ormat Nevada, Inc.; proposes to amend CUP no. 15-0013 to expand the Heber 1 geothermal facility located at 895 Pitzer Road, Heber, California, by taking the existing dual-flash steam turbine generator out of service and installing two new Ormat Energy Converter geothermal power generation units as well as storage tanks and an evacuation skid/vapor recovery maintenance unit. In addition, two existing OECs will be reconfigured into a two-level unit. These upgrades will result in a water usage of 2,300 acre-ft./year and a total energy production of 52 MW net and 78.2 MW gross. The application also proposes to extend the term of the CUP to 30 years (from 2020 to 2050).

The IID has reviewed the revised CUP application and finds that the comments provided in the January 23, 2020 district letter on the original application (see attached letter) continue to apply.

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

Respectfully,

Donald Vargas
Compliance Administrator II

Enrique B. Martinez – General Manager
Mike Pacheco – Manager, Water Dept.
Marilyn Del Bosque Gilbert – Manager, Energy Dept.
Sandra Blain – Deputy Manager, Energy Dept.,
Jesus Martinez – Engineer Principal, Energy Dept., Transmission Planning
Jamie Asbury – Asst. General Counsel
Vance Taylor – Asst. General Counsel
Robert Laurie – Outside Counsel
Michael P. Kemp – Superintendent, Regulatory & Environmental Compliance
Laura Cervantes. – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.

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January 23, 2020

Ms. Mariela Moran
Planner II
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

SUBJECT: Heber 1 Geothermal Expansion Project CUP Application No. 19-0028

Dear Ms. Moran:

On January 8, 2020, the Imperial Irrigation District received from the Imperial County Planning & Development Services Dept. a request for agency comments on Conditional Use Permit application no. 19-0028. The applicant, Ormat Nevada, Inc.; proposes to amend CUP no. 15-0013 to expand the Heber 1 geothermal facility located at 895 Pitzer Road, Heber, California, by taking the existing dual-flash steam turbine generator out of service and installing two (2) new Ormat Energy Converter geothermal power generation units as well as storage tanks and an evacuation skid/vapor recovery maintenance unit. The application also proposes to extend the term of the CUP to 30 years, from 2020 to 2050.

The Imperial Irrigation District has reviewed the information and has the following comments:

1. For electrical service for the project, the applicant should be advised to contact Joel Lopez, IID Customer Project Development Planner, at (760) 482-3444 or e-mail Mr. Lopez at jflopez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the IID website http://www.iid.com/home/showdocument?id=12923), the applicant will be required to submit a complete set of approved plans (including CAD files), project schedule, estimated in-service date, one-line diagram of facility, electrical loads, panel size, voltage, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures related to providing electrical service to the project.

2. IID facilities that may be impacted include the Daffodil Canal (the project site is located adjacent to and west of the Daffodil Canal), Daffodil Lateral 1 and Dogwood Canal. However, it appears that the expansion project will not affect IID's canals or laterals. If this should occur, the applicant will be required to contact IID Water Department Engineering Services section prior to final project design. IID Water Dept. ESS can be contacted at (760) 339-9265 for further information.

3. The applicant may not use IID's canal or drain banks to access the project site. Any abandonment of easements or facilities will be approved by IID based on systems (irrigation, drainage, power, etc.) needs.

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4. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions are available at the district website http://www.iid.com/departments/real-estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

5. In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.

6. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. **Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.**

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

Respectfully,

Donald Vargas
Compliance Administrator II

Enrique B Martinez – General Manager
Mike Pacheco – Manager, Water Dept
Marilyn Del Bosque Gilbert – Manager, Energy Dept
Jamie Asbury – Deputy Manager, Energy Dept., Operations
Enrique De Leon – Asst. Mgr., Energy Dept., Distr., Planning, Eng. & Customer Service
Vance Taylor – Asst. General Counsel
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Laura Cervantes – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept

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Heber Public Utility District
1078 Dogwood Rd., Ste. 103 · P.O. Box "H"
Heber, CA 92249-0470
760-482-2440 (P) – 760-353-9951 (Fax)

RECEIVED
MAY 28 2020
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

Mr. David Black, Planner IV
Imperial County Planning and Development Services
801 Main Street
El Centro, CA 92243

RE: COMMENT LETTER REGARDING CONDITIONAL USE PERMIT (CUP) #19-0028 HEBER I PROJECT

Dear Mr. Black:

Thank you for allowing us the opportunity to provide comments regarding the above-referenced project. The proposed project is located within Heber Public Utility District's Sphere of Influence. The following comments are offered:

1. **Hazard Assessment:** The project description on the Request for Review and Comment Letter identifies the installation of 6 isopentane storage tanks. The Reclamation Plan Application Form also identifies a total of 6 isopentane storage tanks at 10,000 gallons each. The Hazard Assessment is based on the release of a single 10,000-gallon isopentane tank. There are residential units and an elementary school within one mile of the proposed location of the isopentane tanks. Please clarify how the release of a single tank affects the other tanks causing additional release.

   Section 4.6 of the Hazard Assessment states that "[a]n overpressure of 1 psi is unlikely to have serious direct effects on people," yet it continues on to say that an overpressure "can result in injuries to people, and shattering of glass windows, which may cause skin laceration from flying glass". These two statements are contradictory. Injuries to people is a serious direct effect.

2. **Miscellaneous:** Heber Public Utility District (HPUD) owns a looped domestic water line along Pitzer Road along the frontage of the project site. ORMAT's internal pipelines are located within close proximity to HPUD's domestic water pipeline. Hot water running through ORMAT's pipeline caused our pipelines to burst. Measures must be put in place to ensure protection for HPUD's domestic water pipeline.

Once again, we thank you for the opportunity to comment. Should you have any questions, please feel free to contact me at (760)482-2440 or via email at lfischer@heber.ca.gov.

Sincerely,

Laura Fischer P.A
General Manager

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COUNTY OF IMPERIAL

PUBLIC HEALTH DEPARTMENT

JANETTE ANGULO, M.P.A.
Director

STEVEN MUNDAY, M.P.H., M.S.
Health Officer

May 27, 2020

Mariela Moran, Planner II
IC Planning & Development Services
801 Main Street
El Centro, CA 92243

Subject: Environmental Health Comments for Proposed Conditional Use Permit #19-0028

Dear Ms. Moran:

The Imperial County Division of Environmental Health (DEH) is providing the comments below in response to the request for review and comments for Conditional Use Permit #19-0028. The project as described is installation of 4 air coolers, 3 Ormat Energy Converters, and 6 new Isopentane Ground Storage Tanks at 895 Pitzer Road, Heber CA. The property is also described as Assessor's Parcel Number 054-250-036-000.

Please consider the following comments for the proposed project.

1. Any potential discharge of any processed water, the applicant must contact the Water Regional Board.
2. As per the Isopentane above ground tanks, the applicant must contact the Department of Toxic Substances Control to be regulated by the Imperial County Certified Unified Program Agency (CUPA).

If you have any questions, please do not hesitate to contact me at 442-265-1888.

Sincerely,

Mario Salinas

Mario Salinas
Environmental Compliance Specialist I

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EEC ORIGINAL PKG

Mariela Moran

From: Maria Scoville
Sent: Thursday, January 9, 2020 5:04 PM
To: Mariela Moran
Cc: Rosa Soto; Carina Gomez; Maria Scoville; Michael Abraham
Subject: FW: Request for Review and Comment Letter for CUP19-0028

Ms. Mariela,

Please see email below ↓ ↓

From: Krug, Robert@DTSC <Robert.Krug@dtsc.ca.gov>
Sent: Thursday, January 9, 2020 5:00 PM
To: Maria Scoville <mariascoville@co.imperial.ca.us>
Subject: RE: Request for Review and Comment Letter for CUP19-0028

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

Hi Maria,
When this retrofit is completed they need to update their CERS information if there are any changes in Hazardous Materials, Hazardous Waste, ASTs with petroleum, USTs, or CalARP thresholds, and they need to notify the DTSC Imperial CUPA at that time.
Bob

Robert Krug
Supervisor / Senior Environmental Scientist
DTSC Imperial CUPA
627 Wake Avenue
El Centro, CA 92243
Robert.Krug@dtsc.ca.gov
(760) 336-8919 Work
(760) 457-7376 Cell

From: Maria Scoville <mariascoville@co.imperial.ca.us>
Sent: Wednesday, January 8, 2020 5:04 PM
To: County Ag Commissioner, Imperial@CDPR <carlosortiz@co.imperial.ca.us>; Sandra Mendivil <SandraMendivil@co.imperial.ca.us>; Matt Dessert <MattDessert@co.imperial.ca.us>; Soucier, Monica@Imperial <monicasoucier@co.imperial.ca.us>; Luis Plancarte <LuisPlancarte@co.imperial.ca.us>; Esperanza Colio <EsperanzaColio@co.imperial.ca.us>; Rouhotas, Tony@IMP <tonyrouhotas@co.imperial.ca.us>; Jeff Lamoure <JeffLamoure@co.imperial.ca.us>; Vanessa Ramirez <VanessaRamirez@co.imperial.ca.us>; Jorge Perez <JorgePerez@co.imperial.ca.us>; Alphonso Andrade <AlphonsoAndrade@co.imperial.ca.us>; Mario Salinas <MarioSalinas@co.imperial.ca.us>; Robert Menvielle <RobertMenvielle@co.imperial.ca.us>; Alfredo Estrada Jr <AlfredoEstradaJr@co.imperial.ca.us>; Robert Malek <RobertMalek@co.imperial.ca.us>; Andrew Loper <AndrewLoper@co.imperial.ca.us>; John Gay <JohnGay@co.imperial.ca.us>; Carlos Yee <CarlosYee@co.imperial.ca.us>; rbenavidez@icso.org; 'Donald Vargas - IID' <DVargas@IID.com>; rleal@iid.com; ddale@calexico.ca.gov; jcruz@hesdk8.org; ldubbe@mccabeschool.net; lfischer@heber.ca.gov; aproctor@chp.ca.gov; Eaton, Maurice A@DOT <maurice.eaton@dot.ca.gov>; Orso, Mario H@DOT <mario.orso@dot.ca.gov>; Dunn, Kai@Waterboards

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<Kai.Dunn@waterboards.ca.gov>; Rodriguez, Magdalena@Wildlife <Magdalena.Rodriguez@wildlife.ca.gov>; Kereazis, Dave@DTSC <Dave.Kereazis@dtsc.ca.gov>; Shukry-Zeywar, Nadim@Waterboards <Nadim.Shukry-Zeywar@waterboards.ca.gov>; doug.wylie@waterboards.ca.gov; roger.sanchez@dot.ca.gov; Krug, Robert@DTSC <Robert.Krug@dtsc.ca.gov>; Huff, John@DOC <John.C.Huff@conservation.ca.gov>; hhaines@augustinetribe.com; chairman@cit-nsn.gov; wmicklin@leaningrock.net; lp13boots@aol.com; Sanchez, Katy@NAHC <Katy.Sanchez@nahc.ca.gov>; rgoff@campo-nsn.gov; tashina.harper@crit-nsn.gov; frankbrown@viejas-nsn.gov; Lorrie J. LeLe <ljlele@adamsbroadwell.com>; Thomas.tortez@torresmartinez-nsn.gov; Quechan Indian Tribe <tribalsecretary@quechantribe.com>; historicpreservation@quechantribe.com; cocotcsec@cocopah.com; Byron Nelson - IC Applicators <byronfrontier@yahoo.com>; lcumper@jiv-nsn.gov; epinto@jiv-nsn.gov; michaelg@leaningrock.net; wmicklin@leaningrock.net; ssilva@sycuan-sns.gov
Cc: Mariela Moran <MarielaMoran@co.imperial.ca.us>; Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Rosa Soto <RosaSoto@co.imperial.ca.us>; Carina Gomez <CarinaGomez@co.imperial.ca.us>; Jim Minnick <JimMinnick@co.imperial.ca.us>; Gabriela Robb <GabrielaRobb@co.imperial.ca.us>; John Robb <JohnRobb@co.imperial.ca.us>; Maria Scoville <mariascoville@co.imperial.ca.us>; Rosa Soto <RosaSoto@co.imperial.ca.us>
Subject: Request for Review and Comment Letter for CUP19-0028

Good afternoon Commenting Agencies,

I have attached the Request for Review and Comment Letter for CUP19-0028 as submitted by ORMAT Nevada, Inc. this project is located at 895 Pitzer Road, Heber, CA 92249, also identified as APN 054-250-036-000.

Should you have any questions in regards to the attached letter, feel free to contact Mariela Moran, Planner II at 442-265-1736 or by email at marielamoran@co.imperial.ca.us

Thank you
Maria Scoville

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Mariela Moran

From: Quechan Historic Preservation Officer <historicpreservation@quechantribe.com>
Sent: Friday, January 10, 2020 2:29 PM
To: Maria Scoville
Subject: RE: Request for Review and Comment Letter for CUP19-0028

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

This email is to inform you that we have no comments on this project.

From: Maria Scoville [mailto:mariascoville@co.imperial.ca.us]
Sent: Wednesday, January 08, 2020 6:04 PM
To: Carlos Ortiz; Sandra Mendivil; Matt Dessert; Monica Soucier; Luis Plancarte; Esperanza Colio; Tony Rouhotas; Jeff Lamoure; Vanessa Ramirez; Jorge Perez; Alphonso Andrade; Mario Salinas; Robert Menvielle; Alfredo Estrada Jr; Robert Malek; Andrew Loper; John Gay; Carlos Yee; rbenavidez@icso.org; 'Donald Vargas - IID'; rleal@iid.com; ddale@calexico.ca.gov; jcruz@hesdk8.org; ldubbe@mccabeschool.net; lfischer@heber.ca.gov; aproctor@chp.ca.gov; Maurice Eaton - CALTRANS DIST 11; Mario.Orso@dot.ca.gov; kai.Dunn@waterboards.ca.gov; magdalena.rodriguez@wildlife.ca.gov; Dave.kereazis@dtsc.ca.gov; nadim.shukry-zeywar@waterboards.ca.gov; doug.wylie@waterboards.ca.gov; roger.sanchez@dot.ca.gov; Robert Krug; john.c.huff@conservation.ca.gov; hhaines@augustinetribe.com; chairman@cit-nsn.gov; wmicklin@leaningrock.net; lp13boots@aol.com; katy.sanchez@nahc.ca.gov; rgoff@campo-nsn.gov; tashina.harper@crit-nsn.gov; frankbrown@viejas-nsn.gov; Lorrie J. LeLe; Thomas.tortez@torresmartinez-nsn.gov; Quechan Indian Tribe ; historicpreservation@quechantribe.com; cocotcsec@cocopah.com; Byron Nelson - IC Applicators; lcumper@jiv-nsn.gov; epinto@jiv-nsn.gov; michaelg@leaningrock.net; wmicklin@leaningrock.net; ssilva@sycuan-sns.gov
Cc: Mariela Moran; Michael Abraham; Rosa Soto; Carina Gomez; Jim Minnick; Gabriela Robb; John Robb; Maria Scoville; Rosa Soto
Subject: Request for Review and Comment Letter for CUP19-0028

Good afternoon Commenting Agencies,

I have attached the Request for Review and Comment Letter for CUP19-0028 as submitted by ORMAT Nevada, Inc. this project is located at 895 Pitzer Road, Heber, CA 92249, also identified as APN 054-250-036-000.

Should you have any questions in regards to the attached letter, feel free to contact Mariela Moran, Planner II at 442-265-1736 or by email at marielamoran@co.imperial.ca.us

Thank you
Maria Scoville

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150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

January 17, 2020

RECEIVED
JAN 17 2020
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

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

SUBJECT: Condition Use Permit 19-0028 & Initial Study 19-0033—Heber 1 Project (Ormat)

Dear Mr. Minnick:

The Imperial County Air Pollution Control District ("Air District") would like to thank you for the opportunity to review Conditional Use Permit (CUP) 19-0028 and Initial Study 19-0033 (collectively called "Project"). The Project would remove from service the existing dual-flash steam turbine generator and install two new Ormat Energy Converters (OEC) geothermal power generation units. In addition, the OEC-11 and OEC-13 power generators will be reconfigured into a combined two-level unit called OEC-11. Additional equipment including motive fluid (isopentane) storage tanks, an evacuation skid/vapor recovery maintenance unit (VRMU), and a diesel engine for emergency use will be added to the facility. The Project will extend the permitted life of Heber 1 to 30 years (2020 through 2050). The Project location is located at 895 Pitzer Road in Heber, California (APN 054-250-036-000). The Project applicant is Ormat Nevada, Inc.

Upon review, the Air District requests that the applicant contact Mr. Emmanuel Sanchez, Enforcement Division Manager, to discuss the possible need for a Construction Dust Control Plan. Additionally, the applicant must notify the Air District 10 days prior to the start of any construction activities. Finally, the Air District requests a copy of the Draft CUP prior to recording.

The Air District's rule book can be accessed via the internet at http://www.co.imperial.ca.us/AirPollution. Click on "Rules & Regulations" under "Resources" on the left side of the page. Should you have questions, please call our office at (442) 265-1800.

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Sincerely,

Curtis Blondell

Curtis Blondell
APC Environmental Coordinator

Reviewed by:
Monica Soucier
APC Division Manager

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January 23, 2020

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JAN 23 2020

IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

Ms. Mariela Moran
Planner II
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

SUBJECT: Heber 1 Geothermal Expansion Project CUP Application No. 19-0028

Dear Ms. Moran:

On January 8, 2020, the Imperial Irrigation District received from the Imperial County Planning & Development Services Dept. a request for agency comments on Conditional Use Permit application no. 19-0028. The applicant, Ormat Nevada, Inc.; proposes to amend CUP no. 15-0013 to expand the Heber 1 geothermal facility located at 895 Pitzer Road, Heber, California, by taking the existing dual-flash steam turbine generator out of service and installing two (2) new Ormat Energy Converter geothermal power generation units as well as storage tanks and an evacuation skid/vapor recovery maintenance unit. The application also proposes to extend the term of the CUP to 30 years, from 2020 to 2050.

The Imperial Irrigation District has reviewed the information and has the following comments:

1. For electrical service for the project, the applicant should be advised to contact Joel Lopez, IID Customer Project Development Planner, at (760) 482-3444 or e-mail Mr. Lopez at jflopez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the IID website http://www.iid.com/home/showdocument?id=12923), the applicant will be required to submit a complete set of approved plans (including CAD files), project schedule, estimated in-service date, one-line diagram of facility, electrical loads, panel size, voltage, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures related to providing electrical service to the project.

2. IID facilities that may be impacted include the Daffodil Canal (the project site is located adjacent to and west of the Daffodil Canal), Daffodil Lateral 1 and Dogwood Canal. However, it appears that the expansion project will not affect IID's canals or laterals. If this should occur, the applicant will be required to contact IID Water Department Engineering Services section prior to final project design. IID Water Dept. ESS can be contacted at (760) 339-9265 for further information.

3. The applicant may not use IID's canal or drain banks to access the project site. Any abandonment of easements or facilities will be approved by IID based on systems (irrigation, drainage, power, etc.) needs.

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4. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions are available at the district website http://www.iid.com/departments/real-estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

5. In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.

6. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. **Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.**

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

Respectfully,

Donald Vargas
Compliance Administrator II

Enrique B. Martinez – General Manager
Mike Pacheco – Manager, Water Dept.
Marilyn Del Bosque Gilbert – Manager, Energy Dept.
Jamie Asbury – Deputy Manager, Energy Dept., Operations
Enrique De Leon – Asst. Mgr., Energy Dept., Distr., Planning, Eng & Customer Service
Vance Taylor – Asst General Counsel
Robert Laurie – Outside Counsel
Michael P. Kemp – Superintendent, Regulatory & Environmental Compliance
Laura Cervantes. – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.

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DEPARTMENT OF TRANSPORTATION
DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
PHONE (619) 688-3137
FAX (619) 688-4299
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

January 28, 2020

11-IMP-111
PM 3.27
Heber 1 Project – Ormat Nevada, Inc.
CUP # 19-0028

Ms. Mariela Moran, Planner II
County of Imperial Planning and Development Services
801 Main Street
El Centro, CA 92243

Dear Ms. Moran:

Thank you for including the California Department of Transportation (Caltrans) in the Conditional Use Permit (CUP) review process for the Heber 1 Project – Ormat Nevada, Inc. project located near State Route 111 and State Route 86 (SR-111, SR-86). The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

Caltrans has the following comments:

Traffic Control Plan/Hauling

The California Department of Transportation (Caltrans) has discretionary authority with respect to highways under its jurisdiction and may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transportation Permits Issuance Branch is responsible for the issuance of these special transportation permits for oversize/overweight vehicles on the State Highway System. Additional information is provided online at:
http://www.dot.ca.gov/trafficops/permits/index.html

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A Traffic Control Plan is to be submitted to Caltrans District 11, including the interchange at SR-111/ E. Jasper Road, at least 30 days prior to the start of any construction. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during closures, including routes and signage.

Potential impacts to the highway facilities (SR-111 and SR-86) and traveling public from the detour, demolition and other construction activities should be discussed and addressed before work begins.

If you have any questions, please contact Mark McCumsey, of the Caltrans Development Review Branch, at (619) 688-6802 or by e-mail sent to mark.mccumsey@dot.ca.gov.

Sincerely,

MAURICE EATON, Branch Chief
Local Development and Intergovernmental Review

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Mariela Moran

From: Mccumsey, Mark@DOT <mark.mccumsey@dot.ca.gov>
Sent: Thursday, January 30, 2020 4:08 PM
To: Mariela Moran
Subject: FW: Caltrans Letter - Heber 1 Project - Ormat Nevada, Inc. - CUP# 19-0028
Attachments: CT_Ltr_Heber 1 Project -Ormat Nevada 1-28-20.pdf

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

Mariela,
I wanted to add one more thing to the letter, but will let you know in my email that if the turbine engine that is transported is oversized, larger than the lane width on the highway, per se, then there may need to be an Caltrans encroachment permit required. Since I did not pick up on that in the project description of the size of the turbine engine. That permit would need to be filed locally at the Caltrans District 11 office in San Diego. The transportation permit to haul heavy weight/loads can be obtained in Sacramento over the phone at our HQ office.

Let me know if you have any questions,

Thanks,

Mark McCumsey
Associate Transportation Planner
CA Dept. of Transportation, District 11 Planning
4050 Taylor Street MS-240
San Diego, CA 92110
Phone # (619) 688-6802
Cell # (805) 264-7574

From: Mccumsey, Mark@DOT
Sent: Wednesday, January 29, 2020 8:29 AM
To: Mariela Moran <MarielaMoran@co.imperial.ca.us>
Cc: Eaton, Maurice A@DOT <maurice.eaton@dot.ca.gov>
Subject: Caltrans Letter - Heber 1 Project - Ormat Nevada, Inc. - CUP# 19-0028

Hi Mariela,
Please find the attached letter for the above captioned project.

Let me know if you have any questions,

Thanks,

Mark McCumsey
Associate Transportation Planner
CA Dept. of Transportation, District 11 Planning

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4050 Taylor Street MS-240
San Diego, CA 92110
Phone # (619) 688-6802
Cell # (805) 264-7574

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CUP APPLICATION AND SUPPORTING DOCUMENTATION

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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 HEBER FIELD COMPANY		EMAIL ADDRESS MWendt@ormat.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 6140 PLUMAS STREET, RENO NV		ZIP CODE 89519	PHONE NUMBER 775-356-9029
3. APPLICANT'S NAME HEBER GEOTHERMAL COMPANY / ORMAT NEVADA, INC.		EMAIL ADDRESS MWendt@ormat.com	
4. MAILING ADDRESS (Street / P O Box, City, State) 6140 PLUMAS STREET, RENO, NV		ZIP CODE 89519	PHONE NUMBER 775-356-9029
4. ENGINEER'S NAME SHLOMI HUBERMAN	CA. LICENSE NO.	EMAIL ADDRESS Shuberman@ormat.com	
5. MAILING ADDRESS (Street / P O Box, City, State) 6140 PLUMAS STREET, RENO, NV		ZIP CODE 89519	PHONE NUMBER 775-356-9029

6. ASSESSOR'S PARCEL NO. 054-250-035, 054-250-036	SIZE OF PROPERTY (in acres or square foot) 27 acres	ZONING (existing) A-2-G/SPA
7. PROPERTY (site) ADDRESS 875 PITZER ROAD		
8. GENERAL LOCATION (i.e. city, town, cross street) HEBER, CA		
9. LEGAL DESCRIPTION Track 44, Township 16 South, Range 14 East, SBBM		

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

10. DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail)	Facility refurbishment, equipment installation, removal of existing facilities. See attached.
11. DESCRIBE CURRENT USE OF PROPERTY	MAJOR GEOTHERMAL POWER PLANT
12. DESCRIBE PROPOSED SEWER SYSTEM	No additional sewer service proposed
13. DESCRIBE PROPOSED WATER SYSTEM	No additional water system, same IID intake.
14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM	Expansion of existing fire system.
15. IS PROPOSED USE A BUSINESS? ☒ Yes ☐ No	IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE? 30, 10-15 more during construction

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

Connie Stechman — 3-2-2020
Print Name — Date
Connie Stechman
Signature

Print Name — Date

Signature

REQUIRED SUPPORT DOCUMENTS

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

APPLICATION RECEIVED BY:	MM' Mail	DATE	3/6/2020	REVIEW / APPROVAL BY OTHER DEPT'S required.	
APPLICATION DEEMED COMPLETE BY:		DATE		☐ P. W.	
APPLICATION REJECTED BY:		DATE		☐ E. H. S.	
TENTATIVE HEARING BY:		DATE		☐ A. P. C. D.	
FINAL ACTION: ☐ APPROVED ☐ DENIED		DATE		☐ O. E. S.	

CUP # 19-0028

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HEBER 1 REPOWER PROJECT

APPLICATION TO AMEND CONDITIONAL USE PERMIT NO. 15-0013

IMPERIAL COUNTY

Prepared for:

Ormat Nevada Inc.
6140 Plumas St.
Reno, NV 89519

Prepared by:

CHAMBERS GROUP, INC.
9620 Chesapeake Drive, Suite 202
San Diego, California 92123

December 2020

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Appendix F - Geology and Soils Evaluation
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** Not included, to be prepared by ICPDS staff*

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****Revised Site Plan per email dated 12/21/2020 from Chambers Group***

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SECTION 1.0 – INTRODUCTION

Heber Field Company, a subsidiary of ORMAT Nevada, Inc. (ORMAT), owns and operates the Heber 1 dual-flash/Goulds 1 & OEC-14 binary geothermal electric generation facility (Heber 1) southeast of Heber in Imperial County, CA. ORMAT is a leading geothermal company and the only vertically integrated company engaged in geothermal and recovered energy generation (REG), with the objective of becoming a leading global provider of renewable energy. ORMAT owns, operates, designs, manufactures and sells geothermal facilities based on the ORMAT Energy Converter (OEC) - a power generation unit that converts low-, medium- and high-temperature heat into electricity.

Heber Field Company and ORMAT propose a Repower Project which will take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units at the Heber 1. In addition, OEC-11 and OEC-13 will be reconfigured into a combined two-level unit, OEC-11 ITLU. The steam turbine generator has become less effective as the temperature of the geothermal resource has decreased over time. The new and updated units operate by a different process and will perform better than the steam turbine generator at the current lower temperature of the geothermal fluid, improving efficiency of the operations. Based on ORMAT records, the 2015 amendment to CUP No. 04-0024, which incorporated OEC-14, added 16 gross MW to the existing 62.5 gross MW, bringing the facility net output up to 52MW. The Heber Repower Project is therefore not proposing to increase the authorized nameplate net or gross outputs, which are 52MW and 78.2MW respectively, and only proposing to bring net and gross generation up to existing authorized levels. Additional new equipment including storage tanks and an evacuation skid/vapor recovery maintenance unit (VRMU) will also be added to the facility.

This application also proposes to extend the permitted life of the Heber 1 to 30 years (2020-2050). The proposed facility upgrades would allow the Heber 1 complex to run more efficiently and restore output to the net generation capacity without expanding the existing facility beyond the current footprint, and produce clean renewable energy in the Imperial Valley for the next three decades.

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SECTION 2.0 – PROJECT DESCRIPTION

Ormat Nevada Inc. (Ormat) is a leading geothermal company and the only vertically integrated company engaged in geothermal and recovered energy generation (REG), with the objective of becoming a leading global provider of renewable energy. Ormat owns, operates, designs, manufactures and sells geothermal facilities based on the Ormat Energy Converter (OEC) - a power generation unit that converts low-, medium- and high-temperature heat into electricity.

Ormat proposes to upgrade the existing Heber 1 geothermal facility, which is owned by the subsidiary Heber Field Company, by shutting down the dual-flash steam turbine generator, installing two new OECs (OEC 1 and OEC 2), and reconfiguring two of the existing OECs (OEC 11 and OEC 13). These updates are referred to here onward as the Proposed Project. OEC 1 and 2 combined would function as an Ormat Integrated Three-Level Unit (I3LU) and will use air cooling rather than water cooling for the motive fluid . OEC 11 and OEC 13 combined would function as an Integrated Two-Level Unit (ITLU) and will use the existing cooling tower. The proposed new setup is better suited to the current and expected future conditions of the geothermal resource than the steam turbine generator, improving efficiency of the operations and bringing net and gross generation up to existing authorized levels. Based on Ormat records, the 2015 amendment to CUP No. 04-0024, which incorporated OEC-14, added 16 gross MW to the existing 62.5 gross MW, bringing the facility net output up to 52MW. Therefore, the Proposed Project would not increase the authorized nameplate gross or net output, which are 52MW and 78.2MW respectively. The following sections describe the location and details associated with the upgrade of the Proposed Project site.

A. Project Location:

The Proposed Project site is located in Heber, CA, Imperial County. The Proposed Project would occur entirely within the existing Heber 1 facility, owner and operated by Ormat and located at 895 Pitzer Road, Heber, CA (Figure 1). The Proposed Project site is located within Assessor's Parcel Numbers (APN) 054-250-035 and 054-250-036. The Proposed Project site is zoned General Agriculture within the Heber Specific Plan Area (A-2-G-SPA). The Proposed Project site is generally bound by APNs 054-250-014 to the north, Pitzer Road to the east, East Jasper Road to the south, and a Union Pacific right-of-way and APN 054-250-027 and 054-250-026 to the west; the surrounding land uses and zoning are General Agriculture and Heavy Agriculture and currently contain active agricultural operations.

B. Project Summary:

The Proposed Project includes the following improvements and additions to the existing Heber 1 facility include (Figure 2):

- Replacing the Steam Turbine and Bottoming units with Ormat I3LU and ITLU
    - The I3LU and ITLU would generate 51.3 megawatts (MW) gross and 36.2 MW net
- The I3LU configuration would include new air cooled OECs
    - New air cooled OECs will be OEC 1 and OEC 2
        - New OECs will require installation of two additional isopentane storage tanks (10,000 gallons each) on-site
        - New VRMU

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- OEC 11 and OEC 13 will be converted to ITLU
  - The existing cooling tower and VRMU will be used for OEC 11 and OEC 13
- Additional modification to OEC 11 and OEC 13 includes
  - Some of the brine heat exchangers will be replaced
  - Replace the existing generator and one Turbine
  - Replace a portion of the piping system and pumps
  - No modifications are planned to the existing cooling water system (tower, pumps, condensers, piping etc.) and VRMU
- The Proposed Project does not include alterations to existing units OEC 14 and OEC 12
- Existing substation will be used without changes

Ormat Energy Converter 1

Ormat Energy Converter 1 (OEC 1) is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 1 also includes a generator, vaporizer, air cooled condensers, and preheaters and recuperators. OEC 1 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 1 is 19.85 MW.

Ormat Energy Convertor 2

Ormat Energy Converter 2 (OEC 2) is a two-turbine combined cycle binary unit that operates on a subcritical Rankine cycle with isopentane as the motive fluid for the system. OEC 2 also includes also includes a generator, vaporizer, air cooled condensers, and preheaters. OEC 2 will be served by a VRMU for purging vapor prior to maintenance. The design capacity for OEC 2 is 17.25 MW.

Vapor Recovery Maintenance Unit (VRMU)

The VRMU is composed a liquid motive fluid removal pump, a motive fluid knockout drum, a vacuum pump, motive fluid vapor condenser, motive fluid accumulator tank, a pressure-controlled vent valve, and an activated carbon adsorption unit.

On-site Retention Basins

There are currently three retention basins onsite and are in the process of being filled in coordination with the Regional Water Quality Control Board. For the purposes of this analysis, the retention basins will be considered filled, developed land for construction.

Water Usage

Per the original CUP (15-0013), the permittee may use up to a total of 1,800 acre feet of irrigation water per year for 30 years from Imperial Irrigation District (IID). On November 18, 2019, the IID issued an Amendment No. 1 to the Amended and Restated Water Supply Agreement to supply an additional 500 acre feet of water per year in addition to the 1,800 acre feet that was in the agreement, for a total of 2,300 acre feet per year. The purpose of this increase is the original operational process utilized flashes of geothermal brine to make steam, which made water condensate that was then used in the wet cooling tower. Changes to these existing facilities will no longer generate the extra water needed for the cooling

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towers. In 1985, the IID supplied 5,000 acre feet per year, so over time with equipment modifications and changes in the geothermal resource, water consumption has fluctuated. There will be no change to the existing water intake or supply system to accommodate this change.

Construction Schedule

Construction of the Proposed Project would start June 2020 and would take approximately 6 months to construct. Construction of OEC 1 and OEC 2 would be initial phase of construction. Approximately two months prior to the end of the construction timeline, construction on OEC 11 and OEC 13 would begin.

Construction Equipment

It is assumed that construction equipment would include a crane, boom truck, fork lift, man lift, haul trucks and hand tools. Transporting the retired steam turbine generator from the Project site may require overweight or oversized vehicles and loads to travel on surrounding roadways. Ormat will determine with its contractors the need to submit an application for a special permit to operate, through the California Department of Transportation (Caltrans), well in advance of planned equipment mobilization and hauling of materials to the Project site. Ormat will also contract a traffic engineer to develop a Traffic Control Plan for the Proposed Project and will submit the plan at least 30 days prior to construction, in addition to coordinating with Caltrans.

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Figure 1: Project Location Map

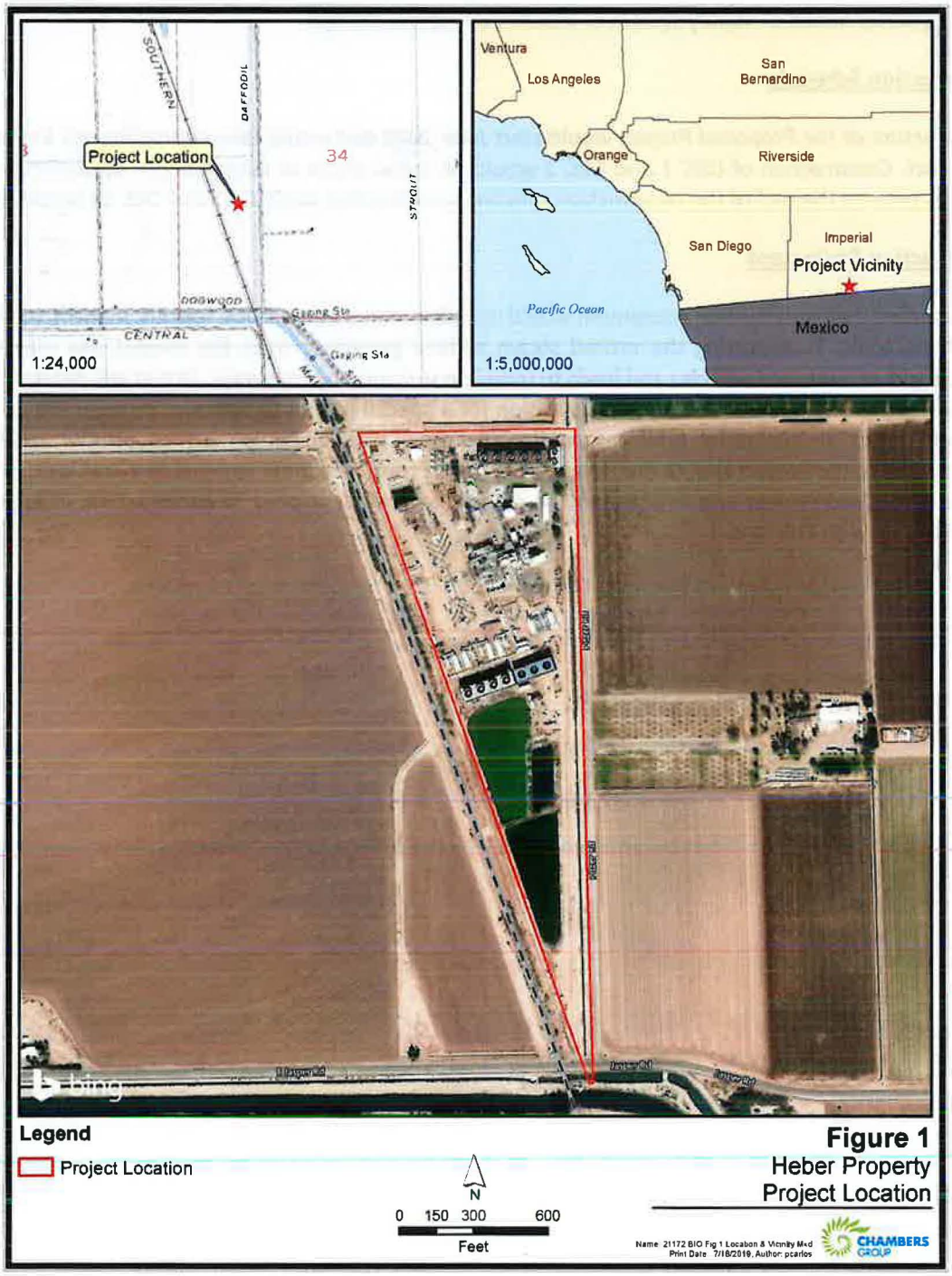

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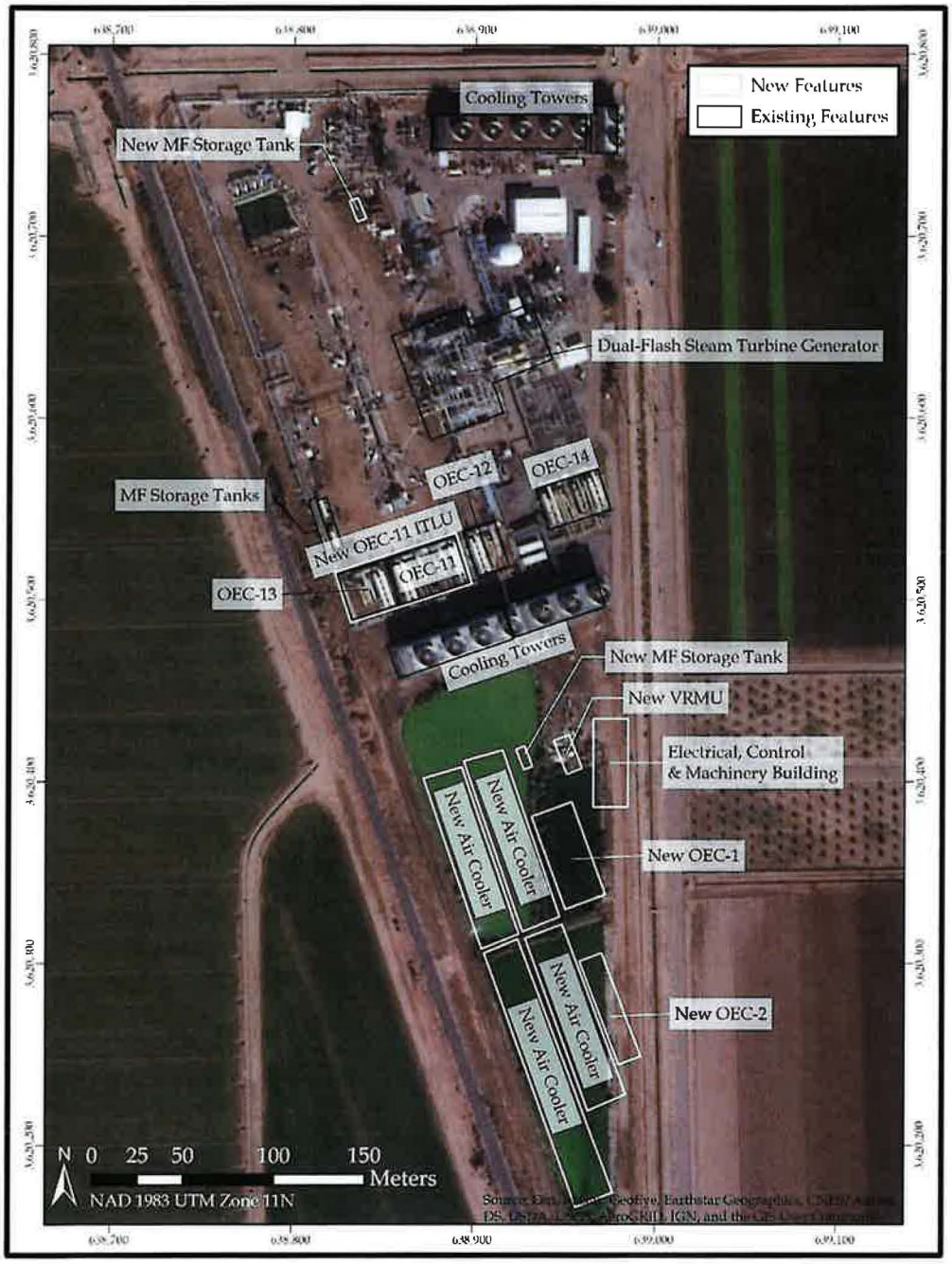
Figure 2: Project Site Plan



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APPENDIX A – SITE PHOTOGRAPHS

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Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

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APPENDIX A – SITE PHOTOGRAPHS (July 2019)



Photo 1. Overview of a typical access road along the western edge of the Study Area. View south.

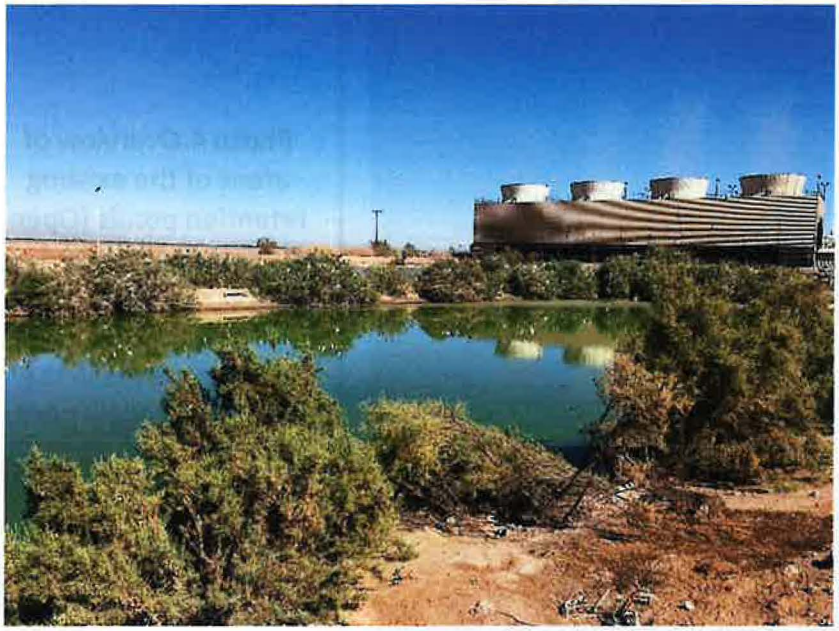

Photo 2. Overview of the Tamarisk Thickets and associated egret rookery. View northwest.

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Photo 3. Overview of existing Retention Ponds and the surrounding Disturbed habitat. View southwest.



Photo 4. Overview of areas of the existing retention ponds (Open Water), Disturbed habitat surrounding the ponds, and existing cooling towers in the background. View north.

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Photo 5. Overview from the eastern edge of the Study Area. View northeast.



Photo 6. Typical overview of Developed areas. View north.

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Photo 7. Typical overview of Landscape/Ornamental areas. View southeast.



Photo 8. Detail overview of Developed areas, Pavement, Bare Ground, and Disturbed habitats. View south.

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Legend

Project Location

Directional Photo Location

Photo Locations

Name: 21172 PLAN Photo Locations.Mxd
\Print Date: 12/3/2019, Author: pcarlos

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APPENDIX B – BIOLOGICAL TECHNICAL REPORT

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Note to the Reader

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BIOLOGICAL TECHNICAL REPORT
FOR THE HEBER 1 REPOWER PROJECT
IMPERIAL COUNTY, CALIFORNIA

Prepared for:

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October 2019

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GLOSSARY OF TERMS AND ACRONYMS

California Rare Plant Rank (CRPR)

List 1A	=	Plants presumed extinct in California.
List 1B	=	Plants rare and endangered in California and throughout their range.
List 2	=	Plants rare, threatened, or endangered in California but more common elsewhere in their range.
List 3	=	Plants about which we need more information; a review list.
List 4	=	Plants of limited distribution; a watch list.

CRPR Extensions

0.1	=	Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2	=	Fairly endangered in California (20-80 percent occurrences threatened).
0.3	=	Not very endangered in California (less than 20 percent of occurrences threatened).

Federal

FE	=	Federally listed; Endangered
FT	=	Federally listed; Threatened
BCC	=	Birds of Conservation Concern

State

ST	=	State listed; Threatened
SE	=	State listed; Endangered
SSC	=	State Species of Special Concern

Local

IID	=	Imperial Irrigation District

General

°F	Degrees Fahrenheit
BCC	Birds of Conservation Concern
BMPs	Best Management Practices
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Register
Chambers Group	Chambers Group, Inc.
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory

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CRPR	California Rare Plant Rank
CWA	Clean Water Act
DRECP	Desert Renewable Energy Conservation Plan
FESA	Federal Endangered Species Act
FT.	Feet
GCP	General Conservation Plan
GIS	Geographic Information System
HCP	Habitat Conservation Plan
I3LU	Integrated Three Level Unit
ITLU	Integrated Two Level Unit
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
MW	Megawatt
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OEC	ORMAT Energy Converter
PFO	Potential for Occurrence
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SQ. FT.	Square Feet
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRMU	Vapor Recovery Maintenance Unit

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EXECUTIVE SUMMARY

This Biological Technical Report (BTR) has been prepared for the County of Imperial, as the lead agency under the California Environmental Quality Act (CEQA), for the Heber 1 Repower Project (Proposed Project). The Proposed Project is located within the Imperial Irrigation District's (IID) Habitat Conservation Plan (HCP); and comprises an existing geothermal power plant. The purpose of this report is to document the biological resources identified as present or potentially present on the Proposed Project; identify potential biological resource impacts resulting from the Proposed Project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state and local rules and regulations under CEQA and IID's HCP. This BTR incorporates the results of a biological reconnaissance-level survey.

Heber Geothermal Company and ORMAT Nevada, Inc. (ORMAT) propose a Repower Project which will take the existing dual-flash steam turbine generator out of service and install two new two-level geothermal power generation units at the Heber 1. In addition, OEC-11 and OEC-13 will be reconfigured into a combined two-level unit, OEC-11 ITLU. The steam turbine generator has become less effective as the temperature of the geothermal resource has decreased over time. The new and updated units operate by a different process and will perform better than the steam turbine generator at the current lower temperature of the geothermal fluid, improving efficiency of the operations. Based on ORMAT records, the 2015 amendment to CUP No. 04-0024, which incorporated OEC-14, added 16 gross MW to the existing 62.5 gross MW, bringing the facility net output up to 52MW. The Heber Repower Project is therefore not proposing to increase the authorized nameplate net or gross outputs, which are 52MW and 78.2MW respectively, and only proposing to bring net and gross generation up to existing authorized levels. Additional new equipment including storage tanks and an evacuation skid/vapor recovery maintenance unit (VRMU) will also be added to the facility. Each of these elements associated with the Proposed Project are explained in further detail within Section 1.3 of this report. The biological reconnaissance-level survey was conducted over the parcel containing the Proposed Project features (Survey Area). Impacts to habitat were calculated for all Proposed Project features and anticipated work areas combined (Project Area).

The existing geothermal facility is developed with existing buildings, and infrastructure. The majority of the proposed site development evaluated within this report will occur to the southern portion of the existing Heber 1 facility. The Survey Area is immediately surrounded by agricultural operations and a Union Pacific Railroad track. The Main Canal and the Daffodil Canal are located to the south and east of the Survey Area, respectively; both are cement-lined canals. A few isolated residences with associated landscape/ornamental vegetation occur primarily south and west of the existing site.

A total of four special status plant species were evaluated for their potential for occurrence (PFO) within the Survey Area. Based on the biological reconnaissance-level survey and analysis conducted for this report, all four special status plant species are considered absent within the Survey Area due to lack of suitable habitat or the species not being observed. Therefore, no impacts to special status plants are would result from the Proposed Project.

A total of nine sensitive wildlife species were evaluated for their PFO within the Survey Area. Based on the biological reconnaissance-level survey and database analysis, two wildlife species, burrowing owl (*Athene cunicularia*) and western mastiff bat (*Eumops perotis*) have a moderate PFO.

No jurisdictional features such as drainages or swales were observed within the Proposed Project area. Two irrigation canals, associated with the IID, are located along the eastern and southern edge of the

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Survey Area. Three retention ponds are located within the Proposed Project area; however, these are closed, man-made systems and for the purposes of this report are considered Developed areas. Limited riparian vegetation is located immediately surrounding the three ponds and is solely comprised of tamarisk and is maintained (cut down) yearly.

Construction of the Proposed Project would result in approximately 7.67 acres (315,373 square feet [sq. ft.]) of surface disturbance, including 1.64 acres of bare ground, 1.02 acres of sparse disturbed habitat and 5.01 acres of developed land. At the time of this report, distinction between temporary and permanent impacts was not known; however, majority of the impacts are anticipated to be temporary in nature. No sensitive or native habitat will be impacted by the Proposed Project.

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SECTION 1.0 – INTRODUCTION

1.1 SITE LOCATION AND DESCRIPTION

The Proposed Project site is located a half-mile south of the unincorporated town of Heber in Imperial County, California. The Proposed Project is located within the U.S. Geological Survey (USGS) *Heber*, California 7.5-minute topographic quadrangle. The Proposed Project site is bordered by Pitzer Road and Daffodil Canal to the east, a Union Pacific Railroad track to the southwest, and a dirt road to the north. The site is further surrounded by agricultural fields and canals associated with the Salton Sink. The City of Calexico is located two miles southeast and the New River is located two miles southwest. The elevation at the Proposed Project site ranges from approximately -7 feet to 2 feet above mean sea level (amsl). Maps of the Proposed Project Location and Proposed Project Vicinity are provided in Appendix A, Figure 1.

The Proposed Project would occur entirely within the existing Heber 1 facility (Survey Area), owned and operated by ORMAT and located at 895 Pitzer Road, Heber, CA. The Proposed Project site is located within Assessor's Parcel Numbers (APN) 054-250-035 and 054-250-036. The Proposed Project site is zoned General Agriculture within the Heber Specific Plan Area (A-2-G-SPA). The Proposed Project site is generally bound by agricultural operations to the north, Pitzer Road to the east, East Jasper Road to the south, and a Union Pacific Railroad right-of-way (ROW) to the west; the surrounding land uses and zoning are General Agriculture and Heavy Agriculture and currently contain active agricultural operations consisting of cattle feed lots and hay grasses.

1.2 PROJECT DESCRIPTION

The Proposed Project includes improvements and additions to the existing Heber 1 facility. The Proposed Project seeks to install two new ORMAT Energy Converters (OEC) designated OEC 1 and OEC 2, upgrade OEC 11 and OEC 13, and pave/replace existing access roads.

OEC 12 and OEC 14, the existing Vapor Recovery Maintenance Unit (VRMU); the cooling water system (tower, pumps, condensers, piping etc.); and the existing substation will not be modified. The Proposed Project will replace the existing Steam Turbine and Bottoming units with ORMAT Integrated three-level unit (I3LU) and Integrated two-level unit (ITLU). These units will result in 51.3 megawatts (MW) gross generation and 36.2 MW net generation capacity.

For further details related to Project features, please refer to the Project Description (Section 2) in the CUP Amendment Application. Construction-related biological impacts associated with each of these Proposed Project features are summarized and detailed in Section 5 of this report.

1.3 CONSTRUCTION SCHEDULE

Construction of the Proposed Project would start August 2020 and would take approximately 10 months to construct. Construction of OEC 1 and OEC 2 would be initial phase of construction. Approximately two months prior to the end of the construction timeline, construction on OEC 11 and OEC 13 would begin. It is anticipated all construction activities would be complete in 10 months.

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1.3.1 Construction Equipment

It is assumed that construction equipment would include a crane, boom truck, cement truck, fork lift, man lift, haul trucks and hand tools. Additional construction equipment may be required based on Proposed Project needs.

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SECTION 2.0 – APPLICABLE REGULATIONS

2.1 FEDERAL

The following are federal policies that apply to the Proposed Project.

2.1.1 Clean Water Act

The purpose of the Clean Water Act (CWA) is to, "Restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of fill material into waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Register (CFR) § 328.3(b)). The goals and standards of the CWA are enforced through permit provisions. The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit. Agricultural water conveyance systems, which are manmade and constructed wholly in uplands, are typically only considered jurisdictional if they are Relatively Permanent Waters (RPWs). "relatively permanent waters typically flow year-round or have continuous flow at least seasonally (e.g. typically three months)" (USACE 2008). Conversely, manmade drainages constructed solely in uplands that are not RPWs are generally not Federally jurisdictional.

When a project may create impacts for wetlands, the project requires a permit or a waiver. Substantial impacts to wetlands may require an Individual Permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required from the Regional Water Quality Control Board (RWQCB) for Section 404 permit actions. No wetlands are present within the Survey Area.

Clean Water Rule

The Clean Water Rule: Definition of Waters of the United States, published in the Federal Register on June 29, 2015 and effective August 28, 2015, was enacted to ensure that waters protected under the CWA are more precisely defined and predictably determined.

2.1.1 Federal Endangered Species Act of 1973

When a private project that has no federal funding and for which no federal action is required may affect a listed species, the private applicant may receive authorization for incidental take of species listed under the Federal Endangered Species Act (FESA). In these situations, Section 10 of the FESA provides for issuance of incidental take permits (ITPs) to private entities with the development of a habitat conservation plan (HCP). An ITP allows take of the species that is incidental to another authorized activity.

2.1.2 Migratory Bird Treaty Act, as Amended

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC 703-711), provides legal protection for almost all bird species occurring in, migrating through, or spending a portion of their life cycle in North America by restricting the killing, taking, collecting, and selling or purchasing of native bird species or their

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parts, nests, or eggs. The United States Fish and Wildlife Service (USFWS) determined it was illegal under the MBTA to directly kill or destroy an active nest (nest with eggs or nestlings) of, nearly any bird species (with the exception of non-native species through the MBTA Reform Act of 2004). Certain game bird species are allowed to be hunted for specific periods determined by federal and state governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities:

- Falconry
- Raptor propagation
- Scientific collecting
- Special purposes, such as rehabilitation, education, migratory game bird propagation, and salvage
- Take of depredating birds, taxidermy, and waterfowl sale and disposal

The regulations governing migratory bird permits can be found in Title 50, Part 13 (General Permit Procedures) and Part 21 (Migratory Bird Permits) of the CFR.

2.2 STATE

The following are California (State) policies that apply to the Proposed Project.

2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code Sections 2050-2116) parallels the FESA. As a responsible agency, California Department of Fish and Wildlife (CDFW) has regulatory authority over species State-listed as endangered and threatened. The State Legislature encourages cooperative and simultaneous findings between State and federal agencies. Consultation with CDFW is required for projects with the potential to affect listed or candidate species. CDFW would determine whether a reasonable alternative would be required for the conservation of the species. CESA prohibits the "take" of these species unless an ITP is granted. Under California Fish and Game Code Section 2081 (ITP), CDFW can authorize the "take" of a listed species (with exception to fully protected species) if the "take" of the listed species is incidental to carrying out an otherwise lawful project that has been approved under the California Environmental Quality Act (CEQA). Section 2080.1 allows for "take" once an applicant obtains a federal ITP which can be approved (Consistency Determination letter) within 30 days by the CDFW Director. If the federal Incidental Take Statement is determined not to be consistent with CESA, then application for a State ITP (2081) is required.

CDFW has designated certain species native to California as Species of Special Concern to "focus attention on wildlife at conservation risk by the Department, other State, Local and Federal governmental entities, regulators, land managers, planners, consulting biologists, and others; stimulate research on poorly known species; achieve conservation and recovery of wildlife before they meet CESA criteria for listing as threatened or endangered."

2.2.2 Sections 1600-1602 of the California Fish and Game Code

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

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stream, or lake, which supports fish or wildlife. CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW limits of jurisdiction include the maximum extent of the uppermost bank-to-bank distance or riparian vegetation dripline. Under Section 1600 of the California Fish and Game Code, CDFW's jurisdiction includes "...bed, channel or bank of any river, stream or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit..." Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife

2.2.3 California Environmental Quality Act

The CEQA (Public Resources Code, Sections 21000-21177) requires that State and local agencies consider environmental consequences and project alternatives before a decision is made to implement a project requiring State or local government approval, financing, or participation by the State of California. In addition, CEQA requires the identification of ways to avoid or reduce environmental degradation or prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.

2.2.4 California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by the CDFW. The California Fish and Game Commission has the authority to designate native plants as "endangered" or "rare" and to protect them from take. Rare plants protected by CDFW generally include species with California Rare Plant Ranking (CRPR) 1A, 1B, 2A, and 2B of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered rare if the population has local significance in the area and is impacted by a project. Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a ROW to allow a public utility to fulfill its obligation to provide service to the public.

When the CESA was passed in 1984, it expanded on the original NPPA, enhanced legal protection for plants, and created the categories of "threatened" and "endangered" species to parallel the FESA. The CESA converted all rare wildlife to threatened species under the NPPA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The NPPA remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between the CDFW and a project proponent.

2.2.5 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1966 (California Water Code §§ 13000-13999.10) mandates that activities that may affect waters of the State shall be regulated to attain the highest quality. The State Water Resources Control Board (SWRCB) and the local RWQCB are the relevant permitting agencies. RWQCB provides regulations for a "non-degradation policy" that are especially protective of areas with high water quality. Porter-Cologne reserves the right for the State of California to regulate

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activities that could affect the quantity and/or quality of surface and/or ground waters, including isolated wetlands, within the State. Waters of the State include isolated waters that are no longer regulated by USACE. If the project is proposed to discharge into waters of the State, a Waste Discharge Report (WDR), or a waiver to WDRs, must be filed before beginning discharge.

2.3 LOCAL

The Proposed Project is located within the geographic area covered by the Imperial Irrigation District (IID) HCP and the Desert Renewable Energy Conservation Plan (DRECP) (Appendix A, Figure 2).

2.3.1 IID HCP

The IID HCP is currently in a draft phase and aims to provide for the conservation and management of covered species, preserve aquatic and terrestrial resources, and provide for the basis to guide or mitigate development in regard to potential impacts to the environment. The plan covers approximately 500,000 acres within Imperial County and a small portion of Riverside County. The plan will cover a total of 96 species, consisting of 86 wildlife species and 10 plant species. Of these species all are previously covered under either federal- or State-based environmental regulations. The plan identifies the importance of the general area's habitats and effect on migratory bird species and details special provisions to minimize or mitigate impacts to overall nesting, burrow, and/or foraging habitat (IID 2006).

2.3.2 DRECP

The DRECP is a multi-agency plan, formed by the Renewable Energy Action Team comprised of the California Energy Commission, CDFW, USFWS, and the Bureau of Land Management, with the goal of facilitating the development and minimizing the environmental impact of the development of renewable energy resources within the desert regions of California. The plan consists of multiple components targeting varying aspects of development, including but not limited to the following: General Conservation Plan (GCP) and a Natural Community Conservation Plan (NCCP). The overall goal is to conserve biological, physical, cultural, social, and scenic resources within the plan area. As this applies to biological resources, the plan intends to achieve six primary objectives: 1) Locate renewable energy development to disturbed lands or those with low biological conflict; 2) Identify plan-wide biological goals and objectives; 3) identify Preserve design envelope for each alternative; 4) contribute to the long-term conservation and management of covered species and natural communities; 5) preserve, restore, and enhance natural communities and ecosystems; and 6) identify and incorporate climate change adaption research and management objectives and/or policies (Renewable Energy Action Team 2016).

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SECTION 3.0 – METHODOLOGY

3.1 LITERATURE REVIEW

Prior to performing the field survey, existing documentation relevant to the Proposed Project site was reviewed. The most recent records of the California Natural Diversity Database (CNDDB) managed by CDFW (CDFW 2019), the USFWS Critical Habitat Mapper (USFWS 2019), and the CNPS Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2019) were reviewed for the following quadrangles containing and surrounding the Proposed Project site: *Heber, Mount Signal, Seeley, El Centro, Holtville W, Holtville E, Bonds Corner,* and *Calexico*, California USGS 7.5 minute quadrangles. These databases contain records of reported occurrences of federal- or state-listed endangered or threatened species, Birds of Conservation Concern (BCC), California Species of Concern (SSC), IID-covered species (IID 2006), or otherwise sensitive species or habitats that may occur within or in the immediate vicinity of the Project site.

3.2 SOILS

Before conducting the survey, soil maps for Imperial County were referenced online (U.S. Department of Agriculture [USDA] 2019) to determine the soil types found within the Proposed Project site. Soils were determined in accordance with categories set forth by the USDA Soil Conservation Service and by referencing the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2019).

3.3 JURISDICTIONAL WATERS

A general assessment of jurisdictional waters regulated by the USACE, RWQCB, and CDFW was conducted for the Proposed Project area. The assessment was conducted by a desktop survey through the USGS National Hydrography Dataset for hydrological connectivity, and a site assessment to confirm the desktop survey.

3.4 BIOLOGICAL RECONNAISSANCE-LEVEL SURVEY

Chambers Group, Inc.'s (Chambers Group) biologist Clark Austin conducted the general biological reconnaissance-level survey within the Proposed Project site to document the existing biological conditions, determine the PFO of sensitive species, and identify potentially jurisdictional waters. The survey was conducted on foot throughout the Proposed Project site between 1025 and 1515 hours on July 2, 2019. Weather conditions during the survey included temperatures ranging from 90 to 95 degrees Fahrenheit (°F), 1 to 3 mile per hour winds, with zero cloud cover, and no precipitation. Photographs of the Proposed Project site were recorded to document existing conditions in July 2019 (Appendix B).

3.4.1 Vegetation

All plant species observed within the Proposed Project site were recorded. Vegetation communities within the Proposed Project site were identified and qualitatively described. Plant communities were determined in accordance with the *Manual of California Vegetation, Second Edition* (2009). Plant nomenclature follows that of *The Jepson Manual* (Baldwin et. al. 2012). A comprehensive list of the plant species observed during the survey is provided in Appendix C.

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3.4.2 Wildlife

All wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (native vegetation, wildlife trails, etc.) or in habitats with the potential to support state- and/or federal-listed or otherwise sensitive species. Notes were made on the general habitat types, species observed, and the conditions of the Project site. A comprehensive list of the wildlife species observed during the survey is provided in Appendix D.

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SECTION 4.0 – RESULTS

4.1 SOILS

After review of USDA Soil Conservation Service and by referencing the USDA NRCS Web Soil Survey (USDA 2019), it was determined that the Proposed Project site is located within the Imperial Valley area (CA683). Based on the results of the database search, a total of three soils types were identified; each is detailed below and strongly associated with alluvial deposits (Appendix A, Figure 3).

4.1.1 Imperial Glenbar Silty Clay Loam, Wet, 0 to 2 percent Slopes

The Imperial soils are nearly level to gently sloping and are on flood plains and in old lake beds at elevations of -235 ft. to 300 ft. amsl. The Glenbar series consists of very deep, well drained soils that formed in stratified stream alluvium. The soil is dry to intermittently moist and is highly dependent on winter and summer monsoonal rains for moisture. The mean annual soil temperature at a depth of 20 inches ranges from 72 to 78 °F. Rock fragments or strata of contrasting texture are lacking to a depth of 40 inches or more. Very thin silty and very fine sandy strata are present in soil that has not been mixed by cultivation with organic matter that decreases irregularly with depth. Tongues ranging from silty clay to loamy sand fill old vertical cracks. The soil has platy or blocky structure and dry fragments may exhibit conchoidal fracture. The soil is dominantly moderately alkaline but can also be strongly alkaline.

4.1.2 Imperial Glenbar Silty Clay Loam, 2 to 5 percent Slopes

Similar to that described above in Section 4.1.1 however with a higher degree of slope.

4.1.3 Vint and Indio Very Fine Sandy Loam, Wet

Vint soils are typically very deep and are located on flood plains, originating from stratified stream alluvium from mixed, rocky sources. These soils typically have slopes of 0 to 3 percent. The soils are typically course-silty, calcareous, and often mixed with little organic matter. Typically found in elevations ranging from -230 ft. to 2,500 ft. amsl in hot, arid continental climates with hot summers and mild winters. These soils are somewhat excessively drained with very slow runoff and moderately rapid permeability.

4.2 JURISDICTIONAL WATERS

As stated earlier the existing conditions of the on-site retention basins will be addressed in a separate, discrete process and for the purposes of this report assume the areas have been drained and filled and baseline conditions are anticipated to be Developed areas. No natural drainages or wetlands were observed within the Survey Area. The Daffodil Canal is located approximately 30 ft. east of the Survey Area and the Main Canal is located approximately 400 ft. south of the main portion of the Survey Area (along the southern edge of the parcel). Both of the aforementioned canals are not anticipated to be impacted by the Proposed Project and are associated with agricultural irrigation and are sourced from the Colorado River (approximately 45 miles east).

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4.3 VEGETATION COMMUNITIES

Five vegetation communities were observed within and adjacent to the Proposed Project site: Sparse Disturbed habitat, Landscape/Ornamental vegetation, Developed lands, Bare Ground, and Pavement. A map showing the vegetation communities observed and other areas within the Proposed Project site is provided in Appendix A, Figure 5a, and the communities are described in the following subsections.

4.3.1 Sparse Disturbed

Disturbed habitat is often associated with frequent use, development, and enhanced erosion and generally consisted primarily of bare ground dominated by non-native annual species including Sahara mustard (*Brassica tournefortii*), Russian thistle (*Salsola* sp.), narrow-leaved oligomeris (*Oligomeris linifolia*), and Arabian schismus (*Schismus arabica*), with non-native grasses scattered throughout but with overall very low vegetation density. The overall habitat was open, with regular disturbance that most likely arises from routine vegetation removal and maintenance that is often associated with fringe habitat surrounding buildings and roads within energy generating facilities resulting in vegetation being widely spaced and the resulting Sparse qualification of this habitat. Vegetation averaged 4-6 inches In height and was confined to the borders of access roads and the existing retention ponds. Isolated occurrences of native species including salt heliotrope (*Heliotropium curassavicum*) and narrow-leaved oligomeris were observed; however, these species were in low density and did not constitute a separate community. A total of 4.39 acres of this type of habitat was mapped within the Survey Area.

4.3.2 Landscape/Ornamental

Landscape/Ornamental vegetation is comprised of purposefully planted and maintained species generally for aesthetic value or erosion control. These areas are often irrigated and maintained on a regular basis. Dominant Landscape/Ornamental plant species observed include Chinese banyan (*Ficus microcarpa* var. *nitida*). A total of 0.21 acres of this habitat was mapped within the Survey Area.

4.3.3 Developed

Developed areas are those where various forms of permanent structures such as buildings cover the soil surface or areas that consist of man-made features such as retention basins. This surface is recorded as separate from bare ground due to the erosional, use, and hydric features associated with the developed features. Due to the lack of permeability, buildings can channel water run-off and can result in unique erosional management considerations. Included within this habitat are the existing on-site retention basins and associated tamarisk scrub currently lining the basins; these areas are being addressed in a separate, discrete process and for the purposes of this report are considered Developed habitat. Approximately 13.23 acres of Developed area is present in the Study Area; and is generally associated with existing plant infrastructure.

4.3.4 Bare Ground

Bare Ground areas are generally devoid of vegetation, but do not contain any form of pavement. These areas are typically associated with unmarked roads and areas that have been previously cleared for anthropogenic use and are generally associated with the matrix located between Developed areas of the plant infrastructure. Compared to Developed areas, Bare Ground has higher water permeability and

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higher potential to support fossorial mammal species. Approximately 6.95 acres of Bare Ground area was mapped in the Survey Area.

4.3.5 Pavement

Areas designated as Pavement are generally existing roads, parking lots, and sidewalks and can be comprised of cement or asphalt. These areas are generally restricted to existing roadways and heavily-used portions of the existing plant. Approximately 0.23 acre of Pavement was mapped in the Survey Area.

4.4 SENSITIVE SPECIES

The following information is a list of abbreviations used to help determine listing status and/or the significance of biological sensitive resources potentially occurring on the Proposed Project site.

Rare Plant Rank (RPR)

List 1A	=	Plants presumed extinct in California.
List 1B	=	Plants rare and endangered in California and throughout their range.
List 2	=	Plants rare, threatened or endangered in California but more common elsewhere in their range.
List 3	=	Plants about which we need more information; a review list.
List 4	=	Plants of limited distribution; a watch list.

RPR Extensions

0.1	=	Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2	=	Fairly endangered in California (20-80 percent occurrences threatened).
0.3	=	Not very endangered in California (less than 20 percent of occurrences threatened).

Federal

FE	=	Federally listed; Endangered
FT	=	Federally listed; Threatened
BCC	=	Birds of Conservation Concern

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State

ST	=	State listed; Threatened
SE	=	State listed; Endangered
SSC	=	State Species of Special Concern

Local

IID	=	Imperial Irrigation District-covered

The following information was used to determine the significance of biological resources potentially occurring within the Proposed Project site. The criteria used to evaluate the PFO of sensitive species on the Proposed Project site are outlined in Table 1.

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Table 1: Criteria for Evaluating Sensitive Species Potential for Occurrence (PFO)

PFO	CRITERIA
Absent:	Species is restricted to habitats or environmental conditions that do not occur within the Proposed Project site. Additionally, if the survey was conducted within the blooming period of the species and appropriate habitat was observed in the surrounding area but the species was not observed within the Proposed Project impact area it was considered absent.
Low:	Historical records for this species do not exist within the immediate vicinity (approximately 5 miles) of the Proposed Project site, and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the immediate vicinity of the Proposed Project site (approximately 3 miles) and marginal habitat exists on the Proposed Project site, or the habitat requirements or environmental conditions associated with the species occur within the Proposed Project site, but no historical records exist within 5 miles of the Proposed Project site.
High:	Both a historical record exists of the species within the Proposed Project site or its immediate vicinity (approximately 1 mile), and the habitat requirements and environmental conditions associated with the species occur within the Proposed Project site.
Present:	Species was detected within the Proposed Project site at the time of the survey.

4.4.1 Special Status Plant Species

Factors used to determine the PFO included the quality of habitat, elevation, and the results of the biological reconnaissance-level survey. In addition, the location of prior CNDDB records of occurrence were used as additional data, but since the CNDDB is a positive-sighting database, this data was used only in support of the analysis from the previously identified factors.

Current database searches (CDFW 2019, CNPSEI 2019, and USFWS 2019) resulted in a list of four federal- and/or state-listed threatened and endangered, rare, or IID-covered (collectively, "special status") plant species documented to occur within five miles of the Proposed Project site. After the literature review and the biological reconnaissance-level survey, it was determined that all four species were considered absent from the survey area based on the assessment of the various habitat types observed and subsequent lack of habitat suitability.

The following four plant species are considered **Absent** from the Proposed Project site due to lack of suitable habitat of the Proposed Project site:

- Chaparral sand-verbena (*Abronia villosa var. aurita*) –List 1B.1
- Gravel milk-vetch (*Astragalus sabulonum*) – List 2B.2
- Abrams' spurge (*Euphorbia abramsiana*) –List 2B.2
- California satintail (*Imperata brevifolia*) –List 2B.1

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4.4.2 Sensitive Wildlife Species

A current database search (CDFW 2019 and USFWS 2019) resulted in a list of nine federal- and/or state-listed endangered or threatened, BCC, SSC, or IID-covered wildlife species known to occur in the vicinity of the Proposed Project site. After a literature review and the assessment of the various habitat types within the Proposed Project site, it was determined that five sensitive wildlife species are considered absent from the Proposed Project site, five species have a low PFO, two species have a moderate PFO, and no species have a high PFO, within the Proposed Project site. Factors used to determine PFO included the quality of habitat and the location of prior CNDDB records of occurrence.

The following five wildlife species are considered **absent** from the Proposed Project site due to lack of suitable habitat on the Proposed Project site:

- American badger (*Taxidea taxus*)- SSC
- western yellow bat (*Lasiurus xanthinus*) – roosting - SSC
- Flat-tailed horned lizard (*Phrnosoma macallii*) – SSC, IID
- northern leopard frog (*Lithobates pipens*) – SSC, IID
- yellow warbler - nesting (*Setophaga petechia*) – BCC, SSC, IID

The following five wildlife species have a **low** PFO on the Proposed Project site due to low-quality habitat (e.g. Developed areas such as buildings and pipping) on the Proposed Project site:

- big free-tailed bat (*Nyctinomops macrotis*) – SSC, IID
- pocketed free-tailed bat (*Nyctinomops femorosaccus*) – SSC, IID
- western mastiff bat (*Eumops perotis californicus*) – roosting – SSC, IID
- western yellow bat (*Lasiurus xanthinus*) – foraging - SSC
- yellow warbler - foraging – BCC, SSC, IID

The analysis of the CNDDB search and field survey resulted in two species with a **moderate** potential to occur on the Proposed Project site. Burrowing owl (*Athene cunicularia;* Nesting and foraging) and western mastiff bat (foraging) have a moderate PFO and are described below:

Burrowing owl - SSC, IID

The burrowing owl inhabits dry, open, native or non-native grasslands, deserts, and other arid environments with low-growing and low-density vegetation (Ehrlich 1988). It typically use burrows made by mammals such as California ground squirrels (*Spermophilus beecheyi*), foxes, or badgers (Trulio 1997). When burrows are scarce within the Proposed Project area, the burrowing owl may use man-made structures such as openings beneath cement or asphalt pavement, pipes, culverts, and nest boxes. Low-quality suitable habitat located for this species occurs along the access road berms and in the eastern and western portions of the Survey Area and within riprap surrounding the existing retention ponds. Additionally, higher-quality nesting habitat is located to the west of the Proposed Project area within an active agricultural area and Proposed Project related features may be within the 500-foot buffer associated with this species. This species has only been recorded greater than one mile from the Survey Area and no individuals were observed

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during the survey. Suitable foraging habitat is located within and immediately surrounding the Survey Area; therefore, the burrowing owl has a moderate PFO within the Proposed Project site.

Western mastiff bat – foraging - SSC, IID

Uncommon resident in southern California, occurring from the coast eastward to the Colorado Desert. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial Grasslands, palm oases, Chaparral, desert scrub, and urban environments (Tremor et. al. 2017). This species has been recorded within three miles of the Proposed Project site and low-quality roosting habitat exists within the existing buildings and piping structures within the Survey Area.

The analysis of the CNDDB search and field survey resulted in no species with a **high** PFO within the Proposed Project site.

4.5 GENERAL PLANT SPECIES

A total of 14 plant species were observed during the survey. Plant species observed or detected during the site survey were dominated by non-native species with occasional native species interspersed. No sensitive species were observed during the survey effort. A complete list of plants observed is provided in Appendix C.

4.6 GENERAL WILDLIFE SPECIES

A total of 10 wildlife species were observed during the survey. Wildlife species observed or detected during the site survey were characteristic of the existing Proposed Project site conditions. A complete list of wildlife observed is provided in Appendix D.

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SECTION 5.0 – PROPOSED PROJECT IMPACTS

5.1 ANALYSIS OF PROPOSED PROJECT EFFECTS

The Proposed Project is not anticipated to impact any sensitive or native habitat. All impacts are anticipated to occur to previously developed areas and therefore are not anticipated to be significant.

5.1.1 Direct Impacts

Impacts resulting from proposed activities associated with the existing steam turbine and bottoming units, OEC 1 and OEC 2, OEC 11 and OEC 13, and Emergency Fire Water Pump are combined into one impact area detailed in Appendix A, Figure 5b. The construction and operations are located within previously developed areas or open space areas dominated by non-sensitive habitats. Total impacts to each habitat type are detailed in Table 2 below.

Table 2: Direct Impacts by Habitat Type

Habitat Type	Anticipated Impact in sq. ft.	Anticipated Impacts in Acres
Sparse Disturbed	44,431	1.02
Developed	218,236	5.01
Bare Ground	71,438	1.64
Total	334,105	7.67

Note: No impacts are expected to Landscape/Ornamental vegetation or Pavement and therefore those habitat types are not listed within Table 2.

5.1.2 Indirect Impacts

Increased land use associated with the upgrade of existing facilities and the installation of new facilities will result in more anthropogenic activity within the Survey Area and therefore potentially more noise, vibration, artificial light, and/or an overall degradation of existing and surrounding habitat. However, the baseline conditions at the site are consistent with the conditions that will exist during operations.

5.2 CUMULATIVE IMPACT ANALYSIS

The Proposed Project area is previously developed and surrounded by agricultural land and has limited to no connectivity with patches of native habitat. The ultimate goal of the Proposed Project is to increase renewable energy generation capacity and reduce overall plant emissions. All anticipated impacts associated with the Proposed Project are located within the existing footprint of the Heber 1 geothermal facility, and land use within the parcel will remain unchanged.

5.3 MITIGATION MEASURES

This Proposed Project is located within the IID HCP. All impacts associated with the Proposed Project are to occur to non-sensitive habitats and therefore, no compensatory mitigation is required. However, it is recommended that the following measures be implemented to minimize impacts to biological resources or species:

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- Environmental awareness training should occur prior to the start of any construction-related activities. Special focus should be made on sensitive animals that have a PFO within the Survey Area (e.g. burrowing owl and western mastiff bat).
- If construction or vegetation removal activities are to occur during the bird breeding season (February 15 – August 31) a nesting bird survey should be conducted prior to the start of construction or vegetation clearing activities. If active nests are found, an appropriate nest buffer shall be established by a qualified biologist until the nest fledges or fails naturally.
- Due to surrounding agricultural areas and low-quality but suitable habitat within the Survey Area a focused survey for burrowing owl is suggested before construction activities commence.
- If modification of the existing buildings is required a focused bat survey should be performed for western mastiff bat as this species may roost in building overhangs or within piping infrastructure located within the Survey Area.

5.4 CONCLUSIONS

Through the implementation of the above mitigation measures, it is expected the Proposed Project will have a less than significant impact on species diversity or richness of the Survey Area or surrounding ecosystem. A total of nine sensitive wildlife species were evaluated for their PFO within the Survey Area. Based on the biological reconnaissance-level survey and database analysis, two wildlife species, burrowing owl (*Athene cunicularia*) and western mastiff bat (*Eumops perotis*) have a moderate PFO. The other species were determined absent or with a low PFO due to lack of suitable habitat. No sensitive species were observed during the surveys. Through the implementation of the above listed mitigation measures, no significant impacts are anticipated to biological resources as a result of Proposed Project-related activities.

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APPENDIX A – FIGURES

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Legend

Project Location

N

0 150 300 600

feet

Figure 1
Project Location

Name: 21172 BIDT Fig 1 Location & Vicinity.mxd
Print Date: 9/25/2019, Author: pcarlos

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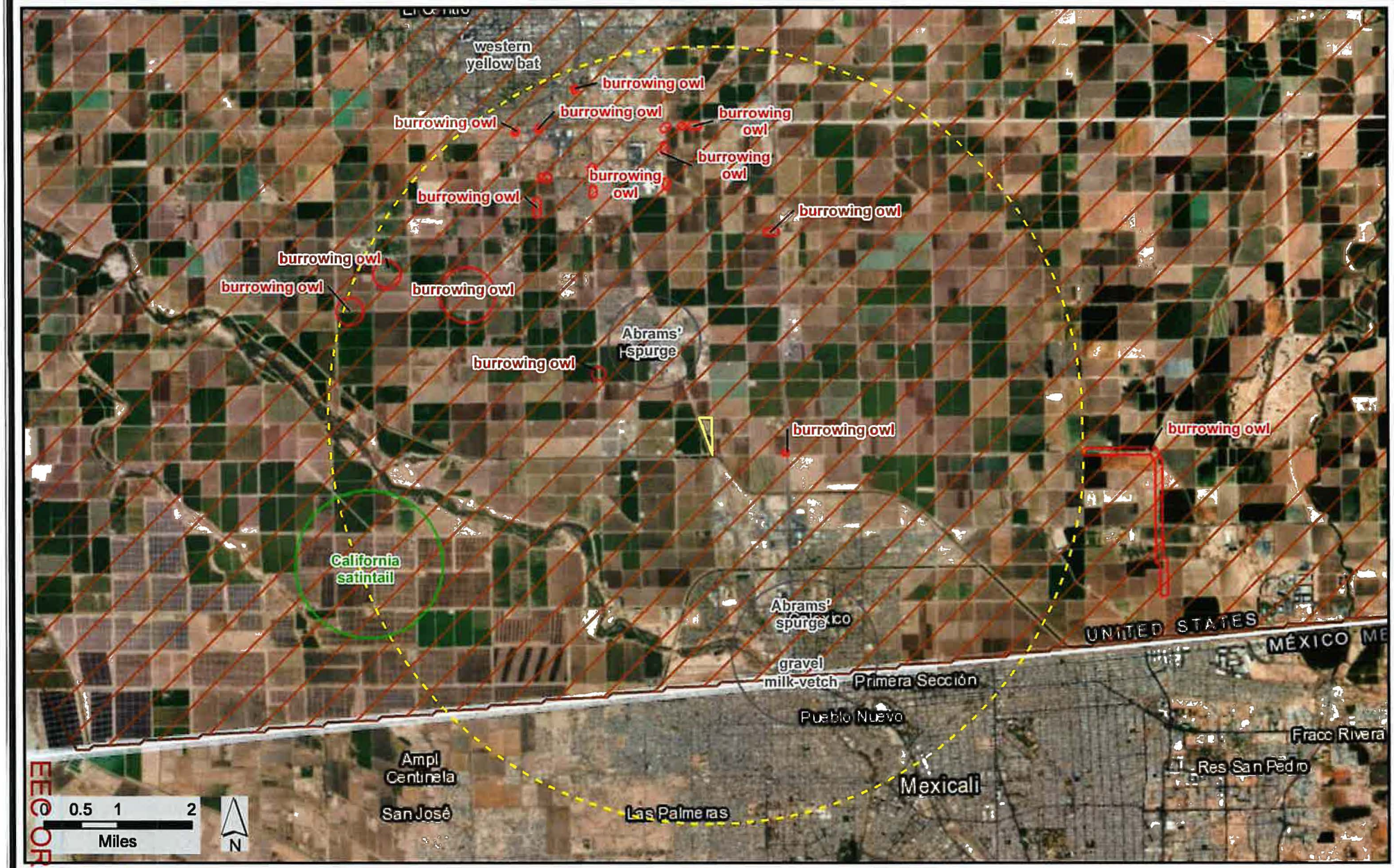

Legend

- Project Location
- 5 Mile Buffer
- Imperial Irrigation District HCP

CNDDB selection

- Plant (circular)
- Multiple (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)

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Figure 2
IID HCP and CNDDB Occurrences

Name: 21172 BIO Fig 2 IID HCP, CNDDB Occurrences, and USFWS Occurrences.Mxd
Print Date: 10/3/2019, Author: pcarlos

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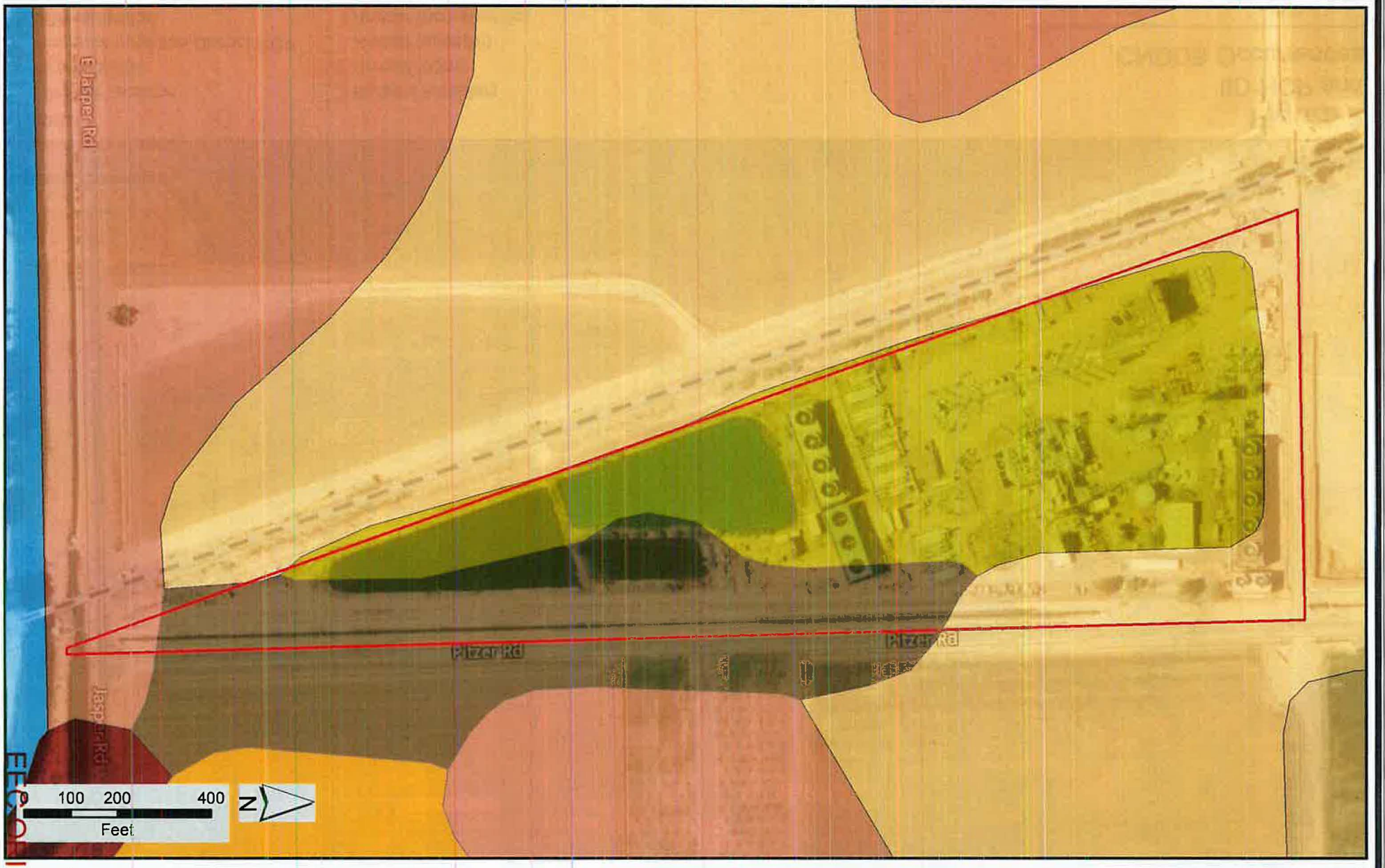

Legend

- Project Location

Soil Types

- Water
- Indio loam, wet
- Holtville silty clay, wet
- Imperial silty clay, wet
- Meloland very fine sandy loam, wet
- Vint and Indio very fine sandy loams, wet
- Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes
- Imperial-Glenbar silty clay loams, 2 to 5 percent slopes

Figure 3
Soils

Name: 21172 BIO Fig 3 Soils.Mxd
Print Date: 10/2/2019, Author: pcarlos

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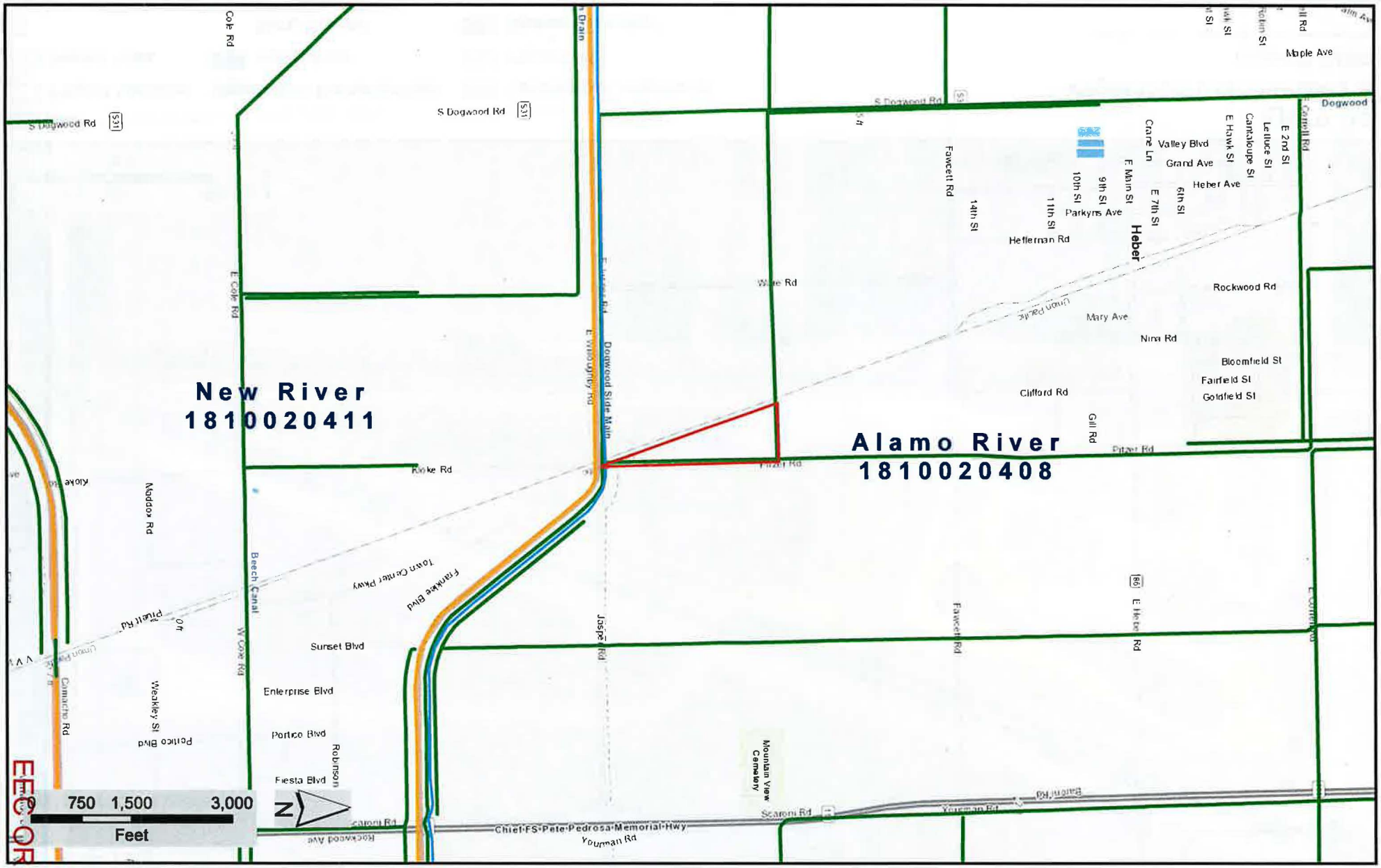

Legend

- Project Location
- HUC-10 Watershed Boundary

USGS NHD Flowlines

- Artificial Path
- Canal Ditch

USFWS Mapped NWI Type

- Freshwater Pond
- Riverine

Figure 4
Jurisdictional Waters and Associated Wetlands

Name: 21172 BIO Fig 4 Jurisdictional Waters and Associated Wetlands.Mxd
Print Date: 10/2/2019, Author: pcarlos

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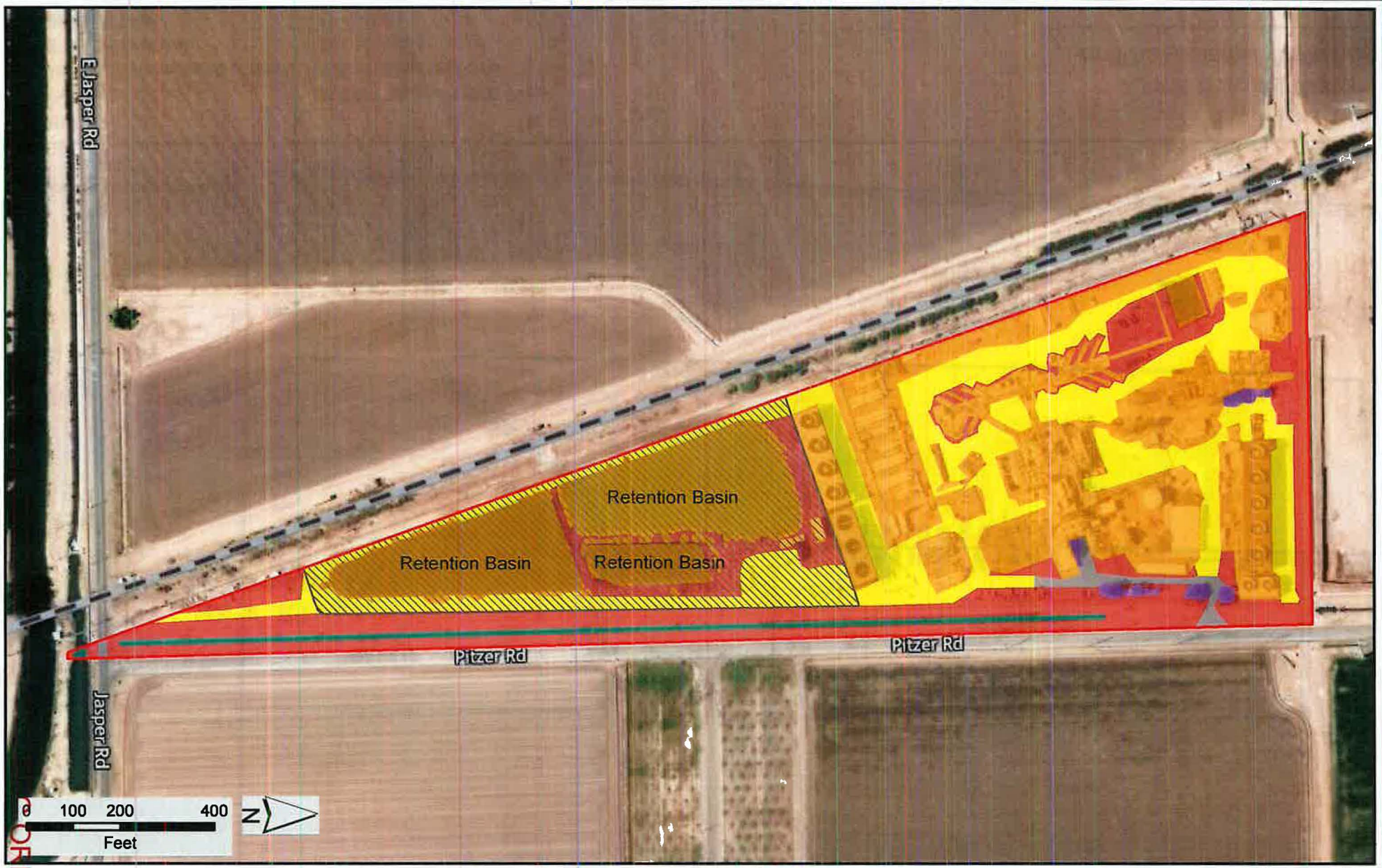

Legend

- Project Location
- Impact Area

Vegetation Communities

- Agriculture
- Bare Ground
- Developed
- Landscape/Ornamental
- Pavement
- Sparse Disturbed

Figure 5a
Vegetation Communities & Impact Area

Name: 21172 BIO Fig 5a Vegetation Communities & Impact Areas.Mxd
Print Date: 10/30/2019, Author: pcarlos

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Legend

- Project Location

Vegetation Communities

- Agriculture
- Bare Ground
- Developed
- Landscape/Ornamental
- Pavement
- Sparse Disturbed

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Figure 5b
Vegetation Communities & Site Plan

Name: 21172 BIO Fig 5b Vegetation Communities & Site Plan.Mxd
Print Date: 10/30/2019, Author: pcarles

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APPENDIX B – SITE PHOTOGRAPHS

APPENDIX B – SITE PHOTOGRAPHS (July 2019)



Photo 1. Overview of a typical access road along the western edge of the Study Area. View south.

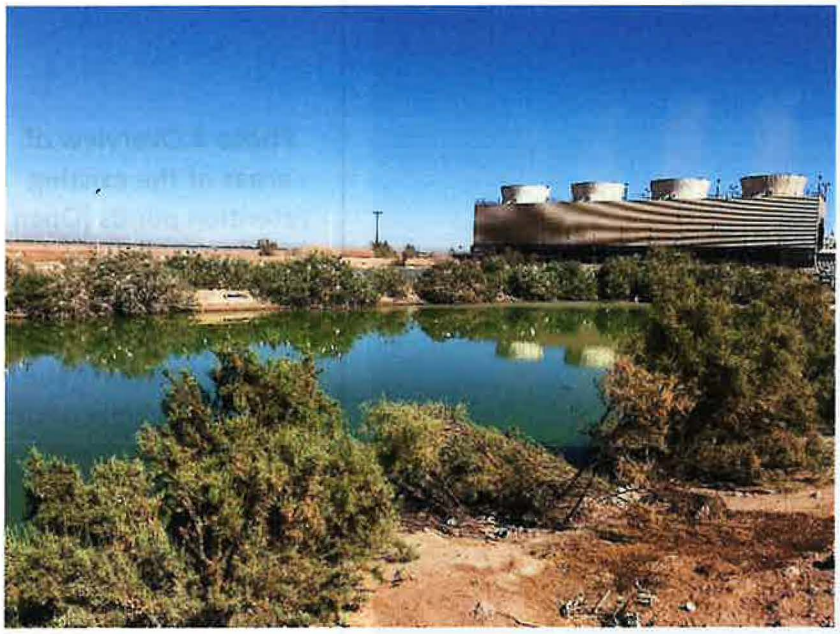

Photo 2. Overview of the Tamarisk Thickets and associated egret rookery. View northwest.

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Photo 3. Overview of existing Retention Ponds and the surrounding Disturbed habitat. View southwest.



Photo 4. Overview of areas of the existing retention ponds (Open Water), Disturbed habitat surrounding the ponds, and existing cooling towers in the background. View north.

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Photo 5. Overview from the eastern edge of the Study Area. View northeast.



Photo 6. Typical overview of Developed areas. View north.

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Photo 7. Typical overview of Landscape/Ornamental areas. View southeast.



Photo 8. Detail overview of Developed areas, Pavement, Bare Ground, and Disturbed habitats. View south.

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APPENDIX C – PLANT SPECIES LIST

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APPENDIX C – PLANT SPECIES LIST

Scientific Name	Common Name
ANGIOSPERMS (EUDICOTS)	
ASTERACEAE	**SUNFLOWER FAMILY**
Geraea canescens	desert sunflower
BORAGINACEAE	**BORAGE FAMILY**
Cryptantha sp.	cryptantha
BRASSICACEAE	**MUSTARD FAMILY**
Brassica tournefortii	sahara mustard
Lepidium nitidum	shining peppergrass
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Salsola tragus	Russian thistle
Suaeda nigra	bush seepweed
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Oenothera deltoides subsp. *deltoides*	dune evening-primrose
PLANTAGINACEAE	**PLANTAIN FAMILY**
Plantago sp.	plantain
POLYGONACEAE	**BUCKWHEAT FAMILY**
Chorizanthe rigida	rigid spineflower
Eriogonum inflatum	desert trumpet
RESDACEAE	**MIGNONETTE FAMILY**
Oligomeris linifolia	narrow-leaved oligomeris
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura wrightii	jimson weed
TAMARICACEAE	**TAMARISK FAMILY**
Tamarix sp.	tamarisk
ANGIOSPERMS (MONOCOTS)	
POACEAE	**GRASS FAMILY**
Schismus arabicus	Arabian schismus

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APPENDIX D – WILDLIFE SPECIES LIST

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APPENDIX D – WILDLIFE SPECIES LIST

Scientific Name	Common Name
CLASS AVES	**BIRDS**
ARDEIDAE	**HERONS**
Ardea alba	great egret
Bubulcus ibis	cattle egret
Butorides virescens	green heron
CHARADRIIDAE	**PLOVERS, DOTTERELS, LAPWINGS**
Charadrius vociferus	killdeer
COLUMBIDAE	**PIGEONS & DOVES**
Columba livia	rock pigeon
Zenaida asiatica	white-winged dove
ICTERIDAE	**ORIOLES, GRACKLES, COWBIRDS**
Agelaius phoeniceus	red-winged blackbird
Quiscalus mexicanus	great-tailed grackle
RALLIDAE	**RAILS**
Fulica americana	American coot
RECURVIROSTRIDAE	**AVOCETS & STILTS**
Himantopus mexicanus	black-necked stilt

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APPENDIX C – PHASE I CULTURAL RESOURCES REPORT

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Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

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PHASE I CULTURAL RESOURCES REPORT FOR THE HEBER 1 REPOWER PROJECT, IMPERIAL COUNTY, CALIFORNIA

Prepared for:

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September 4, 2019

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NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

Authors: Ted Roberts and Lauren DeOliveira.

Firm: Chambers Group, Inc.

Client/Project Proponent: Ormat Nevada, Inc

Report Date: September 4, 2019

Report Title: Phase I Cultural Resources Report for the Heber 1 Repower Project, Imperial County, California

Type of Study: Cultural Resources Phase 1 Study

New Sites: N/A

Updated Sites: N/A

USGS Quad: Heber 7.5-minute quadrangle

Acreage: 20

Permit Numbers: N/A

Key Words: County of Imperial, Community of Heber, Negative Survey, CEQA, Reconnaissance Survey, *Heber* USGS Quadrangle

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Figure 7: Overview of project area from south side. Looking north 22

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SECTION 1.0 – INTRODUCTION

Chambers Group, Inc. (Chambers Group) has been contracted by Ormat Nevada, Inc., within the Community of Heber, Imperial County, California, to complete an Archaeological Assessment (including a literature review and reconnaissance survey) for the proposed Heber 1 Repower Project. The proposed project will include the replacement of the steam turbine and bottoming units with an integrated three-level unit, new air-cooled converter, new brine feed exchangers along with feed pumps, and a portion of the piping systems. The project is proposed within 20 acres of the existing Heber 1 geothermal facility located at 895 Pitzer Road, Imperial County, California.

Chambers Group completed an archaeological literature review and records search and reconnaissance survey of the 20-acre project location. This report outlines the archaeological findings and results of both efforts.

The following study has been conducted in accordance with the California Environmental Quality Act (CEQA).

1.1 REGULATORY FRAMEWORK

Work for this project was conducted in compliance with CEQA. The regulatory framework as it pertains to cultural resources under CEQA is detailed below.

Under the provisions of CEQA, including the CEQA Statutes (Public Resources Code [PRC] §§ 21083.2 and 21084.1), the CEQA Guidelines (Title 14 California Code of Regulations [CCR], § 15064.5), and PRC § 5024.1 (Title 14 CCR § 4850 et seq.), properties expected to be directly or indirectly affected by a proposed project must be evaluated for CRHR eligibility (PRC § 5024.1).

The purpose of the California Register of Historical Resources (CRHR) is to maintain listings of the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term *historical resources* includes a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CCR § 15064.5[a]). The criteria for listing properties in the CRHR were expressly developed in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP). The California Office of Historic Preservation (OHP 1995:2) regards "any physical evidence of human activities over 45 years old" as meriting recordation and evaluation.

1.1.1 CALIFORNIA REGISTER OF HISTORIC RESOURCES

A cultural resource is considered "historically significant" under CEQA if the resource meets one or more of the criteria for listing on the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR. A resource is considered significant if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of persons important in our past;

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3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the California Register must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section. A *unique archaeological resource* is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
    - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
    - Has a special and particular quality, such as being the oldest of its type or the best available example of its type
    - Is directly associated with a scientifically recognized important prehistoric or historic event or person

Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a "unique archaeological resource" under CEQA PRC § 21083.2 are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" (PRC § 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to historical resources from a proposed project are thus considered significant if the project (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

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SECTION 2.0 – PROJECT DESCRIPTION AND LOCATION

2.1 PROJECT DESCRIPTION

Chambers Group has been contracted by Ormat Nevada Inc., within the Community of Heber, Imperial County, California, to complete an Archaeological Literature Review and records search along with a reconnaissance survey of the 20-acre project area. This study is for the proposed construction of the Heber 1 Repower, which will include the replacement of the steam turbine and bottoming units with an integrated three- level unit, new air-cooled converter, new brine feed exchangers along with feed pumps, and a portion of the piping systems. The project is proposed within the existing footprint of the Heber 1 Geothermal Facility.

The purpose of this investigation is to assess the potential for significant archaeological deposits and/or materials within the proposed project area and to determine if the current project has the potential to adversely affect any significant cultural materials.

2.2 PROJECT LOCATION

The project is located at 895 Pitzer Road within the Community of Heber, Imperial County, California. The 20-acre project area is located immediately northwest of the intersection of Pitzer Road and Jasper Road, west of CA-111. Specifically, the proposed project is located on the Heber 7.5-min quadrangle, Section 34, in Township 16 South, Range 14. Regional access to the project area is provided via CA Route 111 in Imperial County, California.

The project area encompasses the existing Heber 1 Geothermal Facility and retention ponds (Figure 1). The reconnaissance survey was designed to assess and evaluate the entire project area.

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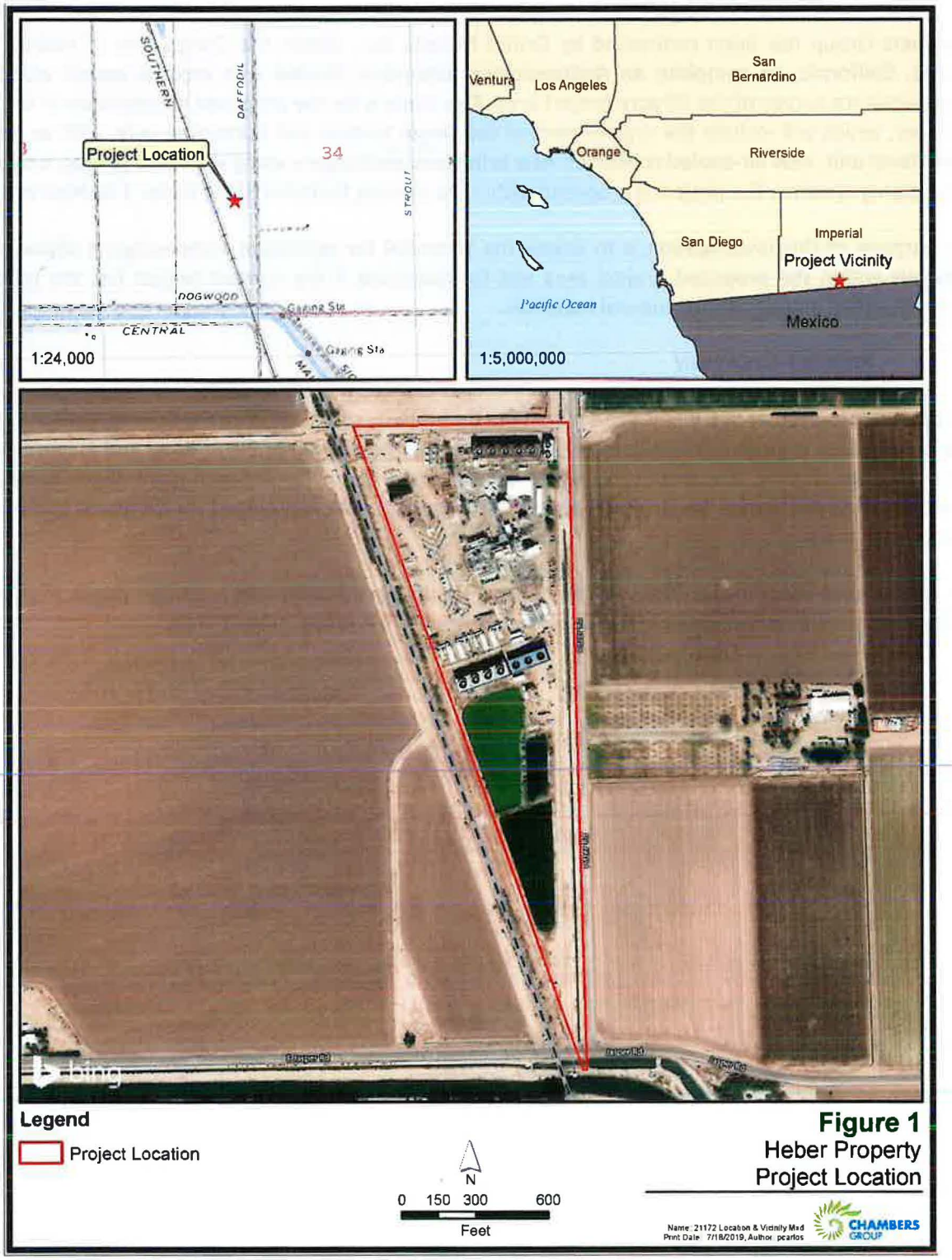
Figure 1: Project Location and Vicinity Map



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SECTION 3.0 – BACKGROUND

3.1 ETHNOGRAPHY AND ARCHAEOLOGY

The Project area was occupied by the Kumeyaay and Cahuilla people. Following is a brief ethnographic and archaeological summary of the Kumeyaay and Cahuilla.

3.1.1 Kumeyaay

The predominant Native American people occupying the region encompassing the current project area were the Kumeyaay. Eighteenth-century Spanish explorers and settlers used the collective term "Diegeño" for these people, which referred to bands living near the presidio and mission of San Diego de Alcalá. Today, members of the tribe prefer to be called Kumeyaay (Luomala 1978).

The territory of the Kumeyaay extended north from Todos Santos Bay near Ensenada, Mexico to the mouth of the San Luis Rey River in north San Diego County, and east to the Sand Hills in central Imperial Valley near the current project area. The Kumeyaay occupied the southern and eastern desert portions of the territory, while the Ipai inhabited the northern coastal region (Luomala 1978).

The primary source of subsistence for the of Kumeyaay was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Buds, blossoms, potherbs, wild seeds, cactus fruits, and wild plums were among the diet of both groups. The Kumeyaay practiced limited agriculture within the floodplain areas of their territory. Melons, maize, beans, and cowpeas were planted. Women sometimes transplanted wild onion and tobacco plants to convenient locations and sowed wild tobacco seeds. Deer, rodents, and birds provided meat as a secondary source of sustenance. Families also gathered acorns and piñon nuts at the higher altitudes. Village locations were selected for seasonal use and were occupied by exogamous, patrilineal clans. Three or four clans would winter together and then disperse into smaller bands during the spring and summer (Luomala 1978).

Kumeyaay structures varied with the seasons. Summer shelter consisted of a wind break, tree, or a cave fronted with rocks. Winter dwellings had slightly sunken floors with dome-shaped structures made of brush thatch covered with grass and earth (Gifford 1931; Luomala 1978).

Upon death, the Kumeyaay cremated the body of the deceased. Ashes were placed in a ceramic urn and buried or hidden in a cluster of rocks. The family customarily held a mourning ceremony one year after the death of a family member. During this ceremony, the clothes of the deceased individual were burned to ensure that the spirit would not return for his or her possessions (Gifford 1931; Luomala 1978).

It is estimated that the pre-contact Kumeyaay population living in this region ranged from approximately 3,000 (Kroeber 1925) to 9,000 (Luomala 1978). Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with European-Americans, particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay people were forced to adopt a sedentary lifestyle and accept Christianity (Luomala 1978). As of 1968, Kumeyaay population was somewhere between approximately 1,322 (Shipek 1972, included in Luomala 1978) and 1,522 (Luomala 1978) and by 1990 an estimated 1,200 Kumeyaay lived on reservation lands while 2,000 lived elsewhere (Pritzker 2000).

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3.1.2 Cahuilla

The project area currently falls within the ethnographic territory of the Cahuilla, whose ancestors may have entered this region of Southern California approximately 3,000 years ago (Moratto 1984: 559-560). The Cahuilla ancestral territory is located near the geographic center of Southern California and varied greatly topographically and environmentally, ranging from forested mountains to desert areas. Natural boundaries such as the Colorado Desert provided the Cahuilla separate territory from the neighboring Mojave, Ipai, and Tipai. In turn, mountains, hills, and plains separated the Cahuilla from the adjacent Luiseno, Gabeielino and the Serrano (Bean 1978: 575).

The Cahuilla relied heavily on the exploitation and seasonal availability of faunal and floral resources through a pattern of residential mobility that emphasized hunting and gathering. Important floral species used in food, for manufacturing of products, and/or for medicinal uses primarily included acorns, mesquite and screw beans, piñon nuts, and various cacti bulbs (Bean 1978:578). Coiled-ware baskets were common and used for a variety of tasks including food preparation, storage, and transportation (Bean 1978:579).

Networks of trails linked villages and functioned as hunting, trading, and social conduits. Trade occurred between the Cahuilla and tribes such as the Gabrieleno as far west as Santa Catalina and the Pima as far east as the Gila River. Trades of both goods and technologies were frequently exchanged between the Cahuilla and nearby Serrano, Gabrielino, and Luiseño cultural groups (Bean 1978:575-582).

The Cahuilla are believed to have first come into contact with Europeans prior to the Juan Bautista de Anza expedition in 1774; however, little direct contact was established between the Cahuilla and the Spanish except for those baptized at the Missions San Gabriel, San Luis Rey, and San Diego (Bean 1978:583-584). Following the establishment of several *asistencias* near the traditional Cahuilla territories, many Spanish cultural forms — especially agriculture and language — were adopted by the Cahuilla people (Bean 1978:583-584; Lech 2012:17-30).

Through the Rancho and American periods, the Cahuilla continued to retain their political autonomy and lands despite more frequent interactions with European-American immigrants. In 1863, a large number of the population were killed by a sweeping smallpox epidemic that affected many of the tribal groups in Southern California. The first reservations established in Riverside County ca. 1865 saw many of the Cahuilla remaining on their traditional lands. After 1891, however, all aspects of the Cahuilla economic, political, and social life were closely monitored by the Federal Government; a combination of missionaries and government schools drastically altered the Cahuilla culture (Bean 1978:583-584).

3.2 PREHISTORY

Archaeological studies have been limited in the Salton Sea desert region. This lack of archaeological investigation has resulted in undefined and imperfect archaeological classification schemas and typologies. Therefore, the prehistoric time periods used by archaeologists to describe the southern Imperial County desert region borrow heavily from those chronologies established for San Diego County prehistory, with some minor Colorado Desert-specific clarifications. The three general time periods accepted in the region are the San Dieguito Complex, the Archaic period, and the Late Prehistoric period. These periods are briefly described below.

The earliest recognized occupation of the region, dating to 10,000-8,000 years before present (B.P.), is known as the San Dieguito complex (Rogers 1939, 1945). Assemblages from this occupation generally consist of flaked stone tools. Evidence of milling activities is rare for sites dating to this period. It is generally agreed

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that the San Dieguito complex shows characteristics of the Western Pluvial Lakes Tradition (WPLT), which was widespread in California during the early Holocene. The WPLT assemblage generally includes scrapers, choppers and bifacial knives. Archaeologists theorize this toolkit composition likely reflects a generalized hunting and gathering society (Moratto 1984; Moratto et al. 1994, Schaeffer and Laylander 2007).

The following period, the Archaic (8,500-1,300 B.P.), is traditionally seen as encompassing both coastal and inland adaptations, with the coastal Archaic represented by the shell middens of the La Jolla complex and the inland Archaic represented by the Pauma complex (True 1980). Coastal settlement is also thought to have been significantly affected by the stabilization of sea levels around 4,000 years ago that led to a general decline in the productivity of coastal ecosystems. Artifacts associated with this period include milling stones, unshaped manos, flaked cobble tools, Pinto-like and Elko projectile points, and flexed inhumations (Schaefer and Laylander 2007). Colorado Desert rock art studies have led researchers to suggest Archaic Period origins for many petroglyph and pictograph styles and elements common in later times (Whitley 2005). More recently, several important late Archaic period sites have been documented in the northern Coachella Valley, consisting of deeply buried middens with clay-lined features and living surfaces, cremations, hearths and rock shelters. Faunal assemblages show a high percentage of lagomorphs (rabbits and hares). The larger sites suggest a more sustained settlement type than previously known for the Archaic period in this area (Schaefer and Laylander 2007).

The Late Prehistoric period (1,300-200 B.P.) is marked by the appearance of small projectile points indicating the use of the bow and arrow, the common use of ceramics, and the general replacement of inhumations with cremations, all characteristic of the San Luis Rey complex as defined by Meighan (1954). The San Luis Rey complex is divided temporally into San Luis Rey I and San Luis Rey II, with the latter distinguished mainly by the addition of ceramics. Along the coast of northern San Diego County, deposits containing significant amounts of Donax shell are now often assigned to the Late Prehistoric, based on a well-documented increase in the use of this resource at this time (e.g., Byrd and Reddy 1999). The inception of the San Luis Rey complex is suggested by True (1966; True et al. 1974) to mark the arrival of Takic speakers from regions farther inland. Waugh (1986) is in general agreement with True but suggests that the migration was probably sporadic and took place over a considerable period. Titus (1987) cites burials showing physical differences between pre- and post-1,300 B.P. remains to further support this contention. However, some researchers have suggested that these Shoshonean groups may have arrived considerably earlier, perhaps as early as 4,000 years ago. Vellanoweth and Altschul (2002:102-105) provide an excellent summary of the various avenues of thought on the Shoshonean Incursion.

3.3 HISTORY

The first significant European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions and four presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated economic and political life over the greater California region. The purpose of the missions was primarily for political control and forced assimilation of the Native American population into Spanish society and Catholicism, along with economic support to the presidios (Castillo 1978).

In the 1700s, due to pressures from other colonizers (Russians, French, British), New Spain decided that a party should be sent north with the idea of founding both military presidios and religious missions in Alta California to secure Spain's hold on its lands. The aim of the party was twofold. The first was the establishment of presidios, which would give Spain a military presence within its lands. The second was the establishment of a chain of missions along the coast slightly inland, with the aim of Christianizing the native population. By

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converting the native Californians, they could be counted as Spanish subjects, thereby bolstering the colonial population within a relatively short time (Lech 2012: 3-4).

The party was led by Gaspar de Portolá and consisted of two groups; one would take an overland route, and one would go by sea. All parties were to converge on San Diego, which would be the starting point for the chain of Spanish colonies. What became known as the Portolá Expedition set out on March 24, 1769. Portolá, who was very loyal to the crown and understood the gravity of his charge, arrived in what would become San Diego on July 1, 1769. Here, he immediately founded the presidio of San Diego. Leaving one group in the southern part of Alta California, Portolá took a smaller group and began heading north to his ultimate destination of Monterey Bay. Continuing up the coast, Portolá established Monterey Bay as a Spanish possession on June 3, 1770, although it would take two expeditions to accomplish this task. Having established the presidios at San Diego and Monterey, Portolá returned to Mexico. During the first four years of Spanish presence in Alta California, Father Junípero Serra, a member of the Portolá expedition and the Catholic leader of the new province, began establishing what would become a chain of 21 coastal missions in California. The first, founded concurrently at San Diego with the presidio, was the launching point for this group. During this time, four additional missions (San Carlos Borromeo de Carmelo, San Antonio de Padua, San Gabriel Arcángel, and San Luis Obispo de Tolosa) were established (Lech 2012: 1-4).

The Mexican Period (1821-1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, their vast land holdings in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978; Cleland 1941). Even after the decree of secularization was issued in 1833 by the Mexican Congress, missionaries continued to operate a small diocesan church. In 1834, the San Gabriel Mission, including over 16,000 head of cattle, was turned over to the civil administrator.

In 1848, The Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848 to present). The discovery of gold that same year sparked the 1849 California Gold Rush, bringing thousands of miners and other new immigrants to California from various parts of the United States, most of whom settled in the north. For those settlers who chose to come to southern California, much of their economic prosperity was fueled by cattle ranching rather than by gold. This prosperity, however, came to a halt in the 1860s because of severe floods and droughts, as well as legal disputes over land boundaries, which put many ranchos into bankruptcy.

Imperial County was formed in 1907 from a portion of San Diego County known as Imperial Valley and is the newest of California's counties. It is known for being one of California's most prosperous agricultural communities because of its vast canal systems stemming from the Colorado River. The first diversion of the Colorado River was in 1905 and continued through 1942 when the All-American Canal was completed. It is this water, conveyed from the Colorado River, that makes Imperial County so rich (Hoover et al. 2002).

The community of Heber was founded in 1903 by the Imperial Land Company working under the direction of the direction of the California Development Company. The community of Heber was named after the President of the California Development Company, A.H. Heber. The initial rapid growth of the community began because of the anticipated construction of the San Diego Yuma railroad in the early 1900's. Unfortunately, the growth of Heber slowed greatly as El Centro was designated the regional center. Heber's continued presence is because of its importance of agricultural. Today, the community of Heber encompasses approximately 9 square miles and has a population of a little over 4,000 people (Heber Public Utility District 2019).

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SECTION 4.0 – SOURCES CONSULTED

A records search dated July 18, 2019, was obtained from the South Coastal Information Center (SCIC) at San Diego State University (Appendix A). The records search provided information on all documented cultural resources and previous archaeological investigations within 0.5-mile of the project area. Resources consulted during the records search conducted by the SCIC included the National Register of Historic Places (NRHP), California Historical Landmarks, California Points of Historical Interest, and the California State Historic Resources Inventory. Results of the records search and additional research are detailed below.

4.1 REPORTS WITHIN THE STUDY AREA

Based upon the records search conducted by the SCIC, 22 cultural resource studies have previously been completed within the 0.5-mile records search radius. Of the 22 previous studies, 12 of these studies were within the current project area and are in italics. Please see the following table for further details.

Table 1: Previous Cultural Resources Studies within the Study Area

Report Number	Year	Author	Title	Resources
IM-00063	1976	Von Werlhof, Jay and Shrilee Von Wherlhof	ARCHAEOLOGICAL EXAMINATION OF A PROPOSED GEOTHERMAL TESTING SITE NEAR HEBER, CALIFORNIA	N/A
IM-00066	1976	Von Werlhof, Jay and Shrilee Von Wherlhof	ARCHAEOLOGICAL RECORD SEARCH OF THE HEBER, CALIFORNIA, REGION	N/A
IM-00115	1977	Von Werlhof, Jay and Shrilee Von Wherlhof	ARCHAEOLOGICAL EXAMINATION OF THE HEBER ANOMOLY REPORT PREPARED FOR VTN CONSOLIDATED, INC.	N/A
IM-00123	1977	VTN Consolidated, Inc.	DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE HEBER GEOTHERMAL DEMONSTRATION PROJECT	N/A
IM-00185	*1979*	*Von Werlhof, Jay, and George E. Collins*	*ARCHAEOLOGICAL EXAMINATIONS OF PROPOSED GEOTHERMAL FACILITIES NEAR HEBER, CA*	*N/A*
IM-00192	1979	VTN Consolidated, Inc.	DRAFT MASTER ENVIRONMENTAL IMPACT REPORT FOR A 500-MEGAWATT GEOTHERMAL DEVELOPMENT AT HEBER, IMPERIAL COUNTY, CALIFORNIA	N/A
IMP-00199	*1979*	*Walker, Carol, Charles Bull, and Jay Von Werlhof*	*CULTURAL RESOURCE STUDY OF A PROPOSED ELECTRIC TRANSMISSION LINE FROM JADE TO THE SAND HILLS,*	*N/A*

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Table 1: Previous Cultural Resources Studies within the Study Area

Report Number	Year	Author	Title	Resources
			IMPERIAL COUNTY, CALIFORNIA	
IM-00233	*1981*	*Walker, Carol, Charles Bull, and Jay Von Werlhof*	*CULTURAL RESOURCE STUDY OF A PROPOSED ELECTRIC TRANSMISSION LINE FROM JADE TO THE SAND HILLS, IMPERIAL COUNTY, CALIFORNIA*	*N/A*
IM-00235	*1981*	*Bureau of Land Management*	*APS/SDG&E INTERCONNECTION PROJECT - SUPPLEMENT TO THE DRAFT ENVIRONMENTAL DOCUMENT*	*N/A*
IM-00272	1982	Sanchez, Michael	DRAFT ENVIRONMENTAL IMPACT REPORT - CURRENT LAND USE PLAN, HEBER PLANNING UNIT	N/A
IM-00301	*1983*	*Welch, Patrick*	*CULTURAL RESOURCE INVENTORY FOR THIRTY PROPOSED ASSET MANAGEMENT PARCELS IN IMPERIAL COUNTY, CALIFORNIA*	*N/A*
IM-00368	1987	Imperial County Planning Department	CHEVRON GEOTHERMAL COMPANY OF CALIFORNIA SUPPLEMENTAL PROJECT INFORMATION FOR THE AUXILIARY PRODUCTION FACILITY HEBER GEOTHERMAL UNIT, IMPERIAL COUNTY	N/A
IM-00536	*1979*	*Burkenroad, David*	*PHASE ONE REGIONAL STUDIES APS/SDG&E INTERCONNECTION PROJECT TRANSMISSION SYSTEM ENVIRONMENTAL STUDY CULTURAL RESOURCES: HISTORY*	*N/A*
IM-00537	*1979*	*Wirth Associates, Inc.*	*PHASE ONE REGIONAL STUDIES APS/SDG&E INTERCONNECTION PROJECT TRANSMISSION SYSTEM ENVIRONMENTAL STUDY CULTURAL RESOURCES: ARCHAEOLOGY*	*N/A*
IM-00538	*1979*	*Imperial County*	*PROPOSED WORKSCOPE PHASE II CULTURAL RESOURCES STUDIES APSSDG& E TRANSMISSION INTERCONNECT PROJECT, MIGUEL TO SAND HILLS, SAND HILLS TO PVNGS*	*N/A*
IMP-00547	*1982*	*Cultural Systems Research, Inc. (CSRI)*	*DRAFT ARCHAEOLOGICAL RESEARCH DESIGN AND DATA RECOVERY*	*N/A*

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Table 1: Previous Cultural Resources Studies within the Study Area

Report Number	Year	Author	Title	Resources
			PROGRAM FOR CULTURAL RESOURCES WITHIN THE MOUNTAIN SPRINGS (JADE) TO SAND HILLS PORTION OF THE APS/SDG&E INTERCONNECTION PROJECT 500KV TRANSMISSION LINE	
IMP-00595	*1982*	*CSRI*	*MOUNTAIN SPRINGS (JADE) TO SAND HILLS DATA RECOVERY PRELIMINARY REPORT*	*N/A*
IMP-01101	2007	BRG Consulting, Inc.	ENVIRONMENTAL INITIAL STUDY - UNIFORM APPLICATIONS NO. 2006-14, III CALEXICO PLACE	N/A
IMP-01135	*2006*	*HDR*	*INITIAL STUDY / MITIGATED NEGATIVE DECLARATION - TOWNCENTER INDUSTRIAL PLAZA, CALEXICO, CALIFORNIA*	*N/A*
IMP-01253	2008	BRG Consulting, Inc.	DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE 111 CALEXICO PLACE SPECIFIC PLAN	N/A
IMP-01306	*1980*	*Wirth Associates, Inc*	*APS/SDG&E INTERCONNECTION PROJECT ENVIRONMENTAL STUDY PHASE II CORRIDOR STUDIES - NATIVE AMERICAN CULTURAL RESOURCES APPENDICES*	*N/A*
IMP-01313	*1980*	*Wirth Associates, Inc*	*APS/SDG&E INTERCONNECTION PROJECT (PHASE II CORRIDOR STUDIES) - CULTURAL RESOURCES: ARCHAEOLOGY*	*N/A*

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4.2 PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN THE STUDY AREA

Based upon the records search conducted by the SCIC, one previously recorded cultural resource (Niland to Calexico Railroad) was recorded within the 0.5-mile records search radius and is not located within the project area.

Table 2: Previously Recorded Cultural Resources within the Study Area

Primary Number	Trinomial	Resource Name	Site Description
P-13-008682	CA-IMP-8166H	Niland to Calexico Railroad	Historic Site

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SECTION 5.0 – NATIVE AMERICAN HERITAGE COMMISSION SACRED LAND FILE SEARCH

On June 27, 2019, Chambers Group requested that the Native American Heritage Commission (NAHC) conduct a search of its Sacred Lands File to determine if cultural resources significant to Native Americans have been recorded in the project footprint and/or buffer area. On July 8, 2019, Chambers Group received a response from NAHC stating that the search of its Sacred Lands File did not indicate the presence of Native American cultural resources within 0.5 mile of the project area or surrounding vicinity. The NAHC provided a list of ten Native American tribal governments that may have knowledge of cultural resources near the project area. The Native American tribes identified by the NAHC included the Campo Band of Diegueno Mission Indians, Ewiiaapaayp Band of Kumeyaay Indians, Jamul Indian Village, Kwaaymii Laguna Band of Mission Indians, La Posta Band of Dieguno Mission Indians, Manzanita Band of Kumeyaay Nation, Sycuan Band of Kumeyaay Nation and Veijas Band of Kumeyaay Indians. Because Imperial County is leading the Assembly Bill (AB) 52 consultation process, Chambers Group did not send consultation letters to the ten affiliated tribes (Appendix B).

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SECTION 6.0 – FIELD METHODS

Chambers Group survey teams are trained in established field methods for cultural resources deemed appropriate for each project. Cultural materials encountered may include prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historic-period artifacts (e.g., metal, glass, ceramics), sediment discoloration that might indicate the presence of a cultural midden, as well as depressions and other features indicative of the former presence of structures or buildings (e.g., post holes, foundations).

On July 2, 2019, Chambers Group archaeologist Lauren DeOliveira, completed a reconnaissance level survey of the 20-acre project area. A reconnaissance level survey was sufficient and employed in the current project because the project area is highly disturbed and includes an existing geothermal facility, making an intensive pedestrian survey unnecessary.

The archaeologist examined exposed ground surface for artifacts (e.g., flaked stone tools, tool-making debris, milling tools, ceramics), ecofacts (e.g., marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows were visually inspected for both cultural resources and paleontological resources.

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SECTION 7.0 – RESULTS OF ARCHAEOLOGICAL SURVEY

The project area is located within the Community of Heber, Imperial County, California. The 20-acre project area is located at 895 Pitzer Road immediately northwest of the intersection of Pitzer Road and Jasper Road, west of CA-111. The project area encompasses the existing Heber 1 Geothermal Facility. The project area is completely disturbed and highly developed, including asphalt driveways and parking areas, piping systems, steam systems, a substation and administration buildings. Overall ground visibility was moderate (70%). Water retention ponds were present on the southern portion of project area and presented some limitations to ground surface visibility. Modern debris such as rubber and wood were observed. Modern bovine and avian bones were observed mostly on the west side of the project area.

No historic or prehistoric resources were identified as a result of the field survey indicating the low likelihood of encountering previously unrecorded resources.

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SECTION 8.0 – SUMMARY AND RECOMMENDATIONS

Chambers Group conducted archaeological investigations within the project area located at 895 Pitzer Road immediately northwest of the intersection of Pitzer Road and Jasper Road, west of CA-111 in July 2019. The work was performed under Chambers Group's contract with Ormat Nevada, Inc. The main goal of the archaeological investigations was to gather and analyze information needed to determine if the project would impact cultural resources.

An archival records search, background studies, and reconnaissance survey of the project area were conducted as part of a Phase I cultural resource study. The cultural record search identified 12 cultural resource studies have occurred within the project area and none of these previous efforts resulted in the identification of cultural resources.

Because no cultural resources were identified within the project area as a result of the record search or the reconnaissance survey, no impacts are expected to occur as part of the proposed project and no further cultural resources work is recommended.

In the event of an unanticipated discovery, the following guidelines are recommended.

If unanticipated cultural resources are encountered during ground-disturbing activities, a qualified archaeologist shall be contacted to assess the significance of the find. In the case that previously undiscovered resources are identified during construction activities, excavations within 50 feet of the find shall be temporarily halted or diverted. If the qualified archaeologist determines the find to be significant, construction activities can resume after the find is assessed and mitigated accordingly.

If the discovery of human remains occurs during ground-disturbing activities, the following regulations must be followed. California State law (California Health and Safety Code 7050.5) and federal law and regulations (Archaeological Resources Protection Act [ARPA], 16 United States Code [U.S.C.] 470 and 43 Code of Federal Regulations, [CFR] 7, Native American Graves Protection and Repatriation Act [NAGPRA] 25 U.S.C. 3001 and 43 CFR 10, and Public Lands, Interior 43 CFR 8365.1-7) require a defined protocol if human remains are discovered in the state of California regardless if the remains are modern or archaeological. Upon discovery of human remains, all work within a minimum of 200 feet of the remains must cease immediately, and the County Coroner must be notified. The appropriate land manager/owner or the site shall also be notified of the discovery. If the remains are located on federal lands, the federal land manager(s), federal law enforcement, and/or federal archaeologist should also be notified. If the human remains are determined by the Coroner to be prehistoric, the appropriate federal archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA 43 CFR 10.6 *Inadvertent Discoveries* must be followed

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Figure 2: Overview of project area. Looking southeast.



Figure 3: Overview of project area from the east side. Looking southwest.

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Figure 4: Overview of project area from east side. Looking northwest.

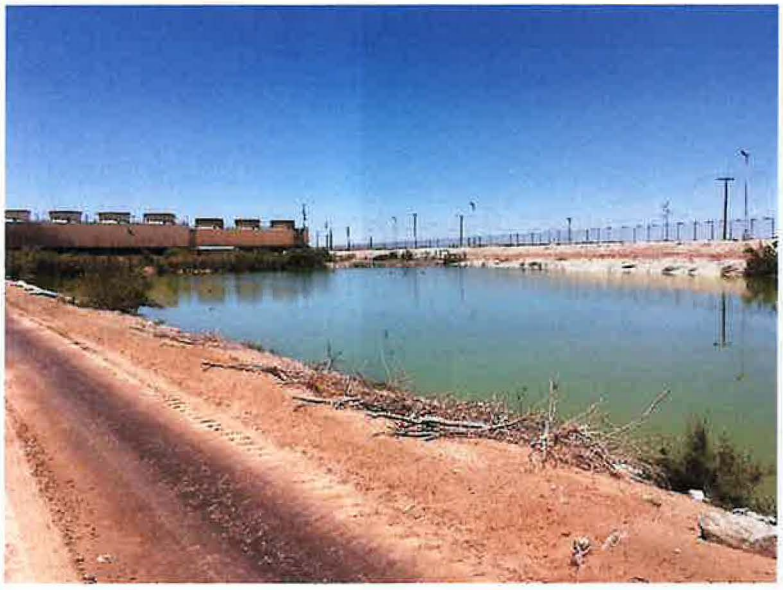

Figure 5: Overview of project area from south side. Looking north.

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Figure 6: Overview of project area. Looking south.



Figure 7: Overview of project area. Looking north.

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APPENDIX A –CULTURAL RECORDS SEARCH RESULTS

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South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
nick@scic.org

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM RECORDS SEARCH

Company: Chambers Group

Company Representative: Lauren DeOliveira

Date Processed: 7/18/2019

Project Identification: Herber 1 Expansion-Herber Property

Search Radius: 1/2 mile

Historical Resources: YES

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: YES

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: YES

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: YES

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Summary of SHRC Approved CHRIS IC Records Search Elements	
RSID:	2630
RUSH:	yes
Hours:	1
Spatial Features:	23
Address-Mapped Shapes:	no
Digital Database Records:	0
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	43

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APPENDIX B – NAHC SACRED LAND FILE SEARCH RESULTS

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Native American Heritage Commission
Native American Contacts List
7/08/2019

Campo Band of Diegueño Mission Indians
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Kwaaymii Laguna Band of Mission Indians
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La Posta Band of Diegueño Mission Indians
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(619) 766-4957 Fax

Sycuan Band of the Kumeyaay Nation
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(619) 445-1927 Fax

Viejas Band of Kumeyaay Indians
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Alpine ,CA 91901
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(619) 445-5337 Fax

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans Tribes for the proposed: 21172 Herber 1 Expansion-Herber Property, Imperial County.

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APPENDIX D – PALEONTOLOGICAL REPORT

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CHAMBERS GROUP

Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

PALEONTOLOGICAL REPORT FOR THE HEBER I REPOWER PROJECT IMPERIAL COUNTY, CALIFORNIA

Prepared for:

Ormat Nevada, Inc
Melissa Wendt
6140 Plumas St.
Reno, NV 89519

Prepared by:

CHAMBERS GROUP, INC.
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September 4, 2019

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Appendix A: Confidential Museum Records Search

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SECTION 1.0 – MANAGEMENT SUMMARY

Purpose and Scope

Chambers Group was retained by Ormat Nevada, Inc. to provide paleontological resource services for the Heber I Repower Project located in Imperial County, California. The scope of services included (1) a paleontological resources literature review, (2) a museum records search, and (3) the preparation of this technical report of findings and recommended mitigation measures.

Dates of Investigation

The museum records search was performed on July 16, 2019. This technical report was completed in July 2019.

Results of the Investigation

According to geological mapping by Dibblee and Minch (2008), the Heber I Repower Project area is underlain by the Lake Cahuilla Beds (late Pleistocene to Holocene). Museum collection records maintained by the San Diego Natural History Museum (SDNHM) indicate that no fossil localities have been recorded within a one-mile radius of the study area (San Diego Natural History Museum 2019).

The results of the literature review indicate that the geological unit underlying the project area has high paleontological sensitivity. That is, the current project area contains an above average potential for paleontological resources. Therefore, any project-related ground disturbances may result in an adverse impact to non-renewable fossil resources unless proper mitigation measures are implemented.

Recommendations

Chambers Group recommends that a qualified paleontologist be retained to design and implement a paleontological resource mitigation plan during any ground disturbing activities related to the proposed development within the project area. All fossils recovered during the paleontological monitoring and mitigation program should be prepared, stabilized, identified, and permanently curated in an approved repository or museum (such as the SDNHM).

Disposition of Data

This report will be filed with Ormat Nevada, Inc. A copy will be retained at Chambers Group along with maps and all other records relating to the project.

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SECTION 2.0 – INTRODUCTION

This report presents the findings of a paleontological literature review and museum records search conducted for the Heber I Repower Project located in Imperial County, California. This study evaluates the paleontological sensitivity of the project area and vicinity, assesses potential project related impacts on paleontological resources, and provides recommendations for project specific mitigation measures. This study was conducted in accordance with the professional guidelines established by the Society of Vertebrate Paleontology (SVP) (2010).

2.1 DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry and physics to understand the history of life on Earth. Paleontological resources, or fossils, are the remains, imprints or traces of once-living organisms preserved in sedimentary rocks. Fossils include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. The fossil record is the only direct evidence that life on Earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources because they are utilized to:

- Study the evolutionary relationships between extinct organisms, as well as their relationships to modern groups.
- Elucidate the taphonomic, behavioral, temporal and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record.
- Reconstruct ancient environments, climate change, and paleoecological relationships.
- Provide a measure of relative geologic dating which forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for radiometric dating.
- Study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time.
- Study patterns and processes of evolution, extinction and speciation.
- Identify past and potential future human-caused effects to global environments and climates.

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SECTION 3.0 – PROJECT DESCRIPTION

3.1 PROJECT DESCRIPTION

Chambers Group has been contracted by Ormat Nevada, Inc. to complete a paleontological literature review and museum records search along with an intensive cultural resources pedestrian survey of the entire 20-acre project area. The proposed project will include the replacement of the steam turbine and bottoming units with an integrated three- level unit, new air-cooled converter, new brine feed exchangers along with feed pumps, and a portion of the piping systems. The project is proposed within 20 acres of the existing Heber 1 geothermal facility located at 895 Pitzer Road, Imperial County, California.

The purpose of this investigation is to assess the potential for significant paleontological deposits and/or materials within the proposed project area.

3.2 PROJECT LOCATION

The project is located at 895 Pitzer Road within the Community of Heber, Imperial County, California. The 20-acre project area is located immediately northwest of the intersection of Pitzer Road and Jasper Road, west of CA-111. Specifically, the proposed project is located on the Heber 7.5-min quadrangle, Section 34, in Township 16 South, Range 14. Regional access to the project area is provided via CA Route 111 in Imperial County, California.

The project area encompasses the existing Heber 1 Geothermal Facility and retention ponds (Figure 1). The reconnaissance survey encompassed the entire project.

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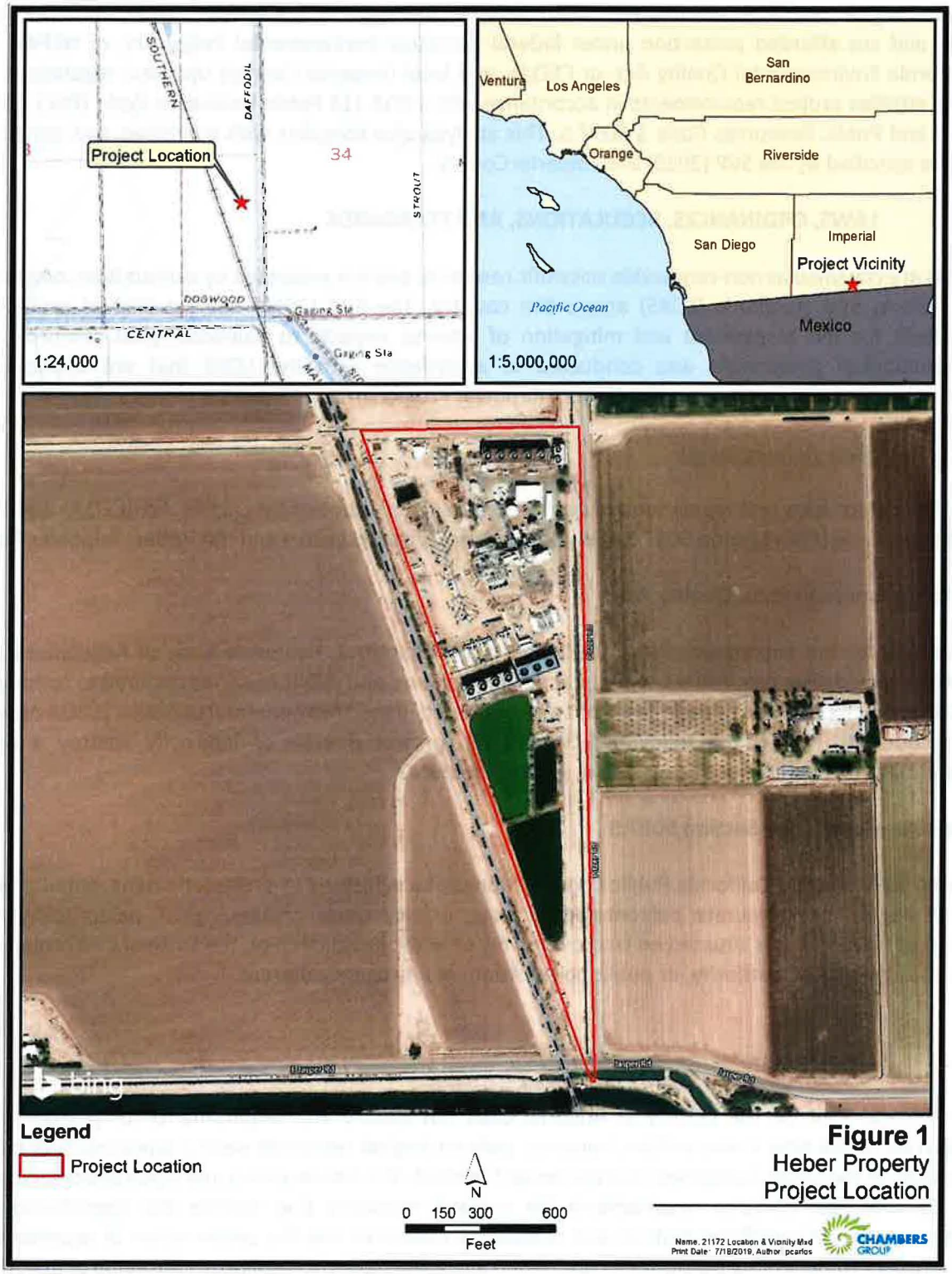
Figure 1: Project Location



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SECTION 4.0 – RESOURCE ASSESSMENT GUIDELINES

Paleontological resources are limited, non-renewable resources of scientific, cultural, and educational value and are afforded protection under federal (National Environmental Policy Act, or NEPA), state (California Environmental Quality Act, or CEQA), and local (Imperial County) laws and regulations. This study satisfies project requirements in accordance with CEQA (13 Public Resources Code [PRC] 2100 et seq.)) and Public Resources Code § 5097.5. This analysis also complies with guidelines and significance criteria specified by the SVP (2010) and Imperial County.

4.1 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Fossils are classified as non-renewable scientific resources and are protected by various laws, ordinances, regulations, and standards (LORS) across the country. The SVP (2010) has established professional standards for the assessment and mitigation of adverse impacts to paleontological resources. This paleontological assessment was conducted in accordance with the LORS that are applicable to paleontological resources within the Heber I Repower Project area.

4.1.1 State Requirements

California state laws and regulations under the California Environmental Quality Act (CEQA) and Public Resources Code (PRC) Section 5097.5 apply to paleontological resources and the Heber I Repower Project.

California Environmental Quality Act

Guidelines for the Implementation of CEQA (Title 14, Chapter 3, California Code of Regulations (CCR) 15000 et seq.) define procedures, types of activities, persons, and public agencies required to comply with CEQA, and include as one of the questions to be answered in the Environmental Checklist (CEQA Appendix G, Section VII, Part f) the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?"

Public Resources Code Section 5097.5

Section 5097.5 of the California Public Code Section protects historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological sites, or any other archaeological, paleontological, or historical feature that is situated on land owned by, or in the jurisdiction of, the State of California, or any city, county, district, authority, or public corporation, or any agency thereof.

4.1.2 Local Requirements

The General Plan for the County of Imperial does not specify any requirements for paleontological resources. At the time it was written, however, paleontological resources were a subcategory of cultural resources in the CEQA Guidelines Environmental Checklist. The Conservation and Open Space Element of the General Plan contains requirements for cultural resources that involve the identification and documentation of significant historic and prehistoric resources and the preservation of representative and worthy examples. The Conservation and Open Space Element also recognizes the value of historic and

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prehistoric resources and the need to assess current and proposed land uses for impacts upon these resources.

4.1.3 Professional Standards

The SVP has established standard guidelines (SVP 2010) that outline professional protocols and practices for the conducting of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most state regulatory agencies with paleontological LORS accept and utilize the professional standards set forth by the SVP.

As defined by the SVP (2010:11) significant paleontological resources are defined as:

> *fossils and fossiliferous deposits... consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).*

Based on the significance definitions of the SVP (2010), all identifiable vertebrate fossils are considered to have significant scientific value because vertebrate fossils are relatively uncommon, and because only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geological units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies.

A geologic unit known to contain significant fossils is considered "sensitive" to adverse impacts if earth moving or ground-disturbing activities in that rock unit could likely disturb or destroy fossil remains directly or indirectly. This definition of sensitivity differs fundamentally from that for archaeological resources as follows:

> *It is extremely important to distinguish between archaeological and paleontological resources when discussing the paleontological potential of rock units. The boundaries of an archaeological resource site define the areal/geographic extent of an archaeological resource, which is generally independent from the rock unit on which it sits. However, paleontological sites indicate that the containing rock unit or formation is fossiliferous. Therefore, the limits of the entire rock unit, both areal and stratigraphic, define the extent of paleontological potential.*

Many archaeological sites contain features that are visually detectable on the surface. In contrast, fossils are contained within surficial sediments or within bedrock, and are therefore not observable or detectable unless exposed by erosion or human activity. In summary, paleontologists cannot know either the quality or quantity of fossils prior to natural erosion or human-caused exposure. As a result, even in the absence of surface fossils, it is necessary to access the sensitivity of rock units based on their known potential to

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produce significant fossils elsewhere within the same geologic unit (both within and outside of the study area), a similar geologic unit, or based on whether the unit in question was deposited in a type of environment that is known to be favorable for fossil preservation. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken to prevent adverse impacts to these resources.

4.1.4 Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils (See above section 4.1.3 for definition of significance). This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources," the SVP (2010:1-2) defines four categories of paleontological sensitivity for rock units: high, low, undetermined, and no potential:

- **High Potential:** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e. g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.
- **Low Potential:** Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.
- **Undetermined Potential:** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be

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developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

- **No Potential:** Some rock units have no potential to contain significant paleontological resources, for instance high grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontological potential of the rock units present within the study area.

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SECTION 5.0 – METHODS

Due to the nature of the fossil record, paleontologists cannot know either the quality or the quantity of fossils present in a given geologic unit prior to natural erosion or human-caused exposure. Therefore, in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce scientifically significant fossils elsewhere within the same geologic unit (both within and outside of the study area) or a unit representative of the same depositional environment.

A detailed review of museum collections was performed by the Department of Paleontology and PaleoServices staff at the SDNHM for the purposes of (1) determining whether there are any known fossil localities in or near the project area, (2) identifying the geologic units present in the project area, and (3) determining the paleontological sensitivity ratings of those geologic units in order to assess potential impacts to nonrenewable paleontological resources.

In addition to the records search, published and unpublished literature and geologic maps were reviewed and mitigation measures specific to this project were developed in accordance with the SVP (2010). A paleontological sensitivity map was created using these findings (See Section 7 below).

No surface fossils were identified during the cultural resources pedestrian survey conducted on July 2, 2019 by Lauren DeOliveira, M.S., RPA.

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SECTION 6.0 – GEOLOGY AND PALEONTOLOGY

6.1 GEOLOGICAL SETTING

The project area lies within the southern portion of the Salton Trough, a northwesterly-trending tectonic basin located between the Peninsular Ranges on the west and the Chocolate Mountains on the east (Dorsey, 2006). The area is characterized by numerous northwest-trending strike-slip faults, including from east to west, the San Andreas, San Jacinto, and Elsinore faults. Roughly 2,000 square miles of the Salton Trough lie below sea level, and in many respects, the area can be considered a landward extension of the Gulf of California. In fact, if it were not for the tremendous volumes of sediment transported by the modern Colorado River and its Pliocene and Pleistocene counterparts, the Gulf of California would extend northward as far as Riverside County. However, during the past five million years as the ancestral and modern-day Colorado River have cut down through the Colorado Plateau carving out the Grand Canyon and carrying the eroded sediment load southward, the river has built a sediment dam—the Colorado River delta – across the Salton Trough from east to west. At various times during the history of the prograding Colorado River delta, the full discharge of the river flowed north, forming a large, inland freshwater lake (actually a succession of ephemeral lakes, see discussion below). Periodic changes in the river's course would divert the flow to the south and into the Gulf of California. Cut off from its freshwater supply, the prehistoric lake would eventually dry up due to evaporation (Figure 2).



Figure 2: Overview of Project Area, facing southeast.

In point of fact, there has not been one, but a succession of ephemeral lakes in the area spanning a period of almost three million years (Kirby et al., 2007). The oldest ephemeral lakes from approximately 2.5 to 1.1 million years ago accumulated extensive deposits of claystone, mudstone, and siltstone that are collectively referred to by geologists as the Borrego Formation (Lutz et al., 2006). A younger succession of ephemeral, freshwater lakes that formed from approximately 1.1 to 0.5 million years ago accumulated thick deposits of fine-grained sediments referred to by geologists as the Brawley Formation (Steely et al., 2009). More recently, including up to late prehistoric times (~450 years ago), a series of ephemeral

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freshwater lakes accumulated sediments that today are exposed extensively across the central portion of the Salton Trough and are referred to by geologists as Lake Cahuilla sediments (see discussion below).

6.2 GEOLOGIC UNITS UNDERLYING THE PROJECT AREA

Published geological reports (e.g., Dibblee & Minch, 2008) covering the Project area indicate that the proposed Project has the potential to impact late Pleistocene- to Holocene-age Lake Cahuilla Beds. These geologic units and their paleontological potential are summarized below. The SDNHM does not have any recorded fossil localities within a half mile of the Project site. The general fossil content of these localities is described below.

6.2.1 Lake Cahuilla Beds

Lake Cahuilla was a former freshwater lake that periodically occupied a major portion of the Salton Trough during late Pleistocene to Holocene time (approximately 37,000 to 240 years ago), depositing sediments that underlie the entire Project site. Generally, Lake Cahuilla sediments consist of an interbedded sequence of both freshwater lacustrine (lake) and fluvial (river/stream) deposits. There are no SDNHM fossil collection localities from these deposits within a half-mile radius of the Project site. Elsewhere in Imperial County, the Lake Cahuilla Beds have yielded well-preserved subfossil remains of freshwater clams and snails (Stearns, 1901) and sparse remains of freshwater fish (Hubbs and Miller 1948). The paleontological resources of the Lake Cahuilla Beds are considered significant because of the paleoclimatic and paleoecological information they can provide (Jefferson, 2006), and these deposits are therefore assigned a high paleontological potential (SVP, 2010).

Recent paleontological mitigation work in Imperial County has resulted in the discovery and recovery of diverse fossil assemblages from exposures of Lake Cahuilla lacustrine and fluvial sediments. During 2009, trenching and slant drilling for the Southern California Gas Line 6914 Loop Imperial Valley Project between Brawley and Calipatria exposed layers of clayey siltstones and fine-grained sandstones to a depth of 40 feet. Fossils recovered from these layers included freshwater mollusks, ostracods, and fish. Some were found as shallow as 5 feet. During the 2009 mass grading operations for the State Route 78/111 Brawley Bypass Project near Brawley exposed over 35 feet of alternating mudstone, siltstone, and fine-grained sandstone of prehistoric Lake Cahuilla. Fossils recovered from these layers included remains of freshwater algae, mollusks, ostracods, and fish.

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SECTION 7.0 – ANALYSIS AND RESULTS

7.1 RESOURCE ASSESSMENT SUMMARY

Geologic mapping by Dibblee and Minch (2008) was consulted to identify the specific geologic units underlying the Heber I Repower Project area. The following table summarizes these units and their known paleontological sensitivity ratings.

Table 1: Geologic Formations in the Project Area

Geologic Formation	Age	Fossils	Paleontological Sensitivity Potential	Monitoring Recommendation
Lake Cahuilla Beds	Late Pleistocene to Holocene	Invertebrates, vertebrates	High	Full-time

7.2 MUSEUM RECORDS SEARCH AND LITERATURE REVIEW

The Department of Paleontology and PaleoServices staff at the SDNHM performed a paleontological records search to locate fossil localities within an in the immediate vicinity of the project area. Museum records indicate that no vertebrate fossil localities have been documented within the study area.

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SECTION 8.0 – RECOMMENDED MITIGATION MEASURES

The destruction of fossils as a result of human-caused ground disturbance has a significant cumulative impact, as it makes biological records of ancient life permanently unavailable for study by scientists. Implementation of proper mitigation measures can, however, reduce the impacts to the paleontological resources to below the level of significance.

The following mitigation measures have been developed in accordance with the SVP (2010) standards and meet the paleontological requirements of CEQA. These mitigation measures have been used throughout California and have been demonstrated to be successful in protecting paleontological resources while allowing timely completion of construction.

A. All project-related ground disturbances that could potential impact the Lake Cahuilla Beds will be monitored by a qualified paleontological monitor on a full-time basis, as these geologic units are determined to have a high paleontological sensitivity. It is anticipated that much of the proposed project site would be covered with up to eight feet of previously filled land.
B. A qualified paleontologist will be retained to supervise monitoring of construction excavations and to produce a Paleontological Monitoring and Mitigation Plan for the proposed project, which would include the identification of undisturbed locations of Lake Cahuilla Beds throughout the proposed project site. The plan should also identify areas to be spot checked where ground disturbance could exceed the depth of previously filled land. Paleontological resource monitoring will include inspection of exposed rock units during active excavations within sensitive geologic sediments. The monitor will have authority to temporarily divert grading away from exposed fossils and halt construction activities in the immediate vicinity in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare progress reports to be filed with the client and the lead agency.
C. At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples will be collected and submitted for analysis.
D. Matrix sampling would be conducted to test for the presence of microfossils. Testing for microfossils would consist of screen-washing small samples (approximately 200 pounds) to determine if significant fossils are present. If microfossils are present, additional matrix samples will be collected (up to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant microfossil sample).
E. Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposited in a designated paleontological curation facility. The most likely repository is the SDNHM.
F. The qualified paleontologist will prepare a final monitoring and mitigation report to be filed with the client, the lead agency, and the repository.

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APPENDIX A – CONFIDENTIAL MUSEUM RECORDS SEARCH

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APPENDIX E – WATER QUALITY MANAGEMENT PLAN

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Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

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Water Quality Management Plan

For

Heber 1 Repower Project

895 Pitzer Road

Heber, CA 92249

8/19/2019

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1 Project Information

Table 1 summarizes basic project information. Appendix A includes a vicinity map of the project.

Table 1. Project Summary

Project Name	Heber 1 Repower Project
Address	895 Pitzer Road, Heber, CA 92249
Total Size (acres or square feet)	24.92 AC / 1,085,595 SF
Project Description	Installation of 4 air coolers, 3 Ormat Energy Converters (OECs), and 6 new Isopentane Above Ground Storage Tanks on the southern portion of APN 054-250-036. See Appendix B for a Site Plan of the proposed work. Due to the fact that there are 2 existing isopentane tanks onsite, the 6 new tanks will follow the same procedures as those in place for the existing tanks and therefore do not need to be further addressed in this analysis.

1.1 Hydromodification Applicability

Hydromodification projects must meet additional flow control requirements. Table 2 indicates whether the project is a hydromodification project.

Table 2. Hydromodification Management Requirements Applicability

Hydromodification Project (Y/N): Total project area is 1 acre or larger and results in an increase in impervious area compared to the existing condition of the property	**Y**

1.2 Eligibility for Reduced BMP Sizing or Alternative BMPs

Eligibility for reduced BMP sizing or using alternative BMPs is summarized in Table 3. Any items marked "Y" must be explained briefly below the table. Note: All proposed impervious area for this development replaces existing pervious area.

Table 3. Applicability of Special BMP Sizing or Selection Standards

Redevelopment qualifying for reduced BMP sizing due to 50% rule (Y/N): results in increase of less than 50% of the impervious surface when compared to the existing condition of the property. Perform the following calculation: The area of existing (pre-project) impervious area at the project site is: 220,064 ft^2 (A) The total proposed newly created or replaced impervious area is: 141,295 ft^2 (B) Percent impervious surface created or replaced: (B/A)*100 = 64.2% (C) Qualifies if "C" is less than or equal to 50%.	**N**
Road or Linear Underground/Overhead Project (LUP) qualifying for special BMP sizing and selection (Y/N): most roads and LUPs qualify. See details in Section 4.3.2.2 of the El Centro Post-Construction Storm Water Standards Manual	N
Downtown project eligible for alternative BMP selection (Y/N): project creating/replacing less than 1 acre of impervious area, with at least 85% of entire project site covered by permanent structures, and located in the area bounded by State, Broadway, 4th, and 8th. See Section 4.3.4.4 of the El Centro Post-Construction Storm Water Standards Manual.	N

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Historic project eligible for alternative BMP selection (Y/N): Historic sites, structures or landscapes that cannot alter their original configuration in order to maintain their historic integrity. See Section 4.3.4.4 of the El Centro Post-Construction Storm Water Standards Manual.	N

2 Drainage Management Areas

Table 4 below summarizes the project's Drainage Management Areas (DMA). Runoff calculations for the Storm Water Design Volume (SDV) are based on Section 4.3.2 of the "City of El Centro Post-Construction Storm Water Best Management Practice Standards Manual for Development Projects" (2015), per the steps outlined below:

- $C = 0.858 \times i^3 - 0.78 \times i^2 + 0.774 \times i + 0.04$ = **0.243**
  - C = runoff coefficient
  - i = (impervious area within DMA) / (total DMA area)
    = (361,359 sf) / (1,085,595 sf) = **0.333**
- $P_0 = (a \times C) \times P_6$ = **0.195 in**
  - P_0 = DMA-specific unit storm water volume
  - a = regression constant (1.963)
  - C = runoff coefficient
  - P_6 = mean annual runoff-producing rainfall depth (0.41 for El Centro)
- $SDV = A \times (P_0/12)$ = **17,683 cf**
  - SDV = storm water volume (cf)
  - A = DMA area (sf)
  - P_0 = unit storm water volume (in)

Table 4. DMA Summary

DMA ID	Total DMA Area (sf)	Impervious Area (sf)	Storm Water Design Volume, *SDV* (cf)
1	1,085,595	361,359	17,683

Appendix C includes a map of the site showing the DMA 1 area, impervious and pervious surfaces, and BMPs for the site.

3 Site Design BMPs

Site Design BMPs are techniques to reduce runoff from the project site. Site Design BMPs reduce the volume of storm water to be treated by Low Impact Development (LID) or treatment BMPs. Site Design BMP measures per the "City of El Centro Post-Construction Storm Water Best Management Practice Standards Manual for Development Projects" (2015) are not applicable to the proposed development.

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4 Low Impact Development and Treatment BMPs

The amount runoff to be treated by Low Impact Development (LID) or treatment BMPs is calculated as follows:

$SDV - V_{SD} = V_R$

SDV: Storm Water Design Volume (see Table 4)

V_{SD}: volume of runoff reduced by site design BMPs

V_R: remaining volume Low Impact Development and Treatment BMPs of runoff to be treated

Table 5 summarizes these values by DMA.

Table 5. DMA Runoff Summary by DMA

DMA ID	Storm Water Design Volume, *SDV* (cf)	Runoff Reduction from Site Design, V_{SD} (cf)	Remaining Runoff to be Treated, V_R (cf)	LID or Treatment BMP Used
1	17,683	17,683	0	Bioretention Basin

The rationale for using a BMP other than bioretention, if applicable, is described in Table 6.

Table 6. Use of BMPs Other than Bioretention

If BMPs other than bioretention were used, explain why they are as effective as bioretention.	N/A

Calculations for the proposed LID or treatment BMPs are included in Appendix D. The proposed BMP is a retention basin sized to capture and retain the DCV volume.

5 Flow Control BMPs

5.1 Flow Control BMPs for Hydromodification Projects

Hydromodification projects, as identified in Section 1.2, must meet the following standard:

- Post-project runoff for Hydromodification Projects shall not exceed estimated pre-project peak flow rate for the 10-year, 24-hour storm.

In Final Engineering, the proposed retention basin is to be designed to capture the 10-year, 24-hour storm water runoff and contain it while the water evaporates. During evaporation, the water will need to be moderated by approved vector control equipment. As a result, the post-project runoff will not exceed the estimated pre-project runoff.

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5.2 Flood Control Requirements

Projects must also meet all standards for flood control and applicable flood control standards from IID and Caltrans, as applicable.

Generally, flood control standards require the project to provide sufficient storage capacity to capture runoff from a 3 inch storm, typically using a retention or detention basin. In Final Engineering, the retention basin should be designed to meet this and/or other applicable requirements.

6 Source Control BMPs

Source control BMPs must be implemented, where applicable and feasible. Appendix E provides a list of required source control BMPs, along with whether each will be implemented at the proposed project. Source control BMPs marked as not applicable include an explanation of why they are not applicable.

7 Operation and Maintenance

An operation and maintenance plan for proposed BMPs is to be included in Final Engineering.

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Appendix A. Vicinity Map

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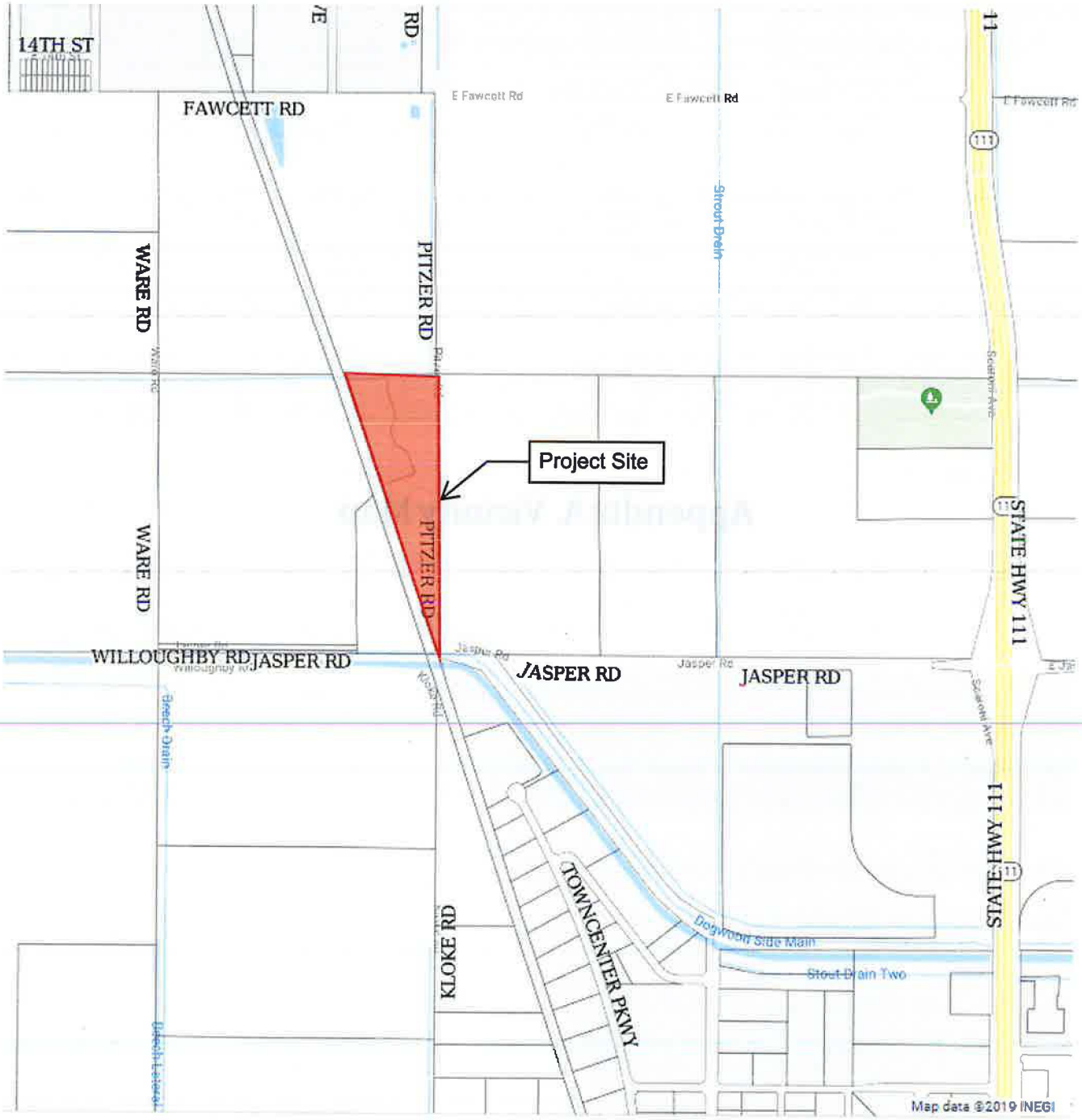
Vicinity Map



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Appendix B. Site Plan

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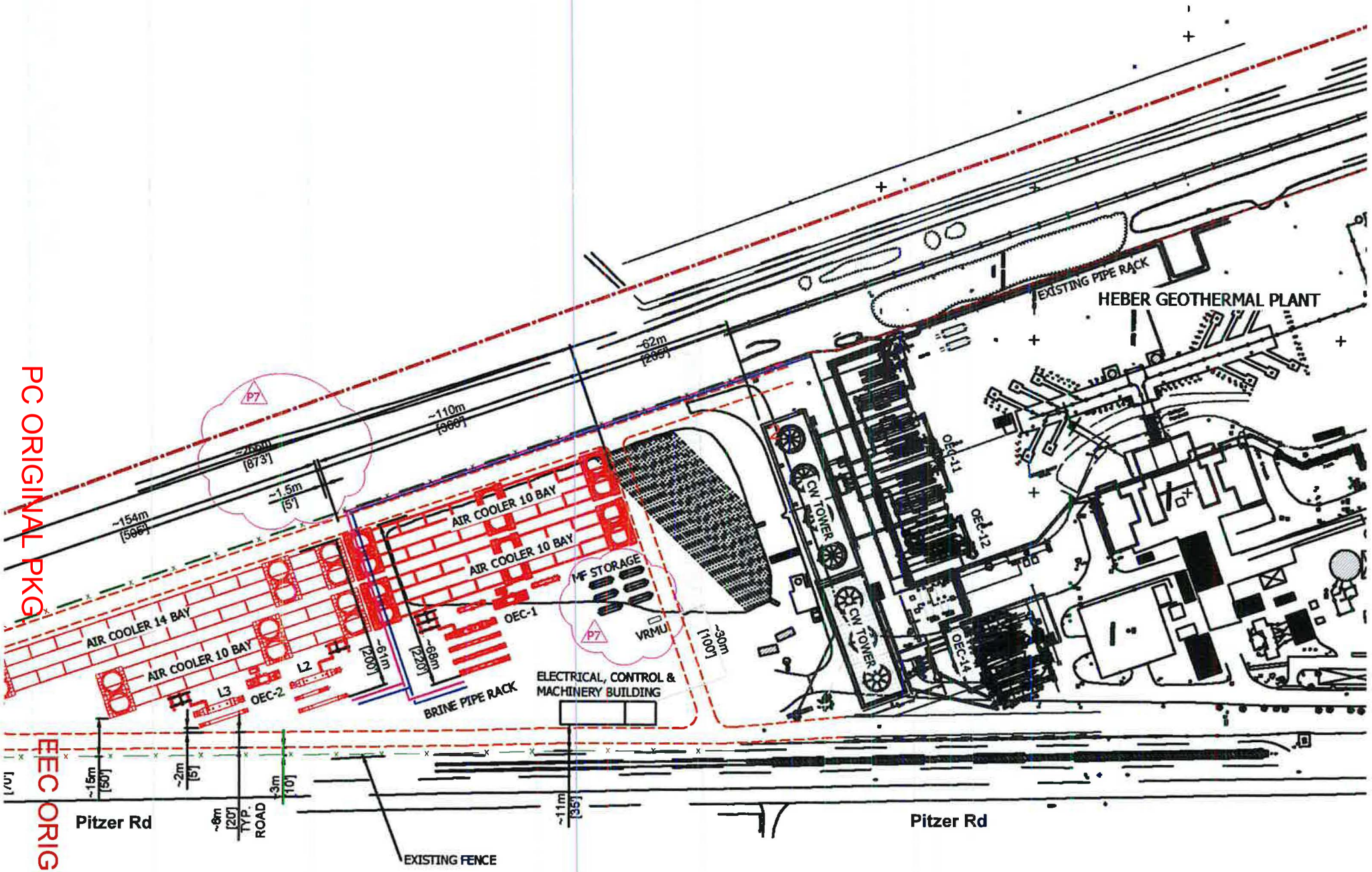
REMAIN.



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Appendix C. Project Drainage Management Area and BMP Map

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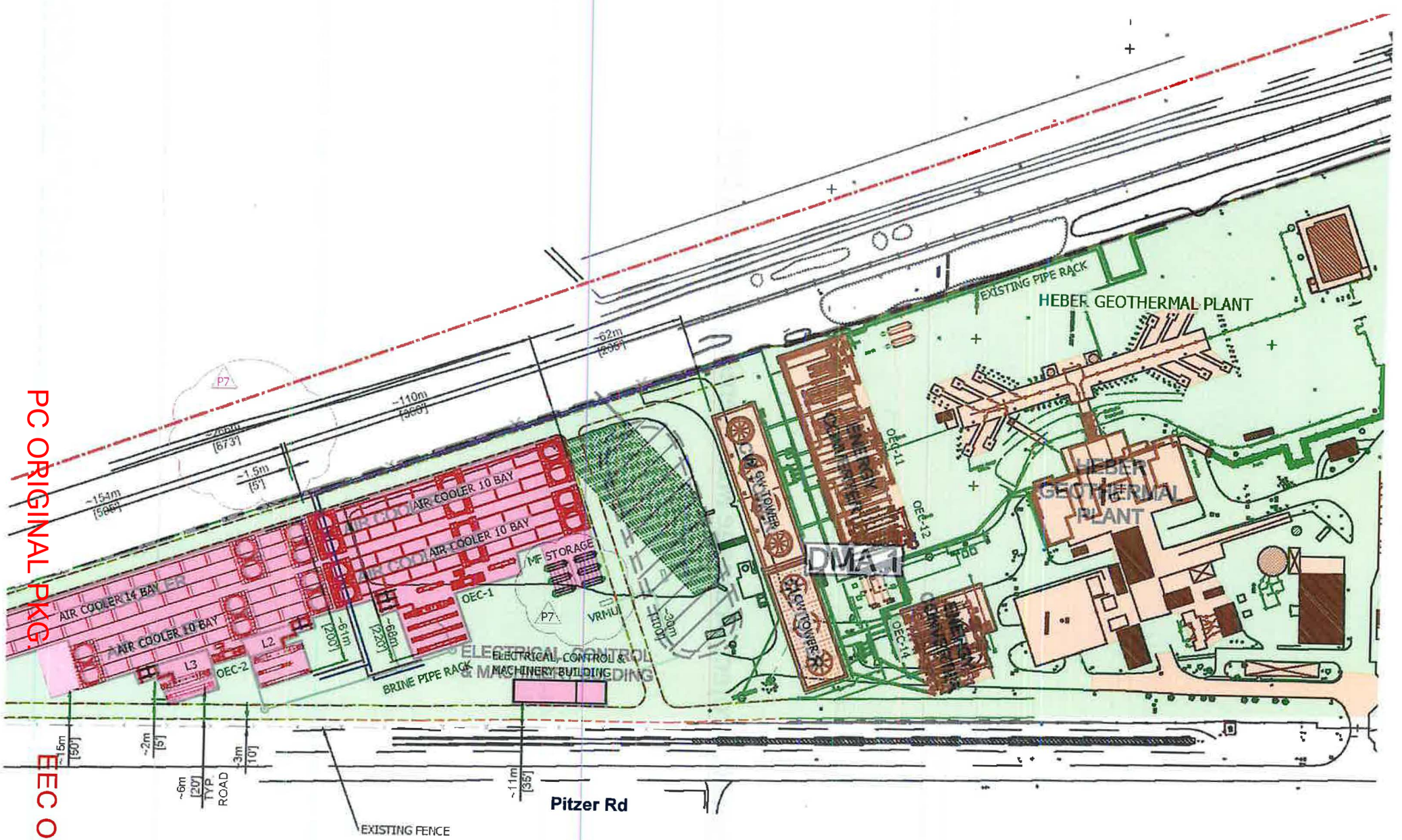

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Appendix D. LID and Treatment BMP Sizing Calculations and Design Characteristic

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Design Capture Volume Calculations

Project Name: Heber 1 Repower Project
Completed by: James Herrick
Checked by: Shea Anti
Date: 19-Aug-19
County: Imperial County

Design Capture Volume

	DMA 1
Impervious Area (S.F.)	361,359
Area (S.F.)	1,085,595
Impervious Fraction, i	0.333
Runoff Coefficient, C	0.243
Mean Storm Rainfall Depth, P_6 (in.)	0.410
Regression Constant, a_2	1.963
DMA-Specific unit storm water volume, P_0	0.195
DCV (C.F.)	17,683

Proposed BMP Basin Volume

	DMA 1
Average Basin Area (Top+Bottom, sf)	38,582
Elevation Difference (ft)	7
Volume of Basin (cf)*	270,072

* Based on Grading Plan by Dynamic Consulting Engineers, dated 8/9/19

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Appendix E. Source Control BMPs Proposed

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Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N1	Education of Property Owners, Tenants and Occupants on Stormwater BMPs	☒	☐	Owner shall familiarize him/herself with the contents of this WQMP and furnish copies of BMP factsheets to all future tenants.
N2	Activity Restrictions	☐	☒	No activity restrictions planned for site
N3	Landscape Management BMPs	☐	☒	No landscaping proposed for site
N4	BMP Maintenance	☒	☐	BMPs to be maintained per maintenance plans determined in Final Engineering.
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	No hazardous waste is defined for site
N6	Local Water Quality Ordinances	☒	☐	Owner shall ensure business activities at the site comply with the City's Stormwater Ordinance through the implementation of BMP's included in this report.
N7	Spill Contingency Plan	☐	☒	No hazardous waste is defined for site
N8	Underground Storage Tank Compliance	☐	☒	No underground storage tanks on site
N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous waste is defined for site

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Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N10	Uniform Fire Code Implementation	☐	☒	No hazardous waste.
N11	Litter/Debris Control Program	☒	☐	A program shall be implemented to pick up litter, sweep and clean the trash enclosure on a weekly basis. Owner shall ensure tenants contract with a refuse company to have dumpsters emptied on a weekly basis, at a minimum.
N12	Employee Training	☒	☐	Owner shall establish an educational program for site employees and contractors to inform and train personnel engaged in maintenance activities.
N13	Housekeeping of Loading Docks	☐	☒	No loading docks are proposed
N14	Catch Basin Inspection Program	☐	☒	No catch basins are proposed.
N15	Vacuum Sweeping of Private Streets and Parking Lots	☒	☒	No parking lots are proposed.
N16	Other Non-structural Measures for Public Agency Projects	☐	☒	Not a public agency project
N17	Comply with all other applicable NPDES permits	☒	☐	All required application NPDES permits will be obtained by the contractor including filing an NOI, SWPPP and obtaining a WDID # prior to the start of construction.

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Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S1	Provide storm drain system stencilling and signage (CASQA New Development BMP Handbook SD-13)	☐	☒	Storm drain system is not designed to enter the public system at any point.
S2	Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)	☐	☒	No proposed outdoor storage
S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32)	☒	☐	All dumpsters shall have working lids which shall be kept closed at all times. Trash enclosure shall comply with CASQA SD-32 and shall be enclosed and have a roof.
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12)	☐	☒	No irrigation system proposed for site.
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	☐	☒	No landscaped areas proposed for site.
S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)	☐	☒	No slopes and channels on site.
S7	Covered dock areas (CASQA New Development BMP Handbook SD-31)	☐	☒	No loading docks are proposed on site.
S8	Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31)	☐	☒	No maintenance bays are proposed onsite
S9	Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	No vehicle wash areas
S10	Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36)	☐	☒	No outdoor processing areas

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Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S11	Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	No outdoor equipment
S12	Fueling areas (CASQA New Development BMP Handbook SD-30)	☐	☒	No fueling areas necessary on site
S13	Hillside landscaping (CASQA New Development BMP Handbook SD-10)	☐	☒	No hillside areas on site
S14	Wash water control for food preparation areas	☐	☒	No food preparation areas.
S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)	☐	☒	No community carwash racks

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Appendix F. BMP Fact Sheets

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Infiltration Basin TC-11



Maintenance Concerns, Objectives, and Goals

- Vector Control
- Clogged soil or outlet structures
- Vegetation/Landscape Maintenance
- Groundwater contamination
- Accumulation of metals
- Aesthetics

Targeted Constituents

✓	Sediment	■
✓	Nutrients	■
✓	Trash	■
✓	Metals	■
✓	Bacteria	■
✓	Oil and Grease	■
✓	Organics	■
✓	Oxygen Demanding	■

Legend ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

General Description

An infiltration basin is a shallow impoundment that is designed to infiltrate stormwater. Infiltration basins use the natural filtering ability of the soil to remove pollutants in stormwater runoff. Infiltration facilities store runoff until it gradually infiltrates into the soil and eventually into the water table. This practice has high pollutant removal efficiency and can also help recharge groundwater, thus helping to maintain low flows in stream systems. Infiltration basins can be challenging to apply on many sites, however, because of soils requirements. In addition, some studies have shown relatively high failure rates compared with other management practices.

Inspection/Maintenance Considerations

Infiltration basins perform better in well-drained permeable soils. Infiltration basins in areas of low permeability can clog within a couple years, and require more frequent inspections and maintenance. The use and regular maintenance of pretreatment BMPs will significantly minimize maintenance requirements for the basin. Spill response procedures and controls should be implemented to prevent spills from reaching the infiltration system.

Scarification or other disturbance should only be performed when there are actual signs of clogging or significant loss of infiltrative capacity, rather than on a routine basis. Always remove deposited sediments before scarification, and use a hand-guided rotary tiller, if possible, or a disc harrow pulled by a light tractor. This BMP may require groundwater monitoring. Basins cannot be put into operation until the upstream tributary area stabilized.

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TC-11 Infiltration Basin

Clogged infiltration basins with surface standing water can become a breeding area for mosquitoes and midges. Maintenance efforts associated with infiltration basins should include frequent inspections to ensure that water infiltrates into the subsurface completely (recommended infiltration rate of 72 hours or less) and that vegetation is carefully managed to prevent creating mosquito and other vector habitats.

Inspection Activities	Suggested Frequency
■ Observe drain time for a storm after completion or modification of the facility to confirm that the desired drain time has been obtained. ■ Newly established vegetation should be inspected several times to determine if any landscape maintenance (reseeding, irrigation, etc.) is necessary.	Post construction
■ Inspect for the following issues: differential accumulation of sediment, signs of wetness or damage to structures, erosion of the basin floor, dead or dying grass on the bottom, condition of riprap, drain time, signs of petroleum hydrocarbon contamination, standing water, trash and debris, sediment accumulation, slope stability, pretreatment device condition	Semi-annual and after extreme events
Maintenance Activities	**Suggested Frequency**
■ Factors responsible for clogging should be repaired immediately. ■ Weed once monthly during the first two growing seasons.	Post construction
■ Stabilize eroded banks. ■ Repair undercut and eroded areas at inflow and outflow structures. ■ Maintain access to the basin for regular maintenance activities. ■ Mow as appropriate for vegetative cover species.	Standard maintenance (as needed)
■ Monitor health of vegetation and replace as necessary. ■ Control mosquitoes as necessary. ■ Remove litter and debris from infiltration basin area as required.	
■ Mow and remove grass clippings, litter, and debris. ■ Trim vegetation at the beginning and end of the wet season to prevent establishment of woody vegetation and for aesthetic and vector reasons. ■ Replant eroded or barren spots to prevent erosion and accumulation of sediment.	Semi-annual
■ Scrape bottom and remove sediment when accumulated sediment reduces original infiltration rate by 25-50%. Restore original cross-section and infiltration rate. Properly dispose of sediment. ■ Seed or sod to restore ground cover. ■ Disc or otherwise aerate bottom. ■ Dethatch basin bottom.	3-5 year maintenance

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Additional Information

In most cases, sediment from an infiltration basin does not contain toxins at levels posing a hazardous concern. Studies to date indicate that pond sediments are generally below toxicity limits and can be safely landfilled or disposed onsite. Onsite sediment disposal is always preferable (if local authorities permit) as long as the sediments are deposited away from the shoreline to prevent their reentry into the pond and away from recreation areas, where they could possibly be ingested by young children. Sediments should be tested for toxicants in compliance with current disposal requirements if land uses in the catchment include commercial or industrial zones, or if visual or olfactory indications of pollution are noticed. Sediments containing high levels of pollutants should be disposed of properly.

Light equipment, which will not compact the underlying soil, should be used to remove the top layer of sediment. The remaining soil should be tilled and revegetated as soon as possible.

Sediment removal within the basin should be performed when the sediment is dry enough so that it is cracked and readily separates from the basin floor. This also prevents smearing of the basin floor.

References

King County, Stormwater Pollution Control Manual – Best Management Practices for Businesses. July, 1995 Available at: ftp://dnr metrokc.gov/wlr/dss/spcm/SPCM.HTM

Metropolitan Council, Urban Small Sites Best Management Practices Manual. Available at: http://www.metrocouncil.org/environment/Watershed/BMP/manual.htm

U.S. Environmental Protection Agency, Post-Construction Stormwater Management in New Development & Redevelopment BMP Factsheets. Available at: http://www.cfpub.epa.gov/npdes/stormwater/menuofbmps/bmp_files.cfm

Ventura Countywide Stormwater Quality Management Program, Technical Guidance Manual for Stormwater Quality Control Measures. July, 2002.

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Site Design & Landscape Planning SD-10



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

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SD-10 Site Design & Landscape Planning

Designing New Installations

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.
- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Conserve Natural Areas during Landscape Planning

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands.

Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.
- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

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regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

Protection of Slopes and Channels during Landscape Design

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

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SD-10 Site Design & Landscape Planning

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

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Trash Storage Areas SD-32

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

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- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

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APPENDIX F – GEOLOGY AND SOILS EVALUATION

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Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

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Geology and Soils Evaluation

Heber 1 Repower Project

Imperial County, California

Chambers Group, Inc.

9620 Chesapeake Drive, Suite 202 | San Diego, California 92123

December 6, 2019 | Project No. 108854001



Geotechnical | Environmental | Construction Inspection & Testing | Forensic Engineering & Expert Witness

Geophysics | Engineering Geology | Laboratory Testing | Industrial Hygiene | Occupational Safety | Air Quality | GIS

Ninyo & Moore

Geotechnical & Environmental Sciences Consultants

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Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

December 6, 2019
Project No. 108854001

Mr. Thomas Strand
Chambers Group, Inc.
9620 Chesapeake Drive, Suite 202
San Diego, California 92123

Subject: Geology and Soils Evaluation
Heber 1 Repower Project
Imperial County, California

Dear Mr. Strand:

In accordance with your request, Ninyo & Moore has performed a Geology and Soils Evaluation for the Heber 1 Repower Project located in Imperial County, California. The attached report presents our methodology, findings, and recommendations regarding the geology and soils conditions at the project site.

We appreciate the opportunity to be of service to you on this important project.

Respectfully submitted,
NINYO & MOORE

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1 INTRODUCTION

In accordance with your request, Ninyo & Moore has completed a geology and soils evaluation for the proposed Heber 1 Repower Project in Imperial County, California (Figure 1). Our evaluation is based on a geologic reconnaissance, review of published and non-published reports, aerial photographs, in-house data, and the assessment of the potential geologic hazards in the project area. The purpose of this geology and soils evaluation was to evaluate the potential for existing environmental impacts related to geologic or soils conditions to affect the project site and adjoining areas, and to discuss measures that can be implemented to reduce or mitigate the potential impacts with respect to the design and construction of the proposed project.

2 SCOPE OF SERVICES

Our scope of services included the following:

- Review of readily available regional, local, and site-specific geologic and geotechnical reports.
- Review of readily available background information including topographic, soils, mineral resources, geologic, and seismic and geologic hazard maps, and stereoscopic aerial photographs.
- Performance of a geologic reconnaissance of the site vicinity. Selected photographs taken during our geologic reconnaissance are included in Appendix A.
- Compilation and analysis of the data obtained from our background reviews and site reconnaissance.
- Preparation of this report documenting findings and providing opinions and recommendations regarding possible geologic and soil impacts at the site. The findings were evaluated with respect to questions A through H listed in Section VII, "Geology and Soils" within Appendix G, "Environmental Checklist Form" of the "Guidelines for Implementation of the California Environmental Quality Act (CEQA)."

3 SITE AND PROJECT DESCRIPTION

The site for the proposed Heber 1 Geothermal Plant expansion is a triangular-shaped parcel in the Heber area of Imperial County, California (Figure 1). The project site includes the existing Heber 1 Geothermal Plant. The project site is bounded by Fawcett Road to the north, Pitzer Road to the east, Jasper Road to the south, and the Union Pacific railroad tracks to the west. The project area is located within the relatively flat bed of the ancient Lake Cahuilla. Elevations across the project site range from approximately 0 to 2 feet above mean sea level (MSL) at the berms surrounding the ponds to a water surface of -6 feet MSL within the ponds.

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Based on our understanding and review of the project description and site plan (Chambers Group, 2019 and Ormat, 2010), the proposed project will occur within the existing Heber 1 facility. The proposed expansion would consist of the replacement of steam turbine and bottoming units with Ormat Integrated three-level unit and Integrated two-level unit, new air cooled Ormat Energy Converters, new isopentane tanks, replacement of brine heat exchangers and generators, and a new retention basin to collect water during a 100 year flood event.

4 GEOLOGIC AND SUBSURFACE CONDITIONS

The following sections present our findings relative to regional and site geology, geologic hazards (e.g., landslides or expansive soils), groundwater, faulting, and seismicity.

4.1 Regional Geologic Setting

The project site is situated within the Salton Trough section of the Colorado Desert physiographic province. The Salton Trough extends from the upper Coachella Valley north of the Salton Sea to the Gulf of California, and is bounded by the Chocolate Mountains to the northeast and the Peninsular Ranges of southern California and Baja California to the west and southwest. The Salton Trough is a rift zone characterized by high seismicity, high heat flux, extensional tectonics, crustal thinning, and rapid sedimentation (Guptill et al., 1986). The seismicity of the Salton Trough area is controlled by several prominent, predominantly northwest-trending faults. These include the Whittier-Elsinore, San Jacinto and San Andreas fault zones. In addition, several northeast-trending cross faults connect the dominant northwest-trending fault systems (Figure 3). Further discussion of faulting relative to the site is provided in the Faulting and Seismicity section of this report.

4.2 Project Site Geology

Based on our review of published geologic maps (Figure 4) and our site reconnaissance, surficial soils within the project area consist of fill and alluvium (Dibblee and Minch, 2008). A brief description of these units, as described in the cited literature or as observed on the site, is presented below.

Fill soils were observed at the project site along the perimeter of the existing ponds (Photographs 1 through 4). As shown in Photographs 2 through 4, the berms surrounding the ponds contain concrete fragments and debris. Alluvium consisting of the Cahuilla Beds associated with the former Lake Cahuilla are mapped as underlying the site. These deposits are anticipated to consist of thinly laminated clays, sands, and gravels.

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4.3 Groundwater

Based on our site observations, water is present within the existing ponds at the project site at an elevation of approximately -6 feet MSL. Groundwater monitoring well data in the site vicinity indicates that groundwater is present at depths as shallow as 6 feet. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors. Perched water conditions may be encountered in such areas as existing utility trenches and the geologic contacts between granular and clayey materials.

4.4 Faulting And Seismicity

The project site is not located within a State of California Earthquake Fault Zone (formerly known as Alquist-Priolo Special Studies Zone) (Hart and Bryant, 1997). However, it is located in a seismically active area, as is the majority of southern California, and the potential for strong ground motion in the project area is considered significant during the design life of the proposed improvements. The approximate locations of major faults in the region and their geographic relationship to the Project site are shown on Figure 3.

Based on our document review, the active Imperial Fault is located approximately 6 miles northeast of the project site. Table 1 lists selected principal known active faults that may affect the project site and the maximum moment magnitude (M_{max}) as published by the United States Geological Survey (USGS, 2019). The approximate fault-to-site distances were calculated using the USGS fault parameters web-based design tool (USGS, 2019).

Table 1 – Principal Active Faults

Fault	Approximate Fault-to-Site Distance miles (kilometers)	Maximum Moment Magnitude (M_{max})
Imperial	6.0 (9.7)	7.0
Superstition Hills	9.7 (15.6)	6.8
San Jacinto (Superstition Mountain Segment)	15.9 (25.6)	6.7
Laguna Salada	16.5 (26.5)	7.3
Elsinore (Coyote Mountain)	28.9 (46.5)	6.9
Elmore Ranch	29.4 (47.3)	6.7
San Jacinto (Borrego Segment)	31.8 (51.2)	6.8
South San Andreas (Coachella Valley Segment)	45.4 (73.1)	7.0
San Jacinto (Clark Segment)	50.5 (81.3)	7.1
Elsinore (Julian Segment)	51.5 (82.9)	7.4
San Jacinto (Coyote Creek Segment)	52.6 (84.7)	7.0
Earthquake Valley	57.7 (92.9)	6.8

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The principal seismic hazards at the project site are surface fault rupture, strong ground motion, and liquefaction. A brief description of these hazards and the potential for their occurrences on site are discussed below.

4.4.1 Surface Ground Rupture

Based on our review of the referenced literature and our project site reconnaissance, no active faults are known to cross the project site. The active Imperial Fault is located approximately 6 miles northeast of the project site. Therefore, the probability of damage from surface ground rupture is considered to be low. However, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

4.4.2 Ground Motion

The 2016 CBC specifies that the potential for liquefaction and soil strength loss be evaluated, where applicable, for the Maximum Considered Earthquake Geometric Mean (MCEG) peak ground acceleration with adjustment for site class effects in accordance with the American Society of Civil Engineers (ASCE) 7-10 Standard. The MCEG peak ground acceleration is based on the geometric mean peak ground acceleration with a 2 percent probability of exceedance in 50 years. The MCEG peak ground acceleration with adjustment for site class effects (PGA_M) was calculated as 0.55g using a web-based seismic design tool (SEAOC/OSHPD, 2019) that yielded a mapped MCE_G peak ground acceleration of 0.50g for the site and a site coefficient (F_{PGA}) of 1.100 for Site Class D.

4.5 Liquefaction and Seismically Induced Settlement

Liquefaction is the phenomenon in which loosely deposited, saturated granular soils (located below the water table) with clay contents (particles less than 0.005 mm) of less than 15 percent, liquid limit of less than 35 percent, and natural moisture content greater than 90 percent of the liquid limit undergo rapid loss of shear strength due to development of excess pore pressure during strong earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact due to rapid rise in pore water pressure and it eventually causes the soil to behave as a fluid for a short period of time. Liquefaction is known generally to occur in saturated or near-saturated cohesionless soils at depths shallower than 50 feet bgs. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking. The sand layers within the fill and lake bed deposits underlying the site may be susceptible to liquefaction.

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4.6 Tsunamis and Seiches

Tsunamis are long wavelength seismic sea waves (long compared to the ocean depth) generated by sudden movements of the ocean bottom during submarine earthquakes, landslides, or volcanic activity. Based on the inland location and elevation of the project site, the potential for a tsunami to impact the project is not a design consideration.

Seiches are oscillations of enclosed or partially enclosed bodies of water often generated by seismic activity. Based on the elevation of the project site and the absence of nearby bodies of water, the potential for seiches to impact the project is considered low.

4.7 Landsliding and Slope Stability

Based on our review of published geologic literature, aerial photographs, and our project reconnaissance, no landslides or related features are known to underlie or be adjacent to the project. Therefore, the potential for landslides at the project is considered low.

Global slope stability is not anticipated to be a design consideration at the project due to the relatively flat nature of the site. However, surficial stability and erosion may be design considerations in berms or the sloped pond basins.

4.8 Expansive Soils

Expansive soils generally result from specific clay minerals that have the capacity to shrink or swell in response to changes in moisture content. Shrinking or swelling of foundation soils can lead to damage to slabs, foundations, and other engineered structures, including tilting and cracking. Based on our review of background materials and our geologic reconnaissance, soils in the project area are anticipated to have a potential for expansion. Laboratory testing should be performed to evaluate the expansion potential of site soils.

4.9 Corrosive Soils

Caltrans corrosion criteria (2015) consider soils with more than 500 parts per million (ppm) chlorides, more than 0.2 percent sulfates, or a pH less than 5.5 to be corrosive. Site soils may be corrosive. Laboratory testing should be performed to evaluate the corrosivity of site soils.

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5 CONCLUSIONS

Based on our review of the referenced background data and our geologic field reconnaissance it is our opinion that geologic and geotechnical considerations at the project site include the following:

- Surface and near-surface soils at the project are mapped as alluvium. Fill materials are also anticipated to be present at the project site. Geotechnical constraints related to soils at the project are:
  - *Soft Ground* – Areas with soft ground or loose soils can be found in areas underlain by existing fill and alluvium.
  - *Expansive Soils* – The project soils are expected to have a moderate to high potential for expansion.
  - *Fill Soils* – Fill soils placed without engineering supervision may be loosely or inadequately compacted, may contain oversize materials unsuitable for reuse in engineered fills, and may contain unsuitable organic or expansive materials and debris that may preclude their use in engineered fills.
- The closest known major active fault is the Imperial Fault, which is located approximately 6 miles northeast of the project. Geotechnical constraints related to faulting and seismic events at the project are:
  - Ground Shaking – The project has a moderate potential for strong ground motions due to earthquakes on nearby active faults.
  - Liquefaction – Based on the generally loose nature of the materials underlying the project site and the shallow historic groundwater, the potential for liquefaction within sand layers underlying the site is anticipated to be a design consideration.
- Shallow groundwater may occur beneath portions of the project in existing drainages and ponds.
- Surficial stability and erosion may be design considerations in berms or the sloped pond basins.
- Due to the inland location and elevation of the project, significant flooding or dam inundation are not considered design constraints.
- Based on previous work in the project area, some soils at the project site may be expansive and corrosive.

The conditions described above would increase the cost and duration of grading and construction of the project, but would not preclude development of the project.

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6 RECOMMENDATIONS

Based on the geologic and geotechnical considerations at the project site presented in the previous section, our general recommendations are presented below. These recommendations assume that a geotechnical evaluation, including subsurface evaluation and laboratory testing, will be conducted prior to finalization of project plans and specific recommendations will be provided at that time.

- Soft Ground – Soils in areas with soft ground or loose soils in the area of the proposed project may be subject to settlement. A recommendation to mitigate this condition could typically include removal and/or replacement of soils as engineered compacted fill. The extent of soft soils and recommended removals may be evaluated by subsurface investigation and laboratory testing.

- Expansive Soils – Expansive soils may lead to damage to foundations and engineered structures. If expansive soils exist on site, the following recommendations may be implemented during construction: the soils may be removed from distress sensitive areas and placed in deeper fill areas; the soils may be excavated and removed from the site; or the expansive soils may be treated (i.e., lime treatment) to mitigate their potential for expansion. The extent of expansive soils and recommended mitigation measures may be evaluated by subsurface investigation and laboratory testing.

- Ground Shaking – Proposed structures should be designed appropriately to mitigate strong ground shaking in the event of an earthquake on a nearby fault.

- Liquefaction – The site is underlain by alluvium consisting of thinly laminated clays, sands, and gravels. Historically, shallow groundwater is present at the site. Sandy layers within the alluvium may be considered susceptible to liquefaction and dynamic settlement. If site soils are found to be susceptible to liquefaction, the following recommendations may be implemented during construction; removal and replacement of soils susceptible to static settlement or liquefaction; densification of these soils; utilization of deep foundations; or lowering of the groundwater table. The extent of liquefiable soils and recommended mitigation measures may be evaluated by subsurface investigation and laboratory testing.

- Shallow groundwater – Shoring and dewatering may be required if construction is proposed in areas of shallow groundwater.

- Landsliding – Landslides have not been mapped on the site and none were observed during our site reconnaissance. If encountered, the following recommendations may be implemented during construction to mitigate landsliding: removal of the slide masses and replacement with engineered fill; the placement of buttress fills; or a combination of these recommendations. The extent of on-site landsliding and potentially unstable earth materials and recommended mitigation measures may be evaluated by subsurface investigation and laboratory testing.

- Corrosive Soils – If corrosive soils exist on the site, a corrosion engineer may be required to assist in the design of improvements in contact with the soil. The extent of corrosive soils and recommended mitigation measures may be evaluated by subsurface investigation and laboratory testing.

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7 IMPACT ANALYSIS

Based upon the results of our Geology and Soils Evaluation, our opinions, and recommendations are provided in the following sections.

7.1 Significance Thresholds

In evaluating the significance of potential environmental concerns in a particular study area, the criteria to consider, as they relate to geologic and soil conditions, are presented in the CEQA Guidelines. In accordance with the scope of work, the findings of this study were evaluated with respect to Questions A through E of Section VII "Geology and Soils" with in Appendix G of the CEQA Guidelines (2009).

7.2 Project Impacts and Significance

Based on the above criteria and the results of the evaluation, the potential impact by geologic and soil conditions at the project have been identified, and are discussed below.

A. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of known fault?

The potential for ground surface rupture due to active faulting is considered low in the project area due to the absence of known active faults underlying the site. However, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

ii. Strong seismic ground shaking?

The project site has a moderate potential for strong ground motions due to earthquakes on nearby active faults.

iii. Seismic related ground failure, including liquefaction?

Based on the generally loose nature of the subsurface materials and shallow historic groundwater, it is our opinion that the potential for liquefaction within sand layers in the alluvium is a design consideration.

iv. Landslides?

Landslides were not observed on or adjacent to the project site. Therefore, the potential for existing landslides is considered low. However, portions of the project site may be subject to surficial slope instability.

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B. Would the project result in substantial soil erosion or the loss of topsoil?

If the site is developed in accordance with current building codes and industry standards, the potential for substantial soil erosion is considered to be low. The potential for substantial loss of topsoil due to the proposed development is considered low.

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

The alluvial soils underlying the project site may be subject to static settlement or liquefaction during a nearby seismic event.

D. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

The soils on the project site are expected to have a moderate to high potential for expansion.

8 LIMITATIONS

The field evaluation and geotechnical analyses presented in this report have been conducted in accordance with current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No warranty, implied or expressed, is made regarding the conclusions, recommendations, and professional opinions expressed in this report. Variations may exist and conditions not observed or described in this report may be encountered. Our preliminary conclusions and recommendations are based on an analysis of the observed conditions and the referenced background information.

The purpose of this study was to evaluate geologic and geotechnical conditions within the project site and to provide a preliminary geotechnical evaluation report to assist in the preparation of environmental impact documents for the project. A comprehensive geotechnical evaluation, including subsurface exploration and laboratory testing, should be performed prior to design and construction of structural improvements.

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FIGURES

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NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: ESRI WORLD TOPO, 2017

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FIGURE 1

SITE LOCATION

HEBER 1 REPOWER PROJECT
IMPERIAL COUNTY, CALIFORNIA

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SITE BOUNDARY

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NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: GOOGLE EARTH, 2017

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FIGURE 2

AERIAL SITE PLAN

HEBER 1 REPOWER PROJECT
IMPERIAL COUNTY, CALIFORNIA

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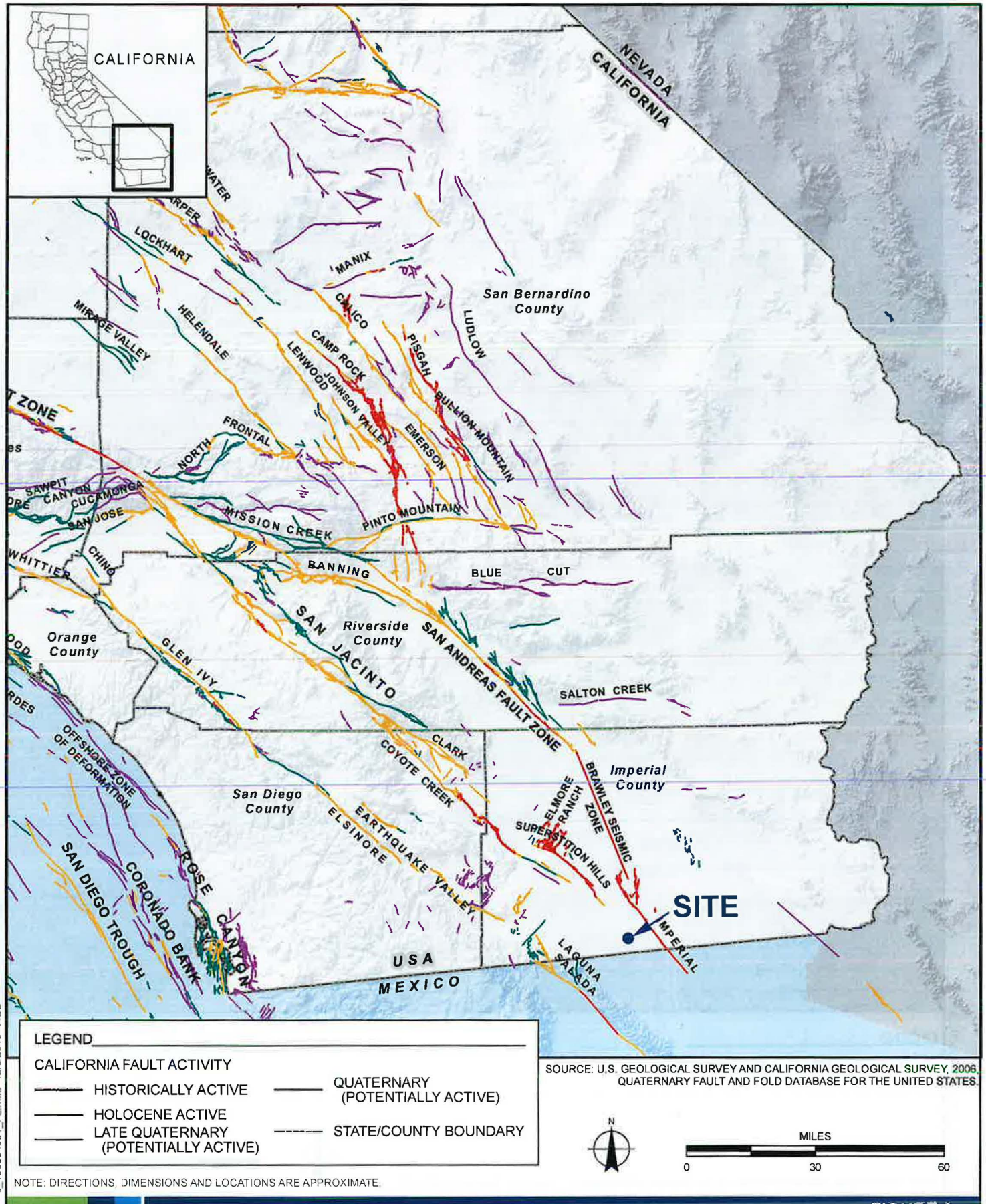

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CALIFORNIA FAULT ACTIVITY

- HISTORICALLY ACTIVE
- HOLOCENE ACTIVE
- LATE QUATERNARY (POTENTIALLY ACTIVE)
- QUATERNARY (POTENTIALLY ACTIVE)
- STATE/COUNTY BOUNDARY

SOURCE: U.S. GEOLOGICAL SURVEY AND CALIFORNIA GEOLOGICAL SURVEY, 2006, QUATERNARY FAULT AND FOLD DATABASE FOR THE UNITED STATES.

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NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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FIGURE 3

FAULT LOCATIONS

HEBER 1 REPOWER PROJECT
IMPERIAL COUNTY, CALIFORNIA

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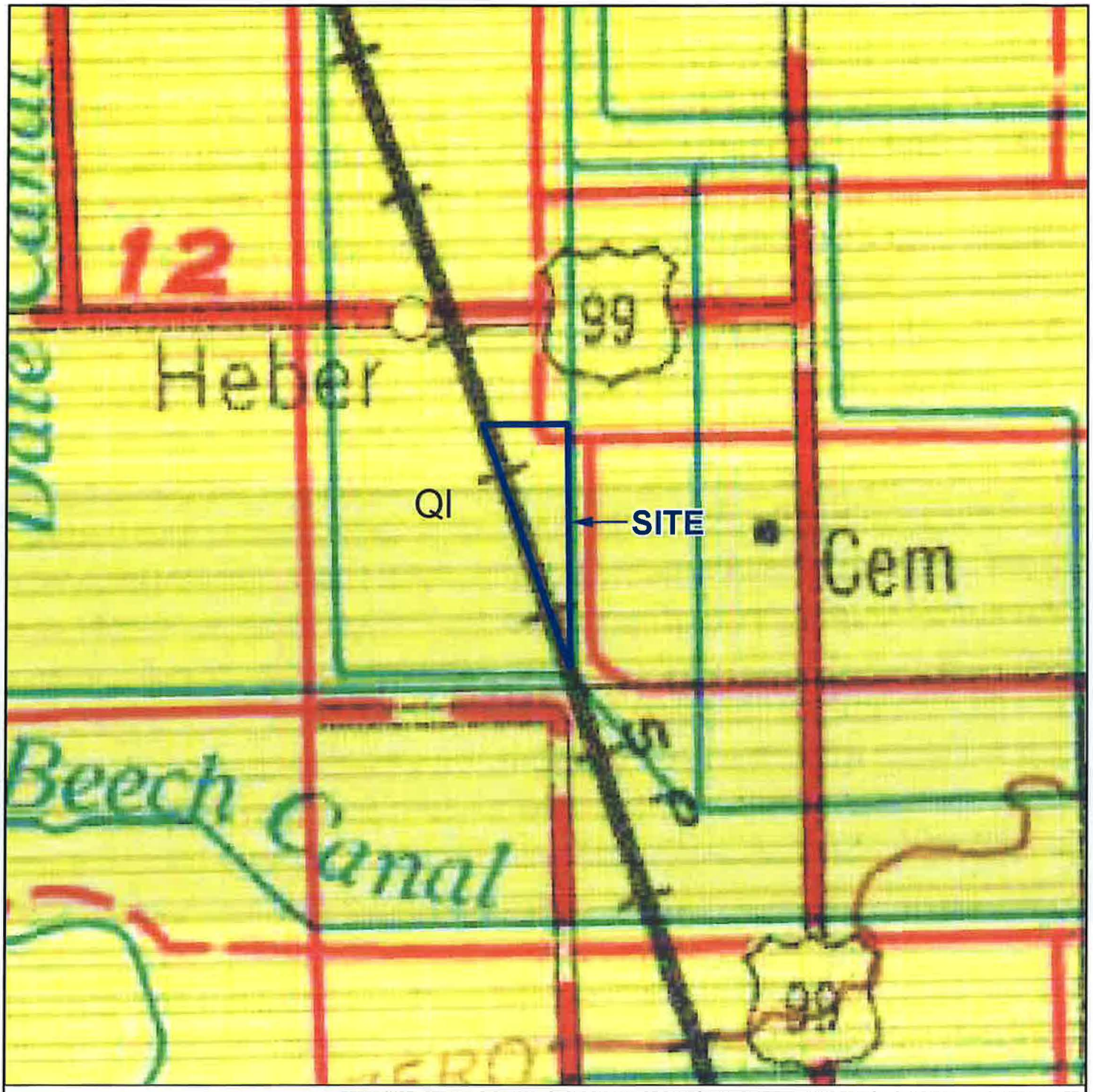

REFERENCE: STRAND, R.G., 1962, GEOLOGIC MAP OF CALIFORNIA, OLAF P. JENKINS EDITION, SAN DIEGO - EL CENTRO SHEET.

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NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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FIGURE 4

GEOLOGY

HEBER 1 REPOWER PROJECT
IMPERIAL COUNTY, CALIFORNIA

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APPENDIX A

Photographs

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Photograph 1: View looking north from the south end of the project site.



Photograph 2: View of the south end of the existing ponds.

FIGURE A-1

PHOTOGRAPHS

HEBER 1 REPOWER PROJECT
IMPERIAL COUNTY, CALIFORNIA

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Photograph 3: View of the berm and associated piping between the northern and southern ponds.



Photograph 4: View of the north end of the existing ponds.

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APPENDIX G – AIR QUALITY ANALYSIS SUMMARY

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AIR SCIENCES INC.

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TECHNICAL MEMORANDUM

AIR QUALITY ANALYSIS SUMMARY FOR THE ORMAT HEBER 1 RE-POWER PROJECT

PREPARED FOR:	Corinne Lytle Bonine, PMP, Chambers Group
PREPARED BY:	Joel Firebaugh, Air Sciences Inc.
PROJECT NO.:	346-1-1
COPIES:	Melissa Wendt, ORMAT Nevada Inc.
DATE:	December 15, 2020

ORMAT Nevada Inc. (ORMAT) proposes a Re-Power Project at its Heber 1 facility in Imperial County, CA which will take the existing dual-flash steam turbine generator out of service and install two new ORMAT Energy Converter (OEC) geothermal power generation units. In addition, OEC-11 and OEC-13 will be reconfigured into a combined two-level unit, OEC-11 ITLU. The re-power project will affect air emissions at the facility.

1.0 Project Description

Heber 1 is a geothermal power generation facility located on private lands owned by ORMAT in southern Imperial County. The facility operates under Imperial County Air Pollution Control District (ICAPCD) Permit to Operate (PTO) #1641B-5. Heber 1 currently consists of a dual-flash steam turbine generator with a gross maximum output of rating of 52 megawatts (MW) and four OECs with a gross combined output rating of 30 MW. Net output for the facility is less than 50 MW. The steam turbine generator includes a Regenerative Thermal Oxidizer (RTO) and Caustic Scrubber emission control devices. Ancillary equipment for the facility includes cooling towers, an evacuation skid/vapor recovery maintenance unit (VRMU), motive fluid (MF) storage tanks, and a diesel engine for emergency use.

The proposed development would occur entirely within the existing facility footprint, which is on Assessor's Parcel Number (APN) 054-250-036. The address for Heber 1 is 895 Pitzer Road, Heber, CA 92249.

1.1 Proposed Development

ORMAT intends to shut down the dual-flash steam turbine generator, install two new OECs, and reconfigure two of the existing OECs. The new OECs will use air cooling rather than water cooling for the MF.

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Two cooling towers; high- and low-pressure flash tanks; surface condenser; RTO; and caustic scrubber, which are all part of the steam turbine generator process, will be decommissioned along with the generator. The equipment will be deconstructed within five years per County of Imperial requirements.

The new OECs with air coolers will be constructed to the south of the existing OECs. Site preparation for the installation of the proposed facilities will include leveling the ground surface, excavation, backfill and soil compaction.

ORMAT Energy Converter-1 (OEC-1)

The proposed OEC-1 unit is a two-turbine combined cycle binary unit using isopentane as the motive fluid for the system. This system also consists of a generator, vaporizers, air-cooled condensers, preheaters and recuperators. OEC-1 will primarily be served by a new VRMU for purging and maintenance events. The design capacity for the unit is 19.8 MW gross output.

ORMAT Energy Converter-2 (OEC-2)

The proposed OEC-2 unit is a two-turbine binary unit, operating with isopentane as the motive fluid for the system. This system consists of a generator, two turbines, vaporizers, air-cooled condenser, and preheaters. OEC-2 will primarily be served by the new VRMU for purging and maintenance events. The design capacity for the unit is 17.2 MW gross output.

Air Coolers

Cooling for OEC-1 and OEC-2 will be accomplished without the use of cooling water. The MF will be cooled using air coolers. The air coolers operate by passing the MF through an air heat exchanger with airflow generated by a large fan. There will be three 10-bay air coolers and one 14-bay air cooler. The air coolers will be purged to remove non-condensable gases, and the purge gas will pass through the new VRMU to capture isopentane and VOC emissions before being released to the atmosphere.

ORMAT Energy Converter-11 Integrated Two-Level Unit (OEC-11 ITLU)

OEC-11 is a two-turbine bottoming unit which includes a generator, vaporizer, preheater, and condenser. The existing integrated purging units are no longer used, and purging is accomplished using the VRMU. With the proposed upgrades, OEC-11 will become an integrated two-level unit (ITLU) and will be renamed OEC-11 ITLU. The upgrades include the replacement of one turbine with a new, larger unit plus new vessels associated with the larger turbine. In addition to these changes, OEC-11 will incorporate the condensers that are currently

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part of OEC-13, and the rest of OEC-13 will be decommissioned. The gross output of the new OEC-11 ITLU will be 14.5 MW.

New Evacuation Skid / Vapor Recovery Maintenance Unit (VRMU)

A new VRMU will be used for purging and maintenance operations for OEC-1 and OEC-2. Vapor from the OEC's are passed through a knock-out drum and condenser, which collect the majority of the isopentane and other condensable gases. Condensed isopentane is returned to the MF system, while remaining gases are passed through an activated carbon adsorption filter which removes remaining isopentane vapor and other organics. The overall isopentane vapor recovery efficiency for the VRMU exceeds 99%. The new VRMU is intended to primarily service the new units: OEC-1, OEC-2, and the air coolers. However, all of the OEC units, air coolers, and tanks are interconnected, and the new VRMU may be used with any of the existing units when appropriate based on current operations.

ORMAT will continue to operate its existing VRMU to primarily service OEC-11 ITLU, OEC-12 and OEC-14, and can use it with the new OECs and air coolers if appropriate based on current operations.

Two Additional Isopentane Above Ground Storage Tanks

To support the new OEC units, two new above ground storage tanks for additional isopentane supply will be installed. There are two existing storage tanks at Heber 1. The new tanks will be sited near the new OECs. Each tank, existing or new, has a capacity of 10,000 gallons. Isopentane gases from the tanks are captured and vented to the VRMUs. These tanks typically store fluid only during maintenance operations and remain empty most of the time.

2.0 Existing Air Emissions

The Heber 1 facility is a synthetic minor source of air pollution and operates in compliance with all applicable air quality requirements and its permit to operate (PTO #1641B-5). Air emission sources currently at the facility include the steam turbine generator, OECs, MF storage tanks, cooling towers, VRMU, and an emergency diesel engine.

The Heber 1 dual-flash steam turbine generator consists of a turbine electric generator powered by geothermal fluid. The geothermal fluid is high-temperature liquid brine that is pumped from underground to a series of flash tanks, where lower pressure causes the brine to vaporize. The steam from the flash tanks powers a turbine generator, producing electricity. Downstream of the turbine, the steam flows through a condenser, and non-condensable gases are routed through a regenerative thermal oxidizer (RTO) and caustic scrubber. The RTO and caustic scrubber remove organics and hydrogen sulfide before venting remaining gases to the atmosphere.

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The OECs generate power by taking geothermal energy (e.g. heat) to vaporize liquid isopentane, which is the motive fluid that powers the turbines to create electricity. The primary air pollutant from these units is isopentane, which is a VOC. Isopentane emissions occur due to maintenance, purging, and fugitive leaks. During maintenance, the unit is shut down and the isopentane is evacuated before the system is opened for the necessary work to be performed. To evacuate the system, the liquid isopentane is transferred to storage tanks, and the remaining vapors are passed through the VRMU. The overall recovery rate of isopentane during evacuation is greater than 99%. However, trace quantities of vapors as well as liquid collected at low points in the system where the liquid cannot be completely drained result in VOC emissions when the unit is opened to the atmosphere.

Purging is the process by which impurities are removed from the isopentane closed circuit. Contamination of the isopentane causes operating efficiency losses, so purging is performed on a regular basis. Vapors are passed through the VRMU and the isopentane is collected and returned to the system while other gases are removed.

Fugitive losses of isopentane can occur due to failing seals, valves, flanges, etc.

Current permitted emission limits for the facility are provided in Table 1. In addition to isopentane emissions, there are particulate emissions from the cooling towers as well as NO_X, SO_2, benzene, and H2S emissions from the steam turbine generator. There is a facility-wide annual benzene emission limit of 1.24 tons per year. Emissions from the emergency diesel generator are not explicitly limited in the ATC, however the engine is limited to 40 hours per year for maintenance and testing purposes.

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Table 1. Facility-wide Existing Emission Limits

	Emission Limits (lbs / day)					
Emission Source	**PM_{10}**	**NO_X**	**SO_2**	**Isopentane[1]**	**Benzene**	**H_2S**
Steam Turbine Generator / RTO (normal operation)		11.66	5.03		2.33	2.74
Steam Turbine Generator during RTO maintenance					93.12	250
Steam Turbine Generator Condensate Line					0.75	18.73
OECs & MF Tanks (total)				99.6		
Purging & Fugitive				*59.6*		
Maintenance				*40.0*		
Cooling Towers	4.36					

[1]Isopentane emissions are calculated on a quarterly average basis.

3.0 Method for Predicting Emissions for Proposed Development

The expected changes to emissions from the proposed development include a reduction in emissions for all permitted pollutants except isopentane. The reduction in emissions is due to the decommissioning of the steam turbine generator and ancillary equipment including two cooling towers. Actual isopentane emissions from the OECs are expected to increase but remain within currently permitted limits.

Future potential isopentane emissions were estimated based on actual emissions from the facility for the most recent two-year period of normal operation. Isopentane emissions are related to the size of the system, so emissions were estimated by scaling the previous actual emissions according to the change in MF volume at the facility. The existing four OECs have a combined volume of 96,800 gallons, and the two MF storage tanks have a combined capacity of 20,000 gallons. After the proposed development, the combined volume of the existing and new OECs will be 240,100 gallons, and the total facility isopentane volume including the MF tanks will be 280,100 gallons.

Isopentane emissions were estimated as follows:

- Maintenance and purging emissions were estimated based on the worst-case quarterly emissions for maintenance and purging from two years of on-site data. These emission rates were scaled based on the ratio of the future OEC volume (240,100 gallons) to the existing OEC volume (96,800 gallons).

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- Fugitive emissions were estimated based on the worst-case quarterly emission rate over the two-year period, scaled based on the total system capacity of the system including MF tanks (280,100 gallons proposed versus 116,800 existing).

This emission estimation method is a reasonably conservative estimate (e.g. an overestimation) of future emissions. The new units benefit from improvements in the design and technology that have occurred during the years since the existing units were constructed. These improvements reduce fugitive leaks as well as emissions during MF evacuation for maintenance but are not accounted for in the emission estimate. Additionally, these new units are expected to have lower emissions because the units they are replacing have higher maintenance requirements due to their age.

4.0 Potential Emissions Summary for Proposed Development

Previous actual isopentane emissions, estimated potential emissions, as well as emission limits in PTO #1641B-5 for the Heber 1 facility are given below in Table 2. Note that the estimated emissions for the facility after the proposed development remain below the current permitted emission limits. The estimated emissions are reasonably conservative for the reasons described above.

Table 2. Actual and Potential Emissions for Heber 1 Facility

	Facility Total Emissions	
Isopentane Emissions	**lbs / day**	**tons / year**
Actual Emissions (Q4 2016 – Q3 2018)	33.3	6.1
Estimated Potential Emissions	81.3	14.8
Emissions Increase	48.0	8.8
Current Permit Limit	99.6	
Proposed Permit Limit	99.0	

Air emissions of other pollutants will decrease due to the decommissioning of the steam turbine generator and associated units including the RTO, condensate line, and 2 cooling towers. The proposed updated emission limits for the facility are presented in Table 3.

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Table 3. Heber 1 Proposed Updated Emission Limits

	Emission Limits (lbs / day)	
Emission Source	**PM_{10}**	**Isopentane**
OECs & MF Tanks (total)		99.0
Cooling Towers	3.72	

5.0 Air Quality Protection Measures

ORMAT has implemented measures to limit air emissions at Heber 1. These measures include but are not limited to the following:

- A water truck is used on site to control fugitive dust emissions.
- A five mile per hour speed limit at the site further reduces fugitive dust emissions.
- During windy conditions, additional watering is conducted to minimize wind-blown fugitive dust.
- Equipment is operated according to best practices and maintained according to design specifications.
- The OECs are inspected for leaks using specialized leak detection equipment during every shift, and leaks are repaired quickly.
- Any breakdown resulting in air emissions is reported to ICAPCD and corrected promptly (within 24 hours when possible).
- The VRMU is tested annually to confirm proper function and high isopentane recovery rates.

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APPENDIX H – HAZARDS ASSESSMENT

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ORMAT

ORMAT, HEBER 1
GEOTHERMAL POWER GENERATION FACILITIES
HEBER, CALIFORNIA

Hazard Assessment

Revision	Date	Description
0.0	December 4, 2020	Initial Issue – Modeling Existing and New Storage Vessels

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Appendix A: Worst-Case Scenario Calculations

Appendix B: Alternative Case Scenario Calculations

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1.0 FACILITY OVERVIEW

This technical assessment was conducted to fulfill the Hazard Assessment Offsite Consequence Analysis (OCA) requirements of the following regulations:

- 40 CFR §68.65 – Environmental Protection Agency (EPA) "Risk Management Plan (RMP)"[1]
- 19 CCR 2750.1 to 2750.9 – California Code of Regulation "California Accidental Release Prevention (CalARP) Program"[2]

This assessment is completed for the **Ormat– Heber 1 Geothermal Complex** Facility located in Heber, California. The facility's location at 895 Pitzer Road, Heber, CA 92249 is illustrated in Figure 1 below. The blue markers depict the locations of the two existing 10,000-gallon vessels and red markers for two new 10,000-gallon isopentane vessels that are being added to the facility as part of the Heber 1 Repower Project.

Figure 1: Aerial View of the Facility Location



The following page presents a closer view of the facility's storage vessel locations, as well as a table displaying the approximate location of the 4 storage vessels.

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Figure 2: Aerial View of the Storage Vessel Locations

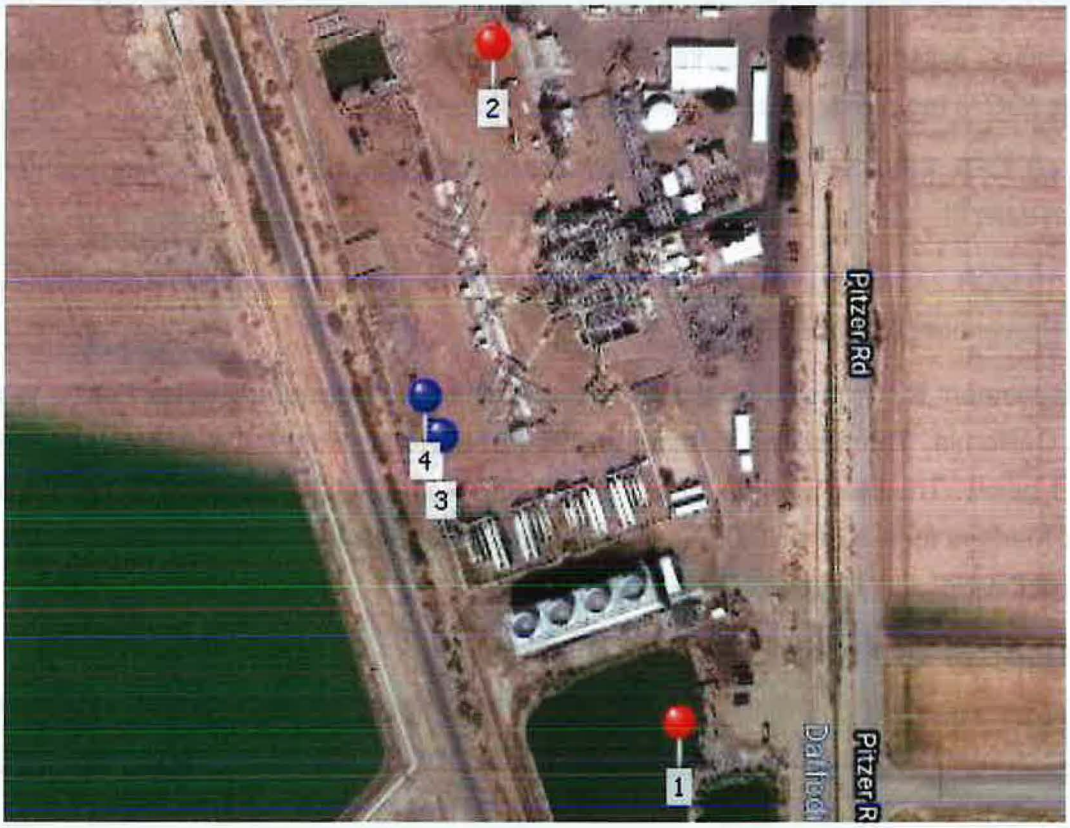

Table 1: Ormat—Heber 1 Storage Vessel Coordinates

COVERED PROCESS	FORMAT	LATITUDE	LONGITUDE
Proposed Isopentane Vessel 1	Decimal Degrees	32.712731°	-115.517670°
Proposed Isopentane Vessel 2	Decimal Degrees	32.715359°	-115.518536°
Existing Isopentane Vessel 3	Decimal Degrees	32.713841°	- 115.518776°
Existing Isopentane Vessel 4	Decimal Degrees	32.713999°	- 115.518851°

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2.0 COVERED PROCESS

The Ormat – Heber 1 Geothermal Complex uses the renewable geothermal resources of the Heber Known Geothermal Resource Area (KGRA) to generate electrical power.

The Heber 1 Geothermal Project produces electricity by using a vaporized motive fluid to spin a turbine connected to a generator. In the Heber 1 binary process, isopentane is the motive fluid.

The covered process at the facility is listed below.

Table 2: Ormat—Heber 1 Geothermal Complex Facility Covered Process

PLANT	REGULATED SUBSTANCE	MAXIMUM INVENTORY IN SINGLE VESSEL (GAL)[A]	TANK TYPE	VESSEL STORAGE INVENTORY
Heber 1	Isopentane	9,000	Storage	10,000-gallon tank

[A] This value represents the maximum amount stored in a single vessel, taking into account administrative controls, which are in place to limit the quantity stored.

This hazard assessment will focus on the regulated substance, isopentane, in Heber 1. The facility is classified as Prevention Program 3 and is regulated by the Environmental Protection Agency's Risk Management Program (EPA RMP) for Chemical Accidental Release Prevention in accordance with the Code of Federal Regulations, Title 40, Chapter I, Subchapter C, Part 68, Subpart B Sections 68.20 to 68.42 (40 CFR §68.20 - 68.42)[1] for isopentane, because it is held on site in excess of 10,000 lbs. The geotechnical power plant utilizes isopentane as the motive fluid in the generation of electricity.

3.0 LEVEL OF CONCERN

To address potential health effects for the worst-case release scenario, the following are the key endpoints of concern for the EPA RMP as defined in Title 40 CFR Section 68.22(2):

(i) Explosion. An overpressure of 1 psi.

(ii) Radiant heat/exposure time. A radiant heat of 5 kW/m^2 for 40 seconds.

(iii) Lower flammability limit. A lower flammability limit as provided in NFPA documents or other generally recognized sources.

The distance from the point of release to the endpoint identified above defines a radius circle of concern for which consequences are reported in the Risk Management Plan.

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4.0 WORST-CASE SCENARIO

The US EPA RMP determines the worst-case release quantity in Title 40 CFR Part 68.25(b) as follows:

> *The worst-case release quantity shall be the greater of the following:*
>
> *(1) For substances in a vessel, the greatest amount held in a single vessel, taking into account administrative controls that limit the maximum quantity;*
>
> *(2) For substances in pipes, the greatest amount in a pipe, taking into account administrative controls that limit the maximum quantity.*

Given the substance released is a flammable, the US EPA RMP gives further guidelines in 68.25 (f):

> *Worst-Case scenario-flammable liquids. The owner or operator shall assume that the quantity of the substance, as determined under paragraph (b) of this section and the provisions below, vaporizes resulting in a vapor cloud explosion. A yield factor of 10 percent of the available energy released in the explosion shall be used to determine the distance to the explosion endpoint if the model used is based on TNT equivalent methods.*
>
> *(1) For regulated flammable substances that are normally liquids at ambient temperature, the owner or operator shall assume that the entire quantity in the vessel or pipe as determined under paragraph (b) of this section, is spilled instantaneously to form a liquid pool. For liquids at temperatures below their atmospheric boiling point, the volatilization rate shall be calculated at the condition specified in paragraph (d) of this section.*
>
> *(2) The owner or operator shall assume that the quantity which becomes vapor in the first 10 minutes is involved in the vapor cloud explosion.*

Furthermore, vapor cloud explosions are considered a conservative analysis as Chapter 4: OCA of the General Risk Management Program Guidance states:

> *As in the case of the worst-case release analysis for toxic substances, the worst-case distance to the endpoint for flammable substances is based on a number of very conservative assumptions. Release of the total quantity of a flammable substance in a vessel or pipe into a vapor cloud generally would be highly unlikely. Vapor cloud explosions are also unlikely events; in an actual release, the flammable gas or vapor*

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released to air might disperse without ignition, or it might burn instead of exploding, with more limited consequences. The endpoint of 1 psi is intended to be conservative and protective; it does not define a level at which severe injuries or death would be commonly expected. An overpressure of 1 psi is unlikely to have serious direct effects on people; this overpressure may cause property damage such as partial demolition of houses, which can result in injuries to people, and shattering of glass windows, which may cause skin laceration from flying glass.

To develop the worst-case scenario, the largest storage vessel was selected. As stated in 19°CCR §2750.3, the worst-case release quantity is the greatest amount held in a single vessel, taking into account inventory procedures and limits.

The Areal Locations of Hazardous Atmospheres (ALOHA)[3] modeling software was used to determine the distance to the endpoint for the worst-case release scenario analysis. The vulnerability zone resulting from this analysis was then reviewed. A vulnerability zone is defined as a circle whose center is the point of release and its radius is the length of the endpoint, which is predicted by the dispersion model (e.g., ALOHA).

4.1 Worst-Case Scenario Selection Process

The process of worst-case release scenario identification is summarized as follows. Figure 3 on the following page depicts the steps in this process.

- **Inventory Calculation**: The first step was to perform the inventory calculations for the 10,000-gallon storage vessels in the covered units and systems.
- **Screening Analysis**: The 10,000-gallon isopentane storage vessels' location was screened. ALOHA modeling software was used to model the scenario and determine the dispersion endpoints for the worst-case release scenario. This was performed to determine the vulnerability zone associated with the worst-case release scenario.
- **Review of the Vulnerability Zone**: The vulnerability zone resulting from the previous step was reviewed and is representative for the plant's worst-case scenario.
- **Worst-Case Analysis**: To document the worst-case scenario, the potential public receptors within the vulnerability zone were identified. All modeling inputs, calculations and assumptions are documented.

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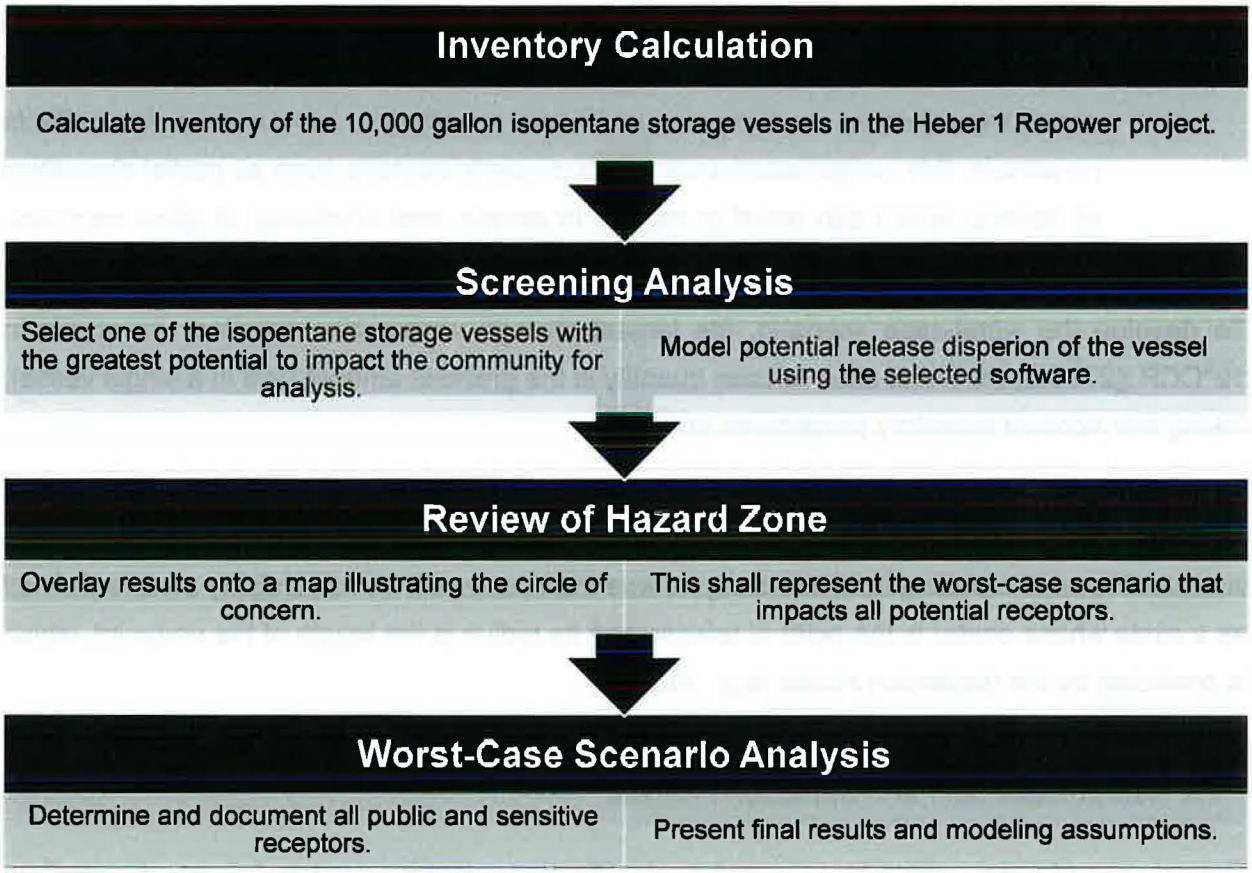
Figure 3: Worst-Case Scenario Selection Process



4.2 Flammable Release Potential Consequences

Several possible consequences of releases of flammable substances are discussed below. It should be noted that the following possible consequences apply to not only worst-case release analysis.

- **Flash Fire**. This event may result from dispersion of a flammable vapor cloud and ignition of the cloud following dispersion. Such a fire could flash back and could represent a severe heat radiation hazard to anyone in the area of the cloud. The lower flammability limit (LFL) endpoint, specified in the rule, would be appropriate for flash fires (vapor cloud fires).
- **Pool Fire**. Spill of a liquid whose boiling point is above ambient temperature may form a liquid pool, which could ignite and form a pool fire. The applicable endpoint specified in the rule is the heat radiation level of 5 kW/m^2.

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- **BLEVE.** A BLEVE (Boiling Liquid Expanding Vapor Explosion) is a potential release scenario associated with a large quantity of flammable materials kept at below their boiling points. A BLEVE that may lead to a fireball could produce intense heat. This event may occur if a vessel containing flammable material ruptures as a result of exposure to fire. Heat radiation from the fireball is the primary hazard and vessel fragments and overpressure from the explosion are generally considered unlikely. To estimate the distance to a radiant heat level that can cause second degree burns (a heat "dose" equivalent to the specified radiant heat endpoint of 5 kW/m^2 for 40 seconds). Consistent with the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis" published guidance, BLEVEs are generally considered unlikely events and were therefore not considered a probable event for the Offsite Consequence Analysis.
- **Vapor Cloud Explosion.** For a vapor cloud explosion to occur, rapid release of a large quantity, turbulent conditions (caused by a turbulent release or congested conditions in the area of the release, or both), and other factors are generally necessary. The endpoint for vapor cloud explosions is 1 psi.
- **Jet Fire.** This may result from the puncture or rupture of a tank or pipeline containing a compressed or liquefied gas under pressure. The gas discharging from the hole can form a jet that "blows" into the air in the direction away from the hole; the jet then may ignite. Jet fires could contribute to BLEVEs and fireballs if they impinge on tanks of flammable substances. A large horizontal jet fire may have the potential to pose an offsite hazard.

For the flammable worst-case release scenario, a vapor cloud explosion was the most appropriate consequence, as defined by the EPA RMP rule.

4.3 Endpoints

As mentioned previously, for flammable materials, the endpoints specified by the EPA RMP are:

- Overpressure of 1 pound per square inch (psi) for vapor cloud explosions
- Radiant heat of 5 kilowatts per square meter (kW/m^2) for jet fires
- Lower flammability limit (LFL) for flash fires

The rule specifies endpoints for fires based on the heat radiation level that may cause second degree burns from a 40-second exposure and the LFL, which is the lowest concentration in air at which a substance will burn. For a vapor cloud explosion, the endpoint is 1 psi, which is the force

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to cause partial demolition of houses with potential serious injuries to people, or shattering glass windows with potential skin laceration from flying glass.

4.4 Modeling Assumptions

The EPA RMP regulation imposes several assumptions that were adhered to when performing the offsite consequence analysis of the worst-case release scenario. These are conservative assumptions for weather and release conditions. The distance to the endpoint estimated under worst-case conditions provides an estimate for the maximum possible area that might be affected by these unlikely conditions. It should be noted that EPA's intention for the vulnerability zone representing a worst-case release scenario is to provide a basis for discussion among the regulated industry, emergency responders, and the public, rather than a basis for any specific actions. The EPA RMP regulations, in conjunction with the RMP Guidance for Offsite Consequence Analysis[4], were used to model the worst-case release scenario and prescribe these atmospheric parameters.

- **Meteorological Parameters:** For the worst-case release analysis, the following assumptions were entered into ALOHA, as specific by the EPA RMP regulations / RMP Guidance for Offsite Consequence Analysis.
  - *Atmospheric stability*: F stability (very stable conditions)
  - *Wind speed:* 1.5 meters/second
  - *Ambient Temperature:* 77 °F
  - *Relative Humidity*: The typical relative humidity at the stationary source, which is 50%
- **Dispersion & Impact Modeling Parameters:**
  - *Height of Release:* Ground level, per EPA Rule requirement
  - *Surface Roughness:* Open Country, meaning there are no obstacles in the immediate area; obstacles including buildings or trees, as defined by the EPA RMP regulations
  - *Vapor Cloud Explosion Impact:* A Vapor Cloud Explosion has been modeled with an endpoint of 1 psi

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- **Mitigation Systems:** Once a release has occurred, mitigation systems are means (structures, equipment, or activities) that help minimize the transport of material to the atmosphere. Mitigation systems can be characterized as passive or active systems.
    - *Passive mitigation systems do not require activation, an energy source, or movement of components to perform their intended function*
    - *Active mitigation systems do require activation, an energy source, and/or movement of components to perform their intended function*

It should be emphasized that the effectiveness of mitigation systems was taken into account when these systems were considered in the offsite consequence analysis. The effectiveness is determined based on how well the systems are designed and their abilities to respond reliably upon demand. The rule permits consideration of only passive mitigation systems for the worst-case release analysis provided that the systems are capable of withstanding the event triggering the release scenario and would still function as intended. For the worst-case release scenario, the secondary containment area built with concrete was considered as a passive mitigation measure in the offsite consequence analysis.

4.5 Worst-Case Release Scenario

One worst-case scenario (WCS) was developed for the facility. For the worst-case release scenario, the existing and new 10,000-gallon storage vessels containing isopentane at the Ormat – Heber 1 Geothermal Complex Facility were considered. The storage vessel is capable of storing a maximum of 9,000 gallons of isopentane, taking into account administrative controls. According to the Chevron Philips Chemical Company safety data sheet, the density of isopentane is 5.14 lbs./gal, which yields a total mass of 46,260 pounds of isopentane held in the storage vessel. The worst-case scenario considers the release of the entire contents of one of the 10,000-gallon isopentane storage vessels, which would result in a release of the entire contents of the vessel, into the secondary containment area. All dispersion modeling parameters utilized in the worst-case release scenario modeling is listed in Table 3 below. A summary of the scenario is presented in Table 4. Appendix A of this report provides a detailed description of the worst-case release scenario, ALOHA modeling output, MARPLOT 5.1.1[5] output with population estimates, and maps displaying the vulnerability zone for a release from each tank, denoted by a circle superimposed on the map.

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Table 3: Worst Case Release Scenario Dispersion Modeling Parameters

PARAMETER	INPUT VALUE	NOTES
Isopentane Input Parameters		
Quantity Released	9,000 gallons	Entire contents of isopentane storage vessel assumed to be released and form an evaporating puddle in secondary containment area, which is involved in a vapor cloud explosion.
Meteorological Parameters		
Atmospheric Stability	F stability	As per 40 CFR §68.22 (b), "For the worst-case release analysis, the owner or operator shall use a wind speed of 1.5 meters per second and F atmospheric stability class"
Wind Speed	1.5 m/s	
Wind Direction	W	Wind Direction from the west based on the Wind Rose plot for Imperial, CA (closest city with wind rose plot available). Since the endpoint distance and circle of interest is presented in this report, the wind direction does not impact the analysis/distance to endpoint and instead is a generic input that ALOHA modeling software requires.
Measurement Height above Ground	10 m	Wind speed is assumed to be measured at this elevation, as this is the standard height at which the National Weather Service usually reports wind speed.
Ambient Temperature	77°F (25°C)	As per 40 CFR §68.22 (c), "An owner or operator using the RMP Offsite

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PARAMETER	INPUT VALUE	NOTES
Relative Humidity	50%	Consequence Analysis Guidance may use 25 °C and 50 percent humidity as values for these variables"
Ground temperature	122ºF	As per 40 CFR §68.22 (g), "for worst case, [it] shall be considered to be released at the highest daily maximum temperature, based on data for the previous three years appropriate for the stationary source." Temperature data was sourced from Weather Underground [6] for Imperial, CA (closest available city with temperature history) and the highest daily maximum temperature from the previous 3 years was identified.
Dispersion and Impact Modeling Parameters		
Height of Release	Ground level	As per 40 CFR §68.22(d), "you must assume a ground level release" and as per the RMP Offsite Consequence Analysis Guidance Document, "this guidance assumes a ground-level release"
Topography/Surface Roughness	Open Country	Open Country, meaning there are no obstacles in the immediate area; obstacles including buildings or trees, as defined by the EPA RMP regulations.

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PARAMETER	INPUT VALUE	NOTES
Level of Congestion	Congested	The level of congestion was assumed to be congested, which is a conservative assumption since greater turbulence (greater congestion) allows the flame front to accelerate, thereby generating a more powerful blast wave (i.e., greater overpressure). The immediate area within the facility is also considered to be congested with piping and equipment.
Isopentane Mitigation System		
Passive Mitigation	Secondary Containment Area	The volume released from a single Isopentane Storage Vessel is assumed to release into a concrete secondary containment area, which is contained around each storage vessel. The secondary containment area dimensions are 40 ft length, 12 ft width, 3.5 ft depth (Surface area = 480 ft^2).

Table 4: Worst-Case Scenario Results Summary

RELEASE SCENARIO	REGULATED SUBSTANCE	ENDPOINT	ENDPOINT DISTANCE
WCS: 10,000-gallon Isopentane Storage Vessel Release	Isopentane	Overpressure of 1 psi	92 yd / 276 ft / 0.052 mi

4.6 Worst-Case Analysis Considerations

The worst-case distances to the flammable endpoints are based on a number of very conservative assumptions. The following summarizes the assumptions:

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- The likelihood of a vessel rupture is extremely low. As a result, the release of entire inventory of a vessel is an unrealistic assumption.
- An overpressure of 1 psi is unlikely to have serious direct effects on people. This overpressure may cause property damage such as partial demolition of houses, which can result in injuries to people, and shattering of glass windows, which may cause skin laceration from flying glass.

5.0 ALTERNATIVE RELEASE SCENARIO

Alternative scenarios are potential releases that may result in consequences whose footprints represented by the endpoints could extend beyond the plant boundary. For a release case to be considered an alternative scenario, two conditions must be met:

1. The likelihood of the alternative release scenarios should be higher than that of the worst-case release scenarios.
2. The distance to endpoint from an alternative release scenario must go beyond the plant fence line.

As put forth in Title 40 CFR Section 68.28(a):

> *The owner or operator shall identify and analyze…at least one alternative release scenario to represent all flammable substances held in a covered process*

Title 40 CFR Section 68.28 (b)(2) defines the scenarios typically considered, but not limited to, the following:

> *(i) Transfer hose releases due to splits or sudden hose uncoupling;*
>
> *(ii) Process piping releases from failures at flanges, joints, welds, valves and valve seals, and drains or bleeds*
>
> *(iii) Process vessel or pump release due to cracks, seal failure, or drain, bleed, or plug failure; and*
>
> *(iv) Vessel overfilling and spill, or over pressurization and venting through relief valves or rupture disks.*
>
> *(v) Shipping container mishandling and breakage or puncturing leading to a spill.*

For alternative release scenarios, active mitigation systems, such as interlocks, shutdown systems, pressure relieving devices, flares, emergency isolation systems, and fire water and deluge systems, as well as passive mitigation systems are considered, if they were applicable. In order to be credited, the mitigation systems considered must be capable of withstanding the event that triggers the release while remaining functional.

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5.1 Alternative Release Scenario Selection Process

The process of alternative release scenario identification is summarized as follows and depicted in Figure 4.

- **Selection of Candidate Alternative Release Scenario:** The process of alternative release scenario identification was initiated with the review of the worst-case release case. Additional vessels, containing various quantities of regulated substances, which considered having a higher likelihood of release, were then reviewed. In this process, all covered processes were reviewed and the candidate case for the alternative release scenario analysis was subsequently selected. The following criteria was utilized to identify the potential scenario:
    - Corrosion history and corrosive services
    - Past incidents and near misses
    - Potential equipment failure
    - Operating conditions
    - Potential for human error
    - Consequences considered in the unit Process Hazard Analysis
- **Analysis of the Selected Alternative Release Scenario:** Once the candidate scenario was selected, ALOHA was utilized to model the selected scenario. The vulnerability zone resulting from the analysis of the alternative release scenario was then reviewed. The release duration was limited by the length of time to release the entire contents of the single Isopentane Storage Vessel.
- **Alternative Release Scenario**: The alternative release scenario for the flammable substance was selected and modeled to evaluate potential offsite impacts. Documentation of this scenario included modeling calculations, parameters, and assumptions.

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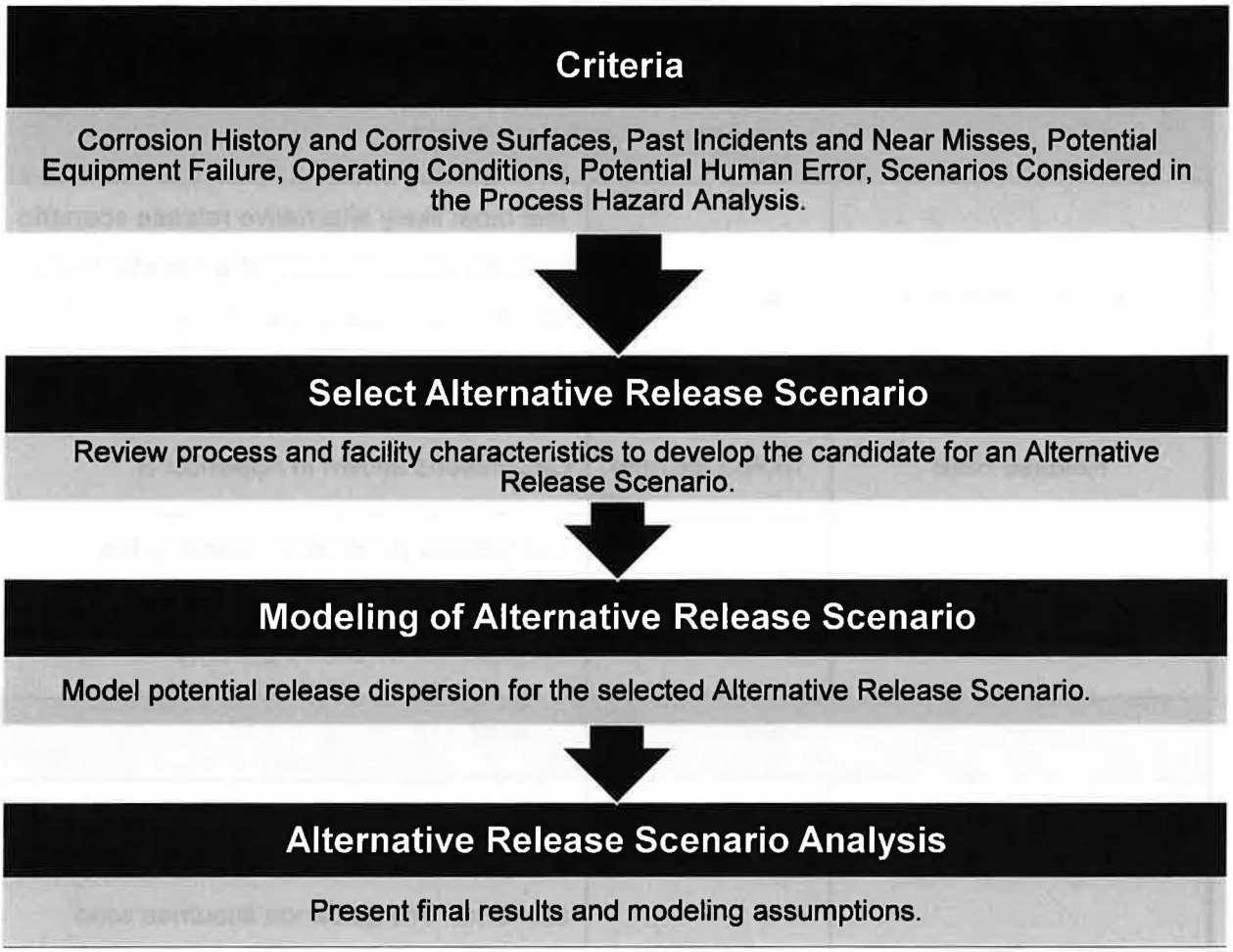
Figure 4: Alternative Release Scenario Selection Process



5.2 Modeling Assumptions

The EPA RMP regulation does not impose any mandatory assumptions for the OCA of the alternative release scenario. All dispersion modeling parameters utilized in the alternative release scenario modeling are listed in Table 5. For the alternative release scenario, a release due to a break in the product transfer hose connection during truck loading has been considered. Appendix B of this report provides a detailed description of the alternative release scenario, ALOHA modeling output, MARPLOT 5.1.1 output with population estimates, and a map with the vulnerability zone denoted by a circle superimposed on the map.

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Table 5: Alternative Release Scenario Dispersion Modeling Parameters

Parameter	Input Value	Notes
Isopentane Input Parameters		
Quantity Released	46,260 lbs.	The most likely alternative release scenario involves the uncoupling of a transfer hose during truck loading operations. Calculations shown in Appendix B.
Release Rate	19,468 lbs./min	Calculations shown in Appendix B.
Release Duration	2.4 mins	The release duration is limited by the quantity stored in a single Isopentane Storage Vessel (9,000 gallons).
Meteorological Parameters		
Atmospheric Stability	D stability	As per EPA RMP Offsite Consequence Analysis Guidance, for an alternative scenario, "this guidance assumes wind speed of 3 meters per second and D stability"
Wind Speed	3.0 m/s	
Wind Direction	W	Wind Direction from the west based on the Wind Rose plot for Imperial, CA (closest city with wind rose plot available). Since the endpoint distance and circle of interest is presented in this report, the wind direction does not impact the analysis/distance to endpoint and instead is a generic input that ALOHA modeling software requires.

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Parameter	Input Value	Notes
Measurement Height above Ground	10 m	Wind speed is assumed to be measured at this elevation, as this is the standard height at which the National Weather Service usually reports wind speed.
Ambient Temperature	77°F (25°C)	As per EPA RMP Offsite Consequence Analysis Guidance, for an alternative scenario, "this guidance assumes 25°C and 50 percent humidity"
Relative Humidity	50%	
Dispersion and Impact Modeling Parameters		
Height of Release	Ground Level	As per EPA RMP Offsite Consequence Analysis Guidance, for an alternative scenario, "this guidance assumes a ground-level release"
Topography/Surface Roughness	Open Country	Open Country, meaning there are no obstacles in the immediate area; obstacles including buildings or trees, as defined by the EPA RMP regulations.
Level of Congestion	Congested	The level of congestion was assumed to be congested, which is a conservative assumption since greater turbulence (greater congestion) allows the flame front to accelerate, thereby generating a more powerful blast wave (i.e., greater overpressure). The immediate area within the facility is also considered to be congested with piping and equipment.

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Parameter	Input Value	Notes
Isopentane Mitigation System		
Passive Mitigation	Secondary Containment Area	The amount released from the alternative release scenario is assumed to release into a concrete secondary containment area, which is contained around each storage vessel. The secondary containment area dimensions are 40 ft length, 12 ft width, 3.5 ft depth (Surface area = 480 ft^2).
Active Mitigation	None	

5.3 Alternative Release Scenario

A summary of the alternative release scenario is presented in Table 6. Appendix B of this report provides a detailed description of the alternative release scenario, ALOHA modeling outputs, MARPLOT 5.1.1 outputs with population estimates, and a map with circles representing the vulnerability zones.

Table 6: Alternative Release Scenario Result Summary

RELEASE SCENARIO	REGULATED SUBSTANCE	ENDPOINT	ENDPOINT DISTANCE
ARS: Transfer Hose uncoupling from 10,000-gallon Isopentane Storage Vessel during Truck Loading Operations	Isopentane	Overpressure of 1 psi	57 yd / 171 ft / 0.032 mi

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5.4 Alternative Release Analysis Considerations

Typically, the same conservative assumptions apply for the alternative release analysis as for the worst-case release analysis. Although the alternative release scenario is intended to be more likely than the worst-case release scenario, the analysis of the alternative release scenario should not be expected to provide a realistic estimate of an area in which off-site impact may occur. The same conservative endpoints have been used for both the worst-case and the alternative release analysis. These endpoints are intended to represent exposure levels below which most members of the public will not experience serious long-term health effects.

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6.0 OFFSITE IMPACTS

A summary of the off-site impacts from an accidental release, including population and sensitive receptors, is discussed in the following sub-sections.

6.1 Impacted Population

In order to determine the impacted population around the facility, the potential for exposure within the endpoint was determined. The furthest endpoint distances reached by the worst-case scenario and alternative release scenario along with the estimated impacted population are summarized in Table 7:

Table 7: Impacted Population for OCA Scenarios

SCENARIO	ENDPOINT DISTANCE	ESTIMATED IMPACTED POPULATION
WCS: 10,000-gallon Isopentane Storage Vessel Release	92 yd / 276 ft / 0.052 mi	0
ARS: Transfer Hose uncoupling from 10,000-gallon Isopentane Storage Vessel during Truck Loading Operations	57 yd / 171 ft / 0.032 mi	0

The population was estimated using 2010 census tract data with the MARPLOT 5.1.1 software. When calculating population densities for large areas that encompass many tracts, the accuracy is rated as good; however, for small areas that encompass only two or three partial tracts, the population data may be skewed due to the unequal distribution within the tract. The use of MARPLOT 5.1.1 is pursuant to guidance endorsed by the US EPA. MARPLOT 5.1.1 requires the latitude and longitude of the facility in order to calculate the population. The latitude and longitude were estimated using Google Earth GPS[7] software and an aerial photo.

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6.2 Offsite Sensitive Receptor Data Sources

Table 8 includes a list of websites and software used to locate offsite sensitive receptors. A few sites will perform a distance search in order to determine the eligibility of a possible receptor. For all other sites, a map interpolation determines whether the receptor falls within the circle of concern.

Table 8: Websites and Software Used

SOURCE	RECEPTORS THIS SOURCE IS USED TO IDENTIFY	METHOD OF DETERMINING ELIGIBILITY
Google Maps[8]	Used to identify all receptors	Distance search in conjunction with a map interpolation
Google Earth	This mapping software is used to locate all receptors. It also incorporates an internet search with the map to locate businesses.	Software will map the location of the receptor.

6.3 Offsite Sensitive Receptors

RMP requirements state that sensitive populations such as schools, hospitals, day-care centers, long-term health care facilities, prisons, residential areas, public use parks/recreational areas, and major commercial facilities, located within the "at risk" area must be identified. These sensitive populations include individuals who could not remove themselves from the exposure area without assistance. The sensitive populations also include industrial installations which may have a hazardous process that cannot be immediately left unattended. According to the EPA's General Risk Management Plan Guidance [9], "The basic test for identifying a public receptor is thus whether an area is a place where it is reasonable to expect that members of the public will routinely gather at least some of the time... Roads and parking lots are not included as such in the definition of 'public receptor.' Neither are places where people typically gather; instead, they are used to travel from one place to another or to park a vehicle while attending an activity elsewhere." Table 9 shows a summary of offsite population receptors and offsite environmental

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receptors for isopentane, within the circle of concern as determined by the worst-case and alternative release scenarios.

Table 9: Summary of Sensitive and Environmental Receptors

RECEPTOR	WCS (0.052 MI)	ARS (0.032 MI)
Population Receptors		
Schools	No	No
Residences	No	No
Hospitals	No	No
Prisons/Correction Facilities	No	No
Recreation Areas	No	No
Major Commercial, Office, or Industrial Areas	No	No
Child Daycare	No	No
Long-term Health Care (e.g., convalescent homes)	No	No
Other (Government Buildings)	No	No
Environmental Receptors		
National or State Parks, Forests, or Monuments	No	No
Officially Designated Wildlife Sanctuaries, Preserves, or Refuges	No	No
Federal Wilderness Areas	No	No
Other (Landmark & Indian Reservations)	No	No

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7.0 WORST-CASE RELEASE AND ALTERNATIVE RELEASE SCENARIO SUMMARY

The following sections outlines a summary of the parameters used for the one worst case release scenario and the one alternative release scenario analyzed for the Heber 1 Repower project.

7.1 Worst-Case Scenario

The worst-case scenario evaluated the release of the entire contents of one of the four 10,000-gallon isopentane storage vessels, containing 9,000 gallons of isopentane. The following table provides a summary of the parameters used for the worst-case scenario and the corresponding inputs.

Table 10: Worst-Case Scenario Parameter/Input Summary

Worst-Case Scenario	
Chemical	Isopentane
Model Used	ALOHA
Scenario	Vapor Cloud Explosion
Quantity Released (gal)	9,000 gallons
Endpoint Used	Overpressure of 1 psi
Distance to Endpoint	92 yd / 276 ft / 0.052 mi
Estimated Residential Population within Distance to Endpoint (numbers)	0
Public Receptors within Distance to Endpoint	
Schools	No
Residences	No
Hospitals	No
Prison/Correctional Facilities	No
Recreational Areas	No
Major Commercial, Office, or Industrial Areas	No
Other	None

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Worst-Case Scenario	
Environmental Receptors within Distance to Endpoint	
National or State Parks, Forests, or Monuments	No
Officially Designated Wildlife Sanctuaries, Preserves or Refuges	No
Federal Wilderness Area	No
Other	No
Passive Mitigation Considered	
Secondary Containment Area	Yes
Other	No

7.2 Alternative Release Scenario

It was determined that a release due to a break in the isopentane transfer hose connection during truck loading, was the most likely release scenario due to human factors associated with manned transfer operations, as well as reliability issues in industry related to hose degradation and coupling failures. The following table provides a summary of the parameters that were used for alternative release scenario and the corresponding inputs.

Table 11: Alternative Release Scenario Parameter/Input Summary

Alternative Release Scenario	
Chemical	Isopentane
Model Used	ALOHA
Scenario	Vapor Cloud Explosion
Quantity Released	46,260 lbs.
Endpoint Used	Overpressure of 1 psi
Distance to Endpoint	57 yd / 171 ft / 0.032 mi
Estimated Residential Population within Distance to Endpoint (numbers)	0

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Alternative Release Scenario	
Public Receptors within Distance to Endpoint	
Schools	No
Residences	No
Hospitals	No
Prison/Correctional Facilities	No
Recreational Areas	No
Major Commercial, Office, or Industrial Areas	No
Other	None
Environmental Receptors within Distance to Endpoint	
National or State Parks, Forests, or Monuments	No
Officially Designated Wildlife Sanctuaries, Preserves or Refuges	No
Federal Wilderness Area	No
Other	No
Passive Mitigation Considered	
Secondary Containment Area	Yes
Other	No
Active Mitigation Considered	
Sprinkler Systems	No
Deluge Systems	No
Water Curtain	No
Excess Flow Valve	No
Other	No

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8.0 FIVE YEAR ACCIDENT HISTORY

There have been no applicable CalARP/RMP/PSM releases of isopentane at the facility within the last five years, therefore, this section is not applicable.

9.0 REFERENCES

1. Code of Federal Regulations (CFR), Title 40, Chapter I, Subchapter C, Part 68, Subpart B, Sections 68.20 to 68.42, "Hazard Assessment"; 2015, January 1.
2. California Code of Regulations (CCR), Title 19, Division 2, Chapter 4.5, Article 4, Sections 2750.1 to 2750.9, "Hazard Assessment"; 2015, January 1.
3. Areal Locations of Hazardous Atmospheres - ALOHA Version 5.4.7, U.S. Environmental Protection Agency, September 2016. http://www2.epa.gov/cameo/aloha-software
4. Risk Management Program Guidance for Offsite Consequence Analysis, U.S. Environmental Protection Agency, March 2009.
5. MARPLOT® 5.1.1 Mapping Software (internet download), National Oceanic and Atmospheric Administration and U.S. Environmental Protection Agency. http://www.epa.gov/osweroe1/content/cameo/marplot.htm. December 2017.
6. Weather History for KIPL (Imperial County Station), Weather Underground, May 11, 2020, https://www.wunderground.com/history/monthly/us/ca/imperial/KIPL
7. Google ™ Earth, version 7.3.2.5776, Google, Inc. (2019)
8. Google ™ Maps, Google, Inc. (2019)
9. General Risk Management Program Guidance – Chapter 2: Applicability of Program Levels, U.S. Environmental Protection Agency, April 2004.

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APPENDIX A
WORST-CASE SCENARIO CALCULATIONS

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WORST-CASE SCENARIO (WCS)

The selected worst-case release scenario analyzes the hypothetical release of the entire contents of any one of the 10,000-gallon isopentane vessels, new or existing. Any one vessel can store up to 9,000 gallons of isopentane, taking into account administrative controls, which are in place to limit the quantity stored in each tank. Per requirement of the EPA rule for flammable substances, it was assumed that the whole quantity is released. The entire quantity is released into the secondary containment area, which is credited as a passive mitigation measure, to form an evaporating puddle, for which the vapors form a vapor cloud. If this vapor cloud ignited, the resultant blast could generate overpressure damage. The secondary containment area dimensions are 40 ft length, 12 ft width, 3.5 ft depth (surface area = 480 ft^2), and it assumed the secondary containment area ground type is concrete. Both the new and existing storage vessels are configured with this secondary containment area.

The ALOHA modeling calculation predicts that the area impacted by the endpoint, which is an overpressure of 1 psi, is a circle with approximately a 92-yard radius (276 ft / 0.052 mi). According to MARPLOT 5.1.1, there are 0 residents and 0 housing units within this vulnerability zone for both vessels. The table and figures on the following pages illustrate the scenario modeling parameter summary, scenario circle for the release, the ALOHA modeling output, as well as the MARPLOT results. These figures demonstrate Ormat's strategic placement of new storage vessels, showing that one explosion and release of all isopentane contents would not affect the other. Each of the new vessels are at least 184 yards (twice the radius of concern) from one another and do not reach any of the two existing vessels. Only vessels 3 and 4 have the potential to experience interacting explosion impacts and this has been addressed with the future implementation of a blast wall. This barrier will serve as a separation mechanism to prevent the explosion area of one vessel from triggering the release and ignition of the other.

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Figure 5: WCS ALOHA Modeling Results

```
SITE DATA:
  Location: HEBER, CALIFORNIA
  Building Air Exchanges Per Hour: 0.20 (unsheltered double storied)
  Time: September 21, 2020  1603 hours PDT (using computer's clock)

CHEMICAL DATA:
  Chemical Name: ISOPENTANE
  CAS Number: 78-78-4                    Molecular Weight: 72.15 g/mol
  PAC-1: 3000 ppm    PAC-2: 33000 ppm    PAC-3: 200000 ppm
  LEL: 14000 ppm     UEL: 76000 ppm
  Ambient Boiling Point: 82.1° F
  Vapor Pressure at Ambient Temperature: 0.91 atm
  Ambient Saturation Concentration: 904,803 ppm or 90.5%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 1.5 meters/second from W at 10 meters
  Ground Roughness: open country         Cloud Cover: 5 tenths
  Air Temperature: 77° F
  Stability Class: F (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Evaporating Puddle (Note: chemical is flammable)
  Puddle Area: 480 square feet           Puddle Volume: 9000 gallons
  Ground Type: Concrete                  Ground Temperature: 122° F
  Initial Puddle Temperature: Air temperature
  Release Duration: ALOHA limited the duration to 1 hour
  Max Average Sustained Release Rate: 118 pounds/min
     (averaged over a minute or more)
  Total Amount Released: 4,949 pounds

THREAT ZONE:
  Threat Modeled: Overpressure (blast force) from vapor cloud explosion
  Type of Ignition: ignited by spark or flame
  Level of Congestion: congested
  Model Run: Heavy Gas
  Red    : LOC was never exceeded --- (8.0 psi = destruction of buildings)
  Orange: 52 yards --- (3.5 psi = serious injury likely)
  Yellow: 92 yards --- (1.0 psi = shatters glass)
```


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Figure 6: WCS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #1

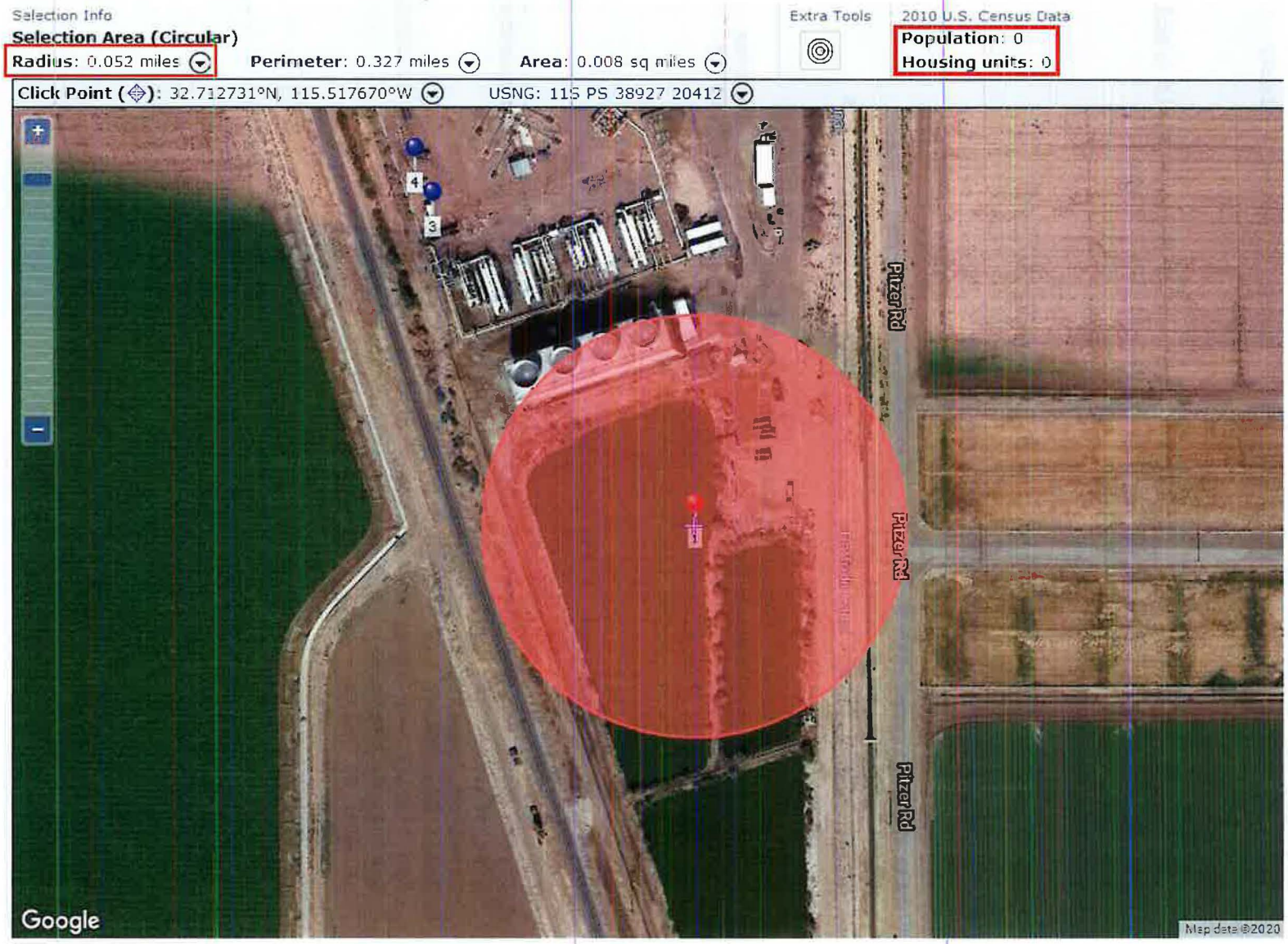

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Figure 7: WCS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #2

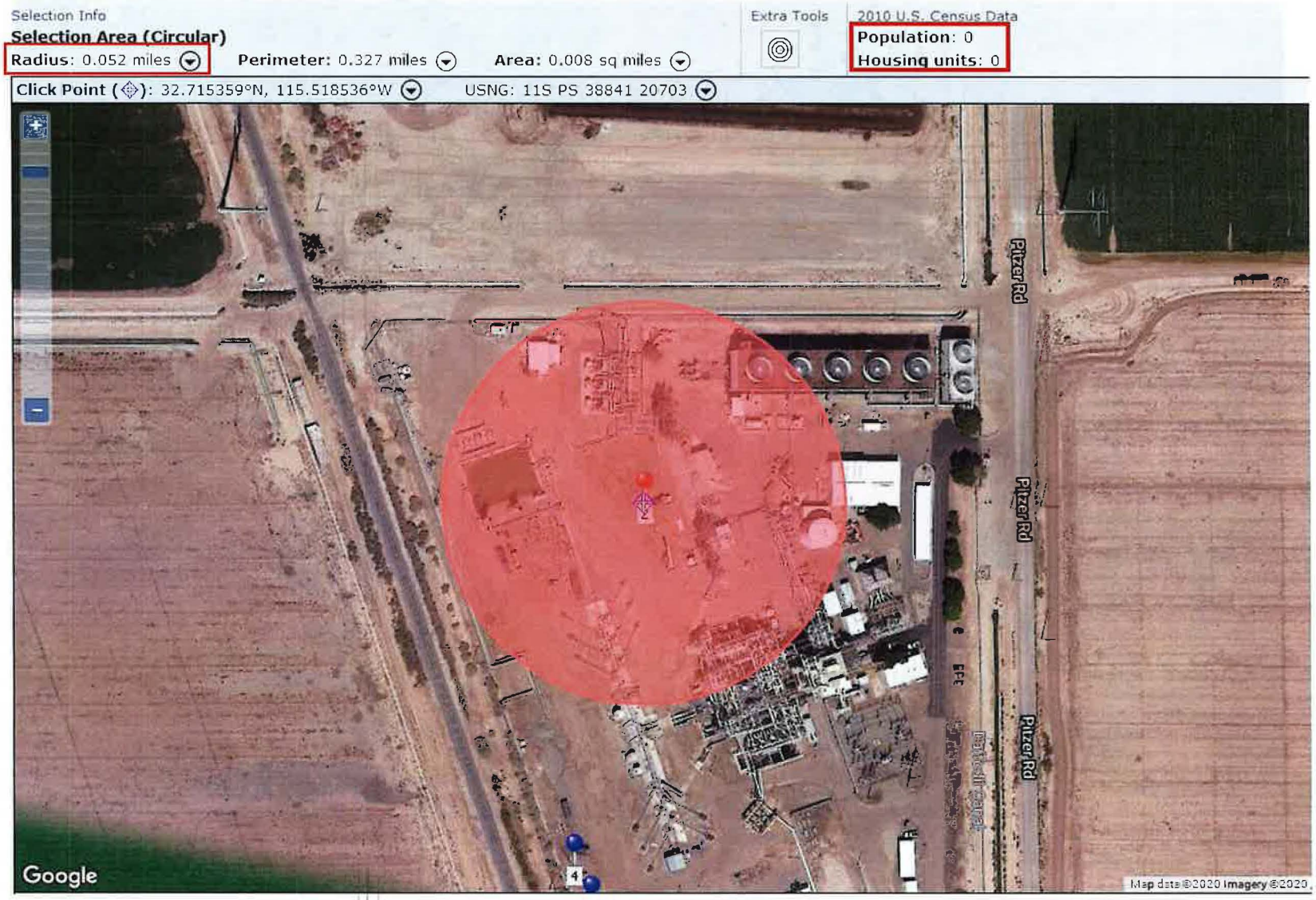

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Figure 8: WCS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #3

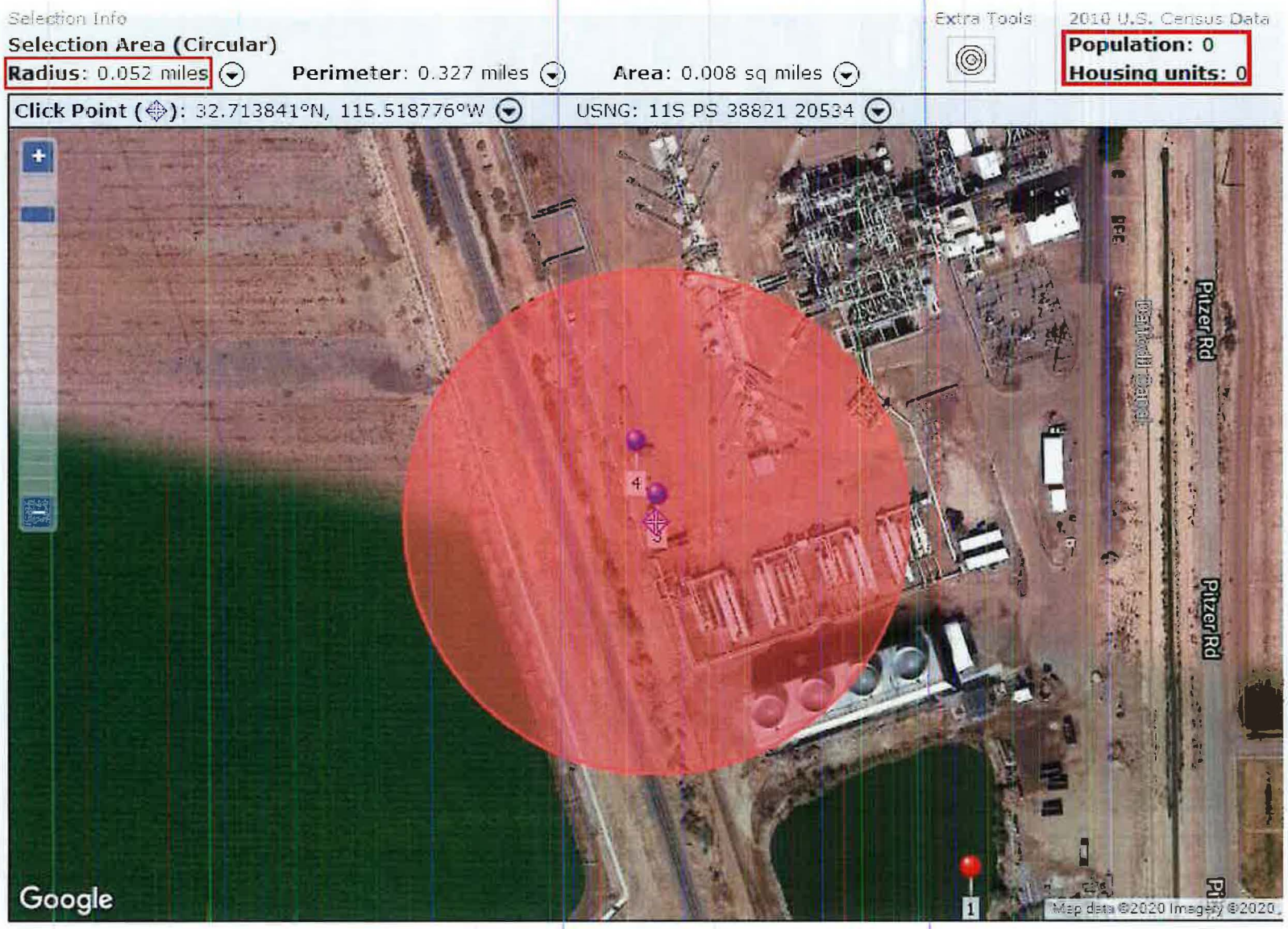

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Figure 9: WCS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #4

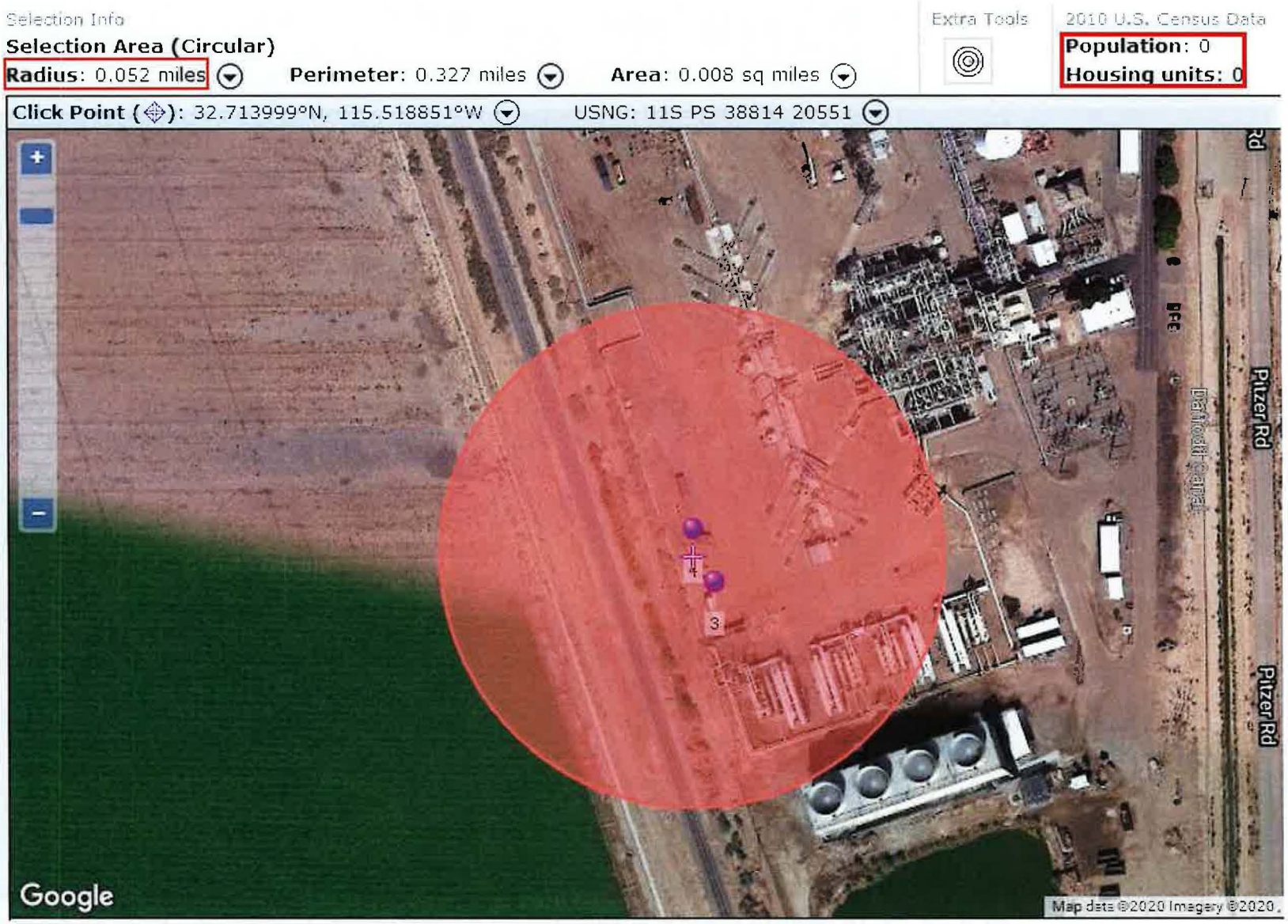

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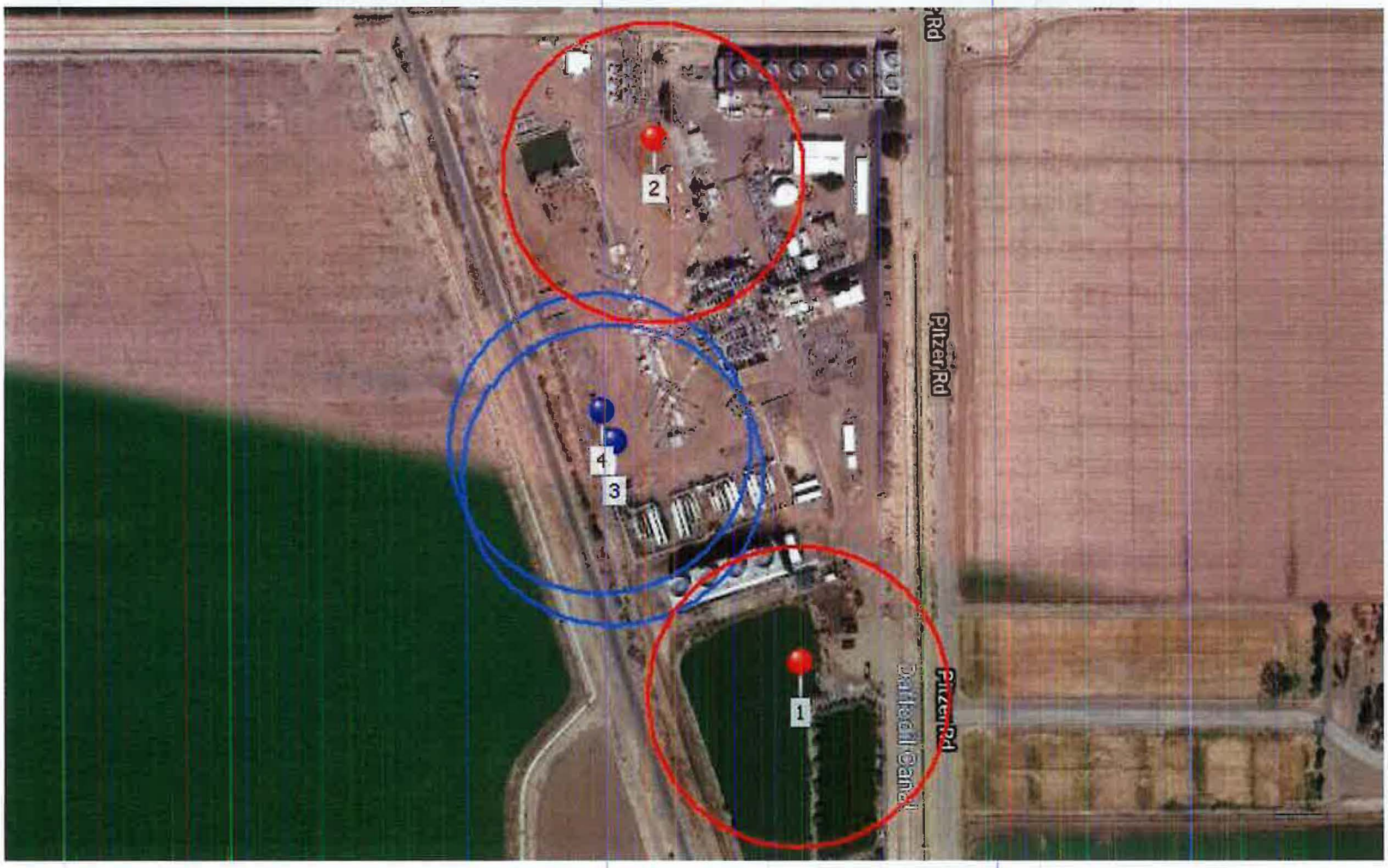
Figure 10: WCS Vulnerability Maps Overlaid for Isopentane Storage Vessels #1, #2, #3, & #4



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APPENDIX B
ALTERNATIVE SCENARIO CALCULATIONS

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ALTERNATIVE RELEASE SCENARIO (ARS)

The selected alternative release scenario is a release due to a break in the product (isopentane) transfer hose connection during truck loading. This was considered the most likely release scenario due to human factors associated with manned transfer operations, as well as reliability issues in industry related to hose degradation and coupling failures. It is assumed that the transfer hose uncouples during isopentane transfer operations and that it is released through an area of 12.6 square inches. The release duration is limited by the volume in the Isopentane Storage Vessel (9,000 gallons), which is 2.4 minutes. In the evaluations of this alternative release scenario, the concrete secondary containment area composed of concrete was credited as a mitigation measure.

In order to calculate the release quantity for a transfer hose rupture, the release rate through the transfer hose must be calculated. The following equation, obtained from the EPA Risk Management Plan Guidance for Offsite Consequence Analysis, illustrates the calculation of the release rate for flammable liquids under pressure through a transfer hose:

$$QR = A_h \times 6.82 \sqrt{\frac{11.7}{DF^2} \times LH + \frac{669}{DF} \times P_g}$$

Where:

- QR = Release rate (lbs./min)
- A_h= Hole or puncture area (square inches)
- DF = Density Factor, dimensionless, obtained from the EPA Risk Management Plan Guidance for Offsite Consequence Analysis
- LH = Height of liquid level above hole (inches)
- P_g = Gauge pressure of the vessel (psig)

To calculate the release rate utilizing the above equation, the values for each of the following variables were calculated for isopentane:

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Hole Area

The transfer hose used in isopentane filling operations at both plants is 4 inches in diameter. Thus, the hole area is based upon the transfer hose rupturing and calculated using the following:

$$HA = \pi r^2 = 12.6 \text{ in}^2$$

Density Factor

The Density Factors are obtained from Appendix C of the EPA Risk Management Plan Guidance for Offsite Consequence Analysis. The Density Factor value for isopentane is 0.79.

Liquid Height

The height of the liquid level above the hole is determined by the nominal liquid level in the vessel. The isopentane transfer point is taken to be at the bottom of the tank. Assuming that the isopentane storage vessel is 33% full of isopentane, this equates to 2,970 gallons being stored in the vessel (397 ft^3). This is a conservative assumption as the storage tanks are normally empty and are only used for temporary storage of isopentane. According to the available tank data provided by the facility, the diameter of the Isopentane Storage Vessel is approximately 8 feet and length is 33.5 feet (tangent to tangent length). It should be noted that the Isopentane Storage Vessel is a horizontal vessel. In calculating the height of the liquid column within the tank, the Isopentane Storage Vessel was modeled as a cylinder, and thus the equation for volume of liquid within the tank is that of a horizontal cylinder. The equations below were used to find the height of the liquid column within the Isopentane Storage Vessel:

$$V_L = A_L \times L$$

$$A_L = R^2 \cos^{-1}\left(\frac{R - LH}{R}\right) - (R - LH)\sqrt{2R \cdot LH - LH^2}, \quad \therefore$$

$$V_L = L \times \left[R^2 \cos^{-1}\left(\frac{R - LH}{R}\right) - (R - LH)\sqrt{2R \cdot LH - LH^2}\right]$$

Where:

V_L = Volume of liquid within the Tank (ft^3)

A_L = Area of liquid (ft^2)

R = Radius of the Tank (ft.)

L = Length of the Tank (ft.)

LH = Height of the liquid within the Tank (ft.)

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Values for each variable listed in the equations above are provided below, with the exception of LH, as this is the variable to be calculated:

V_L = 2,970 gallons = 397 ft^3

R = 4 ft.

L = 33.5 ft.

By using the above values within the equation, the height of the liquid column within the Isopentane Storage Vessel can be calculated, which is approximately 2.3 ft (2.2857 ft) or 27.6 inches.

Pressure

The normal operating pressure of the isopentane motive fluid storage tank was identified to be 60 psig.

Modeling

Using these values, the release rate of isopentane can be determined. Please see the calculations below for determining the isopentane release rate:

$$QR = 12.6\ in^2 \times 6.82 \sqrt{\frac{11.7}{(0.79^2)} \times 27.6\ in + \frac{669}{0.79} \times 60\ psig}$$

$$QR = 19{,}468.3955\ \frac{lbs.}{min} \approx 19{,}468\ \frac{lbs.}{min}$$

Over the 2.4-minute release period, this results in a total of 46,260 lbs. released to the secondary containment area to form an evaporating puddle, for which the vapors form a vapor cloud. If this vapor cloud ignited, the resultant blast could generate overpressure damage.

The ALOHA modeling calculation predicts that the area impacted by the endpoint, which is overpressure of 1 psi, is a circle with approximately a 57-yard radius (171 ft / 0.032 mi). According to MARPLOT 5.1.1, there are 0 residents and 0 housing units within this vulnerability zone for both vessels. The table and figures on the following pages illustrate the scenario modeling parameter summary, scenario circle for the release, the ALOHA modeling output, as well as the MARPLOT results.

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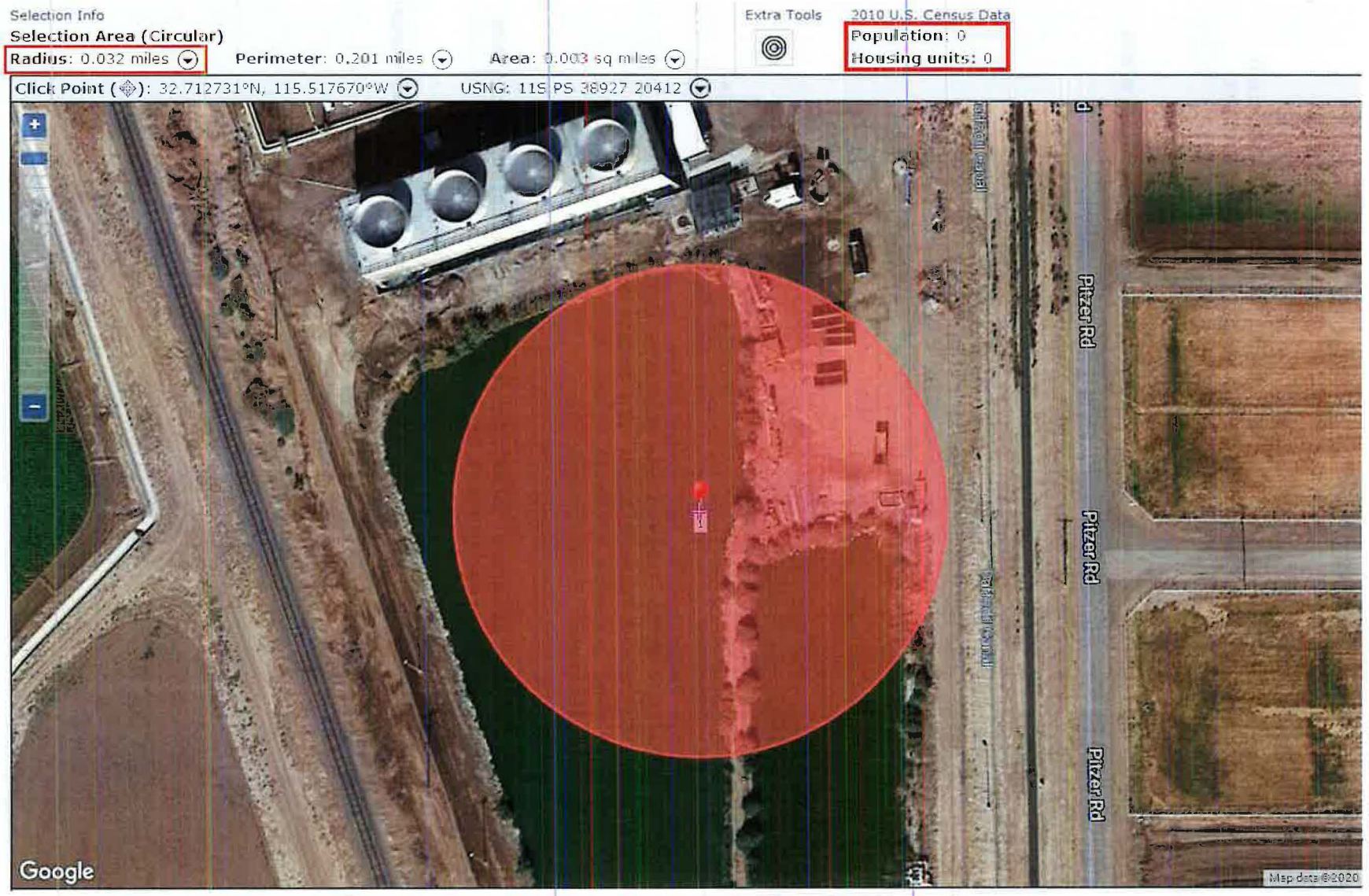
Figure 11: ARS ALOHA Modeling Results

```
SITE DATA:
  Location: HEBER, CALIFORNIA
  Building Air Exchanges Per Hour: 0.33 (unsheltered double storied)
  Time: September 21, 2020  1619 hours PDT (using computer's clock)

CHEMICAL DATA:
  Chemical Name: ISOPENTANE
  CAS Number: 78-78-4                    Molecular Weight: 72.15 g/mol
  PAC-1: 3000 ppm    PAC-2: 33000 ppm    PAC-3: 200000 ppm
  LEL: 14000 ppm     UEL: 76000 ppm
  Ambient Boiling Point: 82.1° F
  Vapor Pressure at Ambient Temperature: 0.91 atm
  Ambient Saturation Concentration: 904,803 ppm or 90.5%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 3 meters/second from W at 10 meters
  Ground Roughness: open country         Cloud Cover: 5 tenths
  Air Temperature: 77° F
  Stability Class: D (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Evaporating Puddle (Note: chemical is flammable)
  Puddle Area: 480 square feet           Puddle Mass: 46260 pounds
  Ground Type: Concrete                  Ground Temperature: 77° F
  Initial Puddle Temperature: Air temperature
  Release Duration: ALOHA limited the duration to 1 hour
  Max Average Sustained Release Rate: 176 pounds/min
     (averaged over a minute or more)
  Total Amount Released: 6,022 pounds

THREAT ZONE:
  Threat Modeled: Overpressure (blast force) from vapor cloud explosion
  Type of Ignition: ignited by spark or flame
  Level of Congestion: congested
  Model Run: Heavy Gas
  Red    : LOC was never exceeded --- (8.0 psi = destruction of buildings)
  Orange: 28 yards --- (3.5 psi = serious injury likely)
  Yellow: 57 yards --- (1.0 psi = shatters glass)
```


PC ORIGINAL PKG. EEC ORIGINAL PKG

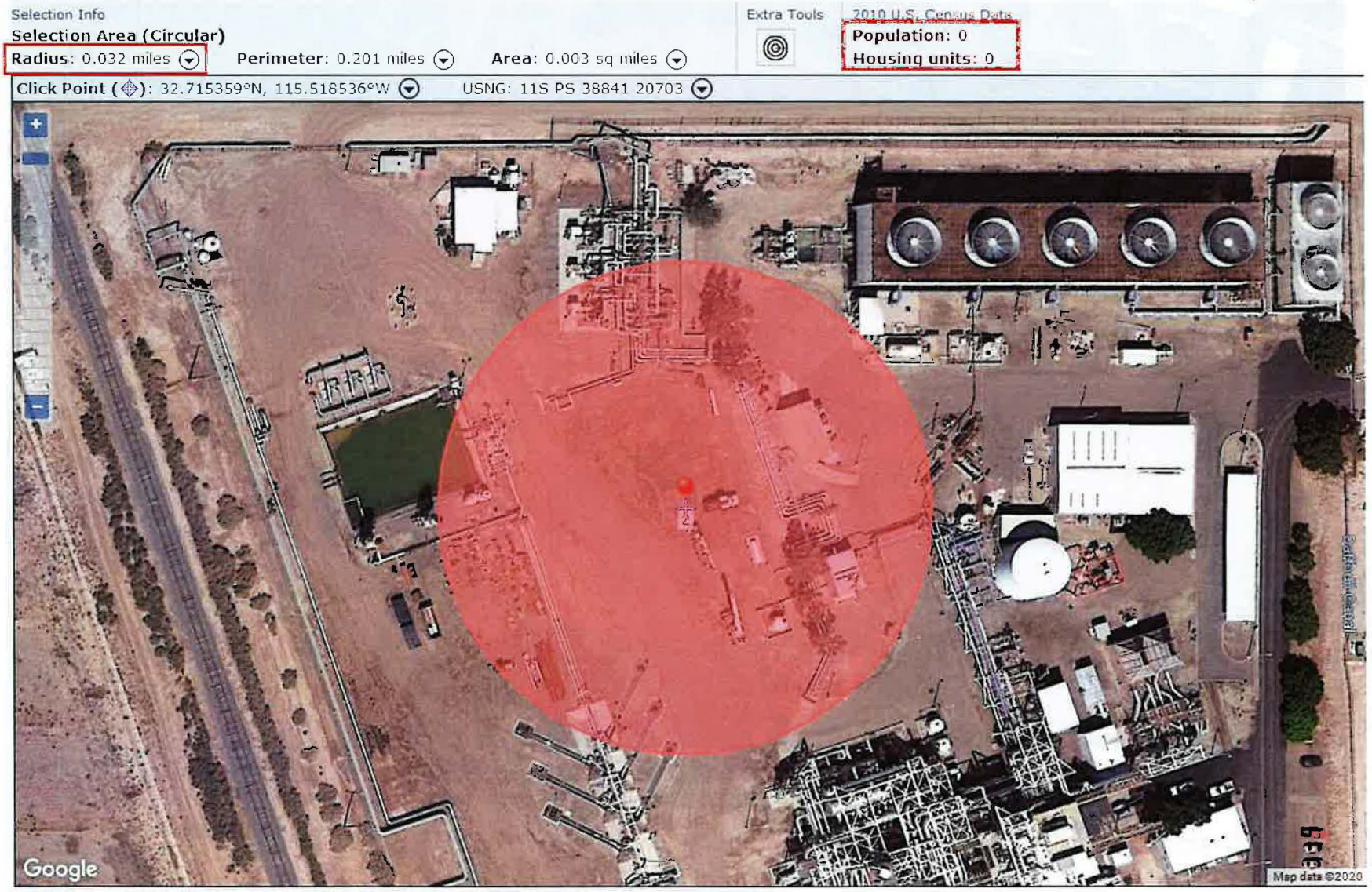
Figure 12: ARS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #1



EEC ORIGINAL PKG

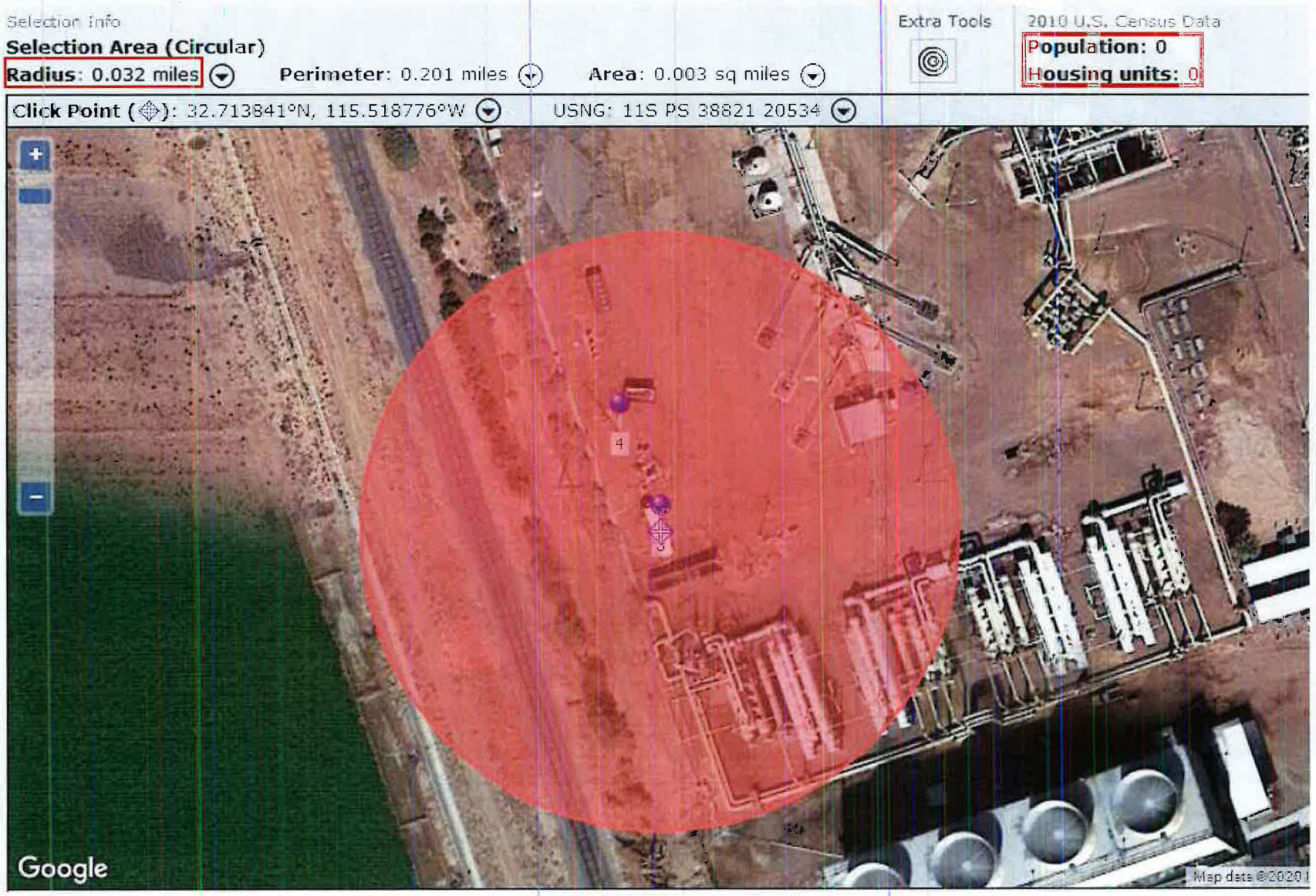
PC ORIGINAL PKG.

Figure 13: ARS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #2



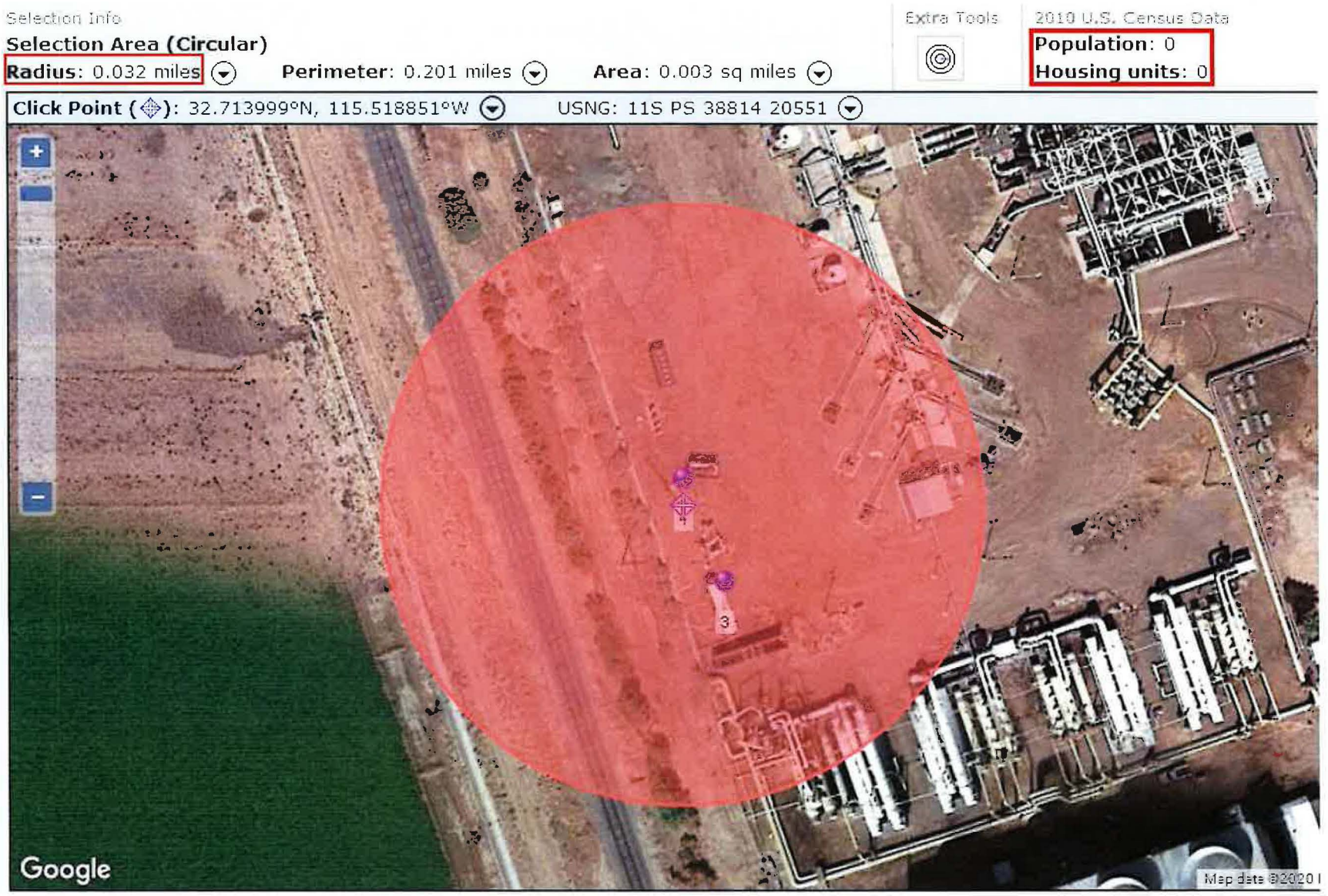
EEC ORIGINAL PKG
PC ORIGINAL PKG.

Figure 14: ARS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #3



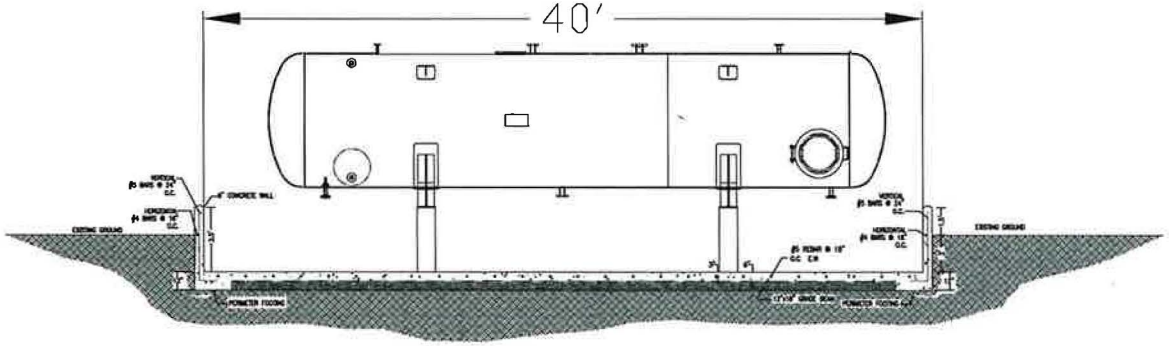
EEC ORIGINAL PKG
PC ORIGINAL PKG.

Figure 15: ARS MARPLOT 5.1.1 Map for Isopentane Storage Vessel #4

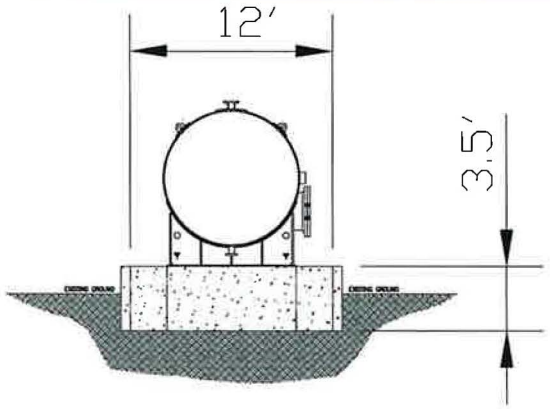


EEC ORIGINAL PKG
PC ORIGINAL PKG.

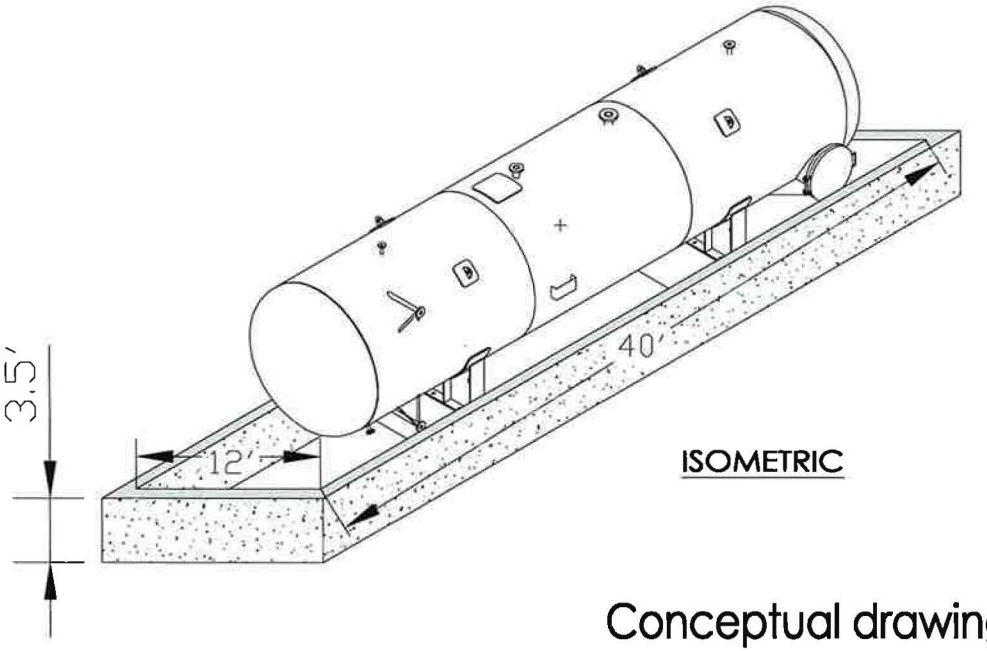
EEC ORIGINAL PKG



CROSS SECTION



FRONT VIEW



ISOMETRIC

Conceptual drawing of the Heber 1 Isopentane storage tanks
Secondary containment Typical.

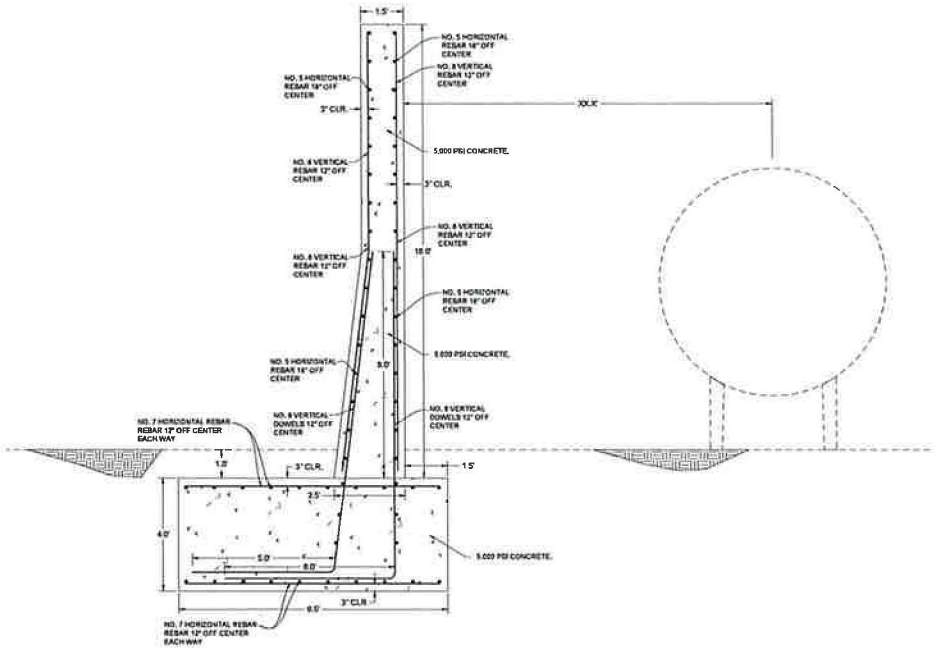
ORMAT

Date: 12/21/2020

PC ORIGINAL PKG.

CONCRETE GENERAL NOTES

1. CONCRETE SHALL BE 5,000 PSI TYPE V PORTLAND CEMENT WITH A MAXIMUM WATER/CEMENT RATIO OF 0.40 (BY WEIGHT).
2. CONCRETE POUR SHALL BE MONOLITHIC.
3. REINFORCING BARS SHALL BE GRADE 60 (fy = 60,000 psi)
4. ALL REINFORCING BARS SHALL HAVE AT MINIMUM 3" COVER.
5. SPECIAL INSPECTIONS SHALL BE PROVIDED FOR THE CONCRETE CONSTRUCTION PER CALIFORNIA BUILDING CODE SECTION 1704.4 AND TABLE 1704.4 REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION.



SCALE: 1" = 20'

30 15 0 30 60 90

DIGALERT

Dynamic CONSULTING ENGINEERS

CIVIL ENGINEERING - LAND SURVEYING - CONSTRUCTION MANAGEMENT
2415 IMPERIAL BUSINESS PARK DRIVE, SUITE B.,
IMPERIAL CA. 92251
TEL. (760) 545-0182 FAX (760) 545-0183

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:

CARLOS BELTRAN, P.E. — 69121 R.C.E. No.

08/09/2019 DATE — 06/30/20 REG. EXP.

IMPERIAL COUNTY PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

DATE — R.C.E. No. — REG. EXP.

ORMAT NEVADA INC.
6225 NEIL ROAD
RENO, NV 89511

DATE 5/11/2020
DRAWN DB
SCALE AS SHOWN
CHECKED CB

HEBER 1 REPOWER PROJECT
MOTIVE FLUID TANK FIRE WALLS
HEBER, CA

FIREWALL
CROSS SECTION

REFERENCE
PROJECT NO.
DCE 013719

SHEET X OF X

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APPENDIX I – IMPERIAL COUNTY RECLAMATION PLAN APPLICATION

EEC ORIGINAL PKG

PC ORIGINAL PKG.

CHAMBERS GROUP

Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

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IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES DEPARTMENT

Reclamation Plan Application

OWNER, OPERATOR AND AGENT:

1. Applicant (Name, Mailing Address and Telephone Number):
   ORMAT Nevada, Inc.
   6140 Plumas Street
   Reno, Nevada 89519
   (755) 356-9029

2. Property Owner (s), or owner of Surface Rights (Name, Mailing Address and Telephone Number): [if different from applicant]
   See 1.

3. Owner of Mineral Rights (Name, Mailing Address and Telephone Number): [if different than applicant]
   See 1.

5. Lessee (Name, Mailing Address and Telephone Number):
   See 1.

6. Operator (Name, Mailing Address and Telephone Number): [if different than applicant]
   See 1.

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EEC ORIGINAL PKG

7. Agent of Process (Name, Mailing Address and Telephone Number):

Melissa Wendt
Director, Project Development
6140 Plumas Street
Reno, Nevada 89519
(755) 356-9029

LOCATION:

8. Legal Description: (must be full legal)

895 Pitzer Road, Heber, CA (APN 054-250-035 and 054-250-036)
Heber 7.5-min quadrangle, Section 34, Township 16 South, Range 14

Assessor Parcel No.: 054-250-035 and 054-250-036

Longitude: 115°31'03.0W

Latitude: 32°42'47.9N

Elevation: near zero

9. Size of the land(s) that will be affected by mining operation. Total acreage:

Heber 1 site is approximately 25 acres.

10. Describe existing and proposed access to the mine site: (please be specific)

Via existing ingress/egress. Primary highway access is provided via CA Route 111.
Jasper Road stems off of CA Route 111 and provides immediate access to the site. There is an access road surrounding the perimeter within the site.

GEOLOGICAL BACKGROUND:

11. Mineral commodity to be minded:

Geothermal fluids. However, no new wells are proposed.

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12. General Geological description of the area:

The site is located within geologic units defined as late Pleistocene to Holocene-age Lake Cahuilla Beds. These geologic units are found in the southern portion of the Salton Trough, a northwesterly-trending tectonic basin west of the Chocolate Mountains. Up to late prehistoric times, a series of ephemeral freshwater lakes accumulated sediments that are found across the central portion of the Salton Trough, referred to by geologists as Lake Cahuilla sediments.

13. Detailed description of the geology of the actual site in which surface mining is to be conducted:

The site is underlain with alluvial deposits associated with the former Lake Cahuilla. These deposits consist of thinly laminated clays, sands, and gravels. Surface soils within the project area consist of a combination of fill and alluvium.

14. Brief description of the environmental setting of the site and the surrounding areas. Existing land uses, soil, vegetation, ground water elevation and surface water characteristics.

The site is located within the existing Heber 1 facility, which is comprised of graded, developed area. Soils are exposed and gravel is used as fill, with minimal natural vegetation present. Groundwater is present at depths starting at 6 feet. The surrounding areas are currently designated for General Agriculture and Heavy Agriculture and contain active agricultural operations.

MINING OPERATION AND PRODUCTION:

15. Proposed starting date of operation: Plant in production since 1985

Estimated life of operation: 30 years, 2020-2050

Termination Date: 2050

Duration of first phase: _____

Second phase: _____

Third phase: _____

Fourth phase: _____

16. Operation will be (include days and hours of operation):

Continuous: Plant operates 24 hours per day, 7 days a week

Intermittent: _____

Seasonal: _____

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17. Maximum anticipated annual production (Tons or Cubic Yards):
N/A

18. Total anticipated production:

Minerals: N/A cubic yards/tons 0

Tailings retained on site: cubic yards/tons 0

Tailings disposed off site: cubic yards/tons 0

Maximum anticipated depth (indicate on map location of benchmarks to verify mine depth):
N/A - Project does not propose drilling or extraction.

19. Describe mining method:
N/A--No mining is proposed as part of the Proposed Project.

20. Describe nature of processing and explain disposal of tailings or waste.
N/A - No tailings will be processed as part of the Proposed Project.

21. Do you plan to use cyanide or other toxic materials in your operations?
Six additional above ground storage tanks will be used for isopentane storage, 10,000 gallons each.

Do you plan to use or store petroleum products or other hazardous materials on the site?
No.

Describe refueling and maintenance of vehicles.
All fueling for construction vehicles will occur off-site as necessary.

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22. Indicate the quantity of water to be used, source of water, method of conveyance to the mine site, the quantity, quality and method of disposal of used and/or surplus water. Indicate if water well to be used for mine operation (drilling, reactivation, changing use or increasing volume of water well may require Conditional Use Permit approval).

No additional water will be required to support the proposed facilities. Water will be used for dust suppression during ground disturbing activities.

23. Describe phases of mining if applicable and concurrent reclamation including time schedule for concurrent activities.

No mining is proposed as part of the Proposed Project. Site reclamation would be performed at the end of the facilities' operational lifespan of 30 years.

24. Describe the types of equipment that will be used in the operation, including the estimated average daily trips (ADT) that will be generated by the operation.

Construction equipment would include a crane, boom truck, fork lift, man lift, haul trucks, and hand tools.

25. Include the following maps: (NOTE: Without these the application is automatically incomplete.)

(1) Topographic Map with overlay showing proposed area to be mined.

(2) Site Plan showing mine layout and dimensions.

(3) General Vicinity Map showing the location of the mine site in Imperial County.

(4) Cross Section Map.

RECLAMATION:

26. Indicate by overlay of map of Item No. 24, or by color or symbol on map those areas to be covered by the reclamation plan:

Total acreage: 24.92 acres

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27. Describe the ultimate physical condition of the site and specify the proposed use (s) or potential uses of the land after reclamation. Explain if utilities, haul or access roads will be removed or reclaimed.

The site is currently developed and used for the generation of geothermal energy. The site consists of exposed soils and gravel. The site would likely be returned to a natural state or used for agricultural production after geothermal energy production concludes. There is no plan for developing new roads associated with the Proposed Project and access will be provided using existing roads within and surrounding the Proposed Project site.

28. Describe relationship of the interim uses than mining and the ultimate physical condition to:

(a) Imperial County Zoning Ordinance

(b) Imperial County General Plan

The site is zoned General Agriculture within the Heber Specific Plan Area (A-2-G-SPA), which is designated for commercial, residential, industrial, and renewable energy land uses in mixed-use development. The Proposed Project and uses are consistent with the Imperial County Zoning Ordinance and General Plan.

29. Notarized statement that all owners of the possessory interest in the land have been notified of the proposed uses or potential uses identified in Item No. 25 (see Attachment "A").

N/A - The site owner is the applicant (ORMAT) and no other parties have an interest on the subject property.

30. Describe soil conditions and proposed topsoil salvage plan.

The site is located within the existing Heber 1 facility, thus the site has been previously graded and developed. Topsoil at the Proposed Project site is a mixture of alluvium and fill. Topsoil will be excavated for the construction of a new retention basin reaching a depth of seven feet, while existing retention basins would be backfilled.

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31. Describe the methods, their sequence and timing, to be used in bringing the reclamation of the land to its end state. Indicate on map (Items Nos. 24 and 25) or on diagrams as necessary. Include discussion of the pertinent items listed below.

(a) Backfilling and grading

(b) Stabilization of slopes

(c) Stabilization of permanent waste dumps, tailings, etc.

(d) Rehabilitation of pre-mining drainage

(e) Removal, disposal or utilization of residual equipment, structure, refuse, etc.

(f) Control and disposal of contaminants, especially with regard to surface runoff and ground water

(g) Treatment of streambeds and streambanks to control erosion and sedimentation

(h) Removal or minimization of residual hazards

(i) Resoiling, revegetation with evidence that selected plants can survive given the site's topography, soil and climate:

See Attachment D - Revegetation Plan.

32. If applicant has selected a short term phasing of his reclamation, describe in detail the specific reclamation to be accomplished during the first phase:

All reclamation activities would occur at the conclusion of the facilities' operational lifespan of 30 years (2050).

33. Describe how reclamation of this site in this manner may affect future mining at this site and in the surrounding area:

Reclamation of the site would remove all facilities from the entirely of the Heber 1 facility and return the land to a natural state or to land for agricultural production. These reclamation activities would not affect future mining or geothermal operations on the site or in the area.

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34. Notarized statement that the person submitting the plan accepts responsibility for reclaiming the mined lands in accordance with the Reclamation Plan (Attachment "B"):

Attached.

35. Include Reclamation Cost Calculations as Attachment "C":

Attached.

36. Describe proposed Revegetation Plan (attach as "Attachment D" if necessary):

The entirety of the Heber 1 facility would be dismantled and removed from the area. All geothermal wells would be abandoned per DOGGR requirements. Once the site is free of facilities, the site would be disced and seeded with a mixture of native seeds, per Imperial County's recommendation. Refer to Attachment D.

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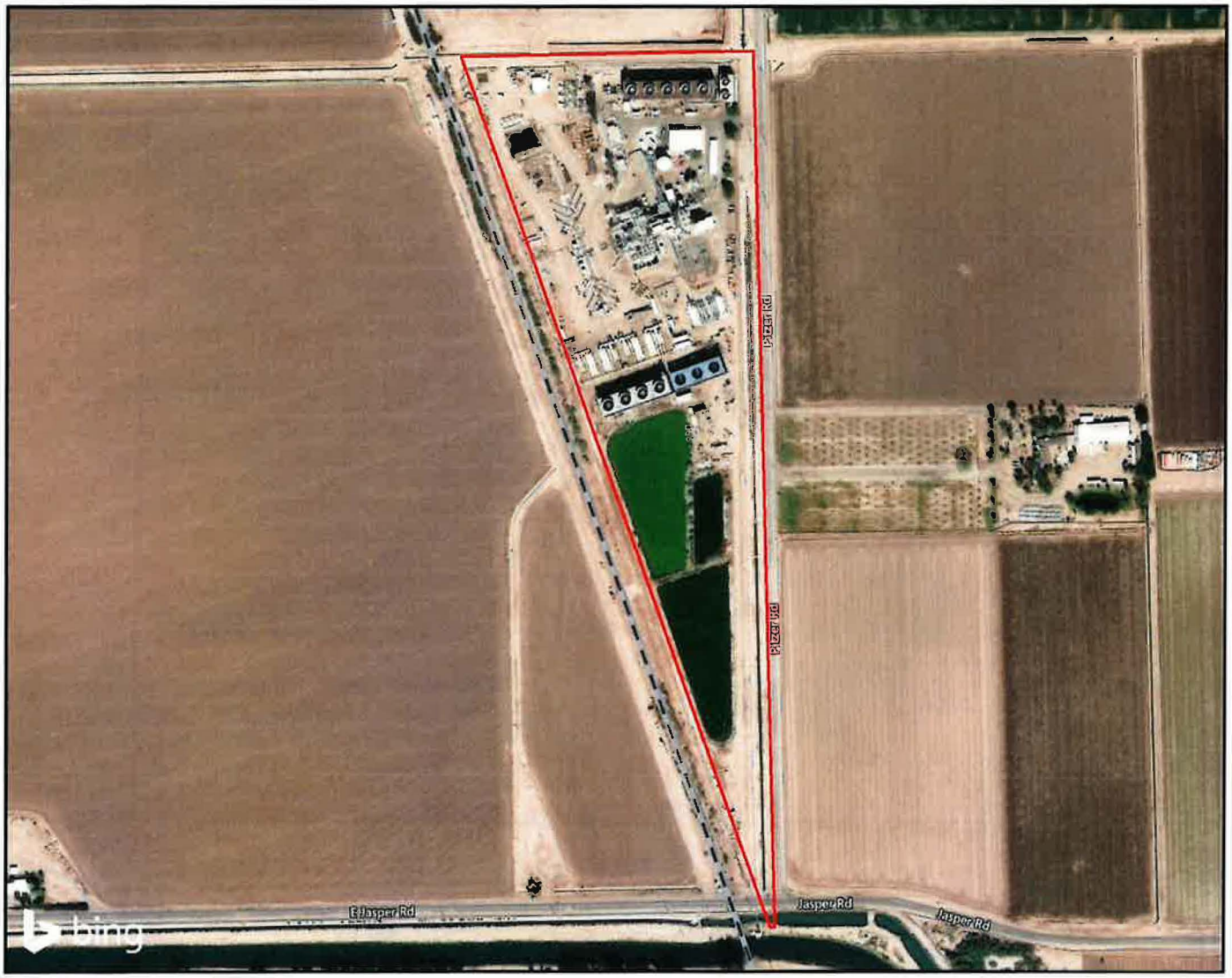
EEC ORIGINAL PKG







Legend

Project Location

N

0 150 300 600

Feet

Figure 1
Heber Property
Project Location

Name: 21172 BIO Fig 1 Location & Vicinity.Mxd
Print Date: 7/18/2019, Author: pcarlos

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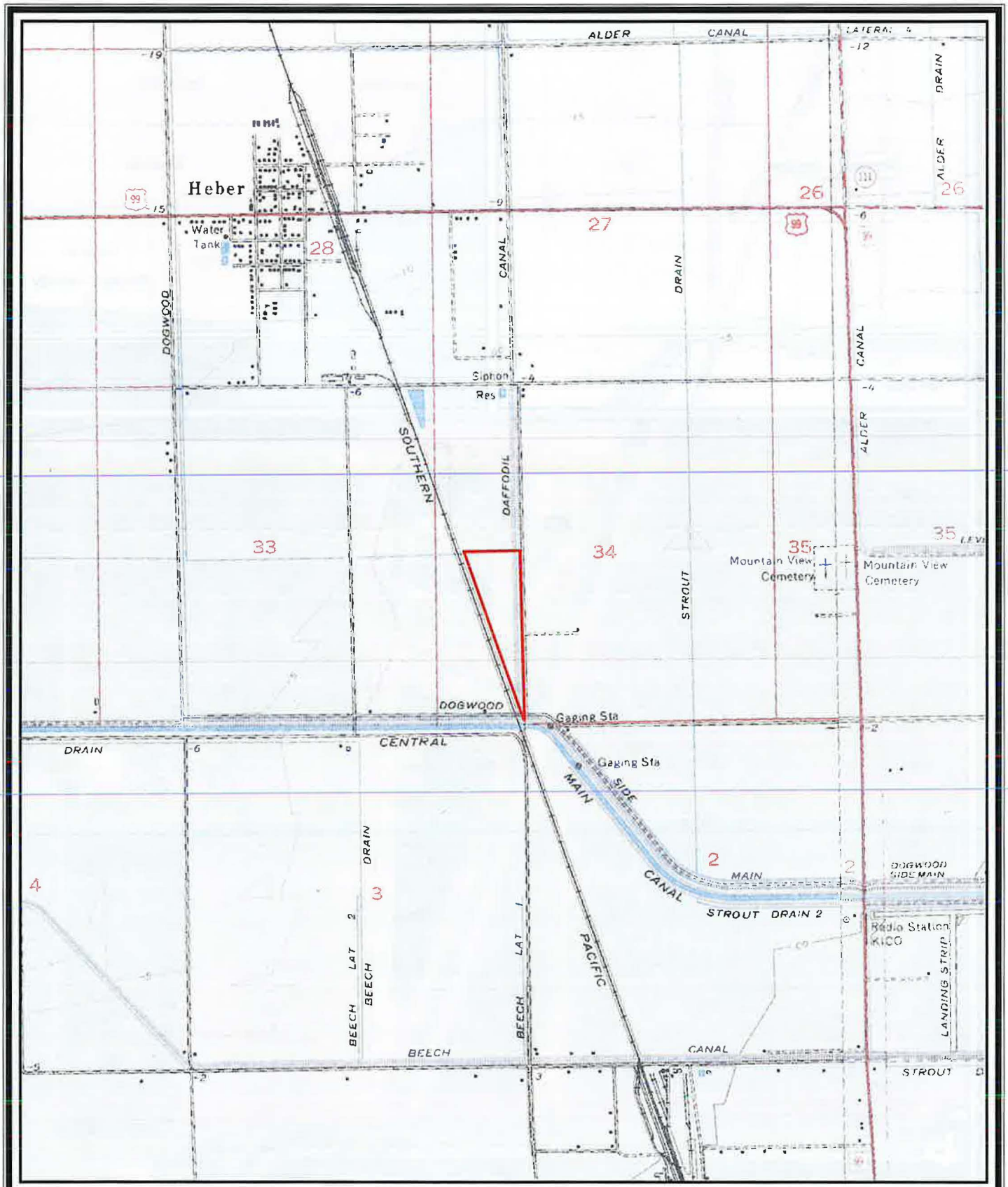
PC ORIGINAL PKG.



Legend

Project Location

N

0 750 1,500 3,000

Feet

Figure 2
Heber Property
Topographic Map

Name: 21172 BIO Fig 2 Topographic Map.Mxd
Print Date: 9/25/2019 Author: pcarlos

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PC ORIGINAL PKG.

EXISTING FACILITY KEYNOTES

① EXISTING CONCRETE CANAL TO REMAIN.
② EXISTING FENCE TO REMAIN.
③ EXISTING A.C. PAVEMENT TO REMAIN.
④ EXISTING ELECTRICAL LIGHT POLE TO REMAIN.
⑤ EXISTING CONCRETE PAD TO REMAIN.
⑥ EXISTING COOLING TOWER TO REMAIN.
⑦ EXISTING RAILROAD TRACKS TO REMAIN.



Name of Owner: Orcal Geothermal Inc.
Legal Description: POR E2 TR 45 16-14 20AC LY ELY OF RR
Assesor's Parcel Number: 054250036

100 200 400
Feet

N

PREPARED BY: CHAMBERS GROUP	FOR:
TITLE: Heber I Expansion Site Plans	SHEET: 1 of 1

EEC ORIGINAL PKG

PC ORIGINAL PKG.

ATTACHMENT "A"

STATEMENT OF NOFICATION

I, the undersigned, have notified all owners of the possessory interest in the land of the proposed use (s) or potential uses identified in Item No. 26 of the Reclamation Plan.

Signed this _____ day

of _____, 2005.

_____

Operator or Operator's Agent

MAIN OFFICE: 801 Main Street El Centro, CA 92243 (760) 482-4236 FAX: (760) 353-8338 E-MAIL: planning@imperialcounty.net
ECON. DEV. OFFICE: 836 Main Street El Centro, CA 92243 (760) 482-4900 FAX: (760) 337-8907

PC ORIGINAL PKG.

EEC ORIGINAL PKG

ATTACHMENT "B"

STATEMENT OF RESPONSIBILITY

I, the undersigned, hereby agree to accept full responsibility for reclaiming all mined lands as described and submitted herein with any modifications requested by the County of Imperial as conditions of approval.

Signed this _____ day

of _____, 2005.

_____

Operator or Operator's Agent

MAIN OFFICE: 801 Main Street El Centro, CA 92243 (760) 482-4236 FAX: (760) 353-8338 E-MAIL: planning@imperialcounty.net
ECON. DEV. OFFICE: 836 Main Street El Centro, CA 92243 (760) 482-4900 FAX: (760) 337-8907

PC ORIGINAL PKG.

EEC ORIGINAL PKG

ATTACHMENT "C"

RECLAMATION COST ANALYSIS

MAIN OFFICE: 801 Main Street El Centro, CA 92243 (760) 482-4236 FAX: (760) 353-8338 E-MAIL: planning@imperialcounty.net
ECON. DEV. OFFICE: 836 Main Street El Centro, CA 92243 (760) 482-4900 FAX: (760) 337-8907

PC ORIGINAL PKG.

EEC ORIGINAL PKG

CHAMBERS GROUP

RECLAMATION COST ESTIMATE FOR HEBER 1 GEOTHERMAL FACILITY

From: Chambers Group, Inc.

Date: November 5, 2019

RE: Reclamation Cost Estimate for the Heber 1 Geothermal Facility

---

This cost estimate has been prepared for the Heber 1 Repower Project and provides a general estimate to perform well abandonment and site reclamation/revegetation for the entire 25-acre Heber 1 Geothermal Facility.

Well Hole Abandonment

Cost of Abandoning Two Injection Wells:

2 wells x 200 feet[1] x $16.10/foot[2] = $6,440

Site Reclamation and Revegetation

Cost of Reclaiming 25 acres:

$10,235[2] (first acre) + $140,875 ($5,635/acre[2] for 25 acres) = $151,110

TOTAL COST ESTIMATE: $157,550

References

[1] California Department of Conservation Oil, Gas, and Geothermal Resources. April 2019. California Code of Regulations, Section 1723. Available online at: https://www.conservation.ca.gov/index/Documents/DOGGR-SR-1%20Web%20Copy.pdf

[2] New Mexico Energy, Minerals, and Natural Resources Department. 2013. Guidance for Estimating Reclamation Costs. Available online at: http://www.emnrd.state.nm.us/MMD/MARP/documents/MMD_Part3FAGuidelines_Sept2013.pdf

Reclamation estimates provided in this document were increased by 15% to account for six years of inflation and potential contingency costs.

PC ORIGINAL PKG.

EEC ORIGINAL PKG

ATTACHMENT "D"

REVEGATION PLAN

(REVISED MARCH 25, 2005)
JH/lh/S:/forms_lists/reclamation plan aplication

MAIN OFFICE: 801 Main Street El Centro, CA 92243 (760) 482-4236 FAX: (760) 353-8338 E-MAIL: planning@imperialcounty.net
ECON. DEV. OFFICE: 836 Main Street El Centro, CA 92243 (760) 482-4900 FAX: (760) 337-8907

PC ORIGINAL PKG.

EEC ORIGINAL PKG

From: Chambers Group, Inc.

Date: November 5, 2019

RE: Revegetation Plan for the Heber 1 Repower Project

INTRODUCTION

ORMAT Nevada, Inc (ORMAT) owns and operates the Heber 1 Geothermal Energy Facility (Heber 1). ORMAT proposes to amend CUP No. 15-0013 to allow for the replacement of the Steam Turbine and Bottoming units at Heber 1 with an ORMAT Integrated three-level unit (I3LU) and an Integrated two-level unit (ITLU); herein referred to as the "Proposed Project" or the "Heber 1 Repower Project". The I3LU configuration would include the installation of two new air cooled ORMAT Energy Converters (OECs); six additional isopentane storage tanks (10,000 gallons each); and a new Vapor Recovery Mechanical Unit (VRMU). Existing OEC 11 and OEC 13 will be converted to an ITLU. All proposed facilities would be developed within the existing Heber 1 facility and fence line. This application also proposes to renew the permitted life of the entire Heber 1 facility to 30 years (2020-2050).

This Revegetation Plan has been prepared in support of the Reclamation Plan Application as part of the CUP amendment application for the Heber 1 Repower Project.

PROJECT DESCRIPTION

Project Location

The Heber 1 facility is located on private lands owned by ORMAT in southern Imperial County (Figure 1). The Proposed Project would occur entirely on Assessor's Parcel Numbers (APN) 054-250-035 and 054-250-036 which is a 24.92-acre property. The address for Heber 1 is 895 Pitzer Road, Heber, CA 92249.

Reclamation, Abandonment, and Revegetation Schedule

Reclamation, abandonment, and revegetation activities would commence at the closure of the Heber 1 Geothermal Energy Facility in 2050, if the CUP amendment application is approved by Imperial County. Activities would commence after two injection wells have been plugged and the dismantlement and removal/disposal of the energy facilities. If necessary, reseeding would be held off until the appropriate season (e.g. fall, spring). Activities would take approximately 6 months to complete.

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Site Preparation

After all wells have been plugged and facilities are removed from the site, retention basins will be back-filled and the site will be graded and leveled by an excavator. The site is near zero elevation and is flat and absent of topography. Reclamation activities will mimic the existing grade of the site and not introduce a new gradient/slope to the area. The site will then be rolled with a soil aerator/loosener. After site reclamation, topsoil will be transported to the site and deposited evenly across the site.

Selection of Plant Materials

The Heber 1 site has minimal natural vegetation, as the site is used for geothermal energy generation and houses industrial equipment that should not have vegetation under/around the facilities. See Appendix A of the CUP application for Site Photographs. The surrounding area is dominated by agricultural production and no natural areas are in the immediate vicinity of the Project Site. ORMAT will reseed the entire 25-acre site with a native seed mix approved by Imperial County.

Irrigation and Maintenance

Revegetation of the site will be maintained by a contractor every two weeks to conduct weeding, watering, and removing trash/debris. The site will be irrigated by water truck as necessary to establish the new vegetation. It is suggested that reseeding occur in late-fall or early winter to maximize seedling recruitment by using the full extent of winter/spring rainy season.

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APPENDIX J – NOISE MODEL OUTPUT

CHAMBERS GROUP

Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

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Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/28/2019
Case Description: Heber 1 Repower

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Home	Residential	50	45	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		81	900	0
Flat Bed Truck	No	40		74	900	0
Gradall	No	40		83	900	0
Man Lift	No	20		75	900	0
Dump Truck	No	40		77	900	0
Jackhammer	Yes	20		89	900	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Crane	55	48	N/A	N/A	N/A	N/A
Flat Bed Truck	49	45	N/A	N/A	N/A	N/A
Gradall	58	54	N/A	N/A	N/A	N/A
Man Lift	50	43	N/A	N/A	N/A	N/A
Dump Truck	51	47	N/A	N/A	N/A	N/A
Jackhammer	64	57	N/A	N/A	N/A	N/A
Total	64	60	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

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APPENDIX K – TRAFFIC ASSESSMENT

CHAMBERS GROUP

Note to the Reader

On December 17th, 2019 ORMAT Nevada Inc. (ORMAT) submitted an application to the County of Imperial Planning & Development Services Department to amend Conditional Use Permit (CUP) No. 15-0013 for the Heber 1 geothermal facility in Imperial County, CA. The amendment proposed a Repower Project which would take the existing dual-flash steam turbine generator out of service and install two new OEC geothermal power generation units to increase performance of the facility (Project). The Project also included installation of new equipment including six 10,000-gallon isopentane storage tanks and an evacuation skid/vapor recovery maintenance unit. Based on close coordination with the County of Imperial ORMAT has decided to reduce the number of 10,000 gallon isopentane tanks on the Heber 1 site from six tanks to two tanks. While these revisions are not reflected in the text of the following technical report, it does not materially change any of the impact assessments or technical conclusions within the report.

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October 29, 2019

Ms. Corinne Lytle-Bonine, PMP
Senior Project Manager
Chambers Group, Inc.
clytle-bonine@chambersgroupinc.com

LLG Reference: 3-19-3136

Subject: **Heber 1 Geothermal Expansion – Temporary Construction Trip Generation**
Imperial County, CA

Dear Corinne:

Linscott, Law & Greenspan, Engineers (LLG) has prepared this trip generation letter to document the expected short-term peak construction traffic volumes associated with the Heber 1 Geothermal Expansion Project ("Project").

Project Description

The Project proposes construction of the Heber 1 Expansion, which will include the replacement of the steam turbine and bottoming units with an integrated three-level unit, new air-cooled converter, new brine feed exchangers along with feed pumps, and a portion of the piping systems. The project is proposed within the existing footprint of the Heber 1 Geothermal Facility.

The Project site is located at 895 Pitzer Road within the Community of Heber, Imperial County, California. The 20-acre project area is located immediately northwest of the intersection of Pitzer Road and Jasper Road, west of CA-111. Regional access to the project area is provided via CA Route 111 in Imperial County, California. The town of Heber is located approximately 2 miles north of the site.

Temporary Construction Traffic Calculations

Replacement of the existing steam turbine and bottoming units will require a period of construction where workers will arrive and depart daily. Additionally, some heavy-truck traffic will occur to deliver and remove equipment to/from the site. Apart from the direct construction traffic described above, some ancillary trips would also occur related to non-heavy truck deliveries, construction management staff, periodic inspections, etc.

Project construction scheduling and phasing is yet to be determined, but coordination with the Project applicant indicates that approximately 50-60 construction workers would be onsite during the most intensive period of construction.

Philip M. Linscott, PE (1924-2000)
William A. Law, PE (1921-2018)
Jack M. Greenspan, PE (Ret.)
Paul W. Wilkinson, PE (Ret.)
John P. Keating, PE
David S. Shender, PE
John A. Boarman, PE
Clare M. Look-Jaeger, PE
Richard E. Barretto, PE
Keil D. Maberry, PE
Walter B. Musial, PE
An LGZWB Company Founded 1966

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Construction Worker Traffic

According to the development team, construction activity at this site is expected to occur between 6:00 AM and 6:00 PM. As stated above, the highest daily estimate of workers is 60 per day. Typically, each worker would be expected to arrive and depart the site at least once, resulting in a daily trip rate of two (2) vehicle trips per worker per day for all 60 workers.

Given the site's close proximity to Heber, some workers could be expected to leave and return to the site once per day on breaks. Conservatively assuming 50% of workers left and returned once per day (say for lunch), this would result in a daily trip rate of four (4) vehicle trips per worker per day for 30 workers.

Based on the forecasted work start/stop times, no worker trips would occur during the AM commuter peak period of 7:00 AM to 9:00 PM as they would already be on the site and working. Similarly, the PM commuter peak period is defined as 4:00 PM to 6:00 PM. With a 6:00 PM finish time, all workers would be departing the site after the commuter peak hour had ended.

Heavy Vehicle (Truck) Traffic

Heavy vehicle trips to the site would be expected to include delivery of construction vehicles and materials, as well as removal of the old turbines and other infrastructure to be replaced. Heavy-vehicle trips would not be expected to occur uniformly over the course of the construction period, but rather on occasion as delivery and removal of equipment is required. For the purposes of this temporary construction traffic generation evaluation, 10 daily truck trips were conservatively assumed to occur in conjunction with the maximum worker load of 60 workers.

The daily distribution of truck trips over the course of the 12-hour work day is also expected to be variable; for this analysis, a conservative estimate of 20 percent of daily truck trips was assumed to occur during both the AM peak and PM commuter peak hours.

As trucks are larger and heavier than passenger cars, with reduced acceleration braking and handling characteristics, a "passenger car equivalence" (PCE) factor of 2.5 was applied to each truck trip to account for the effects of these heavy vehicles within the traffic stream on flat terrain.

Miscellaneous Traffic

In addition to the worker and heavy-truck traffic described above, there will likely be miscellaneous trips associated with construction management, inspection, and non-truck related deliveries. A daily average of 12 trips is assumed to fall within these "miscellaneous" categories, of which 100% are conservatively assigned to the AM and PM peak hours.

Thus, the total number of vehicle trips generated by project construction is conservatively estimated at 254 trips per day, with 22 total trips during the AM peak

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hour and 22 total trips during the PM peak hour. Construction trip generation is presented in ***Table A*** below.

TABLE A
TEMPORARY CONSTRUCTION TRAFFIC GENERATION

Construction Trip Type	Quantity	Daily Volumes (ADT)			AM Peak Hour			PM Peak Hour		
		Rate [a]	PCE [b]	Volume	In	Out	Total	In	Out	Total
Worker	60 workers	3 /worker	1.0	180	0	0	0	0	0	0
Heavy Truck	10 vehicles	2 /vehicle	2.5	50	5	5	10	5	5	10
Miscellaneous	12 vehicles	2 /vehicle	1.0	24	6	6	12	6	6	12
Total	—	—	—	***254***	***11***	***11***	***22***	***11***	***11***	***22***

Footnotes:

a. Trip generation rate is calculated at 3 trips/worker (assumed 50% of 60 workers leave/return once during the day), and 2 trips/vehicle (in/out) for heavy truck and miscellaneous trips.

b. PCE = Passenger Car Equivalence factor.

General Note:

1. Based on the proposed construction start/stop times of 6:00 AM and 6:00 PM respectively, no worker trips would occur during the commuter peak periods of 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM.

County of Imperial Traffic Study Criteria

The County of Imperial Department of Public Works provides a set of criteria within its published *Traffic Study and Report Policy* (2007) to identify the need for a traffic study and report to be prepared. The basic criteria used to make the determination for providing a complete traffic study are:

a. Any project that adds more than 8% of the total existing vehicle trips on the adjacent road system at full build-out of the project.

b. Any project that generates more than 400 daily residential trips, 800 commercial or industrial trip ends, or 200 peak hour trip ends, as determined by the average trip rates contained in the ITE Trip Generation Informational Report or the Imperial County local exceptions.

c. Any project that has the potential to degrade an existing road section, an existing signalized intersection, or an existing unsignalized intersection to below the existing level of service or cause it to be lower than a level of service "C" during any peak hour, using the HCM methods of analysis on any individual, existing traffic movement.

d. Any project, within section *b* above, which generates more than 10% of its total traffic in the form of truck traffic.

e. Any project that intensifies the usage of the site above the level currently allowed by zoning codes and requires a CUP, zone change, variance, or other discretionary permit.

f. Any project that may cause an existing or proposed intersection to meet traffic signal warrants or cause a proposed intersection to be lower than LOS "C".

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LINSCOTT LAW & GREENSPAN engineers

Evaluation of Criteria

As noted in the discussion above, the Project will not generate any additional traffic upon full build-out. During the short-term interim construction period, up to 254 daily trips and a maximum of 22 total peak hour trips area calculated, which is fewer than the 800 daily trips or 200 peak hour trips described by the County criteria.

This level of traffic is unlikely to degrade any existing intersection below LOS C, and in any case, the effects of Project construction traffic would be temporary.

Given these Project characteristics and the estimated construction period trip generation, a traffic report would not be required. However, it is noted that these general criteria are not complete or exhaustive and the Department of Public Works reserves the right to make the final decision on the need for additional traffic impact studies as a condition of development.

Sincerely,

Linscott, Law & Greenspan, Engineers

Chris Mendiara
Associate Principal

cc: File

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APPENDIX L – VISUAL SIMULATIONS

CHAMBERS GROUP

Note to the Reader

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HEBER 1 REPOWER PROJECT

VIEWPOINT MAP





1 PHOTO VIEWPOINT

LARGE MAP VIEW-AREA

PROJECT AREA

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EC

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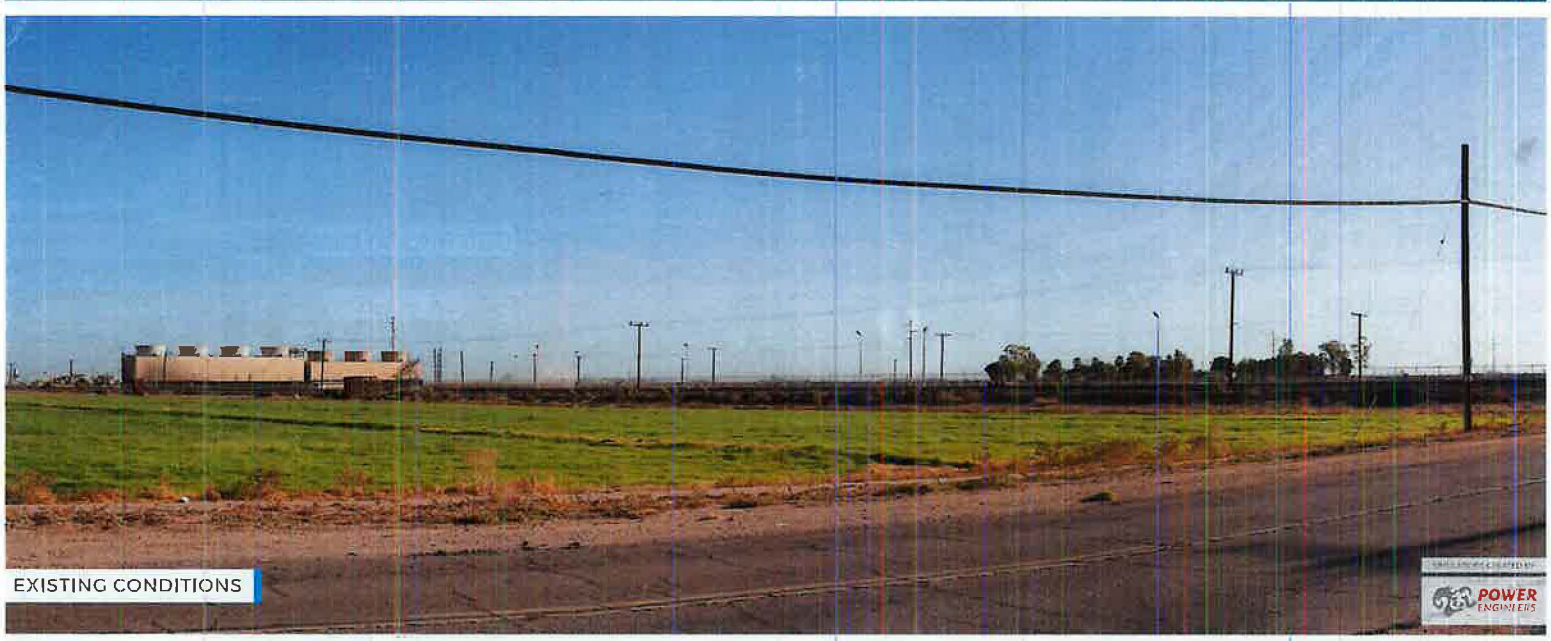

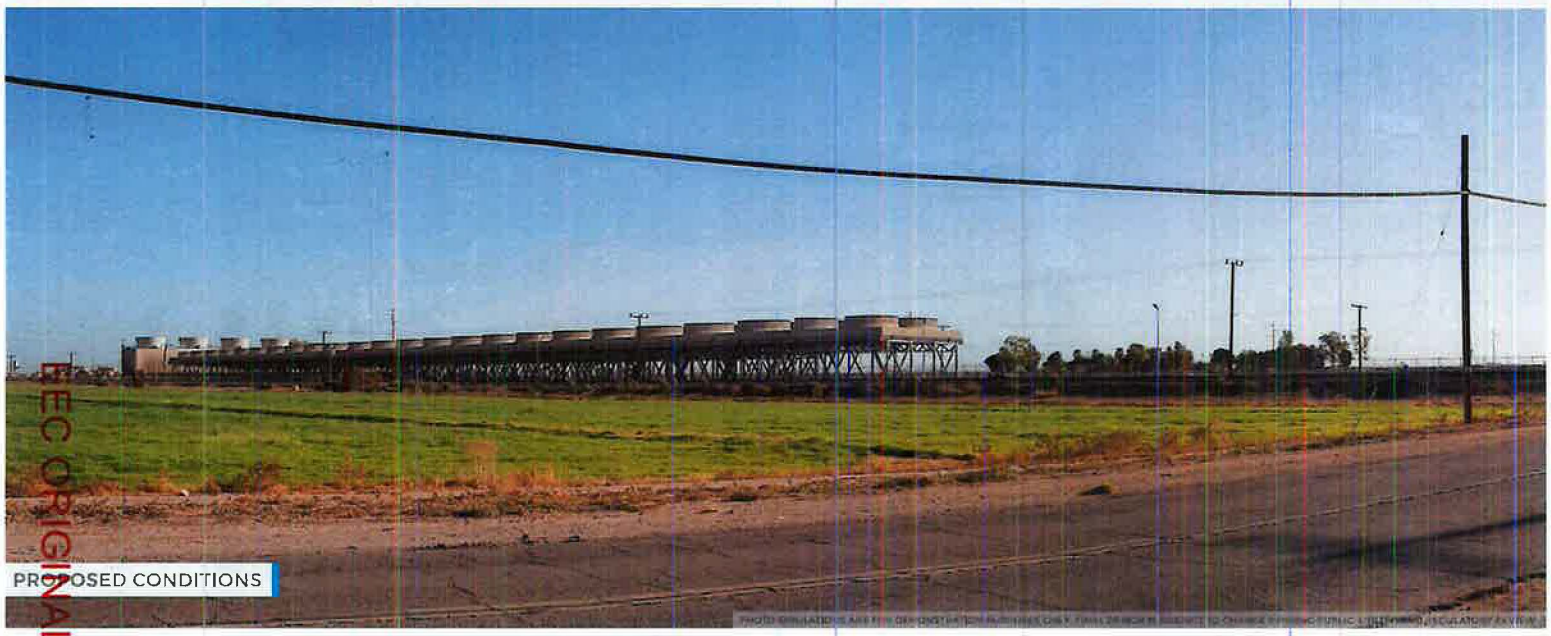

HEBER 1 REPOWER PROJECT

VIEWPOINT 1

DATE: 09/12/2019

TIME: 10:04 AM

DIRECTION: NORTHEAST



1 PHOTO VIEWPOINT

PROJECT AREA

CHAMBERS GROUP

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AIDAN P. MARSHALL

MARC D. JOSEPH
Of Counsel

*Not admitted in California. Licensed in Colorado.

November 16, 2021

VIA EMAIL AND OVERNIGHT MAIL

Chairman Rudy Schaffner and Commissioners
Planning Commission Clerk
Jim Minnick, Planning Director
David Black, Planner IV
Imperial County
Planning & Development Services
801 Main Street
El Centro, CA 92243
icpdscommentletters@co.imperial.ca.us
JimMinnick@co.imperial.ca.us;
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RECEIVED
NOV 16 2021
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

Re: Agenda Item No. 6: Heber 1 Geothermal Repower Project (CUP #19-0028; IS #19-0033; SCH #2021020267)

Dear Chairman Schaffner and Commissioners:

We are writing on behalf of Citizens for Responsible Industry ("Citizens") to provide comments on Item No. 6 on the Imperial County Planning Commission's Agenda regarding consideration of Conditional Use Permit ("CUP") #19-0028 for the Heber 1 Geothermal Repower Project ("Project") proposed by Heber Field Company, a subsidiary of Ormat Nevada Inc., ("Applicant"). The Planning Commission is to determine whether the Project is Categorically Exempt ("CE") from further review pursuant to the California Environmental Quality Act ("CEQA")[1] under the Existing Facilities, Replacement/Reconstruction, and commonsense exemptions.[2]

[1] Pub. Res. Code §§ 2100, *et seq.*
[2] *See* 14 C.C.R. §§ 15031, 15032, 15061.
3304-041j

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The Commission will also consider the Project's proposed Mitigated Negative Declaration ("MND"), Errata to the MND, and Mitigation Monitoring and Reporting Program ("MMRP").

The existing Heber 1 Geothermal Energy Complex, located within the Heber Specific Plan Area at 875 Pitzer Road, Heber, California, was previously constructed pursuant to CUP #15-0013, which was approved by the Planning Commission on September 9, 2015, by the Board of Supervisors on November 10, 2015, and recorded on November 30, 2015.[3] The Applicant is now proposing a fifteen (15) year renewal for the existing facilities' operations.[4] Additionally, to repower the plant to fifty-two megawatts (net) and 78.2 megawatts (gross), the proposed CUP would permit the replacement of the existing dual flash steam turbine generator and bottoming units with an Ormat Integrated three-level unit ("I3LU") and an Integrated two-level unit ("ITLU") as well as the installation of ancillary equipment.[5] The I3LU would include three 10-bay air coolers and one 14-bay air cooler for cooling ORMAT Energy Converters ("OECs") Units 1 and 2, and would also require the installation of two additional isopentane storage tanks, which would be 10,000 gallons each, and a new Vapor Recovery Mechanical Unit ("VRMU").[6] For the ITLU, the Project would convert OEC Units 11 and 13 to an ITLU, and the existing cooling tower and VRMU would be used for OEC Units 11 and 13.[7] Additional modifications to OEC Units 11 and 13 would include replacement of some of the brine heat exchangers, replacement of the existing generator and one turbine, and replacement of a portion of the piping system and pumps.[8]

The Applicant also proposes to modify the permitted water intake from 1,800-acre feet ("AF") of irrigation water to 2,300-AF of irrigation water.[9] On November 18, 2019, the Imperial Irrigation District issued an Amendment No. 1 to the

[3] County of Imperial, *Staff Report* at 1, 2 (hereinafter "Staff Report").
[4] County of Imperial, *Planning Commission Agenda* at 4. Note that the Staff Report's Project Description is inconsistent and states that the Project "proposed to extend the permitted life of Heber 1 to 30 years (2021-2051)." Staff Report at 1.
[5] Staff Report at 1.
[6] *Id.*
[7] *Id.* at 2.
[8] *Id.*
[9] *Id.*

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Amended and Restated Water Supply Agreement to supply an additional 500-AF of water per year in addition to the 1,800-AF that was in the agreement, for a total of 2,300-AF per year.[10]

An Initial Study ("IS") and MND for the Project were prepared for the Environmental Evaluation Committee's ("EEC") review and recommendation.[11] The MND concluded that the Project would have potentially significant impacts on biological resources, hazardous materials, and geology/soils which required mitigation.[12] After the EEC hearing on February 11, 2021, the IS/MND was circulated for public review and comment.[13] The comment period was originally from February 12, 2021 to March 15, 2021, but was extended twice to ultimately conclude on May 10, 2021.[14] On behalf of Citizens, we submitted comments on the IS/MND along with two expert reports dated May 10, 2021.[15] Citizens' comments provide substantial evidence supporting a fair argument that the Project may have significant impacts on air quality from construction and operational emissions, health risk, and more severe impacts on biological resources, hazardous materials, geology/soils, and cumulative impacts than described in the MND. Citizens' comments asked the County to prepare an EIR to accurately disclose and mitigate these impacts. As set forth in the Staff Report, the County provides deficient and confusing responses to these comments and expert reports.[16]

The County has now gutted the conclusions in the IS/MND by inexplicably claiming that the Project qualifies for Class 1, Class 2, and the commonsense CEs under CEQA, and that there are no exceptions to the exemptions which would warrant additional CEQA review.[17] The County's conclusion that the Project is exempt from CEQA is entirely unsupported by the law or facts in the record, including the County's own evidence. A "lead agency's implementation of CEQA 'proceeds by way of a multistep decision tree,'" and given that the County originally

[10] *Id.*
[11] *Id.* at 3.
[12] MND at 9, 39.
[13] *Id.*
[14] *Id.*
[15] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[16] Staff Report, Attachment G.
[17] *See* 14 C.C.R. §§ 15031, 15032, 15061, 15300.2.

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determined pursuant to CEQA Guidelines Section 15070, subsection (b) that a *mitigated* negative declaration was necessary, it is entirely improper for the County to now attempt to backtrack the environmental review process.[18]

The Project is not exempt from CEQA for several reasons. First, mitigated categorical exemptions are expressly prohibited under CEQA.[19] Here, the County has already determined that mitigation measures are necessary to reduce the Project's potentially significant impacts. Evidence in the record demonstrates that these mitigation measures are necessary to reduce potentially significant effects to less than significant levels such that the Project is not exempt from CEQA. Second, CEs under Class 1 and Class 2 require a lead agency to provide "substantial evidence to support [their] finding that the Project will not have a significant effect," which the County fails to demonstrate here.[20] Third, the Project is facially inconsistent with the CEs identified by the County. Finally, exceptions to the CEs are applicable because (a) substantial evidence shows that there is a reasonable possibility that cumulative impacts of successive projects of the same type in the same place over time will be significant, and (b) substantial evidence demonstrates that the Project would have a significant effect on human health and the environment due to unusual circumstances.[21] As such, these exceptions render any CEs to CEQA review inapplicable.

Not only is the Project not exempt from CEQA, but an EIR is required because a fair argument can be made that the Project will result in significant environmental effects. Here, the County does not adequately consider and meaningfully respond to the substantial evidence provided in the comments and expert reports that support a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, hazards, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment. Therefore, the County

[18] *Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal. App. 5th 665, 673–74, *reh'g denied* (Apr. 10, 2020), *review denied* (June 24, 2020); Imperial County Planning & Development Services Department, *Initial Study, Environmental Checklist Form& Mitigated Negative Declaration for Heber 1 Repower Project CUP # 19-0028* at 3 (February 2021) (hereinafter "MND").
[19] *Salmon Pro. & Watershed Network v. County of Marin* (*"SPAWN")* (2004) 125 Cal.App.4th at 1102; *Azusa Land Recl. Co. v. Main San Gabriel Basin Watermaster* (1997) 52 Cal. App.4th 1165, 1198-1201.
[20] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.
[21] 14 CCR § 15300.2(b), (c).

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lacks substantial evidence to conclude that the Project will not have significant impacts, and substantial evidence supports a fair argument that an EIR is required for the Project. We request that the Planning Commission require the preparation of an EIR to fully analyze and mitigate the potentially significant impacts from the Project.

We reviewed the County's Staff Report, including Responses to Comments, with the assistance of Phyllis Fox, Ph.D., PE and Shawn Smallwood, Ph.D.[22] Their technical comments and curriculum vitae are attached hereto and are submitted to the County, in addition to the comments in this letter. Accordingly, the County must address and respond to their comments separately.[23]

I. STATEMENT OF INTEREST

Citizens is a coalition of labor organizations with members who may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The coalition includes Heber residents Jaime Cuevas, Delila and Efrain Guzman, Imperial County resident Eric Jones, and other members and organizations, including California Unions for Reliable Energy ("CURE") and its local affiliates, and the affiliates' members who live, recreate, work, and raise families in Imperial County and in communities near the Project site. Thus, Citizens, its participating organizations, and their members stand to be directly affected by the Project's impacts.

Since its founding in 1997, CURE has been committed to building a strong economy and healthier environment and it works to construct, operate, and maintain conventional and renewable energy power plants and other industrial facilities throughout California. CURE supports the development of clean, renewable energy technology, including geothermal power generation, where properly analyzed and carefully planned to minimize impacts on public health and the environment. Geothermal projects should avoid adverse impacts to natural

[22] P. Fox, Curriculum Vitae and Comments on the Heber 1 Geothermal Repower Project (November 16, 2021)("Exhibit A")(hereinafter, "Fox Comments"); S. Smallwood, Curriculum Vitae and Comments on the Heber 1 Geothermal Repower Project (November 15, 2021)("Exhibit B")(hereinafter "Smallwood Comments").

[23] The Commenters reserve the right to supplement these comments at later hearings and proceedings related to this Project. Gov. Code § 65009(b); Pub. Res. Code § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; *see also Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

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resources and public health and should take all feasible steps to ensure that unavoidable impacts are mitigated to the maximum extent feasible. Only by maintaining the highest standards can energy development truly be sustainable.

The individual members of Citizens, and the members of its affiliated labor organizations, would be directly affected by the Project and may also work constructing the Project itself. They would therefore be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal stake in protecting the Project area from unnecessary, adverse environmental and public health and safety impacts.

Citizens support and encourage the sustainable development of California's energy and natural resources and has an interest in enforcing environmental laws that encourage sustainable development and a safe working environment. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making it less desirable for businesses to locate and people to live and recreate in the County. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduces future employment opportunities.

Finally, the organizational members of Citizens are concerned with projects that can result in serious environmental harm without providing countervailing economic benefits. CEQA provides a balancing process whereby economic benefits are weighed against significant impacts to the environment. It is in this spirit we offer these comments.

II. LEGAL BACKGROUND

"CEQA and the regulations implementing it 'embody California's strong public policy of protecting the environment.'"[24] CEQA is designed to inform decision-makers and the public about the potential, significant environmental effects of a project.[25] "CEQA's fundamental goal [is] fostering informed decision-making."[26]

[24] *Save the Agoura Cornell Knoll*, 46 Cal. App. 5th at 673.
[25] 14 C.C.R. § 15002(a)(1).
[26] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 402.

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"The purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind."[27]

The implementation of CEQA is a multistep process that begins with whether the proposed activity is subject to CEQA at all.[28] Next, assuming CEQA applies, the agency must determine whether the activity qualifies for a CE.[29] If the project is exempt, the agency need not proceed with environmental review.[30] Alternatively, if no exemptions are applicable, the agency must undertake environmental review of the activity, which begins with an initial study to determine whether the project may have a significant effect on the environment.[31] A negative declaration may be prepared "if there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment."[32] A *mitigated* negative declaration is required if the initial study identifies potentially significant environmental effects but (1) those effects can be fully mitigated by changes in the project and (2) the project applicant agrees to incorporate those changes.[33] Because "[t]he adoption of a negative declaration…has a terminal effect on the environmental review process" by allowing the agency to dispense with the duty to prepare an EIR, negative declarations, as well as mitigated negative declarations, are allowed only in cases where there is not even a "fair argument" that the project will have a significant environmental effect.[34]

An EIR is necessary for any discretionary project that may have a significant adverse effect on the environment.[35] "At the heart of CEQA is the requirement that public agencies prepare an EIR for any project that may have a significant effect on the environment."[36] A negative declaration is improper, and an EIR must be prepared, whenever it can be fairly argued on the basis of substantial evidence that the project may have a significant environmental impact.[37] A "significant effect on

[27] *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283.
[28] *See* Pub. Res. Code § 21065.
[29] 14 C.C.R. § 15061.
[30] *Id.*
[31] *Id.* at § 15063.
[32] *Id.* at § 15063(b)(2).
[33] *Id.* at § 15070(b)(1)-(2).
[34] *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440; Pub. Res. Code §§ 21064, 21100.
[35] Pub. Res. Code § 21151(a).
[36] *Friends of College of San Mateo Gardens v. San Mateo County Community College Dist.* (2016) 1 Cal.5th 937, 944 (internal citations and quotations omitted).
[37] *Id.* at 957.

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the environment" is defined as "a substantial, or potentially substantial, adverse change in the environment."[38] Substantial evidence, for purposes of the fair argument standard, includes "fact, a reasonable assumption predicated upon fact, or *expert opinion* supported by fact."[39]

A. Categorical Exemptions are for Projects Determined to Not Have a Significant Effect on the Environment, but These Exemptions are Subject to Exceptions

CEQA identifies certain classes of projects which are exempt from the provisions of CEQA.[40] CEs apply to certain classes of activities that generally do not have a significant effect on the environment.[41] "Where the specific issue is whether the lead agency correctly determined a project fell within a categorical exemption, [a court] must first determine as a matter of law the scope of the exemption and then determine if substantial evidence supports the agency's factual finding that the project fell within the exemption."[42] CEQA exemptions are to be narrowly construed and "[e]xemption categories are not to be expanded beyond the reasonable scope of their statutory language."[43] Erroneous reliance by a lead agency on a CE constitutes a prejudicial abuse of discretion and a violation of CEQA.[44]

If an agency meets its burden to demonstrate that the project is within a categorically exempt class, the burden shifts to the party challenging the CE to show that the project is not exempt due to an exception pursuant to CEQA Guidelines Section 15300.2.[45] One such exception is that a CE shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to "unusual circumstances,"[46] or where

[38] Pub. Res. Code § 21068; 14 C.C.R. § 15382; *County Sanitation Dist. No. 2 v. County of Kern* (2005) 127 Cal.App.4th 1544, 1581.
[39] Pub. Res. Code § 21080(e)(1) (emphasis added); *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 331.
[40] Pub. Res. Code § 21084(a); 14 CCR §§ 15300, 15354.
[41] *Id.*
[42] *California Farm Bureau Fed'n v. California Wildlife Conservation Bd*. (2006) 143 Cal. App. 4th 173, 185.
[43] *Mountain Lion Found. v. Fish & Game Com*. (1997) 16 Cal.4th 105, 125; *McQueen*, 2 Cal.App.3d at 1148.
[44] *Azusa*, 52 Cal.App.4th at 1192.
[45] *California Farm Bureau Fed'n,* 143 Cal. App. 4th at 186
[46] 14 C.C.R. § 15300.2(c).

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there is a reasonable possibility that the activity will have a significant effect on the environment, including (1) when "the cumulative impact of successive projects of the same type in the same place, over time is significant."[47]

B. An Agency's Decision to Rely on a Mitigated Negative Declaration under CEQA is Reviewed for Abuse of Discretion under the Fair Argument Standard

Under the fair argument standard, a reviewing court's function is to determine if substantial evidence supports the agency's conclusion as to whether there is a fair argument that the proposed project might have a significant environmental impact.[48] "Stated another way, if the [reviewing] court perceives substantial evidence that the project might have such an impact, but the agency failed to secure preparation of the required EIR, the agency's action is to be set aside because the agency abused its discretion by failing to proceed 'in a manner required by law.'"[49] If substantial evidence demonstrates that the proposed project might have a significant impact, evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a mitigated negative declaration.[50] Neither the lead agency nor a court may "weigh" conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.[51] "The fair argument standard thus creates a low threshold for requiring an EIR, reflecting the legislative preference for resolving doubts in favor of environmental review."[52]

Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[53] In short, when "expert opinions clash, an EIR should be done."[54] "It is the function of an EIR, not a negative declaration, to resolve conflicting claims, based on substantial evidence, as to the environmental effects of

[47] *Id.* at 15300.2(b).
[48] *Id.*
[49] *Save the Agoura Cornell Knoll*, 46 Cal. App. 5th at 675–76.
[50] *Id.*
[51] *Id.* at *13.
[52] *Id.* at 4.
[53] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935 (Court concluded that expert opinion supported by facts may qualify as substantial evidence supporting a fair argument even if not based on specific observations as to the site under review); *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[54] *Pocket Protectors*, 124 Cal.App.4th at 928; *Sierra Club*, 6 Cal.App.4th at 1317–1318.

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a project."[55] Where substantial evidence is presented, "evidence to the contrary is not sufficient to support a decision to dispense with preparation of an EIR and adopt a negative declaration, because it could be 'fairly argued' that the project might have a significant environmental impact."[56]

The fair argument test requires the preparation of an EIR whenever "there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial."[57]

III. THE PROJECT IS NOT CATEGORICALLY EXEMPT GIVEN THAT THE PROJECT IS LIKELY TO RESULT IN SIGNIFICANT IMPACTS REQUIRING MITIGATION

CEs are based on a finding that a class or category of projects does not have a significant effect on the environment.[58] Thus, an agency's finding that a particular proposed project comes within one of the exempt classes essentially includes an implied finding that the project has no significant effect on the environment.[59] CEs under Class 1 and Class 2 require a lead agency to provide "substantial evidence to support [their] finding that the Project will not have a significant effect."[60] Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency.[61]

Here, none of the exemptions claimed by the County—Class 1, Class 2, or the "common sense" exemption—apply to the Project because the Project has significant impacts which require mitigation. The County's own preparation of an IS/MND—which, by definition, must include mitigation measures to reduce a project's significant environmental impacts—establishes that the Project will result in impacts significant enough to warrant mitigation. Thus, by the County's own conclusions, no CE applies to the Project. Furthermore, as explained in detail below,

[55] *Id.* at 935.
[56] *Sundstrom*, 202 Cal.App.3d at 310 (citation omitted).
[57] 14 C.C.R. § 15063(b)(1).
[58] Pub. Res. Code §§ 21083, 21084; 14 C.C.R. § 15354.
[59] *Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 116.
[60] *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 269.
[61] 14 C.C.R. § 15384.

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both Dr. Fox and Dr. Smallwood provided substantial evidence supporting a fair argument that the Project will result in significant impacts on the environment that require preparation of an EIR under the fair argument standard.[62]

A. The Project is Not Exempt from CEQA Because Mitigated Categorical Exemptions are Prohibited under CEQA

An agency may not rely on a CE if to do so would require the imposition of mitigation measures to reduce potentially significant effects to less than significant levels.[63] Under the Guidelines, "mitigation" includes: "(a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation. (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment. (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. (e) Compensating for the impact by replacing or providing substitute resources or environments."[64]

As established by the courts, "there are sound reasons for precluding reliance upon mitigation measures at the preliminary stage of determining eligibility for a categorical exemption. Regulatory guidelines dealing with the environmental review process under CEQA 'contain elaborate standards–as well as significant procedural requirements–for determining whether *proposed* mitigation will adequately protect the environment and hence make an EIR unnecessary; in sharp contrast, the Guidelines governing preliminary review do not contain any requirements that expressly deal with the evaluation of mitigation measures.'"[65]

In *SPAWN*, the court set aside the county's approval of a project to construct a home, stating "[r]eliance upon mitigation measures (whether included in the application or later adopted) involves an evaluative process of assessing those mitigation measures and weighing them against potential environmental impacts, and that process must be conducted under established CEQA standards and procedures for EIRs or negative declarations."[66] There, the county determined that the proposed construction of a home was categorically exempt from CEQA under a

[62] *Farmland Protection Alliance v. County of Yolo* (Nov. 3, 2021) 2021 WL 5103355, *2; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928;
[63] *SPAWN,* 125 Cal.App.4th at 1102; *Azusa Land Recl. Co.,* 52 Cal. App.4th at 1198-1201.
[64] 14 C.C.R. § 15370.
[65] *SPAWN*, 125 Cal.App.4th at 1108.
[66] *Id.* at 1108.

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CE for single-family homes, even though the home was adjacent to a protected anadromous fish stream and within a stream conservation area which the county conceded was of "critical concern."[67] The county's conclusion that there was no reasonable possibility of significant environmental impacts that would preclude the exemption "was expressly founded on 'dozens of conditions that have been applied to enhance mitigations and reduce to a minimum the possibility of any adverse environmental impacts.'"[68] The *SPAWN* court determined that "whether a project may impact a designated environmental resource must be made without reference to or reliance upon any proposed mitigation measures."[69]

Here, the measures set forth in the IS/MND and MMRP fall squarely within the definition of mitigation under CEQA Guidelines Section 15370. Following circulation of the IS/MND, the County deemed the Project to be categorically exempt despite previously identifying numerous significant environmental effects in the IS/MND that would require the imposition of formal mitigation measures to minimize the Project's significant impacts.[70] As stated in the Staff Report, the basis for the County's exemption determination is because the Project involves "a modification to an existing facility with replacement or reconstruction."[71] However, any Project changes were incorporated *prior* to the circulation of the IS/MND identifying significant impacts.[72] Therefore, based on the same Project Description, the County had previously made numerous findings in the IS/MND that the Project would result in several significant adverse impacts and incorporated a number of mitigation measures to reduce the Project's significant impacts.[73] The IS/MND's determinations of significance, in relevant part, include:

1. The Project "has the potential to result in significant or substantial adverse effects on humans. However, the Proposed Project would implement MM-FIRE-1 through MM-FIRE-7 to reduce any potentially significant impacts to hazard and hazardous materials."[74]

[67] *SPAWN,* 125 Cal.App.4th at 1106.
[68] *Id.* at 1107.
[69] *Id.* at 1108.
[70] Staff Report at 3.
[71] Staff Report, Attachment D at 1.
[72] *Id.*
[73] MND at 39.
[74] *Id.*

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2. The Project "has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, and/or reduce the number or restrict the range of a rare or endangered plant or animal. However, the Proposed Project would implement MM-BIO-1 through MM-BIO-4 to reduce any potentially significant impacts to biological resources."[75]
3. The combination of the Project when evaluated with other projects causing related impacts may result in a cumulatively significant impact.[76]

"If a project may have a significant effect on the environment, CEQA review must occur, and only then are mitigation measures relevant."[77] To address the Project's potentially significant impacts, the IS/MND listed several formal and enforceable mitigation measures to address the risk of upset or accident (MM FIRE-1 through MM FIRE-7) and biological resources (MM BIO-1 through MM BIO-4).[78] These mitigation measures were designed to reduce the Project's potentially significant environmental impacts that would otherwise result from the Project, as disclosed in the IS/MND and supported by evidence set forth in the expert reports by Dr. Fox and Dr. Smallwood.[79]

The facts in the present case are akin to the proceedings in *SPAWN* and unlike the situation in *Citizens for Env't Resp. v. State ex rel. 14th Dist. Ag. Assn.* where the court determined that the manure management program ("MMP") used by the fairground for the rodeo was not a mitigation measure that precluded the rodeo from being exempt from CEQA because the MMP predated the at-issue rodeo

[75] *Id.*
[76] *Id.* As detailed in previously submitted comments dated May 10, 2021, although the MND's Mandatory Findings of Significance acknowledge that cumulatively considerable impacts of the Project and related nearby projects are significant and require mitigation, the failure to (1) identify the relevant projects and their cumulative impacts; and (2) suggest feasible mitigation measures is a clear violation of CEQA's requirements to evaluate and discuss cumulative impacts.
[77] *SPAWN*, 125 Cal.App.4th at 1108.
[78] MND at 21, 27.
[79] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

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project and formalized practices that had been implemented for decades.[80] The court reasoned that "[n]othing in the NOE suggests the MMP was created for this project."[81] To the contrary, here, numerous mitigation measures were developed to minimize or reduce the significant impacts that were identified in the IS/MND for this specific Project. Though the Staff Report attempts to characterize these measures as "voluntary," they are in fact mandatory Conditions of Approval that the Staff Report classifies as "legally enforceable," therefore qualifying as mitigation measures within the meaning of CEQA.[82]

The County's improper attempt to include mitigation measures in a CE is contrary to law and deprives the public of its statutory rights to participate and comment on the sufficiency of the mitigation measures proposed to be applied to the Project.

IV. THE CATEGORICAL EXEMPTIONS ASSERTED BY THE COUNTY ARE FACIALLY INAPPLICABLE TO THE PROJECT

A. The Project is Not Categorically Exempt Under Class 1 Because the Proposal Involves Substantially More Than an Insignificant Expansion of Uses

Section 15301 of the CEQA Guidelines provides an exemption for the "operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use."[83] The key, as identified in the provision, is whether the activity involves negligible or no expansion of use.[84]

The existing facilities exemption on its face does not apply to this Project because this Project cannot be characterized as a negligible modification to a previously analyzed project.[85] Rather, the Project involves the installation of two new OECs, i.e., OEC 1 and OEC 2, which would jointly function as an I3LU that would use an entirely different process for cooling motive fluid, i.e., air cooling

[80] *Citizens for Env't Resp. v. State ex rel. 14th Dist. Ag. Assn*. (2015) 242 Cal. App. 4th 555, 570.
[81] *Id.*
[82] *See* Staff Report, Attachment G at 17.
[83] 14 C.C.R. §§ 1537015301.
[84] *Id.*
[85] *See, e.g., Communities for a Better Env't,* 48 Cal. 4th at 326.

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rather than water cooling.[86] These new OECs would also require the installation of a new VRMU and two new isopentane storage tanks (10,000 gallons each) on the site—doubling the number of tanks from two to four.[87] With the addition of the two new isopentane storage tanks, the isopentane volume is estimated to increase from 96,8000 gallons under permitted conditions to 240,100 gallons.[88] Moreover, the IS/MND estimated that isopentane emissions would increase by 48.0 lbs/day due to the two new OEC units and now the Staff Report estimates that the change in isopentane emission volume would be as significant as 65.7 lbs/day.[89] Finally, the Project proposes to repower the plant to its "nameplate" output capacity of 52 megawatts (net) and 78.2 megawatts (gross).[90] The County therefore acknowledges that the Project will result in an expansion of existing use, and there is no evidence in the record that the existing facility formerly operated at its nameplate capacity, rending the Class 1 exemption inapplicable.

The Project would also reconfigure and convert OEC 11 and OEC 13 into an ITLU along with additional modifications.[91] Finally, due to changes to the existing facilities, the Project requires an additional 500 AF of water *annually*.[92] Based on the foregoing, at the outset of the CEQA implementation process, the County properly classified the Project as a non-exempt new project, proceeded forward with CEQA review, and issued an IS/MND, which concluded that the Project would have significant impacts that could be mitigated to less than significant levels.

The Staff Report's Findings of Fact now erroneously claim that the Project is categorically exempt on the basis that it will not result in an expansion of the facility's current use, describing the Project as a "'like-for-like' replacement…."[93] The Findings improperly rely on factually inaccurate claims or omit key Project components to reach the desired conclusion. First, the analysis in the Staff Report

[86] MND at 10.
[87] *Id.*
[88] Staff Report, Attachment F at 10.
[89] *Id.* at 12. Note that the Staff Report discloses that isopentane emissions under proposed conditions would be 99.0 lbs/day and emissions under actual emissions are 33.3 lbs/day. However, the Report incorrectly calculates the change to be 48.0 lbs/day when in fact the change would be 65.7 lbs/day. This discrepancy is due to the fact that the Staff Report significantly increased the Project's proposed conditions for isopentane emissions from 81.3 lbs/day to 99.0 lbs/day, which is less than a tenth below permitted conditions.
[90] Staff Report at 1; MND at 2.
[91] MND at 10.
[92] *Id.* at 12.
[93] Staff Report, Attachment F at 8; 18.

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does not address the significant *increase* in isopentane emissions from the Project to approximately 99.0 lbs/day, which is less than a tenth below permitted conditions.[94] Moreover, the comments prepared by Dr. Fox dated May 10, 2021, provide evidence that isopentane emissions are underestimated in the IS/MND and are likely to increase significantly more than disclosed.[95]

Rather than addressing the increase in isopentane emissions, the Staff Report focuses on the emissions of NOx, S02, H2S, and Benzene, claiming that these emissions "would be completely eliminated."[96] This statement, however, is not supported by substantial evidence given that the IS/MND failed to disclose both the construction fleet as well as the tier of the engines that would be in the construction fleet.[97] Dr. Fox explained in her expert report that in failing to require that the Project utilize Tier 4 construction equipment, the Applicant has no obligation to use lower emitting equipment and NOx exhaust emissions could be around thirty-five times higher if all Tier 1 construction equipment were used instead of Tier 4 equipment.[98] Similarly, PM exhaust emissions could be about fifteen times higher if all Tier 1 equipment were used instead of Tier 4 equipment.[99]

Second, the Findings are misleading in claiming that "no additional physical expansion of facilities at the Project site would occur as a result of the Project."[100] This statement is patently incorrect. The Project proposes to add two new OECs, i.e., OEC 1 and OEC 2, a new VRMU, and two new isopentane storage tanks (10,000 gallons each), doubling the total number of tanks on-site from two to four, and increasing overall facility output.[101] The Findings are thus unsupported by the evidence set forth in the Project Description.

Finally, the Findings state that "[t]he Project neither uses a new technology nor utilizes new processes, as the Heber 1 power plant already utilizes OECs to generate electricity."[102] To the contrary, the I3LU would use an entirely different

[94] *Id.* at 12.
[95] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).
[96] Staff Report, Attachment F at 17.
[97] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 9 (May 10, 2021).
[98] *Id.*
[99] Staff Report, Attachment F at 17.
[100] *Id.*
[101] MND at 2, 10.
[102] Staff Report, Attachment F at 17.

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process for cooling motive fluid, i.e., air cooling rather than water cooling.[103] Additionally, the Project would require an additional 500 AF per year of irrigation water because the "*original* operational process utilized flashes of geothermal brine to make steam," but "*[c]hanges* to these existing facilities will no longer generate the extra water needed for the cooling towers," thus necessitating additional water consumption.[104] The Project's additional water consumption, including the impacts of increased consumption in a County which lacks adequate water supply for all existing industrial and agricultural uses, is more than a "minor alteration" to the existing facility and was not analyzed in the facility's original CEQA document.

For the foregoing reasons, the proposed expansion of existing uses by the Project is significantly more than "negligible or no expansion" and thus the Project is not categorically exempt from CEQA. An EIR is required for the Project.

B. The Project is Not Categorically Exempt Under Class 2

Section 15302 of the CEQA Guidelines provides an exemption from CEQA for the "replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced," including the "[r]eplacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity."[105] Public agencies utilizing such exemptions must support their determination with substantial evidence.[106] A project may therefore be exempted from CEQA if the Lead Agency shows through substantial evidence that it is replacing an existing facility with substantially the same *purpose* and *capacity*.

The Project involves the installation of a new OEC 1 with a design capacity of 19.85 MW, a new OEC 2 with a design capacity of 17.25 MW, two new 10,000-gallon isopentane storage tanks—doubling the number of tanks on site and increasing the volume from 96,8000 gallons under permitted conditions to 240,100 gallons, a new VRMU as well as additional new ancillary components within the existing Heber 1 Geothermal Energy Complex.[107] Nevertheless, the Staff Report again claims that

[103] MND at 10.
[104] *Id.* at 12.
[105] 14 C.C.R. § 15302(c).
[106] Pub. Res. Code § 21168.5.
[107] MND at 11.

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the proposed new facilities would be a "'like-for-like' replacement…."[108] The Project, however, would involve the construction of new and highly technical equipment that involves different technologies and processes as well as environmental impacts.[109] Namely, isopentane emissions, the number of isopentane tanks, and the volume of isopentane have all increased.[110] Moreover, due to equipment modifications and changes, the Project would require additional irrigation water to be supplied annually.[111] The Project, therefore, involves far more than a "replacement or reconstruction" of existing structures and is not exempt from CEQA review.

C. The Project is Not Exempt Under the "Common Sense" Exemption

CEQA provides for a "common sense" exemption, which applies to a project if it can be determined with certainty that there is "no possibility" that the project "may have a significant effect on the environment."[112] "If legitimate questions can be raised about whether the project might have a significant impact and there is any dispute about the possibility of such an impact, the agency cannot find with certainty that a project is exempt."[113] The exemption must "be reserved for those 'obviously exempt' projects, 'where its absolute and precise language clearly applies.'"[114]

The County's obligation to produce substantial evidence supporting its exemption decision is all the more important where the record shows, as it does here, that the Project will have significant environmental impacts. The Staff Report, in concluding that the commonsense exemption applies, states that its analysis of Project impacts "methodically demonstrates that the Project will not create any significant environmental effects, primarily because all construction and installation will occur on the existing site, which has been fully planned, permitted, and developed."[115] This is patently incorrect. As stated in the CEQA Findings, "[t]he purpose of the Project is to decommission the dual-flash steam turbine generator,

[108] Staff Report, Attachment F at 21.
[109] MND at 11-12.
[110] *Id.* at 8, 10.
[111] *Id.* at 12.
[112] 14 C.C.R. § 15061(b)(3).
[113] *Davidon Homes v. City of San Jose* (1997) 54 Cal. App. 4th 106, 117, *as modified on denial of reh'g* (Apr. 29, 1997).
[114] *Id.*
[115] Staff Report, Attachment F at 22.

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install two new ORMAT Energy Converters (OECs), reconfigure two existing OECs, install ancillary equipment including a vapor recovery maintenance unit, and install upgrades to replace aging equipment, including two new 10,000-gallon isopentane storage tanks, *subject to approval of a CUP from the County*."[116] Approval of the CUP is required in order for the Project to go forward and thus the County wrongly asserts that the existing site has been "fully planned, permitted, and developed."[117]

Moreover, the Staff Report alleges that "[o]ther potential areas of impact not necessarily related to the physical land—such as noise, geologic hazards, biological resources, and air emissions—are shown to not approach or exceed any applicable thresholds of significance."[118] The reports by Dr. Smallwood and Dr. Fox present substantial evidence that the Project may have significant impacts. Thus, the County cannot conclude with any certainty that there is no possibility the Project will cause no significant environmental impacts.

As detailed herein, Dr. Fox and Dr. Smallwood identified many potentially significant impacts, supported by substantial evidence, to which the County insufficiently addressed in its Responses to Comments. For example, in response to Dr. Smallwood's comments regarding potentially significant impacts to special-status species, the Staff Report claims that the Project site "is completely void of any suitable habitat for either special-status plant species or wildfire, including avian species," but fails to identify the study or information to support this factual conclusion.[119] In response, Dr. Smallwood reiterates that "[t]his assertion was readily refuted by the project's consultant who documented 10 species of wildlife at the site even though the survey was performed mid-day in July – a time date least likely to detect wildlife.[120]

[116] Staff Report, Attachment B at 3.
[117] It must also be noted that the very requirement for a CUP indicates the possibility of a potentially significant impact. *See* County of Imperial, Code of Ordinances, § 90203.09, 90508.01.
[118] *Id.*
[119] *Id.* at 34-35. "Readers of an EIR should not be required to 'ferret out an unreferenced discussion in [related material].... The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project. '[I]nformation 'scattered here and there in EIR appendices,' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis....'"" *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal. 5th 918, 941, *citing to Vineyard*, 40 Cal.4th at 442.
[120] Smallwood Comments at 8.

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Furthermore, the County improperly dismisses Dr. Smallwood's previous comments regarding the Project's significant collision-mortality impacts to wildlife on the grounds that "the new structure will be located on the same site as the structure replaced…."[121] In response, Dr. Smallwood identifies many of the Project's new structures, including "at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks," which he finds "would pose new collision hazards to wildlife for the subsequent 30 years of operation."[122] Based on his expertise, Dr. Smallwood explains that "[t]he County's response to [his] comments neither acknowledge these project changes, nor addresses the significant impacts on species that could result."[123]

With regards to significant impacts on air quality, Dr. Fox's analysis demonstrates that Project construction activities will emit PM10 and NOx emissions in excess of the significance thresholds, thus creating significant and unmitigated impacts.[124]

Both Dr. Fox and Dr. Smallwood are highly skilled and qualified technical experts with extensive experience in their fields.[125] Their conclusions are supported by well-documented, credible evidence. Their opinions therefore constitute substantial evidence within the meaning of the law.[126] The County's conclusions otherwise are not supported by any specific instances of unsubstantiated opinion or conjecture.[127]

[121] *Id.* at 20.
[122] Smallwood Comments at 7.
[123] *Id.*
[124] Fox Comments at 2.
[125] *See* Curriculum Vitae for Dr. Fox attached hereto as Exhibit A and Curriculum Vitae for Dr. Smallwood attached hereto as Exhibit B.
[126] 14 C.C.R. § 15384(b) ("Substantial evidence" includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts); *Architectural Heritage v. County of Monterey* (2004) 122 Cal.App.4th 1095, 1117-18 (expert's opinion is "credible" if it constitutes "fact-based observations by people apparently qualified to speak to the question [at issue.] That testimony constitutes substantial evidence, because it consists of "facts, reasonable assumptions, and expert opinion supported by facts.").
[127] *See* Staff Report, Appendix F at 46.

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V. THE PROJECT FALLS WITHIN THE EXCEPTIONS TO CEs

A. The Project May Have Significant Cumulative Impacts When Considered with Other Nearby Geothermal Power Projects

CEs are inapplicable when the "cumulative impact of successive projects of the same type in the same place, over time is significant. "[128] Cumulative impacts can result from individually minor but collectively significant impacts from projects taking place over a period of time.[129]

Despite concluding that cumulative impacts would be potentially significant in the IS/MND Mandatory Findings of Significance, the County now finds that the Project will not result in a cumulatively significant impact in part "[b]ecause the Project contemplates replacing the site's currently outdated dual flash turbine with more modernized equipment-thereby resulting in an increase in renewable energy production and a reduction in air emissions…."[130] The County's reasoning is flawed. The Project proposes substantially more than a simple replacement of like-for-like equipment and processes given that the Project involves the construction and operation of two new OEC units, the installation of two additional isopentane storage tanks, a new VRMU, and due to the new processes utilized by the Project, an additional 500 AF per year of irrigation water is required for the Project.[131] Furthermore, based on the evidence provided in Dr. Fox's previously submitted comments, the County also fails to adequately support its finding that the Project would result in a reduction in air emissions.[132] To the contrary, the Project's construction emissions of PM10 and NOx would be significant, and since "the Project will significantly increase the amount of isopentane in the OEC units, …, the maintenance, purging and fugitive emissions should also increase by about a factor of 2.5, resulting in significant ROG emissions" during Project operations.[133] The County's stated grounds for why the Project would not result in a cumulatively significant impact are therefore erroneous.

[128] 14 C.C.R. § 15300.2(b).
[129] *Id.* at § 15355.
[130] MND at 39; Staff Report, Attachment F at 24.
[131] *Id.* at 10-12.
[132] *Id.*; Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 6-14, 21-23 (May 10, 2021).
[133] *Id.*

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Moreover, the County states that "no projects occur in relatively close proximity to the Heber 1 site (including the Heber 2 project, located approximately 1 mile away)."[134] Factors to consider when determining whether to include a related project in a cumulative impacts analysis include environmental resources impacted, location, and project type.[135] Heber 2, for example, is a very similar geothermal project proposed by the same applicant located a mere mile away and yet is improperly identified as outside of the Heber 1 Area of Potential Effect.[136] Both projects involve facilities similar in size with overlapping construction schedules and thus overlapping impacts from construction emissions.[137] The projects also are likely to result in many of the same adverse environmental impacts.[138] For example, our comments on the Heber 2 project supported the conclusion that construction emissions from that project are also likely significant.[139] Since construction of these two projects may very well overlap, already-significant emissions impacts will be substantially worse. Additionally, both projects will increase the release of isopentane, an ozone precursor, into the atmosphere.[140] As detailed by Dr. Fox in her comments, the emissions of isopentane from Heber 1 and Heber 2 far exceed ICAPCD's significance threshold for ROG —an undeniably significant and cumulatively considerable impact.[141] Thus, the Heber 1 and Heber 2 projects would result in cumulatively significant impacts that the County fails to consider in the Staff Report's analysis.[142]

[134] Staff Report, Attachment F at 24.
[135] 14 C.C.R. § 15130(b)(2).
[136] *See* Heber 2 Mitigated Negative Declaration.
[137] *Id.*; *See also* MND.
[138] *See, e.g., Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project*, (SCH: 2020069002; CUP No. 19-0017) (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021).
[139] *Id.* at 23-27.
[140] Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 26 (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 21-23 (May 10, 2021).
[141] ICAPCD, *CEQA Guidelines, Table 1* at 11; Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 35 (Feb. 22, 2021). Dr. Fox explains in her comments that when errors made in estimating isopentane emissions from Heber 2 are corrected, her calculations show an increase in emissions by 505 lb/day. The Heber 1 MND estimates that the Project will result in an increase in isopentane emissions of 48 lb/day. Cumulatively, the two projects will result in an increase of 553 lb/day, well over the ICAPCD threshold of 137 lb/day.
[142] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* (Feb. 22, 2021); Dr. Phyllis Fox, PhD, PE, *Comments on the Initial*

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Heber 2 is not the only project that must be considered in a cumulative impacts analysis. In its 2020 Annual Report, as well as in SEC filings, Ormat indicates that its growth plans include the repair and enhancement of existing wells and drilling of new wells.[143,144] The drilling and operation of new wells constitute additional cumulative project(s) that will result in air emissions that must be considered with those of the Project in a cumulative air quality analysis.

Given the proximity of a remarkably similar project, the County's contention that the Project will not contribute to cumulatively considerable impacts is dubious. The exception makes the CEs inapplicable to this Project.

B. The Project May Have Significant Effects on the Environment due to Unusual Circumstances

CEQA Guidelines state that a CE "shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances."[145] The Supreme Court in *Berkeley Hillside Preservation v. City of Berkeley* clarified the meaning of the CEQA Guidelines language and the applicable standards of review, and set forth two tests to determine whether the unusual circumstances exception applies.[146] "One may identify 'evidence that the project will have a significant effect on the environment.' Alternatively, one may show evidence (1) the project is unusual because it 'has some feature that distinguishes it from others in the exempt class, such as its size or location;' and (2) there is 'a reasonable possibility of a significant effect due to that unusual circumstance.'"[147]

As to the first test, the County's determinations set forth in the IS/MND provide concrete evidence to demonstrate that the Project *will* have significant effects on the environment. The County's conclusions are further supported by the

Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; *CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).

[143] Ormat, *2020 Annual Report* at 64.

[144] U.S. SEC, *Form 10-K, Ormat Technologies, Inc.* (December 31, 2020), available at: https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/17c5fd2c-ee2c-431e-a993-fc6cd4626a05.pdf.

[145] 14 C.F.R. § 15003.2(c).

[146] *Berkeley Hillside Pres.,* 60 Cal. 4th at 1105.

[147] *Protect Tustin Ranch v. City of Tustin* (2021) 2021 WL 4962754, at *5.

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expert reports previously submitted by Dr. Fox and Dr. Smallwood.[148] The IS/MND concludes that the Project would result in significant adverse impacts and incorporates several mitigation measures to reduce the Project's significant impacts.[149] The IS/MND's determinations of significance, in relevant part, include substantial adverse effects on humans that may be reduced by implementing MM-FIRE-1 through MM-FIRE-7, significant impacts to biological resources requiring implementation of implement MM-BIO-1 through MM-BIO-4, and cumulatively significant impacts.[150] The mitigation measures were designed to reduce the Project's potentially significant environmental impacts that would otherwise result from the Project. Thus, there is evidence that the Project *will* have a significant effect on the environment.

In the alternative, the Project also presents circumstances that are unusual for projects in the exempt classes, which pertain to the continued operation of existing facility with a negligible expansion of use and/or replacement structures.[151] The Supreme Court in *Berkeley Hillside Pres*. clearly established that "[a] party invoking the exception may establish an unusual circumstance without evidence of an environmental effect, by showing that the project has some feature that distinguishes it from others in the *exempt class*, such as its size or location."[152] Here, the Project proposes to construct and operate new structures as well as implement new processes to increase the net and gross generation of the existing geothermal power facility.[153] Although the Project is sited within the County's Geothermal Overlay Zone and other geothermal operations exist in the area, the Project is nevertheless unusual for purposes of CEQA Guidelines Section 15003.2.[154]

[148] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[149] *See* MND at 39.
[150] *Id.*
[151] The County concludes in the Staff Report that "[u]nder the 'Class 1' exemption, the Project constitutes an '[e]xisting facility[y] of both inventory and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services[.]' (CEQA Guidelines,§ 15301, subd. (b).) Under the 'Class 2' exemption, the Project constitutes a 'commercial structure with a new structure of substantially the same size, purpose, and capacity' and an 'existing utility system[] and/or facilit[y] involving negligible or no expansion of capacity.' (CEQA Guidelines, § 15302, subds. (b)-(c).)" Staff Report, Attachment F at 25.
[152] *Berkeley Hillside Pres*., 60 Cal. 4th at 1105. (emphasis added)
[153] MND at 10, 23.
[154] Staff Report, Attachment F at 25.

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According to the U.S. Department of Energy, the combined capacity of the Imperial Valley Geothermal Resource Area is approximately 327 net megawatts.[155] Since the Project proposes to increase the net generation of the plant to 52MW, the Project would comprise nearly sixteen percent of the total capacity for the entire Geothermal Overlay Area in the County.[156] By way of comparison, the recent Heber 2 proposal refurbished the Heber 2 unit to its permitted net generation capacity of 33MW, which is 19MW less than this Project.[157] Moreover, unlike some of the other geothermal projects in the County's Geothermal Overlay Zone, this Project site, which is located in one of the most seismically active regions in the U.S.,[158] is surrounded by three cities—the City of Calexico with a population of approximately 40,000, the City of El Centro with a population of around 44,000, and the City of Imperial with a population of around 17,400.[159] The IS/MND concedes that the Project site is "subject to potential ground shaking due to nearby faults."[160] Though the County asserts that risk of seismic activity does not pose significant risks at the Project site, a "swarm of earthquakes" hit Imperial County on June 5, 2021, some felt as far away as Los Angeles.[161]

[155] U.S. Department of Energy, *Imperial Valley Geothermal Area,* available at: https://www.energy.gov/eere/geothermal/imperial-valley-geothermal-area.
[156] *Id.*; MND at 10.
[157] Imperial County, *Initial Study and Mitigated Negative Declaration for the Heber 2 Geothermal Repower Project* at 11.
[158] *Id.* at 23.
[159] Imperial County, *Imperial County Geothermal Projects,* available at: https://www.icpds.com/assets/planning/energy-maps/imperial-county-geothermal-09-15-2017.pdf; U.S. Census Bureau (2019).
[160] *Id.* at 23.
[161] Los Angeles Times, *Earthquake: Swarm of tremblors, including magnitude 5.2 quake, hits Imperial County* (June 5, 2021), available at: https://www.latimes.com/california/story/2021-06-05/earthquake-hits-imperial-county?utm_id=30582&sfmc_id=1628513.

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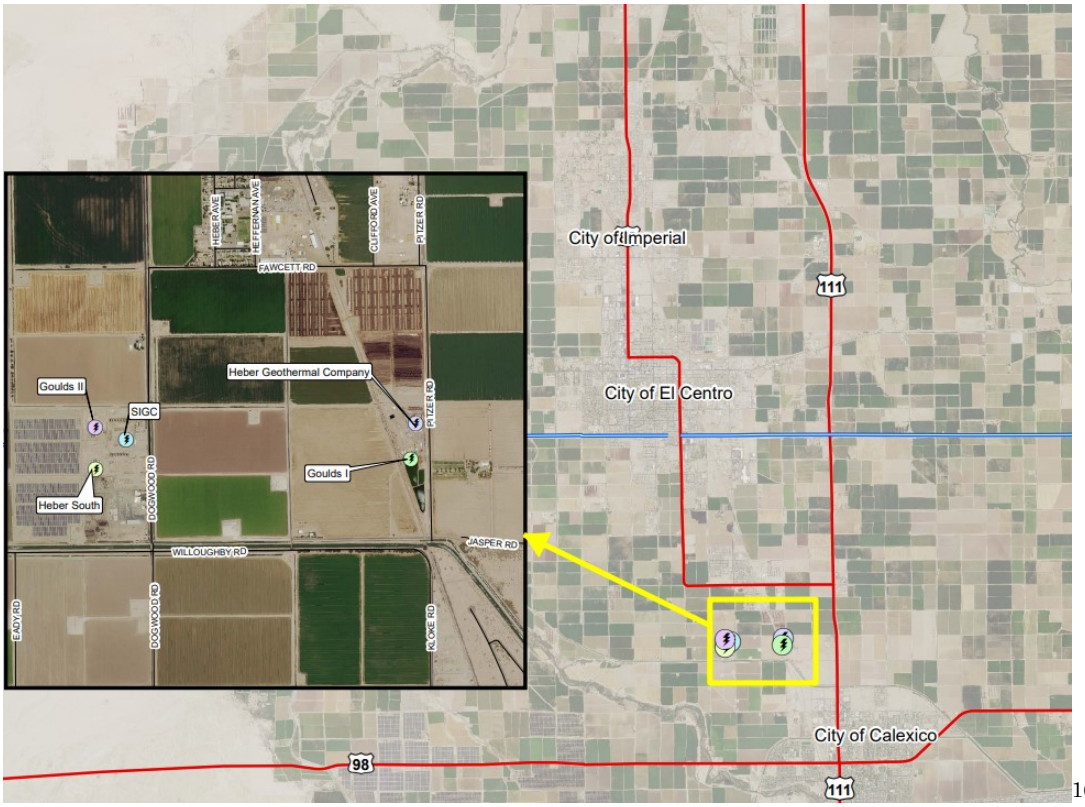

[162]

Finally, this Project involves storage and handling of isopentane, a highly volatile liquid which can readily boil and evaporate on a warm day, making assessment and mitigation of potential accidents involving isopentane extremely important. It is for this reason that Dr. Fox recommended evaluating the most extreme and dangerous scenarios in the hazards analysis, including the potential consequences of a boiling liquid expanding vapor explosion ("BLEVE"), a reasonably foreseeable worst-case scenario that combines both the mechanical effects of an explosion and the thermal effects of a fire.[163]

Given an adequate demonstration of unusual circumstances, the next question identified in *Berkeley Hillside Pres.* is whether there is a fair argument of a reasonable possibility of a significant environmental effect.[164] As demonstrated

[162] *Id.*
[163] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 47-52 (May 10, 2021).
[164] *Berkeley Hillside Pres.*, 60 Cal. 4th at 1105.

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herein, in our previously submitted comments on the IS/MND, and in the expert comments by Dr. Phyllis Fox and Dr. Smallwood, which are hereby incorporated by reference, we have provided substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[165] Our conclusions are further supported by the significance determinations for this Project originally set forth in the IS/MND. For the foregoing reasons, there is a reasonable possibility that the Project will have a significant effect on the environment due to unusual circumstances such that an exception to the claimed CEs apply.

VI. SUBSTANTIAL EVIDENCE SUPPORTS A FAIR ARGUMENT THAT THE PROJECT MAY HAVE SIGNIFICANT ENVIRONMENTAL IMPACTS SUCH THAT AN EIR MUST BE PREPARED

An EIR is required if "there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment."[166] The EIR aids an agency in identifying, analyzing, disclosing, and, to the extent possible, avoiding a project's significant environmental effects through implementing feasible mitigation measures.[167] Mitigated negative declarations are allowed only in cases where there is not even a "fair argument" that the project will have a significant environmental effect.[168] Thus, an MND is also inadequate, and an EIR is required, whenever substantial evidence in the record supports a "fair argument" that significant impacts may occur even with the imposition of mitigation measures.

The "fair argument" standard is an exceptionally "low threshold" favoring environmental review in an EIR rather than a negative declaration.[169] The "fair argument" standard requires preparation of an EIR, if any substantial evidence in

[165] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[166] Pub. Resources Code, § 21080, subd. (d) (emphasis added); CEQA Guidelines, § 15064; see also *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 927; *Mejia v. City of Los Angeles* (2005) 13 Cal.App.4th 322.
[167] Pub. Res. Code § 21002.1(a); 14 C.C.R. § 15002(a) & (f).
[168] *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440; Pub. Resources Code, §§ 21100, 21064.
[169] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928.

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the record indicates that a project may have an adverse environmental effect.[170] As a matter of law, substantial evidence includes both expert and lay opinion.[171] Even if other substantial evidence supports the opposite conclusion, the agency nevertheless must prepare an EIR.[172] Under the "fair argument," CEQA always resolves the benefit of the doubt in favor of the public and the environment.

As explained in our comments on the IS/MND, and in the expert comments attached thereto by Dr. Phyllis Fox and Dr. Smallwood, there is substantial evidence supporting a fair argument that the Project will result in significant and unmitigated impacts to air quality, public health and safety, biological resources, and, combined with other projects in the vicinity, will have cumulatively significant impacts on the environment.[173] Moreover, the County's Responses to Comments do not demonstrate that a "fair argument" cannot be made here. Based on the foregoing, the County must prepare an EIR to disclose and mitigate these impacts.

The Staff Report fails to respond to the majority of our comments on the IS/MND, which constitute substantial evidence to support a fair argument that the Project will have significant environmental effects requiring the preparation of an EIR. These comments and reports are hereby incorporated by reference.[174] The Staff Report ignores or fails to adequately address this evidence and instead now asserts that the Project will result in no significant impacts.[175] The County's conclusion, however, fails to consider a multitude of information about the nature and severity of the Project's direct impacts and omits an analysis of the cumulative impacts of multiple planned projects in the vicinity, including the similar Heber 2 project located less than 1 mile away from the Project site. Therefore, the County lacks substantial evidence to conclude that the Project will not have significant impacts, and substantial evidence continues to support a fair argument that an EIR is required for the Project.

[170] 14 C.C.R. § 15064(f)(1); *Pocket Protectors v. City of Sacramento, supra*, 124 Cal.App.4th at 931.
[171] Pub. Res. Code § 21080(e)(1); 14 C.C.R. § 15064(f)(5).
[172] *Arviv Enterprises v. South Valley Area Planning Comm*. (2002) 101 Cal.App.4th 1333, 1346; *Stanislaus Audubon v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-151; *Quail Botanical Gardens v. City of Encinitas* (1994) 29 Cal.App.4th 1597.
[173] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021); Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[174] *Id.*; *Comments on the Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project (CUP #19-0028; IS #19-0033; SCH #2021020267)* (May 10, 2021).
[175] *See* Errata to the MND. Staff Report, Attachment E.

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A. The Project May Result in Potentially Significant Impacts to Biological Resources That Would Require the Implementation of Mitigation Measures

In his previously submitted comments, Dr. Smallwood concludes that the Project will have significant, unmitigated impacts on several species, which the IS/MND, coupled with the Errata, fails to disclose and mitigate.[176] An EIR must be prepared to fully disclose and mitigate these impacts.

The IS/MND and Errata severely underestimate the Project's impacts to biological resources, including special-status species, because the analysis uses inadequate methods to observe the existing environmental setting and describe the Project site's baseline with respect to the occurrence of biological resources. Due to underestimations of these occurrences and the resulting impacts to species, the County also proposes inadequate mitigation measures—now identified as Conditions of Approval—to reduce those impacts.

Dr. Smallwood previously commented on the inadequate baseline in the IS/MND, which relies on improper methods for determining the occurrence of special-status species at the Project site.[177] Specifically, Dr. Smallwood details many issues with the site-specific survey.[178] The County responded to these comments by claiming Dr. Smallwood "speculate[d] on the efficacy of surveys that are used by professionals in this profession."[179] The County's response, however, misses the point. Dr. Smallwood explains in his attached comments that while "[a] reconnaissance-level survey would be useful for recommending which detection surveys to perform and when to perform them… reconnaissance-level surveys need to be performed during the time of year and time of day that makes sense for detecting particular species. Here, the survey was performed in the middle of a July afternoon in Imperial Valley, which does not allow for a representative picture of the site. High temperatures and other conditions during this time of year and time of day are unlikely to present an accurate view of the species present on the Project site."[180] Dr. Smallwood makes these comments based on his years of planning and

[176] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[177] *Id.*
[178] *Id.*
[179] Staff Report, Attachment F at 27.
[180] Smallwood Comments at 5.

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conducting wildlife surveys.[181] He has "studied the efficacy of wildlife surveys and [has] done so throughout [his] career since 1985, as evidenced by many of [his] papers in peer-reviewed scientific journals."[182] Based on his experience and expertise, Dr. Smallwood concludes that the on-site wildlife surveys conducted to inform the Project's impacts on biological resources were "severely deficient."[183] Moreover, the County's response fails to demonstrate the efficacy of these surveys.

The County also claims that the IPac and CNDDB databases "serve as the standard for determining the biological community present in/near a project site."[184] Dr. Smallwood takes issue with the County's response, explaining that "these databases do not determine the presence of biological communities at a site" and only "track sightings records or occurrence potentials of special-status species."[185] Dr. Smallwood identifies other resources that could inform which species are present on the site, including iNaturalist and eBird.[186] eBird, for example, is administered by the Cornell University Laboratory of Ornithology.[187] The Cornell Laboratory is the most respected ornithological organization in North America and a leading authority in the world.[188] Nevertheless, the County dismisses the use of eBird: "eBird is a publicly-sourced, privately managed database, allowing both novice and expert birders to contribute; therefore, the accuracy of the database cannot be considered reliable and in fact is not relied upon by professionals."[189]

To the contrary, eBird is utilized by professionals and "[n]early 600 scientific papers based on eBird records have been peer-reviewed and published."[190] Dr. Smallwood thus concludes that "eBird not only serves as a highly useful source of information for predicting the occurrence likelihoods of special-status species, but it helps to meet CEQA's objective of public participation."[191] Dr. Smallwood's review of both eBird and iNaturalist resulted in the identification of 56 special-status species of vertebrate wildlife present near the Project site or with ranges that overlap the

[181] *Id.* at 6.
[182] *Id.*
[183] *Id.* at 5.
[184] Staff Report, Attachment F at 27.
[185] Smallwood Comments at 4.
[186] *Id.* at 5.
[187] *Id.*
[188] *Id.*
[189] Staff Report, Attachment F at 27.
[190] *Id.* at 5.
[191] *Id.*

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site.[192] The detection records from eBird and iNaturalist provide substantial evidence supporting a fair argument that there are numerous special-status in the direct vicinity of the Project site which the County failed to detect. These species may be adversely impacted by the Project, requiring mitigation. The conflicting data from the County's surveys and these credible wildlife databases create a fair argument requiring preparation of an EIR to disclose and mitigate the Project's impacts on all special-status species that may be impacted by the Project.[193] Mr. Smallwood's comments also demonstrate that the County failed to make a reasonable effort to describe existing conditions for biological resources at the Project site, leading to inaccurate conclusions of the Project's impacts upon sensitive species, as well as inadequate mitigation measures.

In response to Dr. Smallwood's comments regarding the Project's potentially significant impacts on biological resources, the County claim that the site is a developed industrial complex with no existing habitat is inconsistent with its own evidence and findings.[194] Dr. Smallwood states that "the consulting biologist who visited the site documented 10 species of wildlife there, which confirmed the site provides habitat."[195] Nine of these species are protected by the Migratory Bird Treaty Act ("MBTA").[196] Moreover, based on his own professional expertise, Dr. Smallwood explains that "industrial sites are used as habitat by species of wildlife."[197] Examples include "wildlife [using] asphalt pads used to cover leaked plutonium (Smallwood 1996, Smallwood et al. 1998)," and "birds nesting on and within built structures on industrial facilities."[198] Dr. Smallwood also states that "[t]he County's premise [] neglects the aerosphere portion of the project as habitat of many species of wildlife," known as "aeroecology," which has been studied in Kunz

[192] *Id.*
[193] *Pocket Protectors*, 124 Cal.App.4th at 935 (where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR); *Sierra Club*, 6 Cal.App.4th at 1317–1318; CEQA Guidelines § 15064(f)(5).
[194] Staff Report, Attachment F at 27; Smallwood Comments at 1.
[195] *Id.*
[196] *Id.* at 5.
[197] *Id.* at 1.
[198] *Id.*

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et al. 2008, Davy et al. 2017, and Diehl et al. 2017.[199] Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[200]

The County also attempts to minimize the significant impacts on biological resources identified in Dr. Smallwood's comments by claiming that the Project does not propose any changes to the site or facilities that would affect wildlife.[201] The County's response is not based in fact. Dr. Smallwood identifies several project changes that the County fails to consider or analyze in its response, including "at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks."[202] Given these specific changes, Dr. Smallwood concludes that these new structures would pose new collision hazards to wildlife for the subsequent 30 years of operations that could result in significant impacts on numerous species.[203]

The County next concludes that the Project would not cause significant impacts to avian species on the basis that "due to the industrialized nature of the site, avian species are likely to avoid the site."[204] In response to Dr. Smallwood's comments to the contrary, the County first speculates that Dr. Smallwood's use of collision fatality rates from utility solar projects were not representative of the scale of the structures on the Project site.[205] Dr. Smallwood responds in his comments that "the collision mortality along fences and transmission lines were [actually] drawn from a wide range of project sizes," and here, "the power blocks were of the same-sized solar projects."[206] To address the County's assertion that the Project's structures would somehow have different impacts than the comparative collision mortality cited in Dr. Smallwood's MND comments, Dr. Smallwood tested the scale effects of the structures by regressing the estimated fatality rates along the lengths of transmission line and fence that were used to generate the fatality estimates.[207]

[199] *Id.* at 1-2.
[200] *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935; *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1317–1318; 14 C.C.R. § 15064(f)(5).
[201] Staff Report, Attachment F at 28.
[202] Smallwood Comments at 7.
[203] *Id.*
[204] Staff Report, Attachment G at 28.
[205] Smallwood Comments at 10.
[206] *Id.*
[207] *Id.*

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As detailed in his attached comments, Dr. Smallwood did not find "significant effects of length of transmission line nor of the fence on collision fatality rates," and thus concludes that his "original predictions of collision mortality [] stand."[208]

The County also attempts to distinguish the solar projects referenced by Dr. Smallwood to support his collision fatality estimates on the grounds that these projects were "green field" development and are not appropriate comparisons to the current Project's impacts.[209] However, Dr. Smallwood finds the County's response to be "speculative and unsupported," explaining that "[o]nce structures are built into a bird species' airspace, that species' collision risk with those structures does not depend on what existed at the site before."[210] In his experience working on wind energy repowering projects over the past fifteen years, he has seen no difference in fatality rates between new turbines built onto green fields versus those built exactly where the old turbines used to operate."[211] Based on his experience and studies, Dr. Smallwood supports his comparison by explaining that "[c]ollision risk applies to birds flying through the airspace that exists at the time of the flight, and not what existed there last year."[212]

As the IS/MND's estimations of impacts to biological resources were inadequate, so too were the mitigation measures—now erroneously labelled Conditions of Approval—which the County previously admitted were required to reduce those impacts to less than significant levels. Dr. Smallwood's previous comments recommended additional measures that, in addition to those proposed in the MND, would have much greater effect at minimizing the fatalities and habitat destruction to special-status species at the Project site.[213] These recommendations went unaddressed by the County, and are hereby referenced and incorporated.

In response, the County cites the measures identified in the IS/MND, which are now to be incorporated into the Project's conditions of approval.[214] While Dr. Smallwood concurs with the implementation of these measures, he recommends that the measures be identified as enforceable mitigation measures given the

[208] *Id.*
[209] *Id.* at 12.
[210] *Id.*
[211] *Id.*
[212] *Id.*
[213] *See* Dr. Shawn Smallwood, PhD, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 8-10 (May 10, 2021).
[214] Staff Report, Attachment F at 31.

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presence of significant impacts on biological resources and determines that the measures are not adequate to fully mitigate the Project's significant impacts.[215] COA BIO-3, for example, is inconsistent with CDFW guidance that does not recommend preconstruction surveys without first conducting detection surveys.[216] Dr. Smallwood concludes that the other measures are "take-minimization measures, but would not prevent impacts."[217]

The failure to minimize the fatalities and habitat destruction to special-status species at the Project site with adequate mitigation measures further confirms that a fair argument still exists that the Project will have significant impacts on wildlife and habitat.

B. The Project May Result in Potentially Significant Impacts to Air Quality That Would Require the Implementation of Mitigation Measures

In previously submitted comments, Dr. Fox concludes that the Project would have significant, unmitigated impacts on air quality during construction activities and the decades of operation, which the IS/MND, coupled with the Errata, fails to disclose and mitigate.[218] An EIR must be prepared to fully disclose and mitigate these impacts.

In response to Dr. Fox's analysis, the Staff Report fails to respond directly and fully to many of Dr. Fox's comments, further demonstrating that the record contains substantial evidence supporting a fair argument that the Project would have significant impacts, and that the County lacks substantial evidence to conclude otherwise.[219] For example, Dr. Fox's conclusion that the Project would result in significant and unmitigated impacts to air quality from the Project's construction-related PM10 emissions remains unrebutted in the record.[220] Since the IS/MND fails to estimate construction PM10 emissions, Dr. Fox conducted an analysis of construction fugitive dust PM10 emissions using AP-42, Section

[215] Smallwood Comments at 13.
[216] *Id.*
[217] *Id.*
[218] *See* Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* (May 10, 2021).
[219] Fox Comments at 1.
[220] *Id.* at 2-6.

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13.2.3.[221] In response to the County's comments regarding the use of this emissions factor, Dr. Fox explains that she properly utilized AP-42, Section 13.2.3 given the express language in the Introduction to AP-42:

> Emission factors may be appropriate to use in a number of situations such as making source-specific emission estimates for areawide inventories. These inventories have many purposes including ambient dispersion modeling and analysis, control strategy development, and in screening sources for compliance investigations. Emission factor use may also be appropriate in some permitting applications, such as in applicability determinations and in establishing operating permit fees. [222]

Moreover, the emission factor utilized by Dr. Fox "…is most applicable to construction operations with: (1) medium activity level, (2) moderate silt contents, and (3) semiarid climate."[223] These conditions are present at the site, according to Dr. Fox.[224]

She explains that "Section 13.2.3.3 also 'strongly recommends' that the construction process be broken down into component operations and emission factors specific to each use. The IS/MND did not contain any information to allow this approach. The [Staff] Report also does not contain any of this information."[225] Based on the foregoing, Dr. Fox calculated "unmitigated PM10 emissions of 319 lbs/day compared to a significance threshold of 150 lbs/day."[226] This is a significant PM10 impact which requires mitigation.[227]

Therefore, based on substantial evidence set forth in Dr. Fox's reports, construction PM10 emissions are identified as significant by Dr. Fox, thus requiring mitigation measures that the IS/MND fails to consider or require. However, the four conditions identified in the Staff Report are insufficient to fully mitigate the

[221] *Id.* at 2.
[222] *Id.* at 3.
[223] *Id.* at 4.
[224] *Id.*
[225] *Id.*
[226] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 7 (May 10, 2021). It must be noted that the Imperial County Air Pollution Control District ("ICAPCD") considers PM10 to be of substantial concern. ICAPCD, *CEQA Guidelines* at 12 (December 12, 2017).
[227] *Comtys. for a Better Env't v. Cal. Resources Agency* (2002) 103 Cal.App.4th 98, 110-111 (when impact exceeds CEQA significance threshold, agency must disclose in the EIR that the impact is significant); *Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 960; *CBE v. SCAQMD*, 48 Cal.4th at 327 (impact is significant because exceeds "established significance threshold for NOx … constitute[ing] substantial evidence supporting a fair argument for a significant adverse impact").

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significant construction PM10 impact documented in Dr. Fox's comments.[228] She recommends "requiring that all ICAPCD standard fugitive dust PM10 control measures, as well as discretionary mitigation measures for fugitive PM10 control, must be implemented."[229]

Dr. Fox also identifies significant and unmitigated impacts from the Project's NOx emissions during construction activities.[230] The Staff Report, in response, includes a new air quality modeling analysis in "Appendix N," which Dr. Fox identifies as entirely deficient analysis for three main reasons.[231] First, Appendix N assumes a lot acreage of 2.3 acres, which is not supported by other evidence that describes the disturbed area as 7.67 acres.[232] Second the CalEEMod input indicates zero acres of grading even though the construction equipment for the Project includes a 187 hp grader, thus confirming that more than zero acres will be graded.[233] Lastly, the analysis improperly omits off-site emissions in its calculations of mitigated and unmitigated NOx emissions.[234] Dr. Fox calculated the NOx emissions using the correct disturbed acreage of 7.67 acres and determines that the NOx emissions would be 201 lbs/day, which is double the significance threshold.[235] Although Dr. Fox acknowledges that these emissions could possibly be mitigated by requiring the use of all Tier 4 construction equipment, the Staff Report only requires the use of Tier 3 engines "when commercially available" in the VEPF and if not, then the VEPF allows for Tier 2 engines.[236]

Dr. Fox also provides extensive comments in her prior comment letter on the risks to worker health from valley fever during the life of the Project, noting that Imperial County is endemic for valley fever.[237] The County responds that "Imperial County is not highly endemic for Valley Fever..."[238] To the contrary, Dr. Fox provides evidence that the site is in an endemic area, and that the Project's soil-

[228] Fox Comments at 7-8.
[229] *Id.*
[230] *Id.* at 8.
[231] *Id.* at 9.
[232] *Id.*
[233] *Id.*
[234] *Id.*
[235] *Id.* at 10.
[236] Staff Report, Attachment E at 3.
[237] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 33 (May 10, 2021).
[238] Staff Report, Appendix G at 22.

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disturbing activities have the potential to put receptors at risk.[239] Despite evidence from the California Department of Public Health, case studies, and other published literature that support Dr. Fox's conclusion that "conventional construction mitigation measures required by Imperial County CEQA guidance are not adequate to control Valley Fever spores raised during Project construction," the Staff Report set forth the conclusory assertion that the Applicant's "voluntary" mitigation measures were sufficient.[240] A fair argument can thus be made that the impacts on public health from Valley Fever may be significant and are unmitigated.

Based on the foregoing, in addition to the analysis in the attached expert reports, a fair argument exists that the Project will have significant impacts on air quality.

C. The Project May Result in Potentially Significant Impacts due to Risks of Hazards That Would Require the Implementation of Mitigation Measures

The IS/MND determined that the impacts from hazards would be potentially significant unless mitigated. Dr. Fox nevertheless explains that the IS/MND failed to accurately disclose the severity of the Project's hazards impacts because the IS/MND failed to evaluate a worst-case accident; "a [boiling liquid expanding vapor explosion ("BLEVE")] is the worst-case release scenario for very flammable materials such as isopentane because it combines both the mechanical effects of an explosion and the thermal effects of a fire."[241] The Staff Report fails to meaningfully respond to this comment, and lacks the requisite BLEVE analysis. An EIR must be prepared to fully disclose and mitigate these significant impacts.

The County responds to Dr. Fox's comments regarding impacts from hazards by asserting that the Project's Hazards Analysis "complies with the regulatory standard for assessing a catastrophic event…," citing 40 C.F.R. §§ 68.20-68.42.[242] Dr. Fox disagrees given that she concludes a BLEVE is reasonably expected to occur in the Project's location given that "[a]mbient temperatures at the Project site

[239] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 34-35 (May 10, 2021).
[240] Staff Report, Appendix G at 22.
[241] Dr. Phyllis Fox, PhD, PE, *Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project; CUP No. 19-0028* at 41-42 (May 10, 2021); Fox Comments at 12.
[242] Staff Report, Appendix G at 23.

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routinely exceed isopentane's boiling point from March through October."[243] Dr. Fox explains that "on-site workers would be the most exposed population and would be within the zone of significant impact."[244] Furthermore, her analysis demonstrates that exposed parties within 0.3 miles of an isopentane tank experiencing a BLEVE would suffer from second degree burns yet the nearest off-site sensitive receptors are not identified.[245]

The Staff Report fails to meaningfully respond to these comments and lacks any evidence supporting the County's unsupported conclusion that the Project would not result in significant impacts from a BLEVE. The evidence presented by Dr. Fox is inadequately contested by the County in its Responses to Comments and "to the extent there was a conflict in the evidence, 'neither the lead agency nor a court may 'weigh' conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.'"[246] Thus, a fair argument can be made that there are potentially significant impacts from hazards associated with the Project, requiring an EIR.

VII. CEQA PROHIBITS THE USE OF AN ERRATA TO SUBSTANTIALLY ALTER THE SIGNIFICANCE DETERMINATIONS IN THE IS/MND

CEQA Guidelines permits the use of an errata, in relevant part, if (1) new revisions to the project are added in response to comments on the project's identified effects, which are not new and avoidable significant effects; (2) measures or conditions of approval that are added after circulation of the negative declaration that are not required by CEQA, do not create significant environmental effects, and not necessary to mitigate an avoidable significant effect; and (3) situations where new information is added to the negative declaration that merely clarifies, amplifies, or makes insignificant modifications to the negative declaration.[247] Here, the County improperly uses these CEQA's procedures to issue an Errata to the IS/MND that reduces all of the previously-identified significant impacts to less than significant levels and changes the previously-identified mitigation measures to Conditions of Approval without adequate support.[248] These changes are a far cry

[243] Fox Comments at 12-13.
[244] *Id.* at 13.
[245] *Id.*
[246] *Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal. App. 5th 665, 689, *reh'g denied* (Apr. 10, 2020), *review denied* (June 24, 2020).
[247] 14 C.C.R. § 15073.5(c)(2)-(4).
[248] *See* Staff Report, Attachment E.

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from minor or insignificant modifications. The Errata essentially strikes the IS/MND's entire impact analysis and guts the conclusions originally set forth in the IS/MND.

The County's revised analysis and conclusions in the Errata are also unsupported. For example, Dr. Smallwood disagrees with the Errata's conclusion that the impacts on biological resources are now less than significant.[249] To the contrary, he finds that the Project would have significant impacts to birds from collision-mortality due to the Project's additional structures erected in the airspace.[250] He also notes in his comments that "[t]he errata claims that no sensitive bird species occur at the project site, but this claim neglects the 10 species documented at the site by Chambers Group (2019:App. D), 9 of which are protected by the Migratory Bird Treaty Act."[251]

Moreover, no changes to the Project have occurred to warrant the use of an Errata. Prior to circulating the IS/MND in 2019, there were Project-related changes, but none since.[252] The use of an Errata here is thus improper since the County's intent is clearly to evade its earlier findings that the Project would have significant impacts requiring mitigation. The County cannot use this Errata to proceed forward with its unfounded conclusion that the Project is categorically exempt from CEQA. The County's actions violate the specific procedures outlined in CEQA and for these reasons, the Planning Commission must not adopt the IS/MND and Errata.

VIII. A CONTINUANCE OF THE PLANNING COMMISSION PROCEEDINGS IS NECESSARY DUE TO THE FAILURE TO PROVIDE NEW EVIDENCE CITED TO AND RELIED UPON IN THE STAFF REPORT

Pursuant to Section 54955.1 of the Government Code, we respectfully request a continuance of the Imperial County Planning Commission hearing on November 18, 2021, with regards to Item No. 6 regarding the Project. Section 54955.1 provides that "[a]ny hearing being held, or noticed or ordered to be held, by a legislative body of a local agency at any meeting may by order or notice of continuance be continued or recontinued to any subsequent meeting of the legislative body…."[253] A

[249] Smallwood Comments at 13.
[250] *Id.*
[251] *Id.*
[252] Staff Report, Attachment G at 14.
[253] Gov't Code § 54955.1.

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continuance is necessary with regards to Agenda Item No. 6 because the Staff Report omitted multiple pieces of critical information, thereby depriving the public and decision-makers of a meaningful opportunity to participate in the CEQA process. The omission of evidence on which the County purports to rely to support its CEQA and land use findings to approve the Project is also a reversible abuse of discretion.[254]

The Responses to Comments on the IS/MND attached to the Staff Report as Attachment G repeatedly cited to new information contained in "Appendix O; Supplemental Construction Air Quality Modeling Memorandum" and "Appendix O; Heber 1 Repower Project—Summary Project Information."[255] Neither attachment, however, were included in the Staff Report. We notified the County of these omissions on Thursday, November 11, 2021, via email.[256] The documents were not produced to us until Friday, November 12, 2021, at 2:31pm.[257] Upon receiving the materials, we, along with the public and our experts, had a mere few days—including the weekend—to review and respond to the information, which did not provide our experts with sufficient time to fully review the newly submitted information.

Furthermore, the new Air Quality Modeling Memorandum omits the engine tiers assumed in the CalEEMod run. On November 12, 2021, we again emailed the County to request this critical information and received a response on the day of the comment deadline even though the County had received the information the day prior.[258]

For the foregoing reasons, we ask that the Planning Commission continue Item No. 6 regarding the Project to allow the public additional time to review and respond to the significant new information relied upon in the Staff Report for the Project.

[254] C.C.P. § 1094.5(e), (f).
[255] *See* Staff Report, Attachment G at 2.
[256] Email from Tara Messing, Adams, Broadwell, Joseph & Cardozo, to David Black, County of Imperial dated November 11, 2021.
[257] Email from Rosa Soto, County of Imperial, to Tara Messing, Adams, Broadwell, Joseph & Cardozo, dated November 12, 2021.
[258] Email from Tara Messing, Adams, Broadwell, Joseph & Cardozo, to David Black, County of Imperial dated November 11, 2021; Email from David Black, County of Imperial, to Tara Messing, Adams, Broadwell, Joseph & Cardozo, dated November 16, 2021. Mr. Black's email dated November 16, 2021 forwarded the requested information previously sent by Corinne Lytle Bonine, Chambers Group, via email the day prior on November 15, 2021.

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IX. THE COUNTY LACKS SUBSTANTIAL EVIDENCE TO APPROVE THE PROJECT'S CUP

The Project requires approval of CUP # 19-0028, which the Planning Commission may review and approve or conditionally approve only if it makes all of the findings enumerated in Section 90203.09 of the County's Code of Ordinances.[259] One such finding is that the Project's "proposed use is consistent with the goals and policies of the adopted county general plan."[260] To support this finding, the Resolution in Attachment B to the Staff Report explains that "Section 90508.02 of the County Land Use Ordinance identify the permitted conditional uses within the A-2-G-Heber SPA Zone designation. Uses identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the Imperial County Planning Commission. … Therefore, pursuant to Land Use Ordinance section 90508.02, electrical generation facilities are permitted with approval of a CUP for 'electrical generation plants (*less than 50 mw*).' The Commission finds that the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations."[261] Section 90508.03 makes clear that "[a]ll other uses not expressly permitted by Section 90508.01 or 90508.02 are prohibited."[262]

Both the IS/MND and Staff Report clearly establish that this Project is to increase "the plant's generating capacities of *52-megawatt (MW) net, and 78.2 MW gross*, …."[263] The Project's generating capacity—whether net or gross—exceeds the permitted use specified under Section 90508.02, subsection (y), and thus the Project is not a permitted use on lands zoned A-2 even with the approval of a CUP.[264] The Planning Commission is unable to make the findings required by Section 90203.09 and must not approve the CUP.

[259] County of Imperial, Code of Ordinances § 90203.09.
[260] *Id.* at § 90203.09(A).
[261] Staff Report, Attachment B at 2. (emphasis added)
[262] County of Imperial, Code of Ordinances § 90508.03.
[263] Staff Report, Attachment F at 1. (emphasis added) Moreover, it must also be noted that the CEC has the exclusive authority to certify all thermal power plants (50 megawatts [MW] and greater) and related facilities proposed for construction in California. *See* California Energy Commission, available at: https://www.energy.ca.gov/.
[264] A Project's inconsistencies with local plans and policies also constitute significant impacts under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4; *see also, County of El Dorado v. Dept. of Transp*. (2005) 133 Cal.App.4th 1376.

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X. CONCLUSION

The Project does not qualify for a CE: first and foremost, the County fails to provide substantial evidence that the Project would not result in significant environmental impacts. Second, the County has failed to demonstrate that the CEs under Class 1, Class 2, and the commonsense exemption apply. Even if it did qualify under a CE, the exceptions to the CEs apply given that the Project would result in significant cumulative impacts and would have potentially significant impacts due to unusual circumstances.

The Project also cannot be approved in reliance on the IS/MND because there is substantial evidence supporting a fair argument that the Project may have significant impacts that require preparation of an EIR. The IS/MND fails to meet CEQA's basic requirements, fails to disclose numerous potentially significant, unmitigated Project impacts. The County must prepare an EIR to accurately disclose and mitigate the Project's significant impacts We urge the Planning Commission not to adopt the IS/MND.

For the foregoing reasons, we respectfully request that the Planning Commission deny Conditional Use Permit #19-0028 as well as the Notice of Exemption and findings of fact that the Project is categorically exempt from CEQA. We also urge the Planning Commission not to adopt the IS/MND, Errata to the MND, and MMRP, and not make the de minimums findings recommended by the EEC on February 11, 2021, that the Project will not individually or cumulatively have an adverse effect on fish and wildlife resources. The findings and resolutions attached to the IS/MND and CUP #19-0028 must also be denied. Instead, the County must require the preparation of an EIR to fully analyze and mitigate the Project's potentially significant impacts.

Sincerely,

Tara C. Messing

Tara C. Messing

TCM:ljl

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EXHIBIT A

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Phyllis Fox, PhD, PE
745 White Pine Avenue
Rockledge, FL 32955

November 16, 2021

Tara Messing
Adams Broadwell Joseph and Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

RE: Responses to Comments on the Heber 1 Geothermal Repower Project

As you requested, I have reviewed the responses to my May 10, 2021 Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project, CUP No. 19-0028 (Fox Comments)[1] in the Staff Report for the November 18, 2021 Planning Commission meeting. The Staff Report and supporting documents are contained in the "Project Report."[2] The Project Report and its various attachments and appendices are not adequate to support the proposed categorical exemption from CEQA.

The Project Report does not include copies of any of the comment letters, annotated with comments numbers, as is standard practice in responding to comments on CEQA documents. Rather, the Project Report only includes a brief summary of comments in six comment letters.[3] My comment letter was attached to Comment Letter No. 1, Adams Broadwell Joseph & Cardozo PC (ABJC). The responses to the ABJC letter ignore my letter and respond only to the County's superficial summary of ABJC's comments.[4] The Project Report does not respond directly and fully to any of my comments. Rather, it only responds to very brief summaries of my comments.[5] This prevents meaningful review of responses to my comments as well as responses to comments made by others. Further, the revised air quality analysis, cited in the Project

[1] Phyllis Fox, Comments on the Initial Study/Mitigated Negative Declaration for the Heber 1 Geothermal Repower Project, CUP No. 19-002, Heber, California, May 10, 2021 (Fox Comments).
[2] Project Report to the Planning Commission on CUP #19-0028, Heber 1 Geothermal Repower, November 18, 2021 ("Project Report"); https://www.icpds.com/assets/hearings/06.-CUP19-0028-Heber-1-Geothermal-Repower.pdf.
[3] Project Report, Section 3.0 – Response to Comments, pdf 103.
[4] Project Report, Letter 1, pdf 104-129.
[5] Project Report, Letter 1, Adams Broadwell Joseph & Cardozo PC, May 10, 2021, pdf 104-129 (ABJC Letter).

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Report as Appendix N, Air Emissions Memorandum, was not provided with the Project Report and was not received until November 12, late in the day, severely limiting review time.

As discussed below, my review of the Project Report indicates that none of my comments were responded to as I wrote them. Thus, I reassert them. The following comments respond only to a small subset of the County's responses to some of ABJC's summaries of my comments. Only some are responded to as the available review time was not adequate to review the 560 page Project Report and supporting documents and to correct all of the errors and omissions that they contain. The absence of a response to a comment in my May 10, 2021 comments does not imply concurrence but rather inadequate review time or absence of supporting documents in the record. Thus, I reassert my comments as written in my May 10, 2021 comments, which stand unrebutted in the record.

I demonstrate below that the Project will result in significant impacts that require mitigation, including significant construction PM10 and NOx air quality impacts, significant risk of upset impacts, and significant cumulative construction impacts. Thus, this Project is subject to review under CEQA.

I. CONSTRUCTION IMPACTS

I.A Construction Emissions Are Significant and Unmitigated

The IS/MND did not include any estimate of construction emissions. Thus, I estimated these emissions using the limited available information presented in the IS/MND. My analysis of construction emissions is in my Comment I. This comment demonstrates that the Project would result in significant construction PM10 and NOx emissions and significant construction ozone impacts.[6] There is no response to these comments, but rather only to ABJC's summary of them.[7]

I.A.1 Construction PM10 Emissions Are Significant and Unmitigated

The IS/MND failed to estimate any construction PM10 emissions. I estimated construction fugitive dust PM10 emissions using U.S. EPA's AP-42, Section 13.2.3.[8] The response quotes from AP-42 (without providing a specific cite) as follows:[9]

[6] Fox Comments, Comments 2.2, 2.3, 2.4.
[7] Project Report, pdf 77 and 110-111 (Response to ABJC Comment 21).
[8] Fox Comments, Comment 2.2: Construction PM10 Emissions Are Significant.

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> Emission factors in AP-42 are neither EPA-recommended emission limits (e. g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e. g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance.

This quoted material is found in the Introduction of AP-42.[10] It is irrelevant to the case at hand. I did not recommend the use of any emission factors from AP-42 as "emission limits;" "best available control technology or BACT;" "lowest achievable emission rate or LAER;" "National Emission Standard for Hazardous Air Pollutants or NESHAPs;" or "New Source Performance Standards or NSPS." Thus, this response is irrelevant and does not address my Comment 2.4.

Rather, I used the fugitive dust emission factor from AP-42, Section 13.2.3, to estimate fugitive PM10 emissions from Project construction. The very same Introduction to AP-42 cited in the Responses further states as follows:[11]

> Emission factors may be appropriate to use in a number of situations such as making source-specific emission estimates for areawide inventories. These inventories have many purposes including ambient dispersion modeling and analysis, control strategy development, and in screening sources for compliance investigations. Emission factor use may also be appropriate in some permitting applications, such as in applicability determinations and in establishing operating permit fees.

I used the AP-42 construction activity emission factor of 1.2 tons per acre per month to estimate fugitive dust PM10 emissions from constructing the Project. Thus, my use of AP-42 is appropriate and the response to this comment is irrelevant as fails to address my comment.

The responses further assert that the fugitive dust emission factor I used from AP-42 Section 13.2.3 is inappropriate as it is based on only 1 set of field studies that limit its usefulness for specific construction sites. Thus, the Responses assert that "…the heavy construction emissions factor is not recommended by the EPA for emission regulation compliance determinations, including PM10-compliance during construction, because of the limitation and lack of field testing associated with the emissions factor."[12]

First, I did not and do not recommend this emission factor for emission regulation compliance determinations during construction. Second, this quote fails to accurately represent AP-42, Section ac13.2.3.3 Emission Factors. This section actually states that

[9] Project Report at pdf 77, 78, 110, 111; AP-42, Introduction, p. 2; https://www.epa.gov/sites/default/files/2020-09/documents/c00s00.pdf.
[10] AP-42, Introduction, pdf 2; https://www.epa.gov/sites/default/files/2020-09/documents/c00s00.pdf.
[11] *Ibid.*
[12] Responses, pdf 78, 111 (response to ABJC Comment 21).

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the emission factor that I used "…is most applicable to construction operations with: (1) medium activity level, (2) moderate silt contents, and (3) semiarid climate." These conditions are present at the site.[13] AP-42 Section 13.2.3.3 further "strongly recommends" that the construction process be broken down into component operations and emission factors specific to each used. The IS/MND did not contain any information to allow this approach. The Project Report also does not contain any of this information.

My analysis indicates unmitigated PM10 emissions of 319 lb/day compared to a significance threshold of 150 lb/day.[14] Therefore, construction PM10 emissions are significant, requiring CEQA mitigation such as I recommend in my Comment 2.2. Therefore, Finding No. AQ-B[15] in the Project Report[16] is incorrect. The Project will result in significant construction PM10 impacts in a PM10 non-attainment area. This requires the imposition of enforceable mitigation under CEQA. The proposed "voluntary mitigation measures"[17] are not enforceable CEQA mitigation and are not sufficient to mitigate the significant PM10 impact identified in my comments.

In the facts supporting Finding No. AQ-B, the Project Report, on the other hand, states that construction would emit 75.13 lb/day of PM10 over the 6-month construction phase.[18] The Project Report asserts that "A construction emissions model was run to estimate potential emissions, and the estimates were provided as Appendix N to the IS/MND's responses to comments." No support is provided for this estimate in the Project Report. Supporting Appendix N was provided on November 12, 2021 upon request due to its omission in the Project Report.

The Project Report contains an estimate of construction emissions, cited to as "Supplemental Construction Air Quality Modeling Memorandum, Vista Environmental, July 23, 2021."[19] This is referred to in these comments as "Appendix N." The estimated PM10 emissions reported in the Project Report, Table 3 is 7.03

[13] See U.S. Climate Data, El Centro, California https://www.usclimatedata.com/climate/el-centro/california/united-states/usca0332; Heber, CA; https://www.google.com/search?q=climate+data+heber%2C+CA&ei=jtWJYKa8LI3P0PEPrfyQYA&oq=climate+data+heber%2C+CA&gs_lcp=Cgdnd3Mtd2l6EAMyBQghEKABMgUIIRCrAjIFCCEQqwI6BwgAEEcQsANQy0xY5lJgvVVoAXACeACAAW-IAckDkgEDNC4xmAEAoAEBqgEHZ3dzLXdpesgBCMABAQ&sclient=gws-wiz&ved=0ahUKEwimu4T38qHwAhWNJzQIHS0-BAwQ4dUDCA4&uact=5

[14] Fox Comments, Comment 2.2.

[15] Project Report, pdf 76, Finding AQ-B: "The Project will not result in potential impacts during construction from PM2.5 and PM10 in a non-attainment zone."

[16] Project Report, pdf 76.

[17] Project Report, COA-AQ-1, pdf 77.

[18] Project Report, pdf 76.

[19] Project Report, pdf 57.

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lb/day.[20] However, Appendix N indicates that construction PM10 emissions are 75.13 lb/day and PM2.5 emissions are 7.03 lb/day.[21] Thus, Table 3 in the Project Report reverses PM10 and PM2.5,[22] reporting PM10 as PM2.5 and PM2.5 as PM10.

The Project Report construction PM10 (and PM2.5) emissions were estimated using the CalEEMod model.[23] The CalEEMod output is included in Appendix N. The CalEEMod output indicates that PM10 emissions are 75.13 lb/day, consisting of 72.44 lb/day of fugitive dust PM10 and 2.69 lb/day of diesel exhaust PM10.[24]

However, the CalEEMod model used to estimate construction fugitive dust PM10 emissions does not address my PM10 comment because the CalEEMod model does not include all sources of fugitive dust PM10 emissions from construction. It omits the major source of fugitive PM10 emissions at construction sites—fugitive dust from windblown sources:[25]

> vehicles traveling along paved and unpaved roads. (Fugitive dust from windblown sources such as storage piles and inactive disturbed areas, as well as fugitive dust from off-road vehicle travel, are not quantified in CalEEMod, which is consistent with approaches taken in other comprehensive models.)

These fugitive dust emissions must be separately calculated using methods in AP-42[26] and added to the CalEEMod PM10 and PM2.5 emissions. Fugitive dust emissions arise from storage piles, grading, truck loading, and inactive disturbed areas. Based on calculations I have made in many other cases, these are the major sources of PM10 and PM2.5 emissions from construction projects. Fugitive dust emissions taken alone frequently exceed the PM10 and PM2.5 significance thresholds. The record in this case does not contain any estimate of fugitive dust emissions from windblown sources. As the revised PM10 and PM2.5 emissions were calculated using the CalEEMod model, the response to my comment on significant construction fugitive dust PM10 emissions fails to address my comments[27] because this model does not estimate all fugitive dust PM10 and PM2.5 emissions.

[20] Project Report, Table 3, pdf 57.
[21] *Ibid.*
[22] *Ibid.*
[23] Project Report, #14, pdf 107, #25, pdf 112, #34, pdf 115/116
[24] Appendix N, pdf 9.
[25] CAPCOA, California Emissions Estimator Model User's Guide, Version 2020.4.0, May 2021, 2016, pdf 8; http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/01_user-39-s-guide2020-4-0.pdf?sfvrsn=6.
[26] U.S. EPA, Compilation of Air Pollutant Emission Factors, Report AP-42; https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors#Proposed.
[27] Fox Comment 2.2.

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Further, the amount of fugitive dust (PM10, PM2.5) is directly related to the disturbed area. The CalEEMod analysis is based on a "lot acreage"of 2.3 acres,[28] which is a significant underestimate. No support is provided for this estimate. Further, there is no condition in the Project Report limiting construction to 2.3 acres.

The Findings of Fact in the Project Report state: "Project construction will disturb approximately 7.67 acres of the 24.09 acre Project site."[29] The Biological Technical Report indicates that construction of the project would result in approximately 7.67 acres of surface disturbance,[30] stating "Construction of the Proposed Project would result in approximately 7.67 acres () of surface disturbance, including 1.64 acres of bare ground, 1.02 acres of sparse disturbed habitat and 5.01 acres of developed land."[31] The response to ABJC Comment 9 states that "The estimated surface disturbance is approximately 7.67 acres, comprised of which 6.03 acres are already disturbed/developed surface and 1.64 acres of bare ground."[32] Finally, a July 29, 2021 Technical Memorandum asserts that "[t]he reconstruction and replacement will occur within approximately 3.24 acres…of the existing site disturbance…"[33]

The total fugitive dust PM10 emissions is equal to the sum of fugitive dust PM10 calculated by the CalEEMod model plus windblown sources of fugitive dust that are omitted from this model, calculated using AP-42 emissions factors. Assuming the Findings of Fact estimate of disturbed area of 7.67 acres, the CalEEMod model fugitive PM10 emissions are underestimated by a factor of 3 (7.67/2.3 = 3.33). Thus, fugitive PM10 emissions could be as high as 217 lb/day (72.4436[34] x 3 = 217). This fraction of fugitive PM10 alone exceeds the ICAPCD PM10 significance threshold of 150 lb/day.[35]

Total construction PM10 emissions are even higher. They are calculated as follows:

[28] Appendix N, pdf 7.
[29] Project Report, pdf 61.
[30] Project Report, Biological Technical Report, Table 2, pdf 338.
[31] Project Report, pdf 322.
[32] Project Report, pdf 106, Response 9.
[33] Technical Memorandum from Corinne Lytle Bonine, Chambers Group to Jim Minnick, County of Imperial, Re: Heber 1 Repower Project – Summary Project Information, July 29, 2021 (7/29/2021 Memo).
[34] Appendix N, pdf 8, Section 2.1: Overall Construction (Maximum Daily Emission), Unmitigated Construction, Fugitive PM10 = 72.4436 lb/day.
[35] Appendix E, Table 4.

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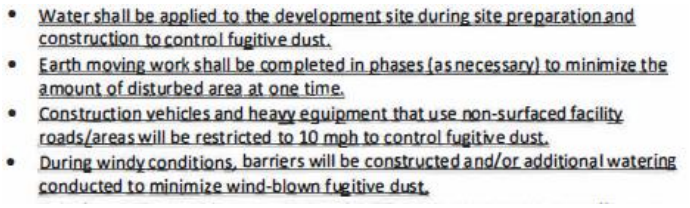
CalEEMod fugitive PM10 adjusted for the correct area (**217 lb/day**) + AP-42 windblown fugitive dust excluded from CalEEMod estimated in my Comment 2.2 (**319 lb/day**) + CalEEMod construction equipment exhaust (**2.69 lb/day**)[36] = **538.7 lb/day.**

In sum, my analysis of construction emissions in my Comment I stands unrebutted in the record. This comment demonstrates that the Project would result in significant construction PM10 air quality impacts, requiring mitigation. Even though the Responses do not recognize this significant impact, the Project Report includes COA-AQ-1, which includes "Voluntary Environmental Protection Features (VEPFs)," some of which are designed to mitigate fugitive dust PM10 emissions including:[37]



- Water shall be applied to the development site during site preparation and construction to control fugitive dust.
- Earth moving work shall be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads/areas will be restricted to 10 mph to control fugitive dust.
- During windy conditions, barriers will be constructed and/or additional watering conducted to minimize wind-blown fugitive dust.

These are not "voluntary" measures, but rather mandatory measures required to reduce the significant construction PM10 impact that I identified in my comments, supplemented by the analysis in this comment. Further, these four conditions are not sufficient to fully mitigate the highly significant construction PM10 impact that I documented in my comments.

The fugitive dust PM10 emissions are a factor of 3.6 higher than the ICAPCD significance threshold of 150 lb/day, requiring that all ICAPCD standard fugitive dust PM10 control measures that apply to a project, as well as discretionary mitigation measures for fugitive PM10 control, must be implemented.[38] These include:[39]

[36] Appendix N, pdf 8, 9.
[37] Project Report, COA-AQ-1, pdf 2, 99.
[38] Imperial County Air Pollution Control District (ICAPCD), Air Quality Handbook, Guidelines for the Implementation of the California Environmental Quality Act of 1970, as Amended (ICAPCD Air Quality Handbook), December 12, 2017,pp. 23-24; https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf.
[39] *Ibid*. Some of these measures may not apply to the Project, e.g., item (g).

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Standard Mitigation Measures for Fugitive PM_{10} Control

a. 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% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.

b. All on site and off site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

c. All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

d. The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.

e. 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.

f. Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.

g. 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% opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

Discretionary Mitigation Measures for Fugitive PM_{10} Control

a. Water exposed soil with adequate frequency for continued moist soil.

b. Replace ground cover in disturbed areas as quickly as possible

c. Automatic sprinkler system installed on all soil piles

d. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

e. Develop a trip reduction plan to achieve a 1.5 AVR for construction employees

f. Implement a shuttle service to and from retail services and food establishments during lunch hours

These measures are required in addition to compliance with ICAPCD Regulation VIII.[40] Proposed COA-AQ-1 includes only discretionary measures (a) and (d), which are not adequate to mitigate the significant construction PM10 air quality impact. Additional mitigation, identified in my Comment 2.2, is required to mitigate this significant air quality impact, requiring review under CEQA.

I.A.2 Construction NOx Emissions Are Significant and Unmitigated

The IS/MND for Heber 1 did not estimate construction emissions and did not include any of the information required to estimate them, including the construction fleet, engine horsepower, engine tier, hours of operation, and construction schedule. Thus, I prepared a rough estimate that demonstrated NOx emissions would be significant unless high tier construction equipment were used.[41]

[40] ICAPCD Air Quality Handbook, pdf 24.
[41] Fox Comments, Comment 2.

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Rather than responding to my comments on significant construction NOx emissions, the Project Report includes the following Voluntary Environmental Protection Feature (VEPF):[42]

> Project construction equipment will utilize Tier 3 engines when commercially available. If a Tier 3 engine is not certified for a particular piece of equipment or not commercially available, then the equipment shall be either equipped with a Tier 2 engine or equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels.

The Project Report uses the CalEEMod model to estimate construction NOx emissions. The CalEEMod output provided in Appendix N failed to disclose the tier of the construction equipment assumed in the analysis. In response to a request on November 12, 2021,[43] an email from the County on the day these comments were due asserts that the CalEEMod analysis assumed Tier 2 engines.[44] The CalEEMod analysis in Appendix N should have disclosed that it used Tier 2 or equivalent control equipment, which is the key input assumption used in this analysis. The failure to disclose the engine "tier" in Appendix N prevented meaningful review.

The CalEEMod run in Appendix N underestimates NOx emissions for several reasons.

First, it assumes a lot acreage of 2.3 acres.[45] Other information throughout the Project Report reports the disturbed area as 7.67 acres. Comment I.A.1. As construction emissions are proportional to disturbed area, the CalEEMod analysis underestimated construction NOx emissions by a factor of 3 (7.67/2.3 = 3.33).

Second, the CalEEMod input indicates zero (0) acres of grading.[46] However, the list of construction equipment includes a 187 hp grader.[47] Thus, acres of grading is clearly not zero. Further, the area that will be disturbed during construction is reported in the Project Report as 7.67 acres, not 2.3 acres.

[42] Project Report, COA-AQ-1, pdf 28.
[43] Email from Tara Messing, Adams, Broadwell, Joseph & Cardozo, to David Black, County of Imperial (November 12, 2021).
[44] Email from David Black, Imperial County, to Tara Messing, Re: Heber 1 Air Quality Modeling Equipent Tier Assumption, November 16, 2021 (8:43 AM) attaching an email from Corinne Lytle-Bonine, Chambers Group, Inc. to David Black, November 15, 2021 (3:49 PM).
[45] Appendix N, pdf 7.
[46] Appendix N, pdf 9.
[47] Appendix N, pdf 10.

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Finally, the CalEEMod run reports "unmitigated" and "mitigated" summer and winter "on-site" plus "off-site" NOx emission of 60.4 lb/day.[48] Mitigation identified in the CalEEMod ouput includes watering exposed areas twice per day to comply with ICAPCD Rule 801 and an unpaved road speed of 5 mph.[49] However, the Project Report, COA-AQ-1 only limits travel on unpaved roads to 10 mph.[50] Thus, the CalEEMod run underestimates fugitive PM10 and PM2.5 from travel on unpaved roads.

Appendix N incorrectly summarizes construction NOx emissions as 57.97 lb/day.[51] This is just on-site emissions. Off-site emissions from hauling, vendor, and worker trips are omitted and amount to an additional 2.4361 lb/day.[52]

The revised NOx emissions, adjusted for a disturbed area of 7.67 acres, are 201 lb/day,[53] which exceeds the significance threshold of 100 lb/day. Thus, construction NOx emissions are significant, requiring mitigation. These emissions could be mitigated by requiring the use of all Tier 4 construction equipment or by requiring other mitigation measures that I identified in my Comment 2.3.

I.A.3 Construction Has Started Without Permits And CEQA Review

I commented that construction had started at both Heber 1 and Heber 2 based on documents filed by the Applicant.[54] The Project Report asserts my comment is based on a "strained reading of certain SEC filing" that are "both inconsistent with the facts on the ground and with the plain meaning of the language in those filings and as properly understood in their context."[55]

However, as I reiterate below, the plain reading of my cited sources indicate that construction has started. The County failed to provide any evidence to demonstrate otherwise. Depending upon the nature of these on-going construction activities, the CEQA baseline may have been altered, affecting the construction impact analysis in the Project Report. Under CEQA, environmental review must be completed before the start of construction. I did not find any Applicant documents that did not assert that construction has started at both Heber 1 and Heber 2.

[48] Appendix N, Section 2.1 Overall Construction (Maximum Daily Emissions), pdf 8-12: Total mitigated and unmitigated NOx = 57.9665 + 2.4361= **60.4 lb/day**.
[49] Appendix N, Section 1.3, pdf 7.
[50] Project Report, COA-AQ-1, pdf 28.
[51] Appendix N, Table 4, pdf 4.
[52] Appendix N, pdf 11.
[53] Revised NOx emissions = (60.4)(7.67/2.3) = **201.4 lb/day.**
[54] Fox Comment 2.5.
[55] Project Report, Response 65, pdf 130.

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Documents filed by the Applicant with the SEC indicate that Project construction started in 2019 and is ongoing:[56]

> During fiscal year 2019, in the Electricity segment, we focused on the commencement of operations at Tungsten solar in Nevada and we began with construction of Heber Complex enhancement as well as with enhancement work in some of our operating power plants. During fiscal year 2018, we focused on

In this SEC filing, in a subsection labeled "Projects Released for Construction," the summary table describes the work at the Heber Complex as: "Permitting, Engineering and procurement ongoing. Manufacturing and **construction commenced**."[57] The Heber Complex consists of Heber 1 and Heber 2, viz.[58]

Project Name	Expected Size (MW)	Technology	Customer	Expected COD	Current Condition
Heber Complex	11	Geothermal air-cooled binary system	SCE and SCPPA	Early 2021	Permitting, Engineering and procurement ongoing. Manufacturing and construction commenced.

The 2019 SEC 10-Q filing similarly states "We are currently in the process of repowering the Heber 1 and Heber 2 power plants. We are planning to replace steam turbine and old OE units with new advanced technology equipment that will add a net capacity of 11 MW. Following these enhancements, we expect the capacity of the complex to reach 92 MW. Permitting, engineering and procurement are ongoing as well as manufacturing and **site construction**. We expect commercial operation in the second half of 2021."[59] The 92 MW is consistent with the original design capacity of the Heber Complex.

The Ormat 2019 annual report also reports that construction has commenced: "During fiscal year 2019, in the Electricity segment, we focused on the commencement of operations at Tungsten solar in Nevada and we began with construction of Heber Complex enhancement as well as with enhancement work in some of our operating

[56] SEC, Form 10-K, Ormat Technologies, Inc., December 31, 2019, pdf 24. The Heber Complex consists of Heber 1 and Heber 2; https://sec.report/Document/0001437749-20-004072/.
[57] SEC, Form 10-K, Ormat Technologies, Inc., December 31, 2019, pdf 30 (emphasis added); see also SEC, Form 10-K, Ormat Technologies, Inc., December 31, 2020, pdf 30; https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/17c5fd2c-ee2c-431e-a993-fc6cd4626a05.pdf.
[58] *Ibid*.
[59] U.S. Securities and Exchange Commission, Form 10-Q, Ormat Technologies, Inc., March 31, 2020, p. 41, pdf 36-37 (emphasis added); http://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/bd1a8403-baa2-4834-9e2f-29ea970e033c.pdf.

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power plants."[60] Elsewhere, the annual report states: "Permitting, Engineering and procurement ongoing. Manufacturing and construction commenced."[61]

Similarly, the Ormat 2020 annual report states for the "Heber Complex": "We are currently in the process of enhancing the Heber 1 and Heber 2 power plants as discussed below."[62] Elsewhere, current conditions are stated as "permitting, engineering and procurement ongoing. Manufacturing and construction commenced."[63] The 2020 Form 10-Q[64] similarly states:

> *Heber Complex (California).* We are currently in the process of repowering the Heber 1 and Heber 2 power plants. We are planning to replace steam turbine and old OEC units with new advanced technology equipment that will add a net capacity of 11 MW. Following these enhancements, we expect the capacity of the complex to reach 92 MW. Permitting, engineering and procurement as well as manufacturing and construction are ongoing. We expect commercial operation at the end of 2021.

The "plain meaning" of the language in these sections indicate that construction has started. If the Applicant's statements in its annual reports and SEC filings are correct, then it appears the Applicant has begun prematurely constructing improvements at both Heber 1 and Heber 2 without complying with CEQA and without obtaining necessary land use permits.

II. RISK OF UPSET

The risk of upset analysis in the IS/MND is based on a vapor cloud explosion using EPA's generic input parameters for conducting a hazard assessment.[65] I commented that this was not a reasonable worst-case release scenario for the Project and provided substantial evidence that a boiling liquid expanding vapor explosion (BLEVE) should have been evaluated.[66]

My risk of upset Comment 7.2 is not responded to. Instead, the responses only address ABJC's summary of my comment in responses 41 to 43.[67] These responses assert that my comment creates a "BLEVE 'straw man'" in an attempt to manufacture the appearance of a regulatory gap where none exists."[68] Further, they assert that the Project's hazard analysis (HA) "…complies with the regulatory standard for assessing a

[60] ORMAT, 2019 Annual Report, p. 31, pdf 39.
[61] ORMAT, 2019 Annual Report, p. 38, pdf 46.
[62] ORMAT, 2020 Annual Report, p. 40, pdf 47;
https://s1.q4cdn.com/231465352/files/doc_financials/2020/ar/Ormat-AR-for-web-Final.pdf.
[63] Ormat, 2020 Annual Report, p. 41, pdf 48.
[64] U.S. Securities and Exchange Commission, Form 10-Q, for quarter ended September 30, 2020;
https://d18rn0p25nwr6d.cloudfront.net/CIK-0001296445/49c05273-a105-4328-8bd9-5f1394153474.pdf.
[65] Fox Comment 7.2.1.
[66] Fox Comment 7.2.1.1.
[67] Project Report, Responses 41-43, pdf 120-121.
[68] Project Report, Response 41, pdf 119-120.

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catastrophic event…" citing 40 C.F.R §§68.20-68.42. These assertions are not supported by any analysis, do not address my hazard comment, are inconsistent with the cited CFR section, and are incorrect.

A BLEVE is feasible at the Project site and would result in significant on-site and off-site impacts if it were evaluated. As a BLEVE was not evaluated, the record is inadequate to support the absence of significant risk of upset impacts. Further, the responses do not address any of the substantial evidence in my Comment 7.2.1, which stands unrebutted in the record. Based on my experience and the evidence presented in my Comment 7.2, a BLEVE would result in a significant impact, requiring CEQA review.

I agree that 40 CFR 68.25 (f), "worst-case release scenario analysis -- flammable liquids" specifies analysis of a "vapor cloud explosion." The IS/MND analyzed a vapor cloud explosion, thus complying with 40 CFR 68.25(f). However, compliance with federal regulations is not per se evidence of compliance with CEQA.

This section of the CFR only applies to "regulated flammable substances that are normally liquids at ambient temperature." A BLEVE is an explosion caused by the rupture of a vessel containing a liquid that has reached a temperature above its boiling point. The normal boiling point of isopentane is 82°F. Ambient temperatures at the Project site routinely exceed isopentane's boiling point from March through October.[69] Thus, the conditions for a BLEVE can be reasonably expected to occur in the Project's desert location. Thus, a BLEVE should have been evaluated but was not.

As I explained in my Comment 7.2.1.1, a BLEVE is the worst-case release scenario for very flammable materials such as isopentane because it combines both the mechanical effects of an explosion and the thermal effects of a fire. Though EPA's guidance states that BLEVEs "are generally considered unlikely events," this does not excuse the Applicant from evaluating the impacts of a BLEVE. A BLEVE is feasible at the Project site due to the boiling point of isopentane and local ambient temperatures. A BLEVE is one of the most severe accidents that can happen and typically results in

[69] El Centro, California: https://www.usclimatedata.com/climate/el-centro/california/united-states/usca0332; Heber, CA: https://www.google.com/search?q=climate+data+heber%2C+CA&ei=jtWJYKa8LI3P0PEPrfyQYA&oq=climate+data+heber%2C+CA&gs_lcp=Cgdnd3Mtd2l6EAMyBQghEKABMgUIIRCrAjIFCCEQqwI6BwgAEEcQsANQy0xY5lJgvVVoAXACeACAAW-IAckDkgEDNC4xmAEAoAEBqgEHZ3dzLXdpesgBCMABAQ&sclient=gws-wiz&ved=0ahUKEwimu4T38qHwAhWNJzQIHS0-BAwQ4dUDCA4&uact=5.

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mortalities.[70] On-site workers would be the most exposed population and would be within the zone of significant impact. EPA risk assessment guidance states as follows:[71]

> A boiling liquid, expanding vapor explosion (BLEVE), leading to a fireball that may produce intense heat, may occur if a vessel containing flammable material ruptures explosively as a result of exposure to fire. Heat radiation from the fireball is the primary hazard; vessel fragments and overpressure from the explosion also can result. BLEVEs are generally considered unlikely events; however, if you think a BLEVE is possible at your site, this guidance provides a method to estimate the distance at which radiant heat effects might lead to second degree burns. (See Section 10.3.) You also may want to consider models or

I used the method in this EPA guidance to estimate the distance at which radiant heat from a BLEVE would lead to second degree burns,[72] a significant health impact. My analysis indicates that exposed parties within 0.3 miles (1,584 ft)[73] of an isopentane tank undergoing a BLEVE would experience second degree burns, a significant health impact. The Project Report fails to identify the nearest off-site sensitive receptor, thus failing as an informational document under CEQA. However, numerous on-site workers would be within 1,584 feet of the isopentane tanks and would experience significant adverse health impact during a BLEVE.

III. CUMULATIVE IMPACTS

A cumulative air quality impact analysis identifies other nearby projects, sums their emissions, and compares them to a significance threshold. The Project Report and supporting documents do not contain any cumulative air quality impact analysis. Rather, cumulative impacts are dismissed by arguing no projects occur in the "Heber 1 Area of Potential Effect." The response to ABJC Comment #13, for example, asserts that "[t]here are no other projects occurring or proposed in the Heber 1 Area of Potential Effect."[74] This is wrong.

The "Area of Potential Effect" is described in the Project Report as follows: "The geographic scope of the cumulative area of analysis considers whether cumulative

[70] See summary of BLEVE accidents in Fox Comment 7.2.1, Table 3. See also: Center for Chemical Process Safety, Guidelines for Vapor Cloud Explosion, Pressure Vessel Burst, BLEVE, and Flash Fire Hazards, Second Edition, John Wiley & Sons, Inc., 2010.

[71] U.S. EPA, Risk Management Program Guidance for Offsite Consequence Analysis, Report EPA 550-B-99-009, April 1999, p. 6-2, pdf 74; https://www.epa.gov/sites/default/files/2013-11/documents/oca-chps.pdf.

[72] *Id.*, Reference Table 30, p. 10-24, pdf 122.

[73] A single isopentane tank can hold up to 9,000 gallons of isopentane (Project Report, pdf 344). The density of isopentane is 616 kg/m^3. Thus, the amount of isopentane that would be released if a BLEVE occurred at a single tank full of isopentane = [(616 kg/m^3) (0.0083 lb/gal)/(kg/m^3)](9,000 gal) = **46,015 lb of isopentane**. EPA 1999, Table 30, p. 10-24, pdf 11 indicates for 50,000 lb of isopentane in a fireball, the "distance in miles at which exposure for the duration of fireball may cause second degree burns" is 0.3 miles.

[74] Project Report, #13, pdf 107.

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effects for this Project would be limited to off-site Project impacts that coincide with effects from another past, present, or reasonably foreseeable future actions. This area of overlap is referred to as the "Area of Potential Effect" and is specific to each resource areas as defined by the analysis in the IS."[75]

The Project Report's "area of potential effect" for air quality impacts should be the air basin where the project is located.[76] Alternatively, one could argue that it is the area within an air basin where pollutant isopleths from cumulative projects overlap. This requires ambient air quality modeling, which is missing from the record. However, based on my experience, the proximity of Heber 1 and Heber 2 (1 mile apart) are within the area of potential effect.

Nevertheless, the Project Report asserts that "…no projects occur in relative close proximity to the Heber 1 complex or Heber 1 Area of Potential Effect (including the Heber 2 project located approximately 1 mile away.) Therefore, no significant cumulative effects would occur as a result of the Project."[77] No evidence is provided to support this assertion. Based on the decision in Kings County Farm Bureau v. City of Hanford,[78] all similar projects within the same air basin are considered to be cumulative projects. Thus, as the two projects are 1 mile apart in the same air basin, this is an on the record admission that Heber 1 and Heber 2 are both within the "Area of Potential Effect." Thus, Heber 2, at the very least, is a project that must be analyzed for the Project's cumulative impacts.

III.A Cumulative Construction Air Quality Impacts Are Significant

In my previous comments, I analyzed cumulative construction air quality impacts and demonstrated that they are significant.[79] The Project Report does not analyze cumulative construction air quality impacts.[80] Rather, it dismisses them by arguing as follows:[81]

[75] Project Report, pdf 89.
[76] See, *e.g.*, Kings County Farm Bureau v. City of Hanford (1990), Cal. App. 3d 692. (An EIR was prepared for a proposed coal-fired cogeneration power plant. The court decision held that it was reasonable and practical to include projects of similar type within the same air basin.). See also Gray v. Madera (2008) 167 Cal. App. 4th 1099 (The EIR should have considered whether noise, when added to existing levels, would be significant, rather than assessing the additional amount alone.)
[77] Project Report, pdf 42-43.
[78] Kings County Farm Bureau v. City of Hanford (1990), Cal. App. 3d 692.
[79] Fox Comments, Comment 4, p. 28.
[80] Project Report, pdf 185, 205.
[81] Project Report, pdf 185, item b). See also pdf 42-43.

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Addtionally, emissions from construction equipment would be temporary and not exceed any air quality thresholds or significantly contribute to an existing regional nonattainment condition. Air quality measures would be implemented during construction of the Proposed Project to minimize the potential for fugitive dust and particulate matter releases. Through the application of these measures, the construction of the Project would limit visible dust emissions and particulate matter emissions to be in compliance with Imperial County's approach to minimizing these construction-related emissions. Ozone, which stems from the use of fuel-combusting equipment, would also be limited to the construction phase of the Project; vehicles and equipment would be turned off when not in use and not left idling to minimize unnecessary emissions.

This line of argument is inconsistent with the definition of cumulative impacts under CEQA, which defines a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."[82] The Project Report does not include a cumulative construction air quality analysis and does not rebut my cumulative construction impact analysis, which concluded cumulative construction emissions are significant.

The response to ABJC Comment #13 asserts that "[t]here are no other projects occurring or proposed in the Heber 1 Area of Potential Effect."[83] Heber 2, which is undergoing upgrades over the same time frame as Heber 1, is located 1 mile from Heber 1.[84] This is clearly a cumulative project, with the potential for overlapping construction and operational impacts.

According to reports filed by the Applicant with regulatory agencies, construction at both facilities is currently under way.[85] There is nothing in the Project Report to prevent continuing construction at these two sites from occurring simultaneously. Construction at both of these facilities would emit the same criteria pollutants into the same air basin. As the area where these projects is located is nonattainment for ozone, PM10, and PM2.5, simultaneous construction at these two facilities would emit PM2.5, PM10, VOC, and NOx, cumulatively contributing to existing PM2.5, PM10, and ozone nonattainment status of the basin. This is a significant cumulative ambient air quality impact that is not disclosed or mitigated in the Project Report.

As discussed supra, Heber 1 and Heber 2 are cumulative projects located within 1 mile of each other. According to regulatory reports filed by the Applicant, construction at both facilities is currently under way.[86] Comment I.A.3. There is nothing to prevent construction at these two sites from continuing to occur simultaneously. Simultaneous construction at these two facilities would emit PM2.5, PM10, VOC, and NOx. VOC and NOx are ozone precursors.

[82] CEQA Section 15130[a][1].
[83] Project Report, #13, pdf 107.
[84] Project Report, pdf 44.
[85] Fox Comments, Comment 2.5.
[86] Fox Comments, Comment 2.5.

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As the area where these projects is located is nonattainment for ozone, PM10 and PM2.5, simultaneous construction of Heber 1 and Heber 2 will cumulatively contribute to the existing ozone, PM2.5, and PM10 nonattainment status of the basin, resulting in significant cumulative ambient air quality impacts that are not disclosed in the Project Report. The sum of the construction emissions from these two Projects as reported in their respective Project Reports is summarized in Table 1 and compared to significance thresholds.

Table 1. Cumulative Construction Emissions

	EMISSIONS (lb/day)			
	Heber 1 (a)	Heber 2 (b)	Total	Significance Threshold (lb/day)
NOx	60.6[87]	65.6[88]	115.94	100
ROG	7.03	7.04	14.07	75
PM10	75.13	172[89]	247	150
PM2.5	9.83	9.82	19.65	-

(a) Appendix N: Air Emissions Memorandum, Table 4.

(b) Heber 2 Project Report, pdf 3073-3074, Section 1.0 Construction Emissions, Table 1, which reports emissions in lb/hr for a 12/hr day.

This summary shows that cumulative NOx and PM10 construction emissions from Heber 1 and Heber 2 exceed the construction significance thresholds. Thus, construction NOx and PM10 emissions are cumulatively significant, requiring mitigation and hence CEQA review. The responses do not address this issue.

I.A.1 Worker Health Impacts from the Project's Significant Cumulative Air Quality Impacts Are Significant and Unmitigated.

Imperial County is already in violation of ambient air quality standards for PM2.5, PM10 (24-hour), and ozone (federal 8-hour).[90] Emissions from constructing both Heber 1 and 2 at the same time, as is already in progress, will further deteriorate

[87] The value for NOx, reported in Appendix N, Table 4, is inconsistent with the attached CalEEMod output files on which it is based. Table 4 reports NOx emissions of 57.97 lb/day. However, the CalEEMod outputs in Appendix N indicate that construction NOx emissions in the summer are 2.4361 + 57.9665 = **60.4 lb/day** and in the winter are 2.6758+57.9665 = **60.6 lb/day**.

[88] Heber 2 Project Report, pdf 3074, Table 1. NOx emissions = 5.47 lb/hr x 12 hr/day = **65.6 lb/day**.

[89] The PM10 emissions for Heber 2 are a substantial underestimate as the reported value is only for fuel combustion. It excludes all fugitive PM10 emissions. My comments in that case estimated fugitive PM10 emissions of 172 lb/day. See: Phyllis Fox, Comments on the Initial Study for the Heber 2 Geothermal Repower Project, August 31, 202, p. 23.

[90] U.S. EPA, California Nonattainment/Maintenance Status for Each County by Year for all Criteria Pollutants, May 31, 2020; https://www3.epa.gov/airquality/greenbook/anayo_ca.html.

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existing ambient air quality. Regardless, construction overlap at Heber 1 and Heber 2 would cause a significant cumulative air quality impact as emissions linger in the atmosphere, adding to existing ambient concentrations of ozone (NOx) and PM10.

This is a very serious issue. NOx is an ozone precursor. Imperial County fails the American Lung Association's (ALA's) State of the Air air quality ranking for both ozone and 24-hour PM10.[91] The ALA concludes that '**If you live in Imperial County the air you breathe may put your health at risk**."[92] In the past decade, ozone levels, PM2.5, and PM10 have consistently violated ambient air quality standards set to protect public health in Imperial County. Figures 1 and 2. Any addition to the existing ambient concentrations of NOx and PM10 will cumulatively contribute to these existing violations.

Figure 1. Annual Weighted Average Number of High Ozone Days in Imperial County.[93]

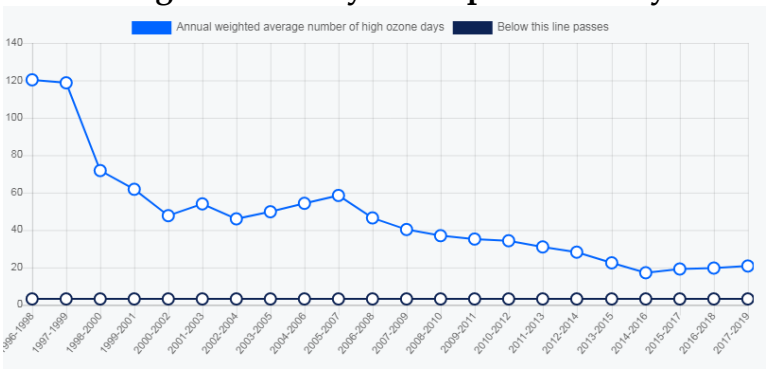
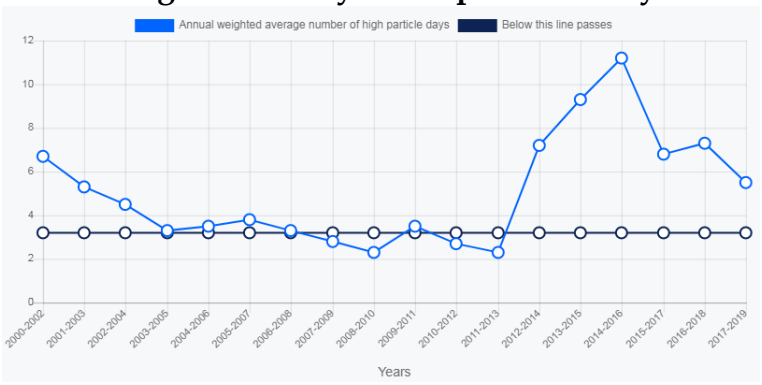


Figure 2. Annual Weighted Average Number of High PM10 Days in Imperial County.[94]



[91] American Lung Association, California: Imperial County; https://www.lung.org/research/sota/city-rankings/states/california/imperial.
[92] *Ibid.* (emphasis added).
[93] *Ibid.*
[94] *Ibid.*

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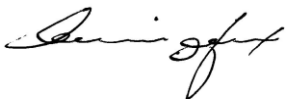
The response to ABJC Comment 14 asserts, based on Appendix N, that "…construction emissions for criteria pollutants and GHG emissions are significantly less than the regulatory thresholds and would not expose sensitive receptors to substantial pollutants."[95] This is not correct.

My Comment 5.1.1, which is not responded to in the Project Report, provides substantial evidence to demonstrate significant impacts on public health from the Project's emissions during construction and operation, especially to construction workers and employees at the site. These include 30 employees routinely present at the site plus 10 to 15 more during construction. Other information indicates 54 full-time equivalent employees. Further, 50 to 60 workers would be required to construct OEC 14.[96] Construction workers and employees at Heber 1 and Heber 2 are sensitive receptors that would be exposed to significant cumulative increases in ozone due to significant cumulative increase in NOx, an ozone precursor, and significant cumulative increases in PM10.[97] Thus, worker health impacts are significant, requiring mitigation and CEQA review.

Sincerely,



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[95] Project Report, Response to Comments, Letter 1, Comment 14, pdf 107.
[96] Fox Comments, Comments 5.1.1.
[97] The Right-to-Know Network, Heber Geothermal Company (Heber 1); https://rtk.rjifuture.org/rmp/facility/100000072253.

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Dr. Fox has over 40 years of experience in the field of environmental engineering, including air pollution control (BACT, BART, MACT, LAER, RACT), greenhouse gas emissions and control, cost effectiveness analyses, water quality and water supply investigations, hydrology, hazardous waste investigations, environmental permitting, nuisance investigations (odor, noise), environmental impact reports, CEQA/NEPA documentation, risk assessments, and litigation support.

EDUCATION

Ph.D. Environmental/Civil Engineering, University of California, Berkeley, 1980.
M.S. Environmental/Civil Engineering, University of California, Berkeley, 1975.
B.S. Physics (with high honors), University of Florida, Gainesville, 1971.

REGISTRATION

Registered Professional Engineer: Arizona (2001-2014: #36701; retired), California (2002-present; CH 6058), Florida (2001-2016; #57886; retired), Georgia (2002-2014; #PE027643; retired), Washington (2002-2014; #38692; retired), Wisconsin (2005-2014; #37595-006; retired)
Board Certified Environmental Engineer, American Academy of Environmental Engineers, Certified in Air Pollution Control (DEE #01-20014), 2002-2014; retired)
Qualified Environmental Professional (QEP), Institute of Professional Environmental Practice (QEP #02-010007, 2001-2015: retired).

PROFESSIONAL HISTORY

Environmental Management, Principal, 1981-present
Lawrence Berkeley National Laboratory, Principal Investigator, 1977-1981
University of California, Berkeley, Program Manager, 1976-1977
Bechtel, Inc., Engineer, 1971-1976, 1964-1966

PROFESSIONAL AFFILIATIONS

American Chemical Society (1981-2010)
Phi Beta Kappa (1970-present)
Sigma Pi Sigma (1970-present)
Who's Who Environmental Registry, PH Publishing, Fort Collins, CO, 1992.
Who's Who in the World, Marquis Who's Who, Inc., Chicago, IL, 11th Ed., p. 371, 1993-present.

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Who's Who of American Women, Marquis Who's Who, Inc., Chicago, IL, 13th Ed., p. 264, 1984-present.
Who's Who in Science and Engineering, Marquis Who's Who, Inc., New Providence, NJ, 5th Ed., p. 414, 1999-present.
Who's Who in America, Marquis Who's Who, Inc., 59th Ed., 2005.
Guide to Specialists on Toxic Substances, World Environment Center, New York, NY, p. 80, 1980.
National Research Council Committee on Irrigation-Induced Water Quality Problems (Selenium), Subcommittee on Quality Control/Quality Assurance (1985-1990).
National Research Council Committee on Surface Mining and Reclamation, Subcommittee on Oil Shale (1978-80)

REPRESENTATIVE EXPERIENCE

Performed environmental and engineering investigations, as outlined below, for a wide range of industrial and commercial facilities including: petroleum refineries and upgrades thereto; reformulated fuels projects; refinery upgrades to process heavy sour crudes, including tar sands and light sweet crudes from the Eagle Ford and Bakken Formations; petroleum, gasoline and ethanol distribution terminals; coal, coke, and ore/mineral export terminals; LNG export, import, and storage terminals; crude-by-rail projects; shale oil plants; crude oil/condensate marine and rail terminals; coal gasification and liquefaction plants; oil and gas production, including conventional, thermally enhanced, hydraulic fracking, and acid stimulation techniques; underground storage tanks; pipelines; compressor stations; gasoline stations; landfills; railyards; hazardous waste treatment facilities; nuclear, hydroelectric, geothermal, wood, biomass, waste, tire-derived fuel, gas, oil, coke and coal-fired power plants; wind farms; solar energy facilities; battery storage facilities; transmission lines; airports; hydrogen plants; petroleum coke calcining plants; coke plants; activated carbon manufacturing facilities; asphalt plants; cement plants; incinerators; flares; manufacturing facilities (e.g., semiconductors, electronic assembly, aerospace components, printed circuit boards, amusement park rides); lanthanide processing plants; ammonia plants; nitric acid plants; urea plants; food processing plants; wineries; almond hulling facilities; composting facilities; grain processing facilities; grain elevators; ethanol production facilities; soy bean oil extraction plants; biodiesel plants; paint formulation plants; wastewater treatment plants; marine terminals and ports; gas processing plants; steel mills; iron nugget production facilities; pig iron plant, based on blast furnace technology; direct reduced iron plant; acid regeneration facilities; railcar refinishing facility; battery manufacturing plants; pesticide manufacturing and repackaging facilities; pulp and paper mills; olefin plants; methanol plants; ethylene crackers; alumina plants, desalination plants; battery storage facilities; data centers; covered lagoon anaerobic digesters with biogas generators and upgrading equipment to produce renewable natural gas and electricity; selective catalytic reduction (SCR) systems; selective noncatalytic reduction (SNCR) systems; halogen acid furnaces; contaminated property

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redevelopment projects (e.g., Mission Bay, Southern Pacific Railyards, Moscone Center expansion, San Diego Padres Ballpark); residential developments; commercial office parks, campuses, and shopping centers; server farms; transportation plans; and a wide range of mines including sand and gravel, hard rock, limestone, nacholite, coal, molybdenum, gold, zinc, and oil shale.

EXPERT WITNESS/LITIGATION SUPPORT

- For plaintiffs-intervenors (Sierra Club), in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications at Rush Island Units 1 and 2 and Labadie Energy Center, assist counsel in evaluating best available control technology (BACT) to reduce SO2 emissions, including wet and dry scrubbing, sorbent injection, and offsets. Case settled. *U.S. and Sierra Club vs. Ameren Missouri*, Case No. 4-11 CV 77 RWS, U.S. District Court, Eastern District of Missouri, Eastern Division, September 30, 2019.
- For the California Attorney General, assist in determining compliance with probation terms in the matter of People v. Chevron USA.
- For plaintiffs, assist in developing Petitioners' proof brief for National Parks Conservation Association et al v. U.S. EPA, Petition for Review of Final Administrative Action of the U.S. EPA, In the U.S. Court of Appeals for the Third Circuit, Docket No. 14-3147.
- For plaintiffs, expert witness in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1997-2000) at the Cemex cement plant in Lyons, Colorado. Reviewed produced documents, prepared expert and rebuttal reports on PSD applicability based on NOx emission calculations for a collection of changes considered both individually and collectively. Deposed August 2011. *United States v. Cemex, Inc.*, In U.S. District Court for the District of Colorado (Civil Action No. 09-cv-00019-MSK-MEH). Case settled June 13, 2013.
- For plaintiffs, in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1988 – 2000) at James De Young Units 3, 4, and 5. Reviewed produced documents, analyzed CEMS and EIA data, and prepared netting and BACT analyses for NOx, SO2, and PM10 (PSD case). Expert report February 24, 2010 and affidavit February 20, 2010. *Sierra Club v. City of Holland, et al.*, U.S. District Court, Western District of Michigan (Civil Action 1:08-cv-1183). Case settled. Consent Decree 1/19/14.
- For plaintiffs, in civil action alleging failure to obtain MACT permit, expert on potential to emit hydrogen chloride (HCl) from a new coal-fired boiler. Reviewed record, estimated HCl emissions, wrote expert report June 2010 and March 2013 (Cost to Install a Scrubber at the Lamar Repowering Project Pursuant to Case-by-Case MACT), deposed August 2010 and

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March 2013. *Wildearth Guardian et al. v. Lamar Utilities Board,* Civil Action No. 09-cv-02974, U.S. District Court, District of Colorado. Case settled August 2013.

- For plaintiffs, expert witness on permitting, emission calculations, and wastewater treatment for coal-to-gasoline plant. Reviewed produced documents. Assisted in preparation of comments on draft minor source permit. Wrote two affidavits on key issues in case. Presented direct and rebuttal testimony 10/27 - 10/28/10 on permit enforceability and failure to properly calculate potential to emit, including underestimate of flaring emissions and omission of VOC and CO emissions from wastewater treatment, cooling tower, tank roof landings, and malfunctions. *Sierra Club, Ohio Valley Environmental Coalition, Coal River Mountain Watch, West Virginia Highlands Conservancy v. John Benedict, Director, Division of Air Quality, West Virginia Department of Environmental Protection and TransGas Development System, LLC,* Appeal No. 10-01-AQB. Virginia Air Quality Board remanded the permit on March 28, 2011 ordering reconsideration of potential to emit calculations, including: (1) support for assumed flare efficiency; (2) inclusion of startup, shutdown and malfunction emissions; and (3) inclusion of wastewater treatment emissions in potential to emit calculations.
- For plaintiffs, expert on BACT emission limits for gas-fired combined cycle power plant. Prepared declaration in support of CBE's Opposition to the United States' Motion for Entry of Proposed Amended Consent Decree. Assisted in settlement discussions. *U.S. EPA, Plaintiff, Communities for a Better Environment, Intervenor Plaintiff, v. Pacific Gas & Electric Company, et al.*, U.S. District Court, Northern District of California, San Francisco Division, Case No. C-09-4503 SI.
- Technical expert in confidential settlement discussions with large coal-fired utility on BACT control technology and emission limits for NOx, SO2, PM, PM2.5, and CO for new natural gas fired combined cycle and simple cycle turbines with oil backup. (July 2010). Case settled.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1998-99) at Gallagher Units 1 and 3. Reviewed produced documents, prepared expert and rebuttal reports on historic and current-day BACT for SO2, control costs, and excess emissions of SO2. Deposed 11/18/09. *United States et al. v. Cinergy, et al.*, In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Settled 12/22/09.
- For plaintiffs, expert witness on MACT, BACT for NOx, and enforceability in an administrative appeal of draft state air permit issued for four 300-MW pet-coke-fired CFBs. Reviewed produced documents and prepared prefiled testimony. Deposed 10/8/09 and 11/9/09. Testified 11/10/09. *Application of Las Brisas Energy Center, LLC for State Air Quality Permit*; before the State Office of Administrative Hearings, Texas. Permit remanded 3/29/10 as LBEC failed to meet burden of proof on a number of issues including MACT.

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Texas Court of Appeals dismissed an appeal to reinstate the permit. The Texas Commission on Environmental Quality and Las Brisas Energy Center, LLC sought to overturn the Court of Appeals decision but moved to have their appeal dismissed in August 2013.

- For defense, expert witness in unlawful detainer case involving a gasoline station, minimart, and residential property with contamination from leaking underground storage tanks. Reviewed agency files and inspected site. Presented expert testimony on July 6, 2009, on causes of, nature and extent of subsurface contamination. *A. Singh v. S. Assaedi,* in Contra Costa County Superior Court, CA. Settled August 2009.
- For plaintiffs, expert witness on netting and enforceability for refinery being upgraded to process tar sands crude. Reviewed produced documents. Prepared expert and rebuttal reports addressing use of emission factors for baseline, omitted sources including coker, flares, tank landings and cleaning, and enforceability. Deposed. *In the Matter of Objection to the Issuance of Significant Source Modification Permit No. 089-25484-00453 to BP Products North America Inc., Whiting Business Unit, Save the Dunes Council, Inc., Sierra Club., Inc., Hoosier Environmental Council et al., Petitioners, B. P. Products North American, Respondents/Permittee,* before the Indiana Office of Environmental Adjudication. Case settled.
- For plaintiffs, expert witness on BACT, MACT, and enforceability in appeal of Title V permit issued to 600 MW coal-fired power plant burning Powder River Basin coal. Prepared technical comments on draft air permit. Reviewed record on appeal, drafted BACT, MACT, and enforceability pre-filed testimony. Drafted MACT and enforceability pre-filed rebuttal testimony. Deposed March 24, 2009. Testified June 10, 2009. *In Re: Southwestern Electric Power Company*, Arkansas Pollution Control and Ecology Commission, Consolidated Docket No. 08-006-P. Recommended Decision issued December 9, 2009 upholding issued permit. Commission adopted Recommended Decision January 22, 2010.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1989-1992) at Wabash Units 2, 3 and 5. Reviewed produced documents, prepared expert and rebuttal report on historic and current-day BACT for NOx and SO2, control costs, and excess emissions of NOx, SO2, and mercury. Deposed 10/21/08. *United States et al. v. Cinergy, et al.*, In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Testified 2/3/09. Memorandum Opinion & Order 5-29-09 requiring shutdown of Wabash River Units 2, 3, 5 by September 30, 2009, run at baseline until shutdown, and permanently surrender SO2 emission allowances.
- For plaintiffs, expert witness in liability phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for three historic modifications (1997-2001) at two portland cement plants involving three cement kilns. Reviewed produced documents, analyzed CEMS data covering subject period, prepared netting analysis for NOx, SO_2 and CO, and prepared expert and rebuttal reports. *United States v. Cemex California*

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Cement, In U.S. District Court for the Central District of California, Eastern Division, Case No. ED CV 07-00223-GW (JCRx). Settled 1/15/09.

- For intervenors Clean Wisconsin and Citizens Utility Board, prepared data requests, reviewed discovery and expert report. Prepared prefiled direct, rebuttal and surrebuttal testimony on cost to extend life of existing Oak Creek Units 5-8 and cost to address future regulatory requirements to determine whether to control or shutdown one or more of the units. Oral testimony 2/5/08. Application for a Certificate of Authority to Install Wet Flue Gas Desulfurization and Selective Catalytic Reduction Facilities and Associated Equipment for Control of Sulfur Dioxide and Nitrogen Oxide Emissions at Oak Creek Power Plant Units 5, 6, 7 and 8, WPSC Docket No. 6630-CE-299.
- For plaintiffs, expert witness on alternatives analysis and BACT for NOx, SO2, total PM10, and sulfuric acid mist in appeal of PSD permit issued to 1200 MW coal fired power plant burning Powder River Basin and/or Central Appalachian coal (Longleaf). Assisted in drafting technical comments on NOx on draft permit. Prepared expert disclosure. Presented 8+ days of direct and rebuttal expert testimony. Attended all 21 days of evidentiary hearing from 9/5/07 – 10/30/07 assisting in all aspects of hearing. *Friends of the Chatahooche and Sierra Club v. Dr. Carol Couch, Director, Environmental Protection Division of Natural Resources Department, Respondent, and Longleaf Energy Associates, Intervener*. ALJ Final Decision 1/11/08 denying petition. ALJ Order vacated & remanded for further proceedings, Fulton County Superior Court, 6/30/08. Court of Appeals of GA remanded the case with directions that the ALJ's final decision be vacated to consider the evidence under the correct standard of review, July 9, 2009. The ALJ issued an opinion April 2, 2010 in favor of the applicant. Final permit issued April 2010.
- For plaintiffs, expert witness on diesel exhaust in inverse condemnation case in which Port expanded maritime operations into residential neighborhoods, subjecting plaintiffs to noise, light, and diesel fumes. Measured real-time diesel particulate concentrations from marine vessels and tug boats on plaintiffs' property. Reviewed documents, depositions, DVDs, and photographs provided by counsel. Deposed. Testified October 24, 2006. *Ann Chargin, Richard Hackett, Carolyn Hackett, et al. v. Stockton Port District*, Superior Court of California, County of San Joaquin, Stockton Branch, No. CV021015. Judge ruled for plaintiffs.
- For plaintiffs, expert witness on NOx emissions and BACT in case alleging failure to obtain necessary permits and install controls on gas-fired combined-cycle turbines. Prepared and reviewed (applicant analyses) of NOx emissions, BACT analyses (water injection, SCR, ultra low NOx burners), and cost-effectiveness analyses based on site visit, plant operating records, stack tests, CEMS data, and turbine and catalyst vendor design information. Participated in negotiations to scope out consent order. *United States v. Nevada Power*. Case settled June 2007, resulting in installation of dry low NOx burners (5 ppm NOx averaged over 1 hr) on four units and a separate solar array at a local business.

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- For plaintiffs, expert witness in appeal of PSD permit issued to 850 MW coal fired boiler burning Powder River Basin coal (Iatan Unit 2) on BACT for particulate matter, sulfuric acid mist and opacity and emission calculations for alleged historic violations of PSD. Assisted in drafting technical comments, petition for review, discovery requests, and responses to discovery requests. Reviewed produced documents. Prepared expert report on BACT for particulate matter. Assisted with expert depositions. Deposed February 7, 8, 27, and 28, 2007. *In Re PSD Construction Permit Issued to Great Plains Energy, Kansas City Power & Light – Iatan Generating Station, Sierra Club v. Missouri Department of Natural Resources, Great Plains Energy, and Kansas City Power & Light.* Case settled March 27, 2007, providing offsets for over 6 million ton/yr of CO2 and lower NOx and SO_2 emission limits.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications of coal-fired boilers and associated equipment. Reviewed produced documents, prepared expert report on cost to retrofit 24 coal-fired power plants with scrubbers designed to remove 99% of the sulfur dioxide from flue gases. Prepared supplemental and expert report on cost estimates and BACT for SO2 for these 24 complaint units. Deposed 1/30/07 and 3/14/07. *United States and State of New York et al. v. American Electric Power*, In U.S. District Court for the Southern District of Ohio, Eastern Division, Consolidated Civil Action Nos. C2-99-1182 and C2-99-1250. Settlement announced 10/9/07.
- For plaintiffs, expert witness on BACT, enforceability, and alternatives analysis in appeal of PSD permit issued for a 270-MW pulverized coal fired boiler burning Powder River Basin coal (City Utilities Springfield Unit 2). Reviewed permitting file and assisted counsel draft petition and prepare and respond to interrogatories and document requests. Reviewed interrogatory responses and produced documents. Assisted with expert depositions. Deposed August 2005. Evidentiary hearings October 2005. *In the Matter of Linda Chipperfield and Sierra Club v. Missouri Department of Natural Resources.* Missouri Supreme Court denied review of adverse lower court rulings August 2007.
- For plaintiffs, expert witness in civil action relating to plume touchdowns at AEP's Gavin coal-fired power plant. Assisted counsel draft interrogatories and document requests. Reviewed responses to interrogatories and produced documents. Prepared expert report "Releases of Sulfuric Acid Mist from the Gavin Power Station." The report evaluates sulfuric acid mist releases to determine if AEP complied with the requirements of CERCLA Section 103(a) and EPCRA Section 304. This report also discusses the formation, chemistry, release characteristics, and abatement of sulfuric acid mist in support of the claim that these releases present an imminent and substantial endangerment to public health under Section 7002(a)(1)(B) of the Resource Conservation and Recovery Act ("RCRA"). *Citizens Against Pollution v. Ohio Power Company*, In the U.S. District Court for the Southern District of Ohio, Eastern Division, Civil Action No. 2-04-cv-371. Case settled 12-8-06.

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- For petitioners, expert witness in contested case hearing on BACT, enforceability, and emission estimates for an air permit issued to a 500-MW supercritical Power River Basin coal-fired boiler (Weston Unit 4). Assisted counsel prepare comments on draft air permit and respond to and draft discovery. Reviewed produced file, deposed (7/05), and prepared expert report on BACT and enforceability. Evidentiary hearings September 2005. *In the Matter of an Air Pollution Control Construction Permit Issued to Wisconsin Public Service Corporation for the Construction and Operation of a 500 MW Pulverized Coal-fired Power Plant Known as Weston Unit 4 in Marathon County, Wisconsin*, Case No. IH-04-21. The Final Order, issued 2/10/06, lowered the NOx BACT limit from 0.07 lb/MMBtu to 0.06 lb/MMBtu based on a 30-day average, added a BACT SO2 control efficiency, and required a 0.0005% high efficiency drift eliminator as BACT for the cooling tower. The modified permit, including these provisions, was issued 3/28/07. Additional appeals in progress.
- For plaintiffs, adviser on technical issues related to Citizen Suit against U.S. EPA regarding failure to update New Source Performance Standards for petroleum refineries, 40 CFR 60, Subparts J, VV, and GGG. *Our Children's Earth Foundation and Sierra Club v. U.S. EPA et al.* Case settled July 2005. CD No. C 05-00094 CW, U.S. District Court, Northern District of California – Oakland Division. Proposed revisions to standards of performance for petroleum refineries published 72 FR 27178 (5/14/07).
- For interveners, reviewed proposed Consent Decree settling Clean Air Act violations due to historic modifications of boilers and associated equipment at two coal-fired power plants. In response to stay order, reviewed the record, selected one representative activity at each of seven generating units, and analyzed to identify CAA violations. Identified NSPS and NSR violations for NOx, SO_2, PM/PM10, and sulfuric acid mist. Summarized results in an expert report. *United States of America, and Michael A. Cox, Attorney General of the State of Michigan, ex rel. Michigan Department of Environmental Quality, Plaintiffs, and Clean Wisconsin, Sierra Club, and Citizens' Utility Board, Intervenors, v. Wisconsin Electric Power Company, Defendant*, U.S. District Court for the Eastern District of Wisconsin, Civil Action No. 2:03-CV-00371-CNC. Order issued 10-1-07 denying petition.
- For a coalition of Nevada labor organizations (ACE), reviewed preliminary determination to issue a Class I Air Quality Operating Permit to Construct and supporting files for a 250-MW pulverized coal-fired boiler (Newmont). Prepared about 100 pages of technical analyses and comments on BACT, MACT, emission calculations, and enforceability. Assisted counsel draft petition and reply brief appealing PSD permit to U.S. EPA Environmental Appeals Board (EAB). Order denying review issued 12/21/05. *In re Newmont Nevada Energy Investment, LLC, TS Power Plant*, PSD Appeal No. 05-04 (EAB 2005).
- For petitioners and plaintiffs, reviewed and prepared comments on air quality and hazardous waste based on negative declaration for refinery ultra low sulfur diesel project located in SCAQMD. Reviewed responses to comments and prepared responses. Prepared declaration and presented oral testimony before SCAQMD Hearing Board on exempt sources (cooling towers) and calculation of potential to emit under NSR. Petition for writ of mandate filed

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March 2005. Case remanded by Court of Appeals to trial court to direct SCAQMD to re-evaluate the potential environmental significance of NOx emissions resulting from the project in accordance with court's opinion. California Court of Appeals, Second Appellate Division, on December 18, 2007, affirmed in part (as to baseline) and denied in part. *Communities for a Better Environment v. South Coast Air Quality Management District and ConocoPhillips and Carlos Valdez et al v. South Coast Air Quality Management District and ConocoPhillips.* Certified for partial publication 1/16/08. Appellate Court opinion upheld by CA Supreme Court 3/15/10. *(2010) 48 Cal.4th 310*.

- For amici seeking to amend a proposed Consent Decree to settle alleged NSR violations at Chevron refineries, reviewed proposed settlement, related files, subject modifications, and emission calculations. Prepared declaration on emission reductions, identification of NSR and NSPS violations, and BACT/LAER for FCCUs, heaters and boilers, flares, and sulfur recovery plants. *U.S. et al. v. Chevron U.S.A.*, Northern District of California, Case No. C 03-04650. Memorandum and Order Entering Consent Decree issued June 2005. Case No. C 03-4650 CRB.
- For petitioners, prepared declaration on enforceability of periodic monitoring requirements, in response to EPA's revised interpretation of 40 CFR 70.6(c)(1). This revision limited additional monitoring required in Title V permits. 69 FR 3203 (Jan. 22, 2004). *Environmental Integrity Project et al. v. EPA* (U.S. Court of Appeals for the District of Columbia). Court ruled the Act requires all Title V permits to contain monitoring requirements to assure compliance. *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008).
- For interveners in application for authority to construct a 500 MW supercritical coal-fired generating unit before the Wisconsin Public Service Commission, prepared pre-filed written direct and rebuttal testimony with oral cross examination and rebuttal on BACT and MACT (Weston 4). Prepared written comments on BACT, MACT, and enforceability on draft air permit for same facility.
- For property owners in Nevada, evaluated the environmental impacts of a 1,450-MW coal-fired power plant proposed in a rural area adjacent to the Black Rock Desert and Granite Range, including emission calculations, air quality modeling, comments on proposed use permit to collect preconstruction monitoring data, and coordination with agencies and other interested parties. Project cancelled.
- For environmental organizations, reviewed draft PSD permit for a 600-MW coal-fired power plant in West Virginia (Longview). Prepared comments on permit enforceability; coal washing; BACT for SO_2 and PM10; Hg MACT; and MACT for HCl, HF, non-Hg metallic HAPs, and enforceability. Assist plaintiffs draft petition appealing air permit. Retained as expert to develop testimony on MACT, BACT, offsets, enforceability. Participate in settlement discussions. Case settled July 2004.
- For petitioners, reviewed record produced in discovery and prepared affidavit on emissions of carbon monoxide and volatile organic compounds during startup of GE 7FA combustion

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turbines to successfully establish plaintiff standing. *Sierra Club et al. v. Georgia Power Company* (Northern District of Georgia).

- For building trades, reviewed air quality permitting action for 1500-MW coal-fired power plant before the Kentucky Department for Environmental Protection (Thoroughbred).
- For petitioners, expert witness in administrative appeal of the PSD/Title V permit issued to a 1500-MW coal-fired power plant. Reviewed over 60,000 pages of produced documents, prepared discovery index, identified and assembled plaintiff exhibits. Deposed. Assisted counsel in drafting discovery requests, with over 30 depositions, witness cross examination, and brief drafting. Presented over 20 days of direct testimony, rebuttal and sur-rebuttal, with cross examination on BACT for NOx, SO_2, and PM/PM10; MACT for Hg and non-Hg metallic HAPs; emission estimates for purposes of Class I and II air modeling; risk assessment; and enforceability of permit limits. Evidentiary hearings from November 2003 to June 2004. *Sierra Club et al. v. Natural Resources & Environmental Protection Cabinet, Division of Air Quality and Thoroughbred Generating Company et al.* Hearing Officer Decision issued August 9, 2005 finding in favor of plaintiffs on counts as to risk, BACT (IGCC/CFB, NOx, SO_2, Hg, Be), single source, enforceability, and errors and omissions. Assist counsel draft exceptions. Cabinet Secretary issued Order April 11, 2006 denying Hearing Offer's report, except as to NOx BACT, Hg, 99% SO2 control and certain errors and omissions.
- For citizens group in Massachusetts, reviewed, commented on, and participated in permitting of pollution control retrofits of coal-fired power plant (Salem Harbor).
- Assisted citizens group and labor union challenge issuance of conditional use permit for a 317,000 ft^2 discount store in Honolulu without any environmental review. In support of a motion for preliminary injunction, prepared 7-page declaration addressing public health impacts of diesel exhaust from vehicles serving the Project. In preparation for trial, prepared 20-page preliminary expert report summarizing results of diesel exhaust and noise measurements at two big box retail stores in Honolulu, estimated diesel PM10 concentrations for Project using ISCST, prepared a cancer health risk assessment based on these analyses, and evaluated noise impacts.
- Assisted environmental organizations to challenge the DOE Finding of No Significant Impact (FONSI) for the Baja California Power and Sempra Energy Resources Cross-Border Transmissions Lines in the U.S. and four associated power plants located in Mexico (DOE EA-1391). Prepared 20-page declaration in support of motion for summary judgment addressing emissions, including CO_2 and NH_3, offsets, BACT, cumulative air quality impacts, alternative cooling systems, and water use and water quality impacts. Plaintiff's motion for summary judgment granted in part. U.S. District Court, Southern District decision concluded that the Environmental Assessment and FONSI violated NEPA and the APA due to their inadequate analysis of the potential controversy surrounding the project, water impacts, impacts from NH_3 and CO_2, alternatives, and cumulative impacts. *Border Power Plant Working Group v. Department of Energy and Bureau of Land Management*, Case No. 02-CV-513-IEG (POR) (May 2, 2003).

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- For Sacramento school, reviewed draft air permit issued for diesel generator located across from playfield. Prepared comments on emission estimates, enforceability, BACT, and health impacts of diesel exhaust. Case settled. BUG trap installed on the diesel generator.
- Assisted unions in appeal of Title V permit issued by BAAQMD to carbon plant that manufactured coke. Reviewed District files, identified historic modifications that should have triggered PSD review, and prepared technical comments on Title V permit. Reviewed responses to comments and assisted counsel draft appeal to BAAQMD hearing board, opening brief, motion to strike, and rebuttal brief. Case settled.
- Assisted California Central Coast city obtain controls on a proposed new city that would straddle the Ventura-Los Angeles County boundary. Reviewed several environmental impact reports, prepared an air quality analysis, a diesel exhaust health risk assessment, and detailed review comments. Governor intervened and State dedicated the land for conservation purposes April 2004.
- Assisted Central California city to obtain controls on large alluvial sand quarry and asphalt plant proposing a modernization. Prepared comments on Negative Declaration on air quality, public health, noise, and traffic. Evaluated process flow diagrams and engineering reports to determine whether proposed changes increased plant capacity or substantially modified plant operations. Prepared comments on application for categorical exemption from CEQA. Presented testimony to County Board of Supervisors. Developed controls to mitigate impacts. Assisted counsel draft Petition for Writ. Case settled June 2002. Substantial improvements in plant operations were obtained including cap on throughput, dust control measures, asphalt plant loadout enclosure, and restrictions on truck routes.
- Assisted oil companies on the California Central Coast in defending class action citizen's lawsuit alleging health effects due to emissions from gas processing plant and leaking underground storage tanks. Reviewed regulatory and other files and advised counsel on merits of case. Case settled November 2001.
- Assisted oil company on the California Central Coast in defending property damage claims arising out of a historic oil spill. Reviewed site investigation reports, pump tests, leachability studies, and health risk assessments, participated in design of additional site characterization studies to assess health impacts, and advised counsel on merits of case. Prepare health risk assessment.
- Assisted unions in appeal of Initial Study/Negative Declaration ("IS/ND") for an MTBE phaseout project at a Bay Area refinery. Reviewed IS/ND and supporting agency permitting files and prepared technical comments on air quality, groundwater, and public health impacts. Reviewed responses to comments and final IS/ND and ATC permits and assisted counsel to draft petitions and briefs appealing decision to Air District Hearing Board. Presented sworn direct and rebuttal testimony with cross examination on groundwater impacts of ethanol spills on hydrocarbon contamination at refinery. Hearing Board ruled 5 to 0 in favor of appellants, remanding ATC to district to prepare an EIR.

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- Assisted Florida cities in challenging the use of diesel and proposed BACT determinations in prevention of significant deterioration (PSD) permits issued to two 510-MW simple cycle peaking electric generating facilities and one 1,080-MW simple cycle/combined cycle facility. Reviewed permit applications, draft permits, and FDEP engineering evaluations, assisted counsel in drafting petitions and responding to discovery. Participated in settlement discussions. Cases settled or applications withdrawn.
- Assisted large California city in federal lawsuit alleging peaker power plant was violating its federal permit. Reviewed permit file and applicant's engineering and cost feasibility study to reduce emissions through retrofit controls. Advised counsel on feasible and cost-effective NOx, SOx, and PM10 controls for several 1960s diesel-fired Pratt and Whitney peaker turbines. Case settled.
- Assisted coalition of Georgia environmental groups in evaluating BACT determinations and permit conditions in PSD permits issued to several large natural gas-fired simple cycle and combined-cycle power plants. Prepared technical comments on draft PSD permits on BACT, enforceability of limits, and toxic emissions. Reviewed responses to comments, advised counsel on merits of cases, participated in settlement discussions, presented oral and written testimony in adjudicatory hearings, and provided technical assistance as required. Cases settled or won at trial.
- Assisted construction unions in review of air quality permitting actions before the Indiana Department of Environmental Management ("IDEM") for several natural gas-fired simple cycle peaker and combined cycle power plants.
- Assisted coalition of towns and environmental groups in challenging air permits issued to 523 MW dual fuel (natural gas and distillate) combined-cycle power plant in Connecticut. Prepared technical comments on draft permits and 60 pages of written testimony addressing emission estimates, startup/shutdown issues, BACT/LAER analyses, and toxic air emissions. Presented testimony in adjudicatory administrative hearings before the Connecticut Department of Environmental Protection in June 2001 and December 2001.
- Assisted various coalitions of unions, citizens groups, cities, public agencies, and developers in licensing and permitting of over 110 coal, gas, oil, biomass, and pet coke-fired power plants generating over 75,000 MW of electricity. These included base-load, combined cycle, simple cycle, and peaker power plants in Alaska, Arizona, Arkansas, California, Colorado, Georgia, Florida, Illinois, Indiana, Kentucky, Michigan, Missouri, Ohio, Oklahoma, Oregon, Texas, West Virginia, Wisconsin, and elsewhere. Prepared analyses of and comments on applications for certification, preliminary and final staff assessments, and various air, water, wastewater, and solid waste permits issued by local agencies. Presented written and oral testimony before various administrative bodies on hazards of ammonia use and transportation, health effects of air emissions, contaminated property issues, BACT/LAER issues related to SCR and SCONOx, criteria and toxic pollutant emission estimates, MACT analyses, air quality modeling, water supply and water quality issues, and methods to reduce

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water use, including dry cooling, parallel dry-wet cooling, hybrid cooling, and zero liquid discharge systems.

- Assisted unions, cities, and neighborhood associations in challenging an EIR issued for the proposed expansion of the Oakland Airport. Reviewed two draft EIRs and prepared a health risk assessment and extensive technical comments on air quality and public health impacts. The California Court of Appeals, First Appellate District, ruled in favor of appellants and plaintiffs, concluding that the EIR "2) erred in using outdated information in assessing the emission of toxic air contaminants (TACs) from jet aircraft; 3) failed to support its decision not to evaluate the health risks associated with the emission of TACs with meaningful analysis," thus accepting my technical arguments and requiring the Port to prepare a new EIR. See *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (August 30, 2001) 111 Cal.Rptr.2d 598.
- Assisted lessor of former gas station with leaking underground storage tanks and TCE contamination from adjacent property. Lessor held option to purchase, which was forfeited based on misrepresentation by remediation contractor as to nature and extent of contamination. Remediation contractor purchased property. Reviewed regulatory agency files and advised counsel on merits of case. Case not filed.
- Advised counsel on merits of several pending actions, including a Proposition 65 case involving groundwater contamination at an explosives manufacturing firm and two former gas stations with leaking underground storage tanks.
- Assisted defendant foundry in Oakland in a lawsuit brought by neighbors alleging property contamination, nuisance, trespass, smoke, and health effects from foundry operation. Inspected and sampled plaintiff's property. Advised counsel on merits of case. Case settled.
- Assisted business owner facing eminent domain eviction. Prepared technical comments on a negative declaration for soil contamination and public health risks from air emissions from a proposed redevelopment project in San Francisco in support of a CEQA lawsuit. Case settled.
- Assisted neighborhood association representing residents living downwind of a Berkeley asphalt plant in separate nuisance and CEQA lawsuits. Prepared technical comments on air quality, odor, and noise impacts, presented testimony at commission and council meetings, participated in community workshops, and participated in settlement discussions. Cases settled. Asphalt plant was upgraded to include air emission and noise controls, including vapor collection system at truck loading station, enclosures for noisy equipment, and improved housekeeping.
- Assisted a Fortune 500 residential home builder in claims alleging health effects from faulty installation of gas appliances. Conducted indoor air quality study, advised counsel on merits of case, and participated in discussions with plaintiffs. Case settled.

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- Assisted property owners in Silicon Valley in lawsuit to recover remediation costs from insurer for large TCE plume originating from a manufacturing facility. Conducted investigations to demonstrate sudden and accidental release of TCE, including groundwater modeling, development of method to date spill, preparation of chemical inventory, investigation of historical waste disposal practices and standards, and on-site sewer and storm drainage inspections and sampling. Prepared declaration in opposition to motion for summary judgment. Case settled.
- Assisted residents in east Oakland downwind of a former battery plant in class action lawsuit alleging property contamination from lead emissions. Conducted historical research and dry deposition modeling that substantiated claim. Participated in mediation at JAMS. Case settled.
- Assisted property owners in West Oakland who purchased a former gas station that had leaking underground storage tanks and groundwater contamination. Reviewed agency files and advised counsel on merits of case. Prepared declaration in opposition to summary judgment. Prepared cost estimate to remediate site. Participated in settlement discussions. Case settled.
- Consultant to counsel representing plaintiffs in two Clean Water Act lawsuits involving selenium discharges into San Francisco Bay from refineries. Reviewed files and advised counsel on merits of case. Prepared interrogatory and discovery questions, assisted in deposing opposing experts, and reviewed and interpreted treatability and other technical studies. Judge ruled in favor of plaintiffs.
- Assisted oil company in a complaint filed by a resident of a small California beach community alleging that discharges of tank farm rinse water into the sanitary sewer system caused hydrogen sulfide gas to infiltrate residence, sending occupants to hospital. Inspected accident site, interviewed parties to the event, and reviewed extensive agency files related to incident. Used chemical analysis, field simulations, mass balance calculations, sewer hydraulic simulations with SWMM44, atmospheric dispersion modeling with SCREEN3, odor analyses, and risk assessment calculations to demonstrate that the incident was caused by a faulty drain trap and inadequate slope of sewer lateral on resident's property. Prepared a detailed technical report summarizing these studies. Case settled.
- Assisted large West Coast city in suit alleging that leaking underground storage tanks on city property had damaged the waterproofing on downgradient building, causing leaks in an underground parking structure. Reviewed subsurface hydrogeologic investigations and evaluated studies conducted by others documenting leakage from underground diesel and gasoline tanks. Inspected, tested, and evaluated waterproofing on subsurface parking structure. Waterproofing was substandard. Case settled.
- Assisted residents downwind of gravel mine and asphalt plant in Siskiyou County, California, in suit to obtain CEQA review of air permitting action. Prepared two declarations analyzing

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air quality and public health impacts. Judge ruled in favor of plaintiffs, closing mine and asphalt plant.

- Assisted defendant oil company on the California Central Coast in class action lawsuit alleging property damage and health effects from subsurface petroleum contamination. Reviewed documents, prepared risk calculations, and advised counsel on merits of case. Participated in settlement discussions. Case settled.
- Assisted defendant oil company in class action lawsuit alleging health impacts from remediation of petroleum contaminated site on California Central Coast. Reviewed documents, designed and conducted monitoring program, and participated in settlement discussions. Case settled.
- Consultant to attorneys representing irrigation districts and municipal water districts to evaluate a potential challenge of USFWS actions under CVPIA section 3406(b)(2). Reviewed agency files and collected and analyzed hydrology, water quality, and fishery data. Advised counsel on merits of case. Case not filed.
- Assisted residents downwind of a Carson refinery in class action lawsuit involving soil and groundwater contamination, nuisance, property damage, and health effects from air emissions. Reviewed files and provided advice on contaminated soil and groundwater, toxic emissions, and health risks. Prepared declaration on refinery fugitive emissions. Prepared deposition questions and reviewed deposition transcripts on air quality, soil contamination, odors, and health impacts. Case settled.
- Assisted residents downwind of a Contra Costa refinery who were affected by an accidental release of naphtha. Characterized spilled naphtha, estimated emissions, and modeled ambient concentrations of hydrocarbons and sulfur compounds. Deposed. Presented testimony in binding arbitration at JAMS. Judge found in favor of plaintiffs.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects from several large accidents as well as routine operations. Reviewed files and prepared analyses of environmental impacts. Prepared declarations, deposed, and presented testimony before jury in one trial and judge in second. Case settled.
- Assisted business owner claiming damages from dust, noise, and vibration during a sewer construction project in San Francisco. Reviewed agency files and PM10 monitoring data and advised counsel on merits of case. Case settled.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects. Prepared declaration in opposition to summary judgment, deposed, and presented expert testimony on accidental releases, odor, and nuisance before jury. Case thrown out by judge, but reversed on appeal and not retried.

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- Presented testimony in small claims court on behalf of residents claiming health effects from hydrogen sulfide from flaring emissions triggered by a power outage at a Contra Costa County refinery. Analyzed meteorological and air quality data and evaluated potential health risks of exposure to low concentrations of hydrogen sulfide. Judge awarded damages to plaintiffs.
- Assisted construction unions in challenging PSD permit for an Indiana steel mill. Prepared technical comments on draft PSD permit, drafted 70-page appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analysis for electric arc furnace and reheat furnace and faulty permit conditions, among others, and drafted briefs responding to four parties. EPA Region V and the EPA General Counsel intervened as amici, supporting petitioners. EAB ruled in favor of petitioners, remanding permit to IDEM on three key issues, including BACT for the reheat furnace and lead emissions from the EAF. Drafted motion to reconsider three issues. Prepared 69 pages of technical comments on revised draft PSD permit. Drafted second EAB appeal addressing lead emissions from the EAF and BACT for reheat furnace based on European experience with SCR/SNCR. Case settled. Permit was substantially improved. See *In re: Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5 (EAB June 22, 2000).
- Assisted defendant urea manufacturer in Alaska in negotiations with USEPA to seek relief from penalties for alleged violations of the Clean Air Act. Reviewed and evaluated regulatory files and monitoring data, prepared technical analysis demonstrating that permit limits were not violated, and participated in negotiations with EPA to dismiss action. Fines were substantially reduced and case closed.
- Assisted construction unions in challenging PSD permitting action for an Indiana grain mill. Prepared technical comments on draft PSD permit and assisted counsel draft appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analyses for heaters and boilers and faulty permit conditions, among others. Case settled.
- As part of a consent decree settling a CEQA lawsuit, assisted neighbors of a large west coast port in negotiations with port authority to secure mitigation for air quality impacts. Prepared technical comments on mobile source air quality impacts and mitigation and negotiated a $9 million CEQA mitigation package. Represented neighbors on technical advisory committee established by port to implement the air quality mitigation program. Program successfully implemented.
- Assisted construction unions in challenging permitting action for a California hazardous waste incinerator. Prepared technical comments on draft permit, assisted counsel prepare appeal of EPA permit to the Environmental Appeals Board. Participated in settlement discussions on technical issues with applicant and EPA Region 9. Case settled.

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- Assisted environmental group in challenging DTSC Negative Declaration on a hazardous waste treatment facility. Prepared technical comments on risk of upset, water, and health risks. Writ of mandamus issued.
- Assisted several neighborhood associations and cities impacted by quarries, asphalt plants, and cement plants in Alameda, Shasta, Sonoma, and Mendocino counties in obtaining mitigations for dust, air quality, public health, traffic, and noise impacts from facility operations and proposed expansions.
- For over 100 industrial facilities, commercial/campus, and redevelopment projects, developed the record in preparation for CEQA and NEPA lawsuits. Prepared technical comments on hazardous materials, solid wastes, public utilities, noise, worker safety, air quality, public health, water resources, water quality, traffic, and risk of upset sections of EIRs, EISs, FONSIs, initial studies, and negative declarations. Assisted counsel in drafting petitions and briefs and prepared declarations.
- For several large commercial development projects and airports, assisted applicant and counsel prepare defensible CEQA documents, respond to comments, and identify and evaluate "all feasible" mitigation to avoid CEQA challenges. This work included developing mitigation programs to reduce traffic-related air quality impacts based on energy conservation programs, solar, low-emission vehicles, alternative fuels, exhaust treatments, and transportation management associations.

SITE INVESTIGATION/REMEDIATION/CLOSURE

- Technical manager and principal engineer for characterization, remediation, and closure of waste management units at former Colorado oil shale plant. Constituents of concern included BTEX, As, 1,1,1-TCA, and TPH. Completed groundwater monitoring programs, site assessments, work plans, and closure plans for seven process water holding ponds, a refinery sewer system, and processed shale disposal area. Managed design and construction of groundwater treatment system and removal actions and obtained clean closure.
- Principal engineer for characterization, remediation, and closure of process water ponds at a former lanthanide processing plant in Colorado. Designed and implemented groundwater monitoring program and site assessments and prepared closure plan.
- Advised the city of Sacramento on redevelopment of two former railyards. Reviewed work plans, site investigations, risk assessment, RAPS, RI/FSs, and CEQA documents. Participated in the development of mitigation strategies to protect construction and utility workers and the public during remediation, redevelopment, and use of the site, including buffer zones, subslab venting, rail berm containment structure, and an environmental oversight plan.

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- Provided technical support for the investigation of a former sanitary landfill that was redeveloped as single family homes. Reviewed and/or prepared portions of numerous documents, including health risk assessments, preliminary endangerment assessments, site investigation reports, work plans, and RI/FSs. Historical research to identify historic waste disposal practices to prepare a preliminary endangerment assessment. Acquired, reviewed, and analyzed the files of 18 federal, state, and local agencies, three sets of construction field notes, analyzed 21 aerial photographs and interviewed 14 individuals associated with operation of former landfill. Assisted counsel in defending lawsuit brought by residents alleging health impacts and diminution of property value due to residual contamination. Prepared summary reports.
- Technical oversight of characterization and remediation of a nitrate plume at an explosives manufacturing facility in Lincoln, CA. Provided interface between owners and consultants. Reviewed site assessments, work plans, closure plans, and RI/FSs.
- Consultant to owner of large western molybdenum mine proposed for NPL listing. Participated in negotiations to scope out consent order and develop scope of work. Participated in studies to determine premining groundwater background to evaluate applicability of water quality standards. Served on technical committees to develop alternatives to mitigate impacts and close the facility, including resloping and grading, various thickness and types of covers, and reclamation. This work included developing and evaluating methods to control surface runoff and erosion, mitigate impacts of acid rock drainage on surface and ground waters, and stabilize nine waste rock piles containing 328 million tons of pyrite-rich, mixed volcanic waste rock (andesites, rhyolite, tuff). Evaluated stability of waste rock piles. Represented client in hearings and meetings with state and federal oversight agencies.

REGULATORY (PARTIAL LIST)

- In December 2020, researched and wrote 23 pages of comments on the Draft Supplemental Recirculated Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2020 A, Focused on Oil and Gas Local Permitting on: (a) significant and unmitigated construction emissions; (b) significant and unmitigated operational emissions; (c) public health and biological impacts of criteria pollutants emissions and ozone; (d) offsets not valid CEQA mitigation.
- In October and December 2020, researched and wrote 46 pages of comments on underestimated and unsupported construction emissions, omitted construction emission sources, failure to consider unique site geotechnical conditions; revised construction emissions; significant construction and operational GHG emissions; GHG mitigation; construction and operational health risks; risk of upset; and cumulative impacts for a facility proposed to upgrade landfill gas to pipeline quality natural gas.

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- In October and November 2020, researched and wrote 37 pages of comments on significant construction impacts, significant operational VOC emissions, and significant public health impacts of new internal floating roof storage tanks at a marine terminal at the Port of Long Beach.
- In September to November 2020, review proposed permit amendment to add HCN emissions from the FCCU to Title V permit for a Houston Refinery and research and write report on methods to measure HCN from FCCUs in situ and remotely.
- In September and October 2020, researched and wrote 14 pages of comments on proposed Leak Detection and Repair (LDAR) program for controlling VOC emissions from a geothermal power plant.
- In August to October 2020, researched and wrote comments on grid-based impacts of San Francisco's proposed building code mandating that new construction be all electric.
- In July and August 2020, researched and wrote comments on groundwater impacts of sea level rise for Final SEIR on crude oil trucking proposal.
- In June to August 2020, researched and wrote 69 pages of comments on inadequate project description, construction impacts, operational air quality impacts, cumulative air quality impacts, public health impacts, valley fever, hazards, geologic impacts, water use, CEC licensing, and extended lifetime impacts for the repower of a geothermal power plant in Imperial County.
- In June 2020, review revised quarry reclamation plan and draft 27 pages of comments on proposed modification.
- In June and July 2020, researched and wrote 23 pages of comments on cement terminal at Port of Stockton on construction impacts, emission baseline, operational emissions, and greenhouse gas mitigation.
- In May to June 2020, review reclamation plan amendment for quarry and research and write 17 page report on hydrology and water quality impacts of proposed amendment.
- In May 2020, researched and wrote 10 pages of comments on FEIR for a new apartment project in Contra Costa County on GHG emissions from vegetation removal, mobile sources, and water use and mitigation for same.
- In March/April 2020, researched and wrote 50 pages of comments on IS/MND for battery energy storage project in San Jose (Hummingbird) on inadequate project description, criteria pollutant and GHG emissions, significant and unmitigated energy impacts, cumulative impacts, construction impacts, public health impacts from BESS accidents, and battery handling and transportation accidents. Wrote 15 pages of responses to comments on vendor specifications, battery composition, cumulative impacts, construction impacts, fire control methods, and battery accidents.

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- In April 2020, researched and wrote 47 pages of comments on IS/MND for data center in Santa Clara (SV1) on operational NOx emissions; out-of-district emissions; interbasin pollutant transport; omitted emission sources; GHG compliance with plans, policies and regulations; indirect GHG emissions; air quality impacts; construction emissions; cumulative impacts; and risk of upset from battery accidents.
- In March 2020, researched and wrote 30 pages of comments on IS/MND for data center in San Jose (Hummingbird) on operational GHG and criteria pollutant emissions, cumulative impacts, and public health risks. Research and write responses to comments.
- In February-March 2020, researched and wrote 30 pages on an IS/MND for a data center in San Jose (Stack) on operational NOx and GHG emissions, cumulative impacts, heath risks, and odor.
- In February 2020, researched and wrote 33 pages of comments on Initial Study for a battery storage facility in Ventura County (Orni) on criteria pollutant and GHG emissions, worker and public health impacts, cumulative impacts, valley fever, and consistency with general plan.
- In February 2020, researched and wrote 20 pages of comments on valley fever in response to applicant's global response to comments on Valley Fever for a wind project in San Diego County.
- In January 2020, researched and wrote 32 pages of comments on the Orni battery storage facility (BESS) on incomplete project description, cumulative GHG and NOx impacts, BESS accidents, and health impacts, including soil contamination and valley fever.
- In January 2020, research and wrote 41 pages of comments on the DEIR for the NuStar Port of Stockton Liquid Bulk Terminal on operational emission calculations, significant NOx emissions, significant GHG emissions. GHG mitigation, and cumulative impacts.
- In December 2019, researched and wrote 3 pages of comments on the Silverstrand Grid battery storage facility on greenhouse gas emissions.
- In December 2019, researched and wrote 15 pages of comments on the Initial Study for the K2 Pure – Chlorine Rail Transportation Curtailment Project, including on air quality baseline, project description, emissions, cancer risks, risk of upset.
- In November 2019, reviewed agency files and researched and wrote 42 pages of comments on the Belridge Solar Project on compliance with local zoning ordinances, water quality impacts, air quality impacts, and worker and public health impacts due to soil contamination and valley fever.
- In October 2019, researched and wrote 49 pages of comments on IS/MND for data center in Santa Clara, CA on operational criteria pollutants (mobile sources, off-site electricity

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generation, emergency generators), ambient air quality impacts, greenhouse gas emissions and mitigation, and cumulative impacts.

- In October 2019, researched and wrote 9 pages of comments on the Application, Statement of Basis and draft Permit to Construct and Temporary Permit to Operate for proposed changes at the Paramount Refinery to facilitate refining of biomass-based feedstock to produce renewable fuels.
- In September 2019, reviewed City of Sunnyvale's file on Google's proposed Central Utility Plant and researched and wrote 34 pages of comments on construction and operational air quality impacts, cumulative impacts, and battery fire and explosion impacts. In October 2019, researched and wrote 15 pages of responses to comments.
- In August 2019, research and wrote 37 pages of comments on the DSEIR for the Le Conte Battery Energy Storage System on GHG emissions, hazards and hazardous material impacts, and health impacts.
- In August 2019, researched and wrote 38 pages of comments on IS/MND for the Hanford-Lakeside Dairy digester Project, Kings County, on project description (piecemealing), cumulative impacts, construction impacts, air quality impacts, valley fever and risk of upset.
- In July 2019, researched and wrote 48 pages of comments on IS/MND for the Five Points Pipeline Dairy Digester Cluster Project, including on air quality, cumulative impacts, worker and public health impacts (including on pesticide-contaminated soils), Valley Fever, construction air quality impacts, and risk of upset.
- In June 2019, researched and wrote 15 pages of responses to comments on IS/MND for SV1 Data Center, including operational NOx emissions, air quality analyses, construction emissions, battery hazards, and mitigation plans for noise, vibration, risk management, storm water pollution, and emergency response and evacuation plans.
- In June 2019, researched and wrote 30 pages of comments on DEIR for the Humboldt Wind Energy Project on fire and aesthetic impacts of transmission line, construction air quality impacts and mitigation, and greenhouse gas emissions.
- In May 2019, researched and wrote 25 pages of comments on the DEIR for the ExxonMobil Interim Trucking for Santa Ynez Phased Restart Project on project description, baseline, and mitigation.
- In April 2019, researched and wrote a 16 page letter critiquing the adequacy of the FEIR for CalAm Desalination Project to support a Monterey County Combined Development Permit, consisting of a Use Permit, an Administrative Permit, and Design Approval for the Desalination Plant and Carmel Valley Pump Station.

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- In April 2019, researched and wrote 22 pages of comments on DEIR for the Eco-Energy Liquid Bulk Terminal at the Port of Stockton on emissions, air quality impact mitigation, and health risk assessment.
- In March 2019, researched and wrote 43 pages of comments on DEIR for Contanda Renewable Diesel Bulk Liquid Terminal at the Port of Stockton on operational emissions, air quality impacts and mitigation and health risks.
- In February 2019, researched and wrote 36 pages of comments on general cumulative impacts, air quality, accidents, and valley fever for IS/MND for biogas cluster project in Kings County.
- In January 2019, researched and wrote 30 pages of comments on air quality and valley fever for IS/MND for energy storage facility in Kings County.
- In December 2018, researched and wrote 11 pages of comments on air quality for IS/MND for biomass gasification facility in Madera County.
- In December 2018, researched and wrote 10 pages of responses to comments on IS/MND for a wind energy project in Riverside County.
- In December 2018, researched and wrote 12 pages of responses to comments on IS/MND for a large Safeway fueling station in Petaluma. The Planning Commission voted unanimously to require an EIR.
- In November 2018, researched and wrote 30 pages of comments on IS/MND on wind energy project in Riverside County on construction health risks, odor impacts, waste disposal, transportation, construction emissions and mitigation and Valley Fever.
- In November 2018, researched and wrote 32 pages of comments on the DEIR for a solar energy generation and storage project in San Bernardino County on hazards, health risks, odor, construction emissions and mitigation, and Valley Fever.
- In September 2018, researched and wrote 36 pages of comments on the FEIR for the Newland Sierra Project including on greenhouse gas emissions, construction emissions, and cumulative impacts.
- In August 2018, researched and wrote 20 pages of comments on the health risk assessment in the IS/MND for a large Safeway fueling station in Petaluma.
- In August 2018, researched and wrote responses to comments on DEIR for the Newland Sierra Project, San Diego County on greenhouse gas emissions, construction emissions, odor, and Valley Fever.
- In July/August 2018, researched and wrote 12 pages of comments on DEIR for proposed Doheny Desal Project, on GHG, criteria pollutant, and TAC emissions and public health impacts during construction and indirect emissions during operation.

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- In June 2018, researched and wrote 12 pages of technical comments rebutting NDDH responses to comments on Meridian Davis Refinery.
- In April 2018, researched and wrote 26 pages of comments on greenhouse gas emissions and mitigation as proposed in the San Diego County Climate Action Plan.
- In April 2018, researched and wrote 24 pages of comments on the FEIR for Monterey County water supply project, including GHG mitigation, air quality impacts and mitigation, and Valley Fever.
- In March-June 2018, researched and wrote 37 pages of comments on the IS/MND for the 2305 Mission College Boulevard Data Center, Santa Clara, California and responded to responses to comments.
- In March 2018, researched and wrote 40 pages of comments on the IS/MND for the Diablo Energy Storage Facility in Pittsburg, California.
- In March 2018, researched and wrote 19 pages of comments on Infill Checklist/Mitigated Negative Declaration for the Legacy@Livermore Project on CalEEMod emission calculations, including NOx and PM10 and construction health risk assessment, including Valley Fever.
- In January 2018, researched and wrote 28 pages of comments on draft Permit to Construct for the Davis Refinery Project, North Dakota, as a minor source of criteria pollutants and HAPs.
- In December 2017, researched and wrote 19 pages of comments on DEIR for the Rialto Bioenergy Facility, Rialto, California.
- In November and December 2017, researched and wrote 6 pages of comments on the Ventura County Air Pollution Control District's Preliminary Determination if Compliance (PDOC) for Mission Rock Energy Center.
- In November 2017, researched and wrote 11 pages of comments on control technology evaluation for the National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry Residual Risk and Technology Review.
- In September and November 2017, prepared comments on revised Negative Declaration for Delicato Winery in San Joaquin County, California.
- In October and November 2017, researched and wrote comments on North City Project Pure Water San Diego Program DEIR/DEIS to reclaim wastewater for municipal use.
- In August 2017, reviewed DEIR on a new residential community in eastern San Diego County (Newland Sierra) and research and wrote 60 pages of comments on air quality, greenhouse gas emissions and health impacts, including Valley Fever.

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- In August 2017, reviewed responses to comments on Part 70 operating permit for IGP Methanol's Gulf Coast Methanol Complex, near Myrtle Grove, Louisiana, and researched and wrote comments on metallic HAP issues.
- In July 2017, reviewed the FEIS for an expansion of the Port of Gulfport and researched and wrote 10 pages of comments on air quality and public health.
- In June 2017, reviewed and prepared technical report on an Application for a synthetic minor source construction permit for a new Refinery in North Dakota.
- In June 2017, reviewed responses to NPCA and other comments on the BP Cherry Point Refinery modifications and assisted counsel in evaluating issues to appeal, including GHG BACT, coker heater SCR cost effectiveness analysis, and SO_2 BACT.
- In June 2017, reviewed Part 70 Operating Permit Renewal/Modification for the Noranda Alumina LC/Gramercy Holdings I, LLC alumina processing plant, St. James, Louisiana, and prepared comments on HAP emissions from bauxite feedstock.
- In May and June 2017, reviewed FEIR on Tesoro Integration Project and prepared responses to comments on the DEIR.
- In May 2017, prepared comments on tank VOC and HAP emissions from Tesoro Integration Project, based on real time monitoring at the Tesoro and other refineries in the SCAQMD.
- In April 2017, prepared comments on Negative Declaration for Delicato Winery in San Joaquin County, California.
- In March 2017, reviewed Negative Declaration for Ellmore geothermal facility in Imperial County, California and prepared summary of issues.
- In March 2017, prepared response to Phillips 66 Company's Appeal of the San Luis Obispo County Planning Commission's Decision Denying the Rail Spur Extension Project Proposed for the Santa Maria Refinery.
- In February 2017, researched and wrote comments on Kalama draft Title V permit for 10,000 MT/day methanol production and marine export facility in Kalama, Washington.
- In January 2017, researched and wrote 51 pages of comments on proposed Title V and PSD permits for the St. James Methanol Plant, St. James Louisiana, on BACT and enforceability of permit conditions.
- In December 2016, researched and wrote comments on draft Title V Permit for Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana, responding to EPA Order addressing enforceability issues.
- In November 2016, researched and wrote comments on Initial Study/Mitigated Negative Declaration for the AES Battery Energy Storage Facility, Long Beach, CA.

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- In November 2016, researched and wrote comments on Campo Verde Battery Energy Storage System Draft Environmental Impact Report.
- In October 2016, researched and wrote comments on Title V Permit for NuStar Terminal Operations Partnership L.P, Stockton, CA.
- In October 2016, prepared expert report, Technical Assessment of Achieving the 40 CFR Part 423 Zero Discharge Standard for Bottom Ash Transport Water at the Belle River Power Plant, East China, Michigan. Reported resulted in a 2 year reduction in compliance date for elimination of bottom ash transport water. 1/30/17 DEQ Letter.
- In September 2016, researched and wrote comments on Proposed Title V Permit and Environmental Assessment Statement, Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana.
- In September 2016, researched and wrote response to "Further Rebuttal in Support of Appeal of Planning Commission Resolution No. 16-1, Denying Use Permit Application 12PLN-00063 and Declining to Certify Final Environmental Impact Report for the Valero Benicia Crude-by-Rail Project.
- In August 2016, reviewed and prepared comments on manuscript: Hutton et al., Freshwater Flows to the San Francisco Bay-Delta Estuary over Nine Decades: Trends Evaluation.
- In August/September 2016, researched and wrote comments on Mitigated Negative Declaration for the Chevron Long Wharf Maintenance and Efficiency Project.
- In July 2016, researched and wrote comments on the Ventura County APCD Preliminary Determination of Compliance and the California Energy Commission Revised Preliminary Staff Assessment for the Puente Power Project.
- In June 2016, researched and wrote comments on an Ordinance (1) Amending the Oakland Municipal Code to Prohibit the Storage and Handling of Coal and Coke at Bulk Material Facilities or Terminals Throughout the City of Oakland and (2) Adopting CEQA Exemption Findings and supporting technical reports. Council approved Ordinance on an 8 to 0 vote on June 27, 2016.
- In May 2016, researched and wrote comments on Draft Title V Permit and Draft Environmental Impact Report for the Tesoro Los Angeles Refinery Integration and Compliance Project.
- In March 2016, researched and wrote comments on Valero's Appeal of Planning Commission's Denial of Valero Crude-by-Rail Project.
- In February 2016, researched and wrote comments on Final Environmental Impact Report, Santa Maria Rail Spur Project.
- In February 2016, researched and wrote comments on Final Environmental Impact Report, Valero Benicia Crude by Rail Project.

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- In January 2016, researched and wrote comments on Draft Programmatic Environmental Impact Report for the Southern California Association of Government's (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy.
- In November 2015, researched and wrote comments on Final Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2015(C) (Focused on Oil and Gas Local Permitting), November 2015.
- In October 2015, researched and wrote comments on Revised Draft Environmental Report, Valero Benicia Crude by Rail Project.
- In September 2015, prepared report, "Environmental, Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, and presented oral testimony on September 21, 2015 before Oakland City Council on behalf of the Sierra Club.
- In September 2015, researched and wrote comments on revisions to two chapters of EPA's Air Pollution Control Cost Manual: Docket ID No. EPA-HQ-OAR-2015-0341.
- In June 2015, researched and wrote comments on DEIR for the CalAm Monterey Peninsula Water Supply Project.
- In April 2015, researched and wrote comments on proposed Title V Operating Permit Revision and Prevention of Significant Deterioration Permit for Arizona Public Service's Ocotillo Power Plant Modernization Project (5 GE LMS100 105-MW simple cycle turbines operated as peakers), in Tempe, Arizona; Final permit appealed to EAB.
- In March 2015, researched and wrote "Comments on Proposed Title V Air Permit, Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana". Client filed petition objecting to the permit. EPA granted majority of issues. In the Matter of Yuhuang Chemical Inc. Methanol Plant, St. James Parish, Louisiana, Permit No. 2560-00295-V0, Issued by the Louisiana Department of Environmental Quality, Petition No. VI-2015-03, Order Responding to the Petitioners' Request for Objection to the Issuance of a Title V Operating Permit, September 1, 2016.
- In February 2015, prepared compilation of BACT cost effectiveness values in support of comments on draft PSD Permit for Bonanza Power Project.
- In January 2015, prepared cost effectiveness analysis for SCR for a 500-MW coal fire power plant, to address unpermitted upgrades in 2000.
- In January 2015, researched and wrote comments on Revised Final Environmental Impact Report for the Phillips 66 Propane Recovery Project. *Communities for a Better Environment et al. v. Contra Costa County et al. Contra Costa County (Superior Court, Contra Costa County, Case No. MSN15-0301, December 1, 2016).*
- In December 2014, researched and wrote "Report on Bakersfield Crude Terminal Permits to Operate." In response, the U.S. EPA cited the Terminal for 10 violations of the Clean Air

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Act. The Fifth Appellate District Court upheld the finding in this report in CBE et al v. San Joaquin Valley Unified Air Pollution Control District and Bakersfield Crude Terminal LLC et al, Super. Ct. No. 284013, June 23, 2017.

- In December 2014, researched and wrote comments on Revised Draft Environmental Impact Report for the Phillips 66 Propane Recovery Project.
- In November 2014, researched and wrote comments on Revised Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project and Crude Unloading Project, Santa Maria, CA to allow the import of tar sands crudes.
- In November 2014, researched and wrote comments on Draft Environmental Impact Report for Phillips 66 Ultra Low Sulfur Diesel Project, responding to the California Supreme Court Decision, *Communities for a Better Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310.*
- In November 2014, researched and wrote comments on Draft Environmental Impact Report for the Tesoro Avon Marine Oil Terminal Lease Consideration.
- In October 2014, prepared: "Report on Hydrogen Cyanide Emissions from Fluid Catalytic Cracking Units", pursuant to the Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, 79 FR 36880.
- In October 2014, researched and wrote technical comments on Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.
- In October 2014, researched and wrote technical comments on the Title V Permit Renewal and three De Minimus Significant Revisions for the Tesoro Logistics Marine Terminal in the SCAQMD.
- In September 2014, researched and wrote technical comments on the Draft Environmental Impact Report for the Valero Crude by Rail Project.
- In August 2014, for EPA Region 6, prepared technical report on costing methods for upgrades to existing scrubbers at coal-fired power plants.
- In July 2014, researched and wrote technical comments on Draft Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.
- In June 2014, researched and wrote technical report on Initial Study and Draft Negative Declaration for the Tesoro Logistics Storage Tank Replacement and Modification Project.
- In May 2014, researched and wrote technical comments on Intent to Approve a new refinery and petroleum transloading operation in Utah.

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- In March and April 2014, prepared declarations on air permits issued for two crude-by-rail terminals in California, modified to switch from importing ethanol to importing Bakken crude oils by rail and transferring to tanker cars. Permits were issued without undergoing CEQA review. One permit was upheld by the San Francisco Superior Court as statute of limitations had run. The Sacramento Air Quality Management District withdrew the second one due to failure to require BACT and conduct CEQA review.
- In March 2014, researched and wrote technical report on Negative Declaration for a proposed modification of the air permit for a bulk petroleum and storage terminal to the allow the import of tar sands and Bakken crude oil by rail and its export by barge, under the New York State Environmental Quality Review Act (SEQRA).
- In February 2014, researched and wrote technical report on proposed modification of air permit for midwest refinery upgrade/expansion to process tar sands crudes.
- In January 2014, prepared cost estimates to capture, transport, and use CO2 in enhanced oil recovery, from the Freeport LNG project based on both Selexol and Amine systems.
- In January 2014, researched and wrote technical report on Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project, Santa Maria, CA. Comments addressed project description (piecemealing, crude slate), risk of upset analyses, mitigation measures, alternative analyses and cumulative impacts.
- In November 2013, researched and wrote technical report on the Phillips 66 Propane Recovery Project, Rodeo, CA. Comments addressed project description (piecemealing, crude slate) and air quality impacts.
- In September 2013, researched and wrote technical report on the Draft Authority to Construct Permit for the Casa Diablo IV Geothermal Development Project Environmental Impact Report and Declaration in Support of Appeal and Petition for Stay, U.S. Department of the Interior, Board of Land Appeals, Appeal of Decision Record for the Casa Diablo IV Geothermal Development Project.
- In September 2013, researched and wrote technical report on Effluent Limitation Guidelines for Best Available Technology Economically Available (BAT) for Bottom Ash Transport Waters from Coal-Fired Power Plants in the Steam Electric Power Generating Point Source Category.
- In July 2013, researched and wrote technical report on Initial Study/Mitigated Negative Declaration for the Valero Crude by Rail Project, Benicia, California, Use Permit Application 12PLN-00063.
- In July 2013, researched and wrote technical report on fugitive particulate matter emissions from coal train staging at the proposed Coyote Island Terminal, Oregon, for draft Permit No. 25-0015-ST-01.

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- In July 2013, researched and wrote technical comments on air quality impacts of the Finger Lakes LPG Storage Facility as reported in various Environmental Impact Statements.
- In July 2013, researched and wrote technical comments on proposed Greenhouse Gas PSD Permit for the Celanese Clear Lake Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June/July 2013, researched and wrote technical comments on proposed Draft PSD Preconstruction Permit for Greenhouse Gas Emission for the ExxonMobil Chemical Company Baytown Olefins Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June 2013, researched and wrote technical report on a Mitigated Negative Declaration for a new rail terminal at the Valero Benicia Refinery to import increased amounts of "North American" crudes. Comments addressed air quality impacts of refining increased amounts of tar sands crudes.
- In June 2013, researched and wrote technical report on Draft Environmental Impact Report for the California Ethanol and Power Imperial Valley 1 Project.
- In May 2013, researched and wrote comments on draft PSD permit for major expansion of midwest refinery to process 100% tar sands crudes, including a complex netting analysis involving debottlenecking, piecemealing, and BACT analyses.
- In April 2013, researched and wrote technical report on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Keystone XL Pipeline on air quality impacts from refining increased amount of tar sands crudes at Refineries in PADD 3.
- In October 2012, researched and wrote technical report on the Environmental Review for the Coyote Island Terminal Dock at the Port of Morrow on fugitive particulate matter emissions.
- In October 2012-October 2014, review and evaluate Flint Hills West Application for an expansion/modification for increased (Texas, Eagle Ford Shale) crude processing and related modification, including netting and BACT analysis. Assist in settlement discussions.
- In February 2012, researched and wrote comments on BART analysis in PA Regional Haze SIP, 77 FR 3984 (Jan. 26, 2012). On Sept. 29, 2015, a federal appeals court overturned the U.S. EPA's approval of this plan, based in part on my comments, concluding "..we will vacate the 2014 Final Rule to the extent it approved Pennsylvania's source-specific BART analysis and remand to the EPA for further proceedings consistent with this Opinion." Nat'l Parks Conservation Assoc. v. EPA, 3d Cir., No. 14-3147, 9/19/15.
- Prepared cost analyses and comments on New York's proposed BART determinations for NOx, SO2, and PM and EPA's proposed approval of BART determinations for Danskammer Generating Station under New York Regional Haze State Implementation Plan and Federal Implementation Plan, 77 FR 51915 (August 28, 2012).

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- Prepared cost analyses and comments on NOx BART determinations for Regional Haze State Implementation Plan for State of Nevada, 77 FR 23191 (April 18, 2012) and 77 FR 25660 (May 1, 2012).
- Prepared analyses of and comments on New Source Performance Standards for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 FR 22392 (April 13, 2012).
- Researched and wrote comments on CASPR-BART emission equivalency and NOx and PM BART determinations in EPA proposed approval of State Implementation Plan for Pennsylvania Regional Haze Implementation Plan, 77 FR 3984 (January 26, 2012).
- Researched and wrote comments and statistical analyses on hazardous air pollutants (HAPs) emission controls, monitoring, compliance methods, and the use of surrogates for acid gases, organic HAPs, and metallic HAPs for proposed National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 76 FR 24976 (May 3, 2011).
- Prepared cost analyses and comments on NOx BART determinations and emission reductions for proposed Federal Implementation Plan for Four Corners Power Plant, 75 FR 64221 (October 19, 2010).
- Prepared cost analyses and comments on NOx BART determinations for Colstrip Units 1- 4 for Montana State Implementation Plan and Regional Haze Federal Implementation Plan, 77 FR 23988 (April 20, 2010).
- For EPA Region 8, prepared report: Revised BART Cost Effectiveness Analysis for Tail-End Selective Catalytic Reduction at the Basin Electric Power Cooperative Leland Olds Station Unit 2 Final Report, March 2011, in support of 76 FR 58570 (Sept. 21, 2011).
- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Selective Catalytic Reduction at the Public Service Company of New Mexico San Juan Generating Station, November 2010, in support of 76 FR 52388 (Aug. 22, 2011).
- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Flue Gas Desulfurization at Coal-Fired Electric Generating Units in Oklahoma: Sooner Units 1 & 2, Muskogee Units 4 & 5, Northeastern Units 3 &4, October 2010, in support of 76 FR 16168 (March 26, 2011). My work was upheld in: *State of Oklahoma v. EPA*, App. Case 12-9526 (10th Cri. July 19, 2013).
- Identified errors in N_2O emission factors in the Mandatory Greenhouse Gas Reporting Rule, 40 CFR 98, and prepared technical analysis to support Petition for Rulemaking to Correct Emissions Factors in the Mandatory Greenhouse Gas Reporting Rule, filed with EPA on 10/28/10.

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- Assisted interested parties develop input for and prepare comments on the Information Collection Request for Petroleum Refinery Sector NSPS and NESHAP Residual Risk and Technology Review, 75 FR 60107 (9/29/10).
- Technical reviewer of EPA's "Emission Estimation Protocol for Petroleum Refineries," posted for public comments on CHIEF on 12/23/09, prepared in response to the City of Houston's petition under the Data Quality Act (March 2010).
- Researched and wrote comments on SCR cost effectiveness for EPA's Advanced Notice of Proposed Rulemaking, Assessment of Anticipated Visibility Improvements at Surrounding Class I Areas and Cost Effectiveness of Best Available Retrofit Technology for Four Corners Power Plant and Navajo Generating Station, 74 FR 44313 (August 28, 2009).
- Researched and wrote comments on Proposed Rule for Standards of Performance for Coal Preparation and Processing Plants, 74 FR 25304 (May 27, 2009).
- Prepared comments on draft PSD permit for major expansion of midwest refinery to process up to 100% tar sands crudes. Participated in development of monitoring and controls to mitigate impacts and in negotiating a Consent Decree to settle claims in 2008.
- Reviewed and assisted interested parties prepare comments on proposed Kentucky air toxic regulations at 401 KAR 64:005, 64:010, 64:020, and 64:030 (June 2007).
- Prepared comments on proposed Standards of Performance for Electric Utility Steam Generating Units and Small Industrial-Commercial-Industrial Steam Generating Units, 70 FR 9706 (February 28, 2005).
- Prepared comments on Louisville Air Pollution Control District proposed Strategic Toxic Air Reduction regulations.
- Prepared comments and analysis of BAAQMD Regulation, Rule 11, Flare Monitoring at Petroleum Refineries.
- Prepared comments on Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electricity Utility Steam Generating Units (MACT standards for coal-fired power plants).
- Prepared Authority to Construct Permit for remediation of a large petroleum-contaminated site on the California Central Coast. Negotiated conditions with agencies and secured permits.
- Prepared Authority to Construct Permit for remediation of a former oil field on the California Central Coast. Participated in negotiations with agencies and secured permits.
- Prepared and/or reviewed hundreds of environmental permits, including NPDES, UIC, Stormwater, Authority to Construct, Prevention of Significant Deterioration, Nonattainment New Source Review, Title V, and RCRA, among others.

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- Participated in the development of the CARB document, *Guidance for Power Plant Siting and Best Available Control Technology*, including attending public workshops and filing technical comments.
- Performed data analyses in support of adoption of emergency power restoration standards by the California Public Utilities Commission for "major" power outages, where major is an outage that simultaneously affects 10% of the customer base.
- Drafted portions of the Good Neighbor Ordinance to grant Contra Costa County greater authority over safety of local industry, particularly chemical plants and refineries.
- Participated in drafting BAAQMD Regulation 8, Rule 28, Pressure Relief Devices, including participation in public workshops, review of staff reports, draft rules and other technical materials, preparation of technical comments on staff proposals, research on availability and costs of methods to control PRV releases, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and cost of low-leak technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pumps and Compressors, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak and seal-less technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 5, Storage of Organic Liquids, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of controlling tank emissions, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors at Petroleum Refinery Complexes, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 22, Valves and Flanges at Chemical Plants, etc, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pump and Compressor Seals, including participation in public workshops, review of staff reports, proposed rules, and other

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supporting technical material, preparation of technical comments on staff proposals, research on availability of low-leak technology, and presentation of testimony before the Board.

- Participated in the development of the BAAQMD Regulation 2, Rule 5, Toxics, including participation in public workshops, review of staff proposals, and preparation of technical comments.
- Participated in the development of SCAQMD Rule 1402, Control of Toxic Air Contaminants from Existing Sources, and proposed amendments to Rule 1401, New Source Review of Toxic Air Contaminants, in 1993, including review of staff proposals and preparation of technical comments on same.
- Participated in the development of the Sunnyvale Ordinance to Regulate the Storage, Use and Handling of Toxic Gas, which was designed to provide engineering controls for gases that are not otherwise regulated by the Uniform Fire Code.
- Participated in the drafting of the Statewide Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries, including participation in workshops, review of draft plans, preparation of technical comments on draft plans, and presentation of testimony before the SWRCB.
- Participated in developing Se permit effluent limitations for the five Bay Area refineries, including review of staff proposals, statistical analyses of Se effluent data, review of literature on aquatic toxicity of Se, preparation of technical comments on several staff proposals, and presentation of testimony before the Bay Area RWQCB.
- Represented the California Department of Water Resources in the 1991 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on a striped bass model developed by the California Department of Fish and Game.
- Represented the State Water Contractors in the 1987 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on natural flows, historical salinity trends in San Francisco Bay, Delta outflow, and hydrodynamics of the South Bay.
- Represented interveners in the licensing of over 20 natural-gas-fired power plants and one coal gasification plant at the California Energy Commission and elsewhere. Reviewed and prepared technical comments on applications for certification, preliminary staff assessments, final staff assessments, preliminary determinations of compliance, final determinations of compliance, and prevention of significant deterioration permits in the areas of air quality, water supply, water quality, biology, public health, worker safety, transportation, site contamination, cooling systems, and hazardous materials. Presented written and oral testimony in evidentiary hearings with cross examination and rebuttal. Participated in technical workshops.

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- Represented several parties in the proposed merger of San Diego Gas & Electric and Southern California Edison. Prepared independent technical analyses on health risks, air quality, and water quality. Presented written and oral testimony before the Public Utilities Commission administrative law judge with cross examination and rebuttal.
- Represented a PRP in negotiations with local health and other agencies to establish impact of subsurface contamination on overlying residential properties. Reviewed health studies prepared by agency consultants and worked with agencies and their consultants to evaluate health risks.

WATER QUALITY/RESOURCES

- Directed and participated in research on environmental impacts of energy development in the Colorado River Basin, including contamination of surface and subsurface waters and modeling of flow and chemical transport through fractured aquifers.
- Played a major role in Northern California water resource planning studies since the early 1970s. Prepared portions of the Basin Plans for the Sacramento, San Joaquin, and Delta basins including sections on water supply, water quality, beneficial uses, waste load allocation, and agricultural drainage. Developed water quality models for the Sacramento and San Joaquin Rivers.
- Conducted hundreds of studies over the past 40 years on Delta water supplies and the impacts of exports from the Delta on water quality and biological resources of the Central Valley, Sacramento-San Joaquin Delta, and San Francisco Bay. Typical examples include:
    1. Evaluate historical trends in salinity, temperature, and flow in San Francisco Bay and upstream rivers to determine impacts of water exports on the estuary;
    2. Evaluate the role of exports and natural factors on the food web by exploring the relationship between salinity and primary productivity in San Francisco Bay, upstream rivers, and ocean;
    3. Evaluate the effects of exports, other in-Delta, and upstream factors on the abundance of salmon and striped bass;
    4. Review and critique agency fishery models that link water exports with the abundance of striped bass and salmon;
    5. Develop a model based on GLMs to estimate the relative impact of exports, water facility operating variables, tidal phase, salinity, temperature, and other variables on the survival of salmon smolts as they migrate through the Delta;
    6. Reconstruct the natural hydrology of the Central Valley using water balances, vegetation mapping, reservoir operation models to simulate flood basins, precipitation records, tree ring research, and historical research;

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7. Evaluate the relationship between biological indicators of estuary health and down-estuary position of a salinity surrogate (X2);
8. Use real-time fisheries monitoring data to quantify impact of exports on fish migration;
9. Refine/develop statistical theory of autocorrelation and use to assess strength of relationships between biological and flow variables;
10. Collect, compile, and analyze water quality and toxicity data for surface waters in the Central Valley to assess the role of water quality in fishery declines;
11. Assess mitigation measures, including habitat restoration and changes in water project operation, to minimize fishery impacts;
12. Evaluate the impact of unscreened agricultural water diversions on abundance of larval fish;
13. Prepare and present testimony on the impacts of water resources development on Bay hydrodynamics, salinity, and temperature in water rights hearings;
14. Evaluate the impact of boat wakes on shallow water habitat, including interpretation of historical aerial photographs;
15. Evaluate the hydrodynamic and water quality impacts of converting Delta islands into reservoirs;
16. Use a hydrodynamic model to simulate the distribution of larval fish in a tidally influenced estuary;
17. Identify and evaluate non-export factors that may have contributed to fishery declines, including predation, shifts in oceanic conditions, aquatic toxicity from pesticides and mining wastes, salinity intrusion from channel dredging, loss of riparian and marsh habitat, sedimentation from upstream land alternations, and changes in dissolved oxygen, flow, and temperature below dams.

- Developed, directed, and participated in a broad-based research program on environmental issues and control technology for energy industries including petroleum, oil shale, coal mining, and coal slurry transport. Research included evaluation of air and water pollution, development of novel, low-cost technology to treat and dispose of wastes, and development and application of geohydrologic models to evaluate subsurface contamination from in-situ retorting. The program consisted of government and industry contracts and employed 45 technical and administrative personnel.
- Coordinated an industry task force established to investigate the occurrence, causes, and solutions for corrosion/erosion and mechanical/engineering failures in the waterside systems (e.g., condensers, steam generation equipment) of power plants. Corrosion/erosion failures

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caused by water and steam contamination that were investigated included waterside corrosion caused by poor microbiological treatment of cooling water, steam-side corrosion caused by ammonia-oxygen attack of copper alloys, stress-corrosion cracking of copper alloys in the air cooling sections of condensers, tube sheet leaks, oxygen in-leakage through condensers, volatilization of silica in boilers and carry over and deposition on turbine blades, and iron corrosion on boiler tube walls. Mechanical/engineering failures investigated included: steam impingement attack on the steam side of condenser tubes, tube-to-tube-sheet joint leakage, flow-induced vibration, structural design problems, and mechanical failures due to stresses induced by shutdown, startup and cycling duty, among others. Worked with electric utility plant owners/operators, condenser and boiler vendors, and architect/engineers to collect data to document the occurrence of and causes for these problems, prepared reports summarizing the investigations, and presented the results and participated on a committee of industry experts tasked with identifying solutions to prevent condenser failures.

- Evaluated the cost effectiveness and technical feasibility of using dry cooling and parallel dry-wet cooling to reduce water demands of several large natural-gas fired power plants in California and Arizona.
- Designed and prepared cost estimates for several dry cooling systems (e.g., fin fan heat exchangers) used in chemical plants and refineries.
- Designed, evaluated, and costed several zero liquid discharge systems for power plants.
- Evaluated the impact of agricultural and mining practices on surface water quality of Central Valley steams. Represented municipal water agencies on several federal and state advisory committees tasked with gathering and assessing relevant technical information, developing work plans, and providing oversight of technical work to investigate toxicity issues in the watershed.

AIR QUALITY/PUBLIC HEALTH

- Prepared or reviewed the air quality and public health sections of hundreds of EIRs and EISs on a wide range of industrial, commercial and residential projects.
- Prepared or reviewed hundreds of NSR and PSD permits for a wide range of industrial facilities.
- Designed, implemented, and directed a 2-year-long community air quality monitoring program to assure that residents downwind of a petroleum-contaminated site were not impacted during remediation of petroleum-contaminated soils. The program included real-time monitoring of particulates, diesel exhaust, and BTEX and time integrated monitoring for over 100 chemicals.
- Designed, implemented, and directed a 5-year long source, industrial hygiene, and ambient monitoring program to characterize air emissions, employee exposure, and downwind environmental impacts of a first-generation shale oil plant. The program included stack

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monitoring of heaters, boilers, incinerators, sulfur recovery units, rock crushers, API separator vents, and wastewater pond fugitives for arsenic, cadmium, chlorine, chromium, mercury, 15 organic indicators (e.g., quinoline, pyrrole, benzo(a)pyrene, thiophene, benzene), sulfur gases, hydrogen cyanide, and ammonia. In many cases, new methods had to be developed or existing methods modified to accommodate the complex matrices of shale plant gases.

- Conducted investigations on the impact of diesel exhaust from truck traffic from a wide range of facilities including mines, large retail centers, light industrial uses, and sports facilities. Conducted traffic surveys, continuously monitored diesel exhaust using an aethalometer, and prepared health risk assessments using resulting data.
- Conducted indoor air quality investigations to assess exposure to natural gas leaks, pesticides, molds and fungi, soil gas from subsurface contamination, and outgasing of carpets, drapes, furniture and construction materials. Prepared health risk assessments using collected data.
- Prepared health risk assessments, emission inventories, air quality analyses, and assisted in the permitting of over 70 1 to 2 MW emergency diesel generators.
- Prepare over 100 health risk assessments, endangerment assessments, and other health-based studies for a wide range of industrial facilities.
- Developed methods to monitor trace elements in gas streams, including a continuous real-time monitor based on the Zeeman atomic absorption spectrometer, to continuously measure mercury and other elements.
- Performed nuisance investigations (odor, noise, dust, smoke, indoor air quality, soil contamination) for businesses, industrial facilities, and residences located proximate to and downwind of pollution sources.

PUBLICATIONS AND PRESENTATIONS (Partial List - Representative Publications)

J.P. Fox, P.H. Hutton, D.J. Howes, A.J. Draper, and L. Sears, Reconstructing the Natural Hydrology of the San Francisco Bay-Delta Watershed, Hydrology and Earth System Sciences, Special Issue: Predictions under Change: Water, Earth, and Biota in the Anthropocene, v. 19, pp. 4257-4274, 2015. http://www.hydrol-earth-syst-sci.net/19/4257/2015/hess-19-4257-2015.pdf. See also: Estimates of Natural and Unimpaired Flows for the Central Valley of California: Water Years 1922-2014 at: https://msb.water.ca.gov/documents/86728/a702a57f-ae7a-41a3-8bff-722e144059d6.

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S-Plus Data Analysis, MathSoft, 6/94.
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Assessment, Control and Remediation of LNAPL Contaminated Sites, API and USEPA, 9/94
Pesticides in the TIE Process, SETAC, 6/96
Sulfate Minerals: Geochemistry, Crystallography, and Environmental Significance, Mineralogical Society of America/Geochemical Society, 11/00.
Design of Gas Turbine Combined Cycle and Cogeneration Systems, Thermoflow, 12/00
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CEQA Update, UC Berkeley Extension, 3/02
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Noise Exposure Assessment: Sampling Strategy and Data Acquisition, AIHA PDC 205, 6/02
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EXHIBIT B

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15 November 2021

RE: Heber 1 Geothermal Repower Project

Dear Ms. Messing,

I write to reply to responses to my comments on the Initial Study and Mitigated Negative Declaration (IS/MND) prepared for the proposed Heber 1 Geothermal Repower Project. I note that the County responded to comments it referenced by number, but it provided no link between the numbers and specific comments. I could not determine whether the County responded to a letter prepared by Adams and Broadwell or the letter I prepared. I therefore did my best to associate the responses to comments I had prepared, based on topic. My qualifications for providing expert comments were provided with my letter of 10 March 2021.

County Response 45: "The site is a developed industrial complex with no existing habitat."

Reply: The County's premise for this conclusion is unsupported and inconsistent with the County's own findings. For one thing, the consulting biologist who visited the site documented 10 species of wildlife there, which confirmed the site provides habitat. Also, many industrial sites are used as habitat by species of wildlife. In my experience, wildlife, including special-status species, often occur on industrial sites such as machine-intensive agriculture (Photos 1 and 2), wind turbine pads (Photo 3). And access roads (Photo 4), sewage treatment facilities, the runways and tarmacs of Naval Air bases, and even on the most intensively industrialized portions of nuclear weapons facilities. I have documented wildlife use of asphalt pads used to cover leaked plutonium (Smallwood 1996, Smallwood et al. 1998). I have documented birds nesting on and within built structures on industrial facilities. And I have reviewed an abundant literature of wildlife use of industrial sites. My experience and the experience of many other ecologists support the standard that habitat is defined by a species' use of the environment (Hall et al. 1997, Morrison et al. 1998, Smallwood 2002), and not by County staff. The standard for determining absence of a species is not by summarily declaring a place absent of habitat, but rather by performing the appropriate surveys to exhaust reasonable opportunities to detect the species.

The County's premise also neglects the aerosphere portion of the project as habitat of many species of wildlife. The aerosphere is a vital habitat element of volant wildlife. Indeed, an entire discipline of ecology has emerged to study this essential aspect of

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habitat – the discipline of aeroecology (Kunz et al. 2008, Davy et al. 2017, Diehl et al. 2017).



Photos 1 and 2. *A pair of California horned larks at their breeding site on bare ground in April 2020, in an agricultural field where safflower and wheat were cultivated to either side. Photos by K. Shawn Smallwood.*



Photo 3. *Male horned lark demonstrates its nesting skills to a watchful female on the bare ground of a wind turbine pad, Altamont Pass Wind Resource Area, 5 April 2017.*

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Photo 4. *Killdeer nest on a graveled wind turbine access road in the Altamont Pass, 26 April 2016.*

County Response 45: "As noted by CRI/CURE, a comprehensive records search for biological resources, vegetation, and sensitive species was performed to identify species that could occupy the proposed project site and surrounding area. All databases used in this research (e.g., IPac, CNDDB, etc.) are managed by public agencies and serve as the standard for determining the biological community present in/near a project site."

Reply: The County asserts a false standard. No standard exists that only public agency-managed databases should be consulted. This is not the standard in science, which includes thousands of peer-reviewed publications based on databases under than IPac or CNDDB, nor is it the standard of CEQA. Another false assertion of the response is that IPac or CNDDB are the standard databases to be consulted to determine the biological community at a project site. This was never the intended purpose of IPac nor CNDDB. CNDDB appropriately posts the following disclaimer: "We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers. Likewise, your contribution of data to the CNDDB is equally important to the maintenance of the CNDDB. …" Similarly, iPac makes no claim of perfect knowledge of species occurrences at or near a site. Below is an explanation for why these databases cannot serve the role the County inappropriately ascribes them.

Spatial distributions of animal populations are naturally dynamic, with centers of activity shifting every generation or so (Taylor and Taylor 1979). Hypotheses for these include the need to exploit forage that has accumulated elsewhere while it depleted at the sites from where the population is shifting, the need to escape predator or parasite loads, and the need of young animals to leave natal areas to form new breeding

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populations. Whatever the reasons, animal populations are not static in their distribution, so past sightings records cannot entirely inform of a species' current locations. A recorded presence of a species in CNDDB informs of the capacity of a site to support the species, but it does not mean the species is always present. Likewise, the reported absence of a species does not necessarily mean the site lacks the capacity to support members of the species nor that the species would continue to be absent from the site. But this latter point goes to another weakness of CNDDB for the purpose the County ascribes it. Absence is never recorded in CNDDB. That is, negative findings from reconnaissance-level surveys and protocol-level detection surveys are never reported to CNDDB. CNDDB does not support the means to track negative findings, nor does it monitor survey effort or survey methods. Lacking these types of contextual data, CNDDB's records can be interpreted only as fortuitous sightings of special-status species. There is no scientific sampling framework to CNDDB, which also relies entirely on volunteer reporting from biologists who were allowed access to whatever property they are reporting from. Many properties have never been surveyed by biologists, and there are many more that have been surveyed by the survey outcomes never reported to CNDDB.

The response also claims that IPac and CNDDB "serve as the standard for determining the biological community present in/near a project site." Partly for the reasons given above, these databases do not determine the presence of biological communities at a site. These databases track sightings records or occurrence potentials of special-status species. Where special-status species are detected during a survey, the investigator might (but often does not) report the detections to CNDDB. Those special-status species that were present at the site but which were undetected, are not recorded to CNDDB. None of the species lacking special status are recorded to CNDDB, and these species compose the majority of species at any given site. In other words, sightings records are of a very small fraction of the biological community at any given site. CNDDB does not inform of biological communities.

An important CEQA objective is to publicly disclose potential environmental impacts of a proposed project so that decision-makers and the public can make more informed decisions over whether and how to proceed with a proposed project. To meet this objective, CEQA does not require use of CNDDB and iPac as the sole databases upon which to inform the public. Nor do detection survey guidelines for any particular species suggest relying solely on CNDDB or iPac for determining habitat suitability at a site. The response asserts exclusionary use of CNDDB and iPac as a false standard, and it asserts a purpose for these databases that was never intended nor scientifically justifiable.

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Public participation with decision-making over proposed projects is another important CEQA objective, and one to which the public can contribute via their observations of special-status species on or near a project site. Observations of the public can be just as informative – and more so – as those of professional biologists, especially regarding cases where biologists commit very little time and effort toward detecting special-status species at a site. eBird is a compilation of observations of the public. It is administered competently by Cornell University Laboratory of Ornithology – the most respected ornithological organization in North America and a leading authority in the world. Nearly 600 scientific papers based on eBird records have been peer-reviewed and published: https://ebird.org/science/ publications. eBird not only serves as a highly useful source of information for predicting the occurrence likelihoods of special-status species, but it helps to meet CEQA's objective of public participation. My review of eBird and iNaturalist identified 56 special-status species of vertebrate wildlife either observed near the project site or whose ranges overlap the site (see Table 1 of my 10 March 2021 letter).

County Response 45: "After a review of the records, a wildlife biologist performed a reconnaissance-level survey of the Project Site" … and "confirmed that the site is completely void of any habitat and sensitive species."

Reply: The survey confirmed no such conclusion that the site is void of habitat and wildlife. Ten species of vertebrate wildlife were detected on the site, 9 of which are protected by the Migratory Bird Treaty Act, as well as California's version of the MBTA. Even had the consultant seen no wildlife at the site, reconnaissance-level surveys in general are not designed nor intended for confirming absence of species. Detection surveys are the types of surveys that have been formulated by species' experts for this purpose. For example, the California Department of Fish and Wildlife committed a large effort to formulate survey guidelines for burrowing owl (CDFW 2012). A reconnaissance-level survey would be useful for recommending which detection surveys to perform and when to perform them. Another purpose of reconnaissance-level surveys is to fortuitously detect species, thereby negating the need for detection surveys. But to be taken seriously, reconnaissance-level surveys need to be performed during the time of year and time of day that makes sense for detecting particular species. Here, the survey was performed in the middle of a July afternoon in Imperial Valley, which does not allow for a representative picture of the site. High temperatures and other conditions during this time of year and time of day are unlikely to present an accurate view of the species present on the Project site.

County Response 45: "Dr. Smallwood's criticism of the on-site surveys speculates on the efficacy of surveys that are used by professionals in this profession."

Reply: My comments do not speculate on the efficacy of surveys used by professionals. Rather, my comments address the severely deficient on-site survey that was performed in the middle of a July day in the Imperial Valley. Based on my years of planning and conducting wildlife surveys, it is evident to me that there was a low likelihood of detecting animal species due to the selected time of year and time of day to conduct the survey. For the survey to provide meaningful information about the species present on

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the site, the time of year and time of day must be adequately considered to determine when species are most active and most detectable. In my professional capacity, I have studied the efficacy of wildlife surveys and have done so throughout my career since 1985, as evidenced by many of my papers in peer-reviewed scientific journals. I studied the efficacy of track counts for mammalian carnivores, of burrow counts for fossorial mammals, of GPS telemetry for golden eagles, of thermal-imaging surveys for nocturnal animals, of live-trapping for small mammals, and of visual scan surveys for behavior observations and for species detections. I have performed thousands of visual scan surveys of the type often referred to as reconnaissance-level surveys, including on industrial sites and in desert environments including in Imperial County. I have surveyed many of the same sites that were surveyed by consulting biologists; my last count of such surveys was more than 150. I have also directly compared survey outcomes between the consulting biologists' reconnaissance-level surveys and my own. I have specifically measured times of year and times of day when species of wildlife are most active and most detectable.

County Response 46: eBird is a data base to which both novices and experts contribute sightings records, so it is not used by professionals.

Reply: Nearly 600 papers have been published by professionals who relied upon eBird data. eBird applies filters to submitted records, and these filters are used by professionals to minimize errors when preparing papers for publication. Although it is true that novices contribute records to eBird, they receive feedback from experts and submitted records often include notes and photos. I have checked many of the notes and photos, and have occasionally found errors such as a juvenile red-tailed hawk identified as a Swainson's hawk. Another flag for potential error is when records identify species far outside their geographic range or outside their migration season. However, these flags are for *potential* errors because it is not uncommon for birds to stray from their normal range or to occur out of season. A means for checking whether anomalous records represent errors is to search for patterns by checking for other sightings of the same species in the same area. Another means for checking on the veracity of records is to notice who entered the record. I am familiar with many of the most experienced naturalists in California. If a lone record of a species within the region is from a reliable source or if it was supported by a clear photo or compelling note, then I am more inclined to trust it. If a lone record is from a source of unknown skill level and it lacks any clear photo or compelling note, then I do not rely on it. In my experience, the vast majority of submitted records have proven accurate.

Ironically, the response goes on to defend the use of CNDDB without addressing my comment that the County used CNDDB inappropriately. As explained in my reply to Response 45, CNDDB is not useful for characterizing the wildlife community nor for determining species' absence. To characterize wildlife communities, intensive multiyear studies are performed using all methods available to detect and count all types of fauna. Such studies are costly and rare, and usually performed to meet academic objectives. The vast majority of studies from which CNDDB records have accumulated were inconsistent with the types of study needed for characterizing wildlife communities.

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CNDDB is a fine tool for CEQA analysis, but not for the way it was used in the analysis of potential impacts related to the proposed project.

County Response 46: The County complains that the quoted assertions were provided without citation, thereby preventing verification.

Reply: I do not know exactly which quoted assertions to which the County refers, because the response number is not linked to comment letters. If the response was to the following quoted statement, then my reply that follows would be appropriate. "We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers. Likewise, your contribution of data to the CNDDB is equally important to the maintenance of the CNDDB. …" As I wrote in my comment letter, the quote appears as a disclaimer by CNDDB. It appears at the bottom of the main web page: https://wildlife.ca.gov/Data/CNDDB/About.

County Response 47: The response asserts that the baseline environment is the operative Heber 1 project, and that nothing would change about it to affect wildlife.

Reply: My comments identify specific changes to the project, which would include at least 1,820 m of security fence and 925 m of electric distribution lines, and the addition of 2 ORMAT energy converters and 2 above-ground, 10,000-gallon, isopentane storage tanks. I commented that these new structures would pose new collision hazards to wildlife for the subsequent 30 years of operations. The County's response to my comments neither acknowledge these project changes, nor addresses the significant impacts on species that could result.

County Response 48: The response claims that my comment is vague because I did not name the species for which occurrence likelihood analysis was inconsistent.

Reply: The County response is wrong. I cited the page (page 20) where the County makes the errors, and I cited my Table 1 which identifies the species for which occurrence likelihood analysis was inconsistent, such as the Yellow warbler, *Setophaga petechia*, Western mastiff bat, *Eumops perotis*, and Western yellow bat, *Lasiurus xanthinus*.

County Response 49: The County claims that my Table 1 was based on eBird.

Reply: My Table 1 was based on both eBird and iNaturalist. Note that I did not use either of these databases to determine absence of any species, which is exactly how the County misused IPac and CNDDB.

County Response 49: COA-BIO-1 through COA-BIO-4 would prevent impacts to wildlife.

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Reply: The measures proposed are not preventative; they are take-minimization measures. All four of the measures are intended to minimize take during construction, but do nothing to avoid, minimize, rectify or compensate for impacts that would happen over the subsequent 30 years of operations. None of the measures would prevent collision mortality, which is a potentially significant impact due to new structures that would pose new collision hazards to wildlife for the subsequent 30 years of operations. And although the proposed measures should be implemented should the project go forward, they typically avoid impacts to very few animals because wildlife are proficient at hiding their nest and roost sites. At best, the proposed measures would minimize take to a small fraction of animals at the site at the time of construction.

County Response 50: The assertion is repeated that the project site is completely void of habitat and of wildlife species.

Reply: This assertion was readily refuted by the project's consultant who documented 10 species of wildlife at the site even though the survey was performed mid-day in July – a time date least likely to detect wildlife.

County Response 51: The County says that my analogy of wildlife species occupying the last remaining patches of habitat as a game of musical chairs is speculative.

Reply: My analogy is based on my years of experience surveying for wildlife and a well-documented process known as habitat fragmentation (Smallwood 2015), which is the diminishment and increasing separation of habitat patches or fragments. It is regarded by ecologists and conservation biologists as one of the two greatest threats to plants and animals – the other major threat being that of habitat loss. As habitat fragments into smaller, isolated patches, species of wildlife tend to load into the remaining fragments, at least temporarily resulting in greater species richness than one might expect. For example, burrowing owls are on the decline in California as their traditional habitat is being destroyed for various types of development, and as burrowing owls have declined, they have more often been detected on construction sites and other highly disturbed sites. Burrowing owls will try to survive in whatever environmental footholds they can, including where they are under threat from heavy machinery. If the owls can survive long enough to produce chicks, then they will use industrial sites. If this is the only type of environment humans will leave for species such as burrowing owls, then they will try their best to survive in it.

The musical chairs pattern of species' occurrence is a pattern I have noticed in my own surveys for wildlife, even in highly disturbed environments. I recently surveyed a site that had been severely damaged by decades of hydraulic mining followed by decades of testing of rocket engines, and in the meantime surrounded by residential and commercial development. As damaged as the site appears today, with all the industrial infrastructure standing atop soilless cobble and surrounded by urban sprawl, in less than three hours I detected 34 species of wildlife, including 8 special-status species – one of them a listed species. At another site I recently surveyed, a biomass electrical generation plant had just been decommissioned, leaving hard-packed ground with

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scattered patches of ruderal vegetation. It was bordered by an operative gravel mining operation and bare-floor nut orchards. But it was the only place where many species of wildlife in the region could find opportunities for stop-over or staging to reach other destinations. The gravel mining operation also included a small retention pond, much like that of the Heber 1 project site. This retention pond along with the open space of the proposed project site drew the attention of many volant animals. During my reconnaissance survey, I saw 30 species of wildlife at this highly degraded site, including 7 special-status species with 2 of them listed. I can cite many more examples of this type of species loading onto the last remaining patches of what the species regard as habitat.

My musical chairs analogy includes the end of the music, when only the last chair remains. This part of the analogy is also true to experience, and I can cite many examples of it, but I will mention only two. Burrowing owls in Yolo County can serve as one example. I once monitored multiple populations of burrowing owls in Yolo County, but these populations were displaced by developments, one after the other. Burrowing owls showed up here and there, including on construction sites and in places that conventional wisdom would have ruled out. The last known breeding pair nested under a stand of large trees next to a new hotel in 2019. Their last "chair" was in a setting – under trees – that was atypical of the species. But with even more of their foraging habitat taken by commercial development that year, their last chair was pulled out from under them. It appears that the burrowing owl has been extirpated from Yolo County.

The second example is the endangered Fresno kangaroo rat (*Dipodomys nitratoides*). I worked to conserve this species for 13 years on three fragments of habitat that looked little like the environment where they thrived a century earlier (we know this from records of naturalists of that time). The first chair was pulled when one of the three sites was laser-planed to prepare for a high-value commercial crop. The second was pulled by poor management decisions that choked out the species with dense stands of one type of plant. Fresno kangaroo rats are now residing on their last chair until the music stops and this last chair is also pulled from the kangaroo rat's world. My analogy is not speculative; it represents what has been happening time and again and will likely continue until there is little left in the world of any human interest.

County Response 52: The Count complains that I cited no laws, regulations or statutes requiring analysis of aerial habitat of wildlife.

Reply: Except for the cases of nest structures, roost sites, and other special habitat features, the laws, regulations and statutes regarding wildlife apply to habitat. Habitat for many species includes those portions of the aerosphere that they use (Kunz et al. 2008, Davy et al. 2017, Diehl et al. 2017). No additional laws, regulations or statutes need to be cited because they are the same laws, regulations and statutes that apply to terrestrial habitat.

County Response 52: The County says that if such authorities exist regarding aerial portions of habitat, they would apply to every building, structure, and development.

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Reply: Many guidelines and best practices guidelines have been formulated to minimize collision impacts of wildlife with anthropogenic structures, including with buildings, utility lines, communication towers, and wind turbines.

County Response 52: "The suggestion of absence of evidence is not evidence."

Reply: It is unclear which comment this response refers, but its context likely has something to do with the collision mortality estimates I cited for the types of structures the project proposes. The estimates I cited were empirical, meaning they were based on data from scientific measurements. The point of making such estimates is to apply them to situations where the estimates can predict outcomes. My application of the estimates was appropriate, and the estimates predict substantial impacts to wildlife that would likely be caused by the project. The estimates support a fair argument for the need to prepare an EIR to appropriately analyze potential project impacts to wildlife.

County Response 53: A complaint is made about views having been made regarding certain laws.

Reply: Without knowing which comment the response goes to, I am unable to reply except to generally state that given my professional expertise as a biologist, the scope of my comments pertain to biological impacts from a technical and scientific perspective.

County Response 54: "No new transmission lines, fencing or changes to Heber 1 fencing are proposed. Structures would be located in developed areas surrounded by existing structures."

Reply: The response misleads by conveniently redefining new structures as those built outside the existing layout of structures. New structures are proposed that present significant biological impacts requiring effective and enforceable mitigation measures, even though most of these new structures would occur within the bounds of the existing project, including the retention pond. New structures along with existing structures would be assigned the new condition of causing another 3 decades of chronic collision-mortality impacts to wildlife.

County Response 54: The County speculates that my use of collision fatality rates had been drawn from utility solar projects that are unrepresentative of the scale of the structures to occur in the proposed project.

Reply: In fact, the collision mortality along fences and transmission lines were drawn from a wide range of project sizes. The County provides no basis for its assertion, thus qualifying it as speculation. Here, the power blocks that I used as surrogates for proposed structures such as the ORMAT energy converters were for the same-sized solar projects, and I therefore did not need to explore a scale effect for the power blocks . It is possible, however, that collision fatalities with the power blocks in solar projects would number more or fewer than those with Heber 1's proposed structures due to a difference in scale, i.e., size. The lengths of fences and transmission lines that were monitored at solar projects varied considerably, so I had the basis for testing for scale

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effects of these structures. I regressed estimated fatality rates on the lengths of transmission line and fence used to generate the fatality estimates (Figures 1 and 2). I found no significant effects of length of transmission line nor of the fence on collision fatality rates. My original predictions of collision mortality therefore stand.

Figure 1. *Estimated fatalities/km of transmission line regressed on km of transmission line among solar projects analyzed in Smallwood (2020).*

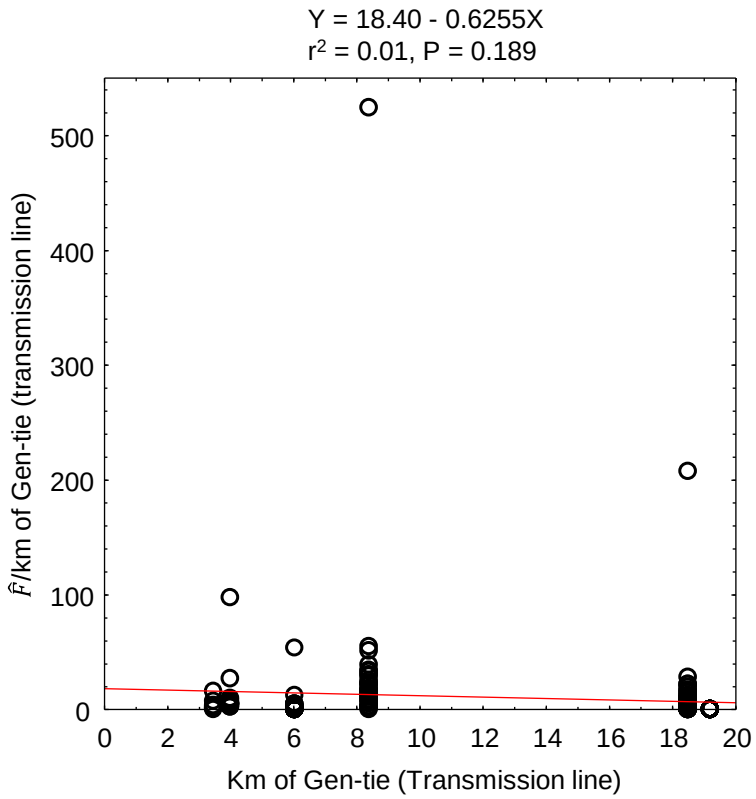

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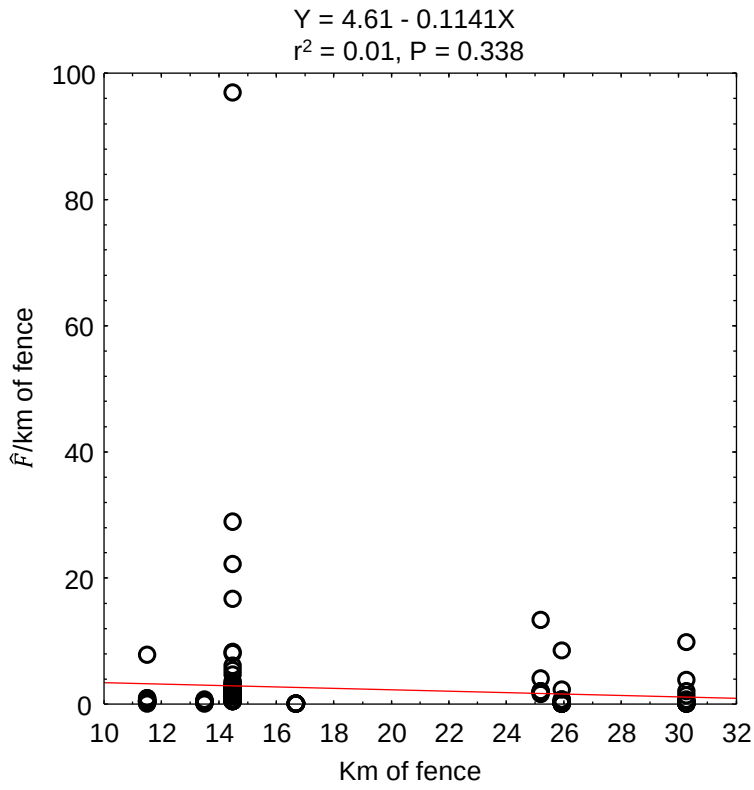
Figure 2. *Estimated fatalities/km of fence regressed on km of fence among solar projects analyzed in Smallwood (2020).*



County Response 54: The County argues that the solar projects from which I drew collision fatality estimates were green fields, thereby disqualifying them as suitable comparisons to potential impacts at the proposed Heber 1 project, which already exists.

Reply: The County's argument is speculative and unsupported. The County's argument implies that birds habituate to hazards in their airspace. Whether birds habituate to such hazards has been looked into, most often in the context of wind turbine collision mortality. My most recent test of habituation revealed that resident songbirds might show some capacity for habituation when they are assisted by contrast painting of the structures that pose the hazard, but not migrants nor raptors (K. S. Smallwood, unpublished data). Without the assistance of contrast painting, fatality rates continued unchanged for years, and showed no change other than reflections of multi-annual cycles of abundance unique to each species.

Once structures are built into a bird species' airspace, that species' collision risk with those structures does not depend on what existed at the site before. Among the wind energy repowering projects I have worked with over the last 15 years, I have seen no difference in fatality rates between new turbines built onto green fields versus those built exactly where the old turbines used to operate. The substantial collision risk factors have been terrain and wind. Collision risk applies to birds flying through the airspace that exists at the time of the flight, and not what existed there last year.

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County Responses 55 –57: The County argues that its four conditions would prevent the impacts to wildlife that it also argues would not happen because wildlife do not occur on the project site.

Reply: As I explained earlier, I concur with the implementation of the four measures proposed, but they must be imposed as enforceable mitigation measures and I disagree that they would prevent impacts or that they would reduce impacts to less-than-significant levels. The measures proposed are take-minimization measures, but would not prevent impacts. Contrary to the County's claim, CAO-BIO 3 would not be consistent with CDFW (2012) guidelines, which do not recommend preconstruction surveys without first having performed detection surveys.

County Response 57: The County takes issue with my characterization of the focused Mastiff bat survey as a preconstruction survey, which it then labels as a preconstruction survey.

Reply: In effect, due to the proposed timing of the survey, it would be a preconstruction survey. A focused survey is typically performed for the purpose of informing the CEQA review and the consumers of that review. Performing the survey after CEQA review fails to inform decision-makers and the public, nor does it inform the formulation of an appropriate mitigation plan.

Errata to the MND

I disagree with the change to the IS/MND to Less that Significant Impact under Biological Resources (d). The IS/MND does not analyze potential project impacts to flying birds that could be caused by additional structures built into the airspace used by birds to move through the region. My analysis of potential impacts reveal substantial collision mortality would be caused by new structures, let alone by existing structures allowed to operate another 30 years. The errata claims that no sensitive bird species occur at the project site, but this claim neglects the 10 species documented at the site by Chambers Group (2019:App. D), 9 of which are protected by the Migratory Bird Treaty Act. Moreover, it is important to again emphasize that these species were identified during a survey performed in the heat of a July day when wildlife would least likely be detectable, and by a type of survey unsuited for supporting determinations of absence of special-status species. Additionally, publicly available data indicates the presence of 42 special-status species of birds in the area of the project (see Table 1 of my 10 March 2021 comment letter), which means there is a high likelihood of the project's structures interfering with the movement of wildlife in the region. Furthermore, the project would eliminate two of the site's three existing retention ponds, which are likely used by many of the 42 special-status species of birds and by the 12 special-status species of bats known to the area.

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Thank you for your attention,



Shawn Smallwood, Ph.D.

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Curriculum Vitae

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Born May 3, 1963 in
Sacramento, California.
Married, father of two.

Ecologist

Expertise

- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;
- Wildlife monitoring and field study using GPS, thermal imaging, behavior surveys;
- Using systems analysis and experimental design principles to identify meaningful ecological patterns that inform management decisions.

Education

Ph.D. Ecology, University of California, Davis. September 1990.
M.S. Ecology, University of California, Davis. June 1987.
B.S. Anthropology, University of California, Davis. June 1985.
Corcoran High School, Corcoran, California. June 1981.

Experience

- 704 professional publications, including:
- 89 peer reviewed publications
- 24 in non-reviewed proceedings
- 589 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 92 public presentations of research results

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC reviewed the science underlying the Alameda County Avian Protection Program, and advised

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the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Part-time Lecturer, 1998-2005, California State University, Sacramento. Instructed Mammalogy, Behavioral Ecology, and Ornithology Lab, Contemporary Environmental Issues, Natural Resources Conservation.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Informed academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws. Testified at public hearings on endangered species issues.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning, and quantitative assessment of land units for their conservation and restoration opportunities basedon ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County

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to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science, *U.C. Davis*. Under Dr. Shu Geng's mentorship, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Managed and analyzed a data base of energy use in California agriculture. Assisted with landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing statewide mountain lion track count for long-term monitoring.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District, I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a $718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin, I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

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Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founds of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al*. v. Rockwell International *et al*., No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a $553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

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Workshops on HCPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a "properly functioning HCP." Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson's hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersion of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

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Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

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- Jersey Industrial Complex Rancho Cucamonga (2021; 20);
- 1188 Champions Drive Parking Garage Staff Report, San Jose (2021; 5);
- San Pedro Mountain, Pacifica (2021; 22);
- Pixior Warehouse IS/MND, Hesperia (2021; 29);
- 2nd Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2021; 9);
- Hearn Veterans Village IS/MND, Santa Rosa (2021; 23);
- Second visit, Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2021; 11);
- Replies on Station East Residential/Mixed Use EIR, Union City (2021; 26);
- Schulte Logistics Centre EIR, Tracy (2021; 30);
- 4150 Point Eden Way Industrial Development EIR, Hayward (2021; 13);
- Airport Business Centre IS/MND, Manteca (2021; 27);
- Dual-branded Hotel IS/MND, Santa Clara (2021; 26);
- Legacy Highlands Specific Plan EIR, Beaumont (2021; 47);
- UC Berkeley LRDP and Housing Projects #1 and #2 EIR (2021; 27);
- Santa Maria Airport Business Park EIR, Santa Maria (2021; 27);
- Replies on Coachella Valley Arena EIR Addendum, Thousand Palms (2021; 20);
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- Inland Harbor Warehouse NOD, Ontario (2021; 8);
- Alvarado Specific Plan DEIR, La Mesa (2021; 35);
- Harvill Avenue and Rider Street Terminal Project MND, Riverside (2021; 23);
- Gillespie Field EIR Addendum, El Cajon (2021; 28);
- Heritage Wind Energy Project section 94-c siting process, New York (2021: 99);
- Commercial Street Hotels project Site Plans, Oakland (2021; 19);
- Heber 1 Geothermal Repower Project MND, El Centro (2021; 11);
- Citrus-Slover Warehouse Project MND, Fontana (2021; 20);
- Scott Ranch Project RDEIR (Davidon Homes), Petaluma (2021; 31);
- Replies on StratosFuel Renewable H2 Project MND, Victorville (2021; 5);
- StratosFuel Renewable H2 Project MND, Victorville (2021; 25);
- Replies on PARS Global Storage MND, Murietta (2021; 22);
- Baldwin-Zacharias Master Plans EIR, Patterson (2021; 38);
- 1000 Gibraltar Drive EIR, Milpitas (2021; 20);
- Mango Avenue Industrial Warehouse Project, Fontana, MND (2021; 20);
- Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2021; 25);
- Replies on UCSF Comprehensive Parnassus Heights Plan EIR (2021; 13);
- 14 Charles Hill Circle Design Review (2021; 11);
- SDG Commerce 217 Warehouse IS, American Canyon (2021; 26);
- Mulqueeney Ranch Wind Repowering Project DSEIR (2021; 98);
- Clawiter Road Industrial Project IS/MND, Hayward (2021; 18);
- Garnet Energy Center Stipulations, New York (2020);
- Heritage Wind Energy Project, New York (2020: 71);
- Ameresco Keller Canyon RNG Project IS/MND, Martinez (2020; 11);
- Cambria Hotel Project Staff Report, Dublin (2020; 19);
- Central Pointe Mixed-Use Staff Report, Santa Ana (2020; 20);
- Oak Valley Town Center EIR Addendum, Calimesa (2020; 23);

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- Coachillin Specific Plan MND Amendment, Desert Hot Springs (2020; 26);
- Stockton Avenue Hotel and Condominiums Project Tiering to EIR, San Jose (2020; 19);
- Cityline Sub-block 3 South Staff Report, Sunyvale (2020; 22);
- Station East Residential/Mixed Use EIR, Union City (2020; 21);
- Multi-Sport Complex & Southeast Industrial Annexation Suppl. EIR, Elk Grove (2020; 24);
- Sun Lakes Village North EIR Amendment 5, Banning, Riverside County (2020; 27);
- 2nd comments on 1296 Lawrence Station Road, Sunnyvale (2020; 4);
- 1296 Lawrence Station Road, Sunnyvale (2020; 16);
- Mesa Wind Project EA, Desert Hot Springs (2020; 31);
- 11th Street Development Project IS/MND, City of Upland (2020; 17);
- Vista Mar Project IS/MND, Pacifica (2020; 17);
- Emerson Creek Wind Project Application, Ohio (2020; 64);
- Replies on Wister Solar Energy Facility EIR, Imperial County (2020; 12);
- Wister Solar Energy Facility EIR, Imperial County (2020; 28);
- Crimson Solar EIS/EIR, Mojave Desert (2020, 35) not submitted;
- Sakioka Farms EIR tiering, Oxnard (2020; 14);
- 3440 Wilshire Project IS/MND, Los Angeles (2020; 19);
- Replies on 2400 Barranca Office Development Project EIR, Irvine (2020; 8);
- 2400 Barranca Office Development Project EIR, Irvine (2020; 25);
- Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 4);
- 2nd comments on Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 8);
- Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 3);
- Lots 4-12 Oddstad Way Project IS/MND, Pacifica (2020; 16);
- Declaration on DDG Visalia Warehouse project (2020; 5);
- Terraces of Lafayette EIR Addendum (2020; 24);
- AMG Industrial Annex IS/MND, Los Banos (2020; 15);
- Replies to responses on Casmalia and Linden Warehouse, Rialto (2020; 15);
- Clover Project MND, Petaluma (2020; 27);
- Ruby Street Apartments Project Env. Checklist, Hayward (2020; 20);
- Replies to responses on 3721 Mt. Diablo Boulevard Staff Report (2020; 5);
- 3721 Mt. Diablo Boulevard Staff Report (2020; 9);
- Steeno Warehouse IS/MND, Hesperia (2020; 19);
- UCSF Comprehensive Parnassus Heights Plan EIR (2020; 24);
- North Pointe Business Center MND, Fresno (2020; 14);
- Casmalia and Linden Warehouse IS, Fontana (2020; 15);
- Rubidoux Commerce Center Project IS/MND, Jurupa Valley (2020; 27);
- Haun and Holland Mixed Use Center MND, Menifee (2020; 23);
- First Industrial Logistics Center II, Moreno Valley IS/MND (2020; 23);
- GLP Store Warehouse Project Staff Report (2020; 15);
- Replies on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 29);
- 2nd comments on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 34);
- Beale WAPA Interconnection Project EA & CEQA checklist (2020; 30);
- Levine-Fricke Softball Field Improvement Addendum, UC Berkeley (2020; 16);
- Greenlaw Partners Warehouse and Distribution Center Staff Report, Palmdale (2020; 14);

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- Humboldt Wind Energy Project DEIR (2019; 25);
- Sand Hill Supplemental EIR, Altamont Pass (2019; 17);
- 1700 Dell Avenue Office Project, Campbell (2019, 28);
- 1180 Main Street Office Project MND, Redwood City (2019; 19:
- Summit Ridge Wind Farm Request for Amendment 4, Oregon (2019; 46);
- Shafter Warehouse Staff Report (2019; 4);
- Park & Broadway Design Review, San Diego (2019; 19);
- Pinnacle Pacific Heights Design Review, San Diego (2019; 19);
- Pinnacle Park & C Design Review, San Diego (2019; 19);
- Preserve at Torrey Highlands EIR, San Diego (2019; 24);
- Santana West Project EIR Addendum, San Jose (2019; 18);
- The Ranch at Eastvale EIR Addendum, Riverside County (2020; 19);
- Hageman Warehouse IS/MND, Bakersfield (2019; 13);
- Oakley Logistics Center EIR, Antioch (2019; 22);
- 27 South First Street IS, San Jose (2019; 23);
- 2nd replies on Times Mirror Square Project EIR, Los Angeles (2020; 11);
- Replies on Times Mirror Square Project EIR, Los Angeles (2020; 13);
- Times Mirror Square Project EIR, Los Angeles (2019; 18);
- East Monte Vista & Aviator General Plan Amend EIR Addendum, Vacaville (2019; 22);
- Hillcrest LRDP EIR, La Jolla (2019; 36);
- 555 Portola Road CUP, Portola Valley (2019; 11);
- Johnson Drive Economic Development Zone SEIR, Pleasanton (2019; 27);
- 1750 Broadway Project CEQA Exemption, Oakland (2019; 19);
- Mor Furniture Project MND, Murietta Hot Springs (2019; 27);
- Harbor View Project EIR, Redwood City (2019; 26);
- Visalia Logistics Center (2019; 13);
- Cordelia Industrial Buildings MND (2019; 14);
- Scheu Distribution Center IS/ND, Rancho Cucamonga (2019; 13);
- Mills Park Center Staff Report, San Bruno (2019; 22);
- Site visit to Desert Highway Farms IS/MND, Imperial County (2019; 9);
- Desert Highway Farms IS/MND, Imperial County (2019; 12);
- ExxonMobil Interim Trucking for Santa Ynez Unit Restart SEIR, Santa Barbara (2019; 9);
- Olympic Holdings Inland Center Warehouse Project MND, Rancho Cucamonga (2019; 14);
- Replies to responses on Lawrence Equipment Industrial Warehouse, Banning (2019; 19);
- PARS Global Storage MND, Murietta (2019; 13);
- Slover Warehouse EIR Addendum, Fontana (2019; 16);
- Seefried Warehouse Project IS/MND, Lathrop (2019; 19)
- World Logistics Center Site Visit, Moreno Valley (2019; 19);
- Merced Landfill Gas-To-Energy Project IS/MND (2019; 12);
- West Village Expansion FEIR, UC Davis (2019; 11);
- Site visit, Doheny Ocean Desalination EIR, Dana Point (2019; 11);
- Replies to responses on Avalon West Valley Expansion EIR, San Jose (2019; 10);
- Avalon West Valley Expansion EIR, San Jose (2019; 22);
- Sunroad – Otay 50 EIR Addendum, San Diego (2019; 26);

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- Del Rey Pointe Residential Project IS/MND, Los Angeles (2019; 34);
- 1 AMD Redevelopment EIR, Sunnyvale (2019; 22);
- Lawrence Equipment Industrial Warehouse IS/MND, Banning (2019; 14);
- SDG Commerce 330 Warehouse IS, American Canyon (2019; 21);
- PAMA Business Center IS/MND, Moreno Valley (2019; 23);
- Cupertino Village Hotel IS (2019; 24);
- Lake House IS/ND, Lodi (2019; 33);
- Campo Wind Project DEIS, San Diego County (DEIS, (2019; 14);
- Stirling Warehouse MND site visit, Victorville (2019; 7);
- Green Valley II Mixed-Use Project EIR, Fairfield (2019; 36);
- We Be Jammin rezone MND, Fresno (2019; 14);
- Gray Whale Cove Pedestrian Crossing IS/ND, Pacifica (2019; 7);
- Visalia Logistics Center & DDG 697V Staff Report (2019; 9);
- Mather South Community Masterplan Project EIR (2019; 35);
- Del Hombre Apartments EIR, Walnut Creek (2019; 23);
- Otay Ranch Planning Area 12 EIR Addendum, Chula Vista (2019; 21);
- The Retreat at Sacramento IS/MND (2019; 26);
- Site visit to Sunroad – Centrum 6 EIR Addendum, San Diego (2019; 9);
- Sunroad – Centrum 6 EIR Addendum, San Diego (2018; 22);
- North First and Brokaw Corporate Campus Buildings EIR Addendum, San Jose (2018; 30);
- South Lake Solar IS, Fresno County (2018; 18);
- Galloo Island Wind Project Application, New York (not submitted) (2018; 44);
- Doheny Ocean Desalination EIR, Dana Point (2018; 15);
- Stirling Warehouse MND, Victorville (2018; 18);
- LDK Warehouse MND, Vacaville (2018; 30);
- Gateway Crossings FEIR, Santa Clara (2018; 23);
- South Hayward Development IS/MND (2018; 9);
- CBU Specific Plan Amendment, Riverside (2018; 27);
- 2nd replies to responses on Dove Hill Road Assisted Living Project MND (2018; 11);
- Replies to responses on Dove Hill Road Assisted Living Project MND (2018; 7);
- Dove Hill Road Assisted Living Project MND (2018; 12);
- Deer Ridge/Shadow Lakes Golf Course EIR, Brentwood (2018; 21);
- Pyramid Asphalt BLM Finding of No Significance, Imperial County (2018; 22);
- Amáre Apartments IS/MND, Martinez (2018; 15);
- Petaluma Hill Road Cannabis MND, Santa Rosa (2018; 21);
- 2nd comments on Zeiss Innovation Center IS/MND, Dublin (2018: 12);
- Zeiss Innovation Center IS/MND, Dublin (2018: 32);
- City of Hope Campus Plan EIR, Duarte (2018; 21);
- Palo Verde Center IS/MND, Blythe (2018; 14);
- Logisticenter at Vacaville MND (2018; 24);
- IKEA Retail Center SEIR, Dublin (2018; 17);
- Merge 56 EIR, San Diego (2018; 15);
- Natomas Crossroads Quad B Office Project P18-014 EIR, Sacramento (2018; 12);
- 2900 Harbor Bay Parkway Staff Report, Alameda (2018; 30);

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- At Dublin EIR, Dublin (2018; 25);
- Fresno Industrial Rezone Amendment Application No. 3807 IS (2018; 10);
- Nova Business Park IS/MND, Napa (2018; 18);
- Updated Collision Risk Model Priors for Estimating Eagle Fatalities, USFWS (2018; 57);
- 750 Marlborough Avenue Warehouse MND, Riverside (2018; 14);
- Replies to responses on San Bernardino Logistics Center IS (2018; 12);
- San Bernardino Logistics Center IS (2018; 19);
- CUP2017-16, Costco IS/MND, Clovis (2018; 11);
- Desert Land Ventures Specific Plan EIR, Desert Hot Springs (2018; 18);
- Ventura Hilton IS/MND (2018; 30);
- North of California Street Master Plan Project IS, Mountain View (2018: 11);
- Tamarind Warehouse MND, Fontana (2018; 16);
- Lathrop Gateway Business Park EIR Addendum (2018; 23);
- Centerpointe Commerce Center IS, Moreno Valley (2019; 18);
- Amazon Warehouse Notice of Exemption, Bakersfield (2018; 13);
- CenterPoint Building 3 project Staff Report, Manteca (2018; 23);
- Cessna & Aviator Warehouse IS/MND, Vacaville (2018; 24);
- Napa Airport Corporate Center EIR, American Canyon (2018, 15);
- 800 Opal Warehouse Initial Study, Mentone, San Bernardino County (2018; 18);
- 2695 W. Winton Ave Industrial Project IS, Hayward (2018; 22);
- Trinity Cannabis Cultivation and Manufacturing Facility DEIR, Calexico (2018; 15);
- Shoe Palace Expansion IS/MND, Morgan Hill (2018; 21);
- Newark Warehouse at Morton Salt Plant Staff Report (2018; 15);
- Northlake Specific Plan FEIR “Peer Review”, Los Angeles County (2018; 9);
- Replies to responses on Northlake Specific Plan SEIR, Los Angeles County (2018; 13);
- Northlake Specific Plan SEIR, Los Angeles County (2017; 27);
- Bogle Wind Turbine DEIR, east Yolo County (2017; 48);
- Ferrante Apartments IS/MND, Los Angeles (2017; 14);
- The Villages of Lakeview EIR, Riverside (2017; 28);
- Data Needed for Assessing Trail Management Impacts on Northern Spotted Owl, Marin County (2017; 5);
- Notes on Proposed Study Options for Trail Impacts on Northern Spotted Owl (2017; 4);
- Pyramid Asphalt IS, Imperial County (Declaration) (2017; 5);
- San Gorgonio Crossings EIR, Riverside County (2017; 22);
- Replies to responses on Jupiter Project IS and MND, Apple Valley (2017; 12);
- Proposed World Logistics Center Mitigation Measures, Moreno Valley (2017, 2019; 12);
- MacArthur Transit Village Project Modified 2016 CEQA Analysis (2017; 12);
- PG&E Company Bay Area Operations and Maintenance HCP (2017; 45);
- Central SoMa Plan DEIR (2017; 14);
- Suggested mitigation for trail impacts on northern spotted owl, Marin County (2016; 5);
- Colony Commerce Center Specific Plan DEIR, Ontario (2016; 16);
- Fairway Trails Improvements MND, Marin County (2016; 13);
- Review of Avian-Solar Science Plan (2016; 28);
- Replies on Pyramid Asphalt IS, Imperial County (2016; 5);

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- Pyramid Asphalt IS, Imperial County (2016; 4);
- Agua Mansa Distribution Warehouse Project Initial Study (2016; 14);
- Santa Anita Warehouse MND, Rancho Cucamonga (2016; 12);
- CapRock Distribution Center III DEIR, Rialto (2016: 12);
- Orange Show Logistics Center IS/MND, San Bernardino (2016; 9);
- City of Palmdale Oasis Medical Village Project IS/MND (2016; 7);
- Comments on proposed rule for incidental eagle take, USFWS (2016, 49);
- Replies on Grapevine Specific and Community Plan FEIR, Kern County (2016; 25);
- Grapevine Specific and Community Plan DEIR, Kern County (2016; 15);
- Clinton County Zoning Ordinance for Wind Turbine siting (2016);
- Hallmark at Shenandoah Warehouse Project Initial Study, San Bernardino (2016; 6);
- Tri-City Industrial Complex Initial Study, San Bernardino (2016; 5);
- Hidden Canyon Industrial Park Plot Plan 16-PP-02, Beaumont (2016; 12);
- Kimball Business Park DEIR (2016; 10);
- Jupiter Project IS and MND, Apple Valley, San Bernardino County (2016; 9);
- Revised Draft Giant Garter Snake Recovery Plan of 2015 (2016, 18);
- Palo Verde Mesa Solar Project EIR, Blythe (2016; 27);
- Reply on Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 14);
- Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 41);
- Reply on Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 38);
- Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 31);
- Second Reply on White Pines Wind Farm, Ontario (2015, 6);
- Reply on White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 10);
- White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 9);
- Proposed Section 24 Specific Plan Agua Caliente Band of Cahuilla Indians DEIS (2015, 9);
- Replies on 24 Specific Plan Agua Caliente Band of Cahuilla Indians FEIS (2015, 6);
- Willow Springs Solar Photovoltaic Project DEIR, Rosamond (2015; 28);
- Sierra Lakes Commerce Center Project DEIR, Fontana (2015, 9);
- Columbia Business Center MND, Riverside (2015; 8);
- West Valley Logistics Center Specific Plan DEIR, Fontana (2015, 10);
- Willow Springs Solar Photovoltaic Project DEIR (2015, 28);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10);
- World Logistic Center Specific Plan FEIR, Moreno Valley (2015, 12);
- Elkhorn Valley Wind Power Project Impacts, Oregon (2015; 143);
- Bay Delta Conservation Plan EIR/EIS, Sacramento (2014, 21);
- Addison Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Addison Wind Energy Project DEIR, Mojave (2014, 15);
- Addison and Rising Tree Wind Energy Project FEIR, Mojave (2014, 12);
- Palen Solar Electric Generating System FSA (CEC), Blythe (2014, 20);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9);
- Seven Mile Hill and Glenrock/Rolling Hills impacts + Addendum, Wyoming (2014; 105);
- Rising Tree Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Rising Tree Wind Energy Project DEIR, Mojave (2014, 15);
- Soitec Solar Development Project PEIR, Boulevard, San Diego County (2014, 18);

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- Oakland Zoo expansion on Alameda whipsnake and California red-legged frog (2014; 3);
- Alta East Wind Energy Project FEIS, Tehachapi Pass (2013, 23);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16);
- Clearwater and Yakima Solar Projects DEIR, Kern County (2013, 9);
- West Antelope Solar Energy Project IS/MND, Antelope Valley (2013, 18);
- Cuyama Solar Project DEIR, Carrizo Plain (2014, 19);
- Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49);
- Kingbird Solar Photovoltaic Project EIR, Kern County (2013, 19);
- Lucerne Valley Solar Project IS/MND, San Bernardino County (2013, 12);
- Tule Wind project FEIR/FEIS (Declaration) (2013; 31);
- Sunlight Partners LANDPRO Solar Project MND (2013; 11);
- Declaration in opposition to BLM fracking (2013; 5);
- Blythe Energy Project (solar) CEC Staff Assessment (2013;16);
- Rosamond Solar Project EIR Addendum, Kern County (2013; 13);
- Pioneer Green Solar Project EIR, Bakersfield (2013; 13);
- Replies on Soccer Center Solar Project MND (2013; 6);
- Soccer Center Solar Project MND, Lancaster (2013; 10);
- Plainview Solar Works MND, Lancaster (2013; 10);
- Alamo Solar Project MND, Mojave Desert (2013; 15);
- Replies on Imperial Valley Solar Company 2 Project (2013; 10);
- Imperial Valley Solar Company 2 Project (2013; 13);
- FRV Orion Solar Project DEIR, Kern County (PP12232) (2013; 9);
- Casa Diablo IV Geothermal Development Project (2013; 6);
- Reply on Casa Diablo IV Geothermal Development Project (2013; 8);
- Alta East Wind Project FEIS, Tehachapi Pass (2013; 23);
- Metropolitan Air Park DEIR, City of San Diego (2013;);
- Davidon Homes Tentative Subdivision Rezoning Project DEIR, Petaluma (2013; 9);
- Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10);
- Campo Verde Solar project FEIR, Imperial Valley (2013; 11pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8);
- North Steens Transmission Line FEIS, Oregon (Declaration) (2012; 62);
- Summer Solar and Springtime Solar Projects Ism Lancaster (2012; 8);
- J&J Ranch, 24 Adobe Lane Environmental Review, Orinda (2012; 14);
- Replies on Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 8);
- Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 9);
- Desert Harvest Solar Project EIS, near Joshua Tree (2012; 15);
- Solar Gen 2 Array Project DEIR, El Centro (2012; 16);
- Ocotillo Sol Project EIS, Imperial Valley (2012; 4);
- Beacon Photovoltaic Project DEIR, Kern County (2012; 5);
- Butte Water District 2012 Water Transfer Program IS/MND (2012; 11);
- Mount Signal and Calexico Solar Farm Projects DEIR (2011; 16);
- City of Elk Grove Sphere of Influence EIR (2011; 28);
- Sutter Landing Park Solar Photovoltaic Project MND, Sacramento (2011; 9);

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- Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4);
- Ivanpah Solar Electric Generating System (ISEGS) (Declaration) (2011; 9);
- Draft Eagle Conservation Plan Guidance, USFWS (2011; 13);
- Niles Canyon Safety Improvement Project EIR/EA (2011; 16);
- Route 84 Safety Improvement Project (Declaration) (2011; 7);
- Rebuttal on Whistling Ridge Wind Energy Power DEIS, Skamania County, (2010; 6);
- Whistling Ridge Wind Energy Power DEIS, Skamania County, Washington (2010; 41);
- Klickitat County's Decisions on Windy Flats West Wind Energy Project (2010; 17);
- St. John's Church Project DEIR, Orinda (2010; 14);
- Results Radio Zone File #2009-001 IS/MND, Conaway site, Davis (2010; 20);
- Rio del Oro Specific Plan Project FEIR, Rancho Cordova (2010;12);
- Results Radio Zone File #2009-001, Mace Blvd site, Davis (2009; 10);
- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009; 9);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Second Declaration) (2008; 17);
- Draft 1A Summary Report to CAISO (2008; 10);
- Hilton Manor Project Categorical Exemption, County of Placer (2009; 9);
- Protest of CARE to Amendment to the Power Purchase and Sale Agreement for Procurement of Eligible Renewable Energy Resources Between Hatchet Ridge Wind LLC and PG&E (2009; 3);
- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142);
- Delta Shores Project EIR, south Sacramento (2009; 11 + addendum 2);
- Declaration in Support of Care's Petition to Modify D.07-09-040 (2008; 3);
- The Public Utility Commission's Implementation Analysis December 16 Workshop for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 9);
- The Public Utility Commission's Implementation Analysis Draft Work Plan for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 11);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7.);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Declaration) (2008; 16);
- Colusa Generating Station, California Energy Commission PSA (2007; 24);
- Rio del Oro Specific Plan Project Recirculated DEIR, Mather (2008: 66);
- Replies on Regional University Specific Plan EIR, Roseville (2008; 20);
- Regional University Specific Plan EIR, Roseville (2008: 33);
- Clark Precast, LLC's "Sugarland" project, ND, Woodland (2008: 15);
- Cape Wind Project DEIS, Nantucket (2008; 157);
- Yuba Highlands Specific Plan EIR, Spenceville, Yuba County (2006; 37);
- Replies to responses on North Table Mountain MND, Butte County (2006; 5);
- North Table Mountain MND, Butte County (2006; 15);
- Windy Point Wind Farm EIS (2006; 14 and Powerpoint slide replies);
- Shiloh I Wind Power Project EIR, Rio Vista (2005; 18);

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- Buena Vista Wind Energy Project NOP, Byron (2004; 15);
- Callahan Estates Subdivision ND, Winters (2004; 11);
- Winters Highlands Subdivision IS/ND (2004; 9);
- Winters Highlands Subdivision IS/ND (2004; 13);
- Creekside Highlands Project, Tract 7270 ND (2004; 21);
- Petition to California Fish and Game Commission to list Burrowing Owl (2003; 10);
- Altamont Pass Wind Resource Area CUP renewals, Alameda County (2003; 41);
- UC Davis Long Range Development Plan: Neighborhood Master Plan (2003; 23);
- Anderson Marketplace Draft Environmental Impact Report (2003; 18);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003; 6);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002; 23);
- Replies on East Altamont Energy Center evidentiary hearing (2002; 9);
- Revised Draft Environmental Impact Report, The Promenade (2002; 7);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002; 3);
- UC Merced -- Declaration (2002; 5);
- Replies on Atwood Ranch Unit III Subdivision FEIR (2003; 22);
- Atwood Ranch Unit III Subdivision EIR (2002; 19);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002; 20);
- Silver Bend Apartments IS/MND, Placer County (2002; 13);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001; 26);
- Colusa County Power Plant IS, Maxwell (2001; 6);
- Dog Park at Catlin Park, Folsom, California (2001; 5);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring Program (BRMIMP) for the Metcalf Energy Center (2000; 10);
- Metcalf Energy Center, California Energy Commission FSA (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000; 4);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7);
- Affidavit of K. Shawn Smallwood in Spirit of the Sage Council, et al. (Plaintiffs) vs. Bruce Babbitt, Secretary, U.S. Department of the Interior, et al. (Defendants), Injuries caused by the No Surprises policy and final rule which codifies that policy (1999: 9).
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Sunset Skyranch Airport Use Permit IS/MND (1999);
- Ballona West Bluffs Project Environmental Impact Report (1999; oral presentation);
- Draft Recovery Plan for Giant Garter Snake (Fed. Reg. 64(176): 49497-49498) (1999; 8);
- Draft Recovery Plan for Arroyo Southwestern Toad (1998);
- Pacific Lumber Co. (Headwaters) HCP & EIR, Fortuna (1998; 28);
- Natomas Basin HCP Permit Amendment, Sacramento (1998);
- San Diego Multi-Species Conservation Program FEIS/FEIR (1997; 10);

Comments on other Environmental Review Documents:

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- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015; 8);
- Covell Village PEIR, Davis (2005; 19);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping (2003; 7.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001; 2 letters totaling 35.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis candensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*), on behalf of The Wildlife Society—Western Section (2000: 10.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7.);
- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10);
- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOA Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, termed the HCP 5-Point Policy Plan (Fed. Reg. 64(45): 11485 - 11490) (1999; 2 + attachments);
- Covell Center Project EIR and EIR Supplement (1997).

Position Statements I prepared the following position statements for the Western Section of The Wildlife Society, and one for nearly 200 scientists:

- Recommended that the California Department of Fish and Game prioritize the extermination of the introduced southern water snake in northern California. The Wildlife Society--Western Section (2001);
- Recommended that The Wildlife Society—Western Section appoint or recommend members of the independent scientific review panel for the UC Merced environmental review process (2001);
- Opposed the siting of the University of California's 10th campus on a sensitive vernal pool/grassland complex east of Merced. The Wildlife Society--Western Section (2000);
- Opposed the legalization of ferret ownership in California. The Wildlife Society--Western Section (2000);
- Opposed the Proposed "No Surprises," "Safe Harbor," and "Candidate Conservation Agreement" rules, including permit-shield protection provisions (Fed. Reg. Vol. 62, No. 103, pp. 29091-29098 and No. 113, pp. 32189-32194). This statement was signed by 188 scientists and went to the responsible federal agencies, as well as to the U.S. Senate and House of Representatives.

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Posters at Professional Meetings

Leyvas, E. and K. S. Smallwood. 2015. Rehabilitating injured animals to offset and rectify wind project impacts. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S., J. Mount, S. Standish, E. Leyvas, D. Bell, E. Walther, B. Karas. 2015. Integrated detection trials to improve the accuracy of fatality rate estimates at wind projects. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S. and C. G. Thelander. 2005. Lessons learned from five years of avian mortality research in the Altamont Pass WRA. AWEA conference, Denver, May 2005.

Neher, L., L. Wilder, J. Woo, L. Spiegel, D. Yen-Nakafugi, and K.S. Smallwood. 2005. Bird's eye view on California wind. AWEA conference, Denver, May 2005.

Smallwood, K. S., C. G. Thelander and L. Spiegel. 2003. Toward a predictive model of avian fatalities in the Altamont Pass Wind Resource Area. Windpower 2003 Conference and Convention, Austin, Texas.

Smallwood, K.S. and Eva Butler. 2002. Pocket Gopher Response to Yellow Star-thistle Eradication as part of Grassland Restoration at Decommissioned Mather Air Force Base, Sacramento County, California. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and Michael L. Morrison. 2002. Fresno kangaroo rat (*Dipodomys nitratoides*) Conservation Research at Resources Management Area 5, Lemoore Naval Air Station. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and E.L. Fitzhugh. 1989. Differentiating mountain lion and dog tracks. Third Mountain Lion Workshop, Prescott, AZ.

Smith, T. R. and K. S. Smallwood. 2000. Effects of study area size, location, season, and allometry on reported *Sorex* shrew densities. Annual Meeting of the Western Section of The Wildlife Society.

Presentations at Professional Meetings and Seminars

Long-Term Population Trend of Burrowing Owls in the Altamont. Golden Gate Audubon, 21 October 2020.

Long-Term Population Trend of Burrowing Owls in the Altamont. East Bay Regional Park District 2020 Stewardship Seminar, Oakland, California, 18 November 2020.

Smallwood, K.S., D.A. Bell, and S, Standish. Dogs detect larger wind energy effects on bats and birds. The Wildlife Society, 28 September 2020.

Smallwood, K.S. and D.A. Bell. Effects of wind turbine curtailment on bird and bat fatalities in the Altamont Pass Wind Resource Area. The Wildlife Society, 28 September 2020.

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Smallwood, K.S., D.A. Bell, and S, Standish. Dogs detect larger wind energy effects on bats and birds. The Wildlife Survey, 7 February 2020.

Smallwood, K.S. and D.A. Bell. Effects of wind turbine curtailment on bird and bat fatalities in the Altamont Pass Wind Resource Area. The Wildlife Survey, 7 February 2020.

Dog detections of bat and bird fatalities at wind farms in the Altamont Pass Wind Resource Area. East Bay Regional Park District 2019 Stewardship Seminar, Oakland, California, 13 November 2019.

Repowering the Altamont Pass. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Developing methods to reduce bird mortality in the Altamont Pass Wind Resource Area, 1999-2007. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Conservation and recovery of burrowing owls in Santa Clara Valley. Santa Clara Valley Habitat Agency, Newark, California, 3 February 2017.

Mitigation of Raptor Fatalities in the Altamont Pass Wind Resource Area. Raptor Research Foundation Meeting, Sacramento, California, 6 November 2015.

From burrows to behavior: Research and management for burrowing owls in a diverse landscape. California Burrowing Owl Consortium meeting, 24 October 2015, San Jose, California.

The Challenges of repowering. Keynote presentation at Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 10 March 2015.

Research Highlights Altamont Pass 2011-2015. Scientific Review Committee, Oakland, California, 8 July 2015.

Siting wind turbines to minimize raptor collisions: Altamont Pass Wind Resource Area. US Fish and Wildlife Service Golden Eagle Working Group, Sacramento, California, 8 January 2015.

Evaluation of nest boxes as a burrowing owl conservation strategy. Sacramento Chapter of the Western Section, The Wildlife Society. Sacramento, California, 26 August 2013.

Predicting collision hazard zones to guide repowering of the Altamont Pass. Conference on wind power and environmental impacts. Stockholm, Sweden, 5-7 February 2013.

Impacts of Wind Turbines on Wildlife. California Council for Wildlife Rehabilitators, Yosemite, California, 12 November 2012.

Impacts of Wind Turbines on Birds and Bats. Madrone Audubon Society, Santa Rosa, California, 20 February 2012.

Comparing Wind Turbine Impacts across North America. California Energy Commission Staff

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Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Alameda County Scientific Review Committee meeting, 17 February 2011

Comparing Wind Turbine Impacts across North America. Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 3 May 2011.

Update on Wildlife Impacts in the Altamont Pass Wind Resource Area. Raptor Symposium, The Wildlife Society—Western Section, Riverside, California, February 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Raptor Symposium, The Wildlife Society - Western Section, Riverside, California, February 2011.

Wildlife mortality caused by wind turbine collisions. Ecological Society of America, Pittsburgh, Pennsylvania, 6 August 2010.

Map-based repowering and reorganization of a wind farm to minimize burrowing owl fatalities. California burrowing Owl Consortium Meeting, Livermore, California, 6 February 2010.

Environmental barriers to wind power. Getting Real About Renewables: Economic and Environmental Barriers to Biofuels and Wind Energy. A symposium sponsored by the Environmental & Energy Law & Policy Journal, University of Houston Law Center, Houston, 23 February 2007.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Meeting with Japan Ministry of the Environment and Japan Ministry of the Economy, Wild Bird Society of Japan, and other NGOs Tokyo, Japan, 9 November 2006.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Symposium on bird collisions with wind turbines. Wild Bird Society of Japan, Tokyo, Japan, 4 November 2006.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. California Society for Ecological Restoration (SERCAL) 13th Annual Conference, UC Santa Barbara, 27 October 2006.

Fatality associations as the basis for predictive models of fatalities in the Altamont Pass Wind Resource Area. EEI/APLIC/PIER Workshop, 2006 Biologist Task Force and Avian Interaction with Electric Facilities Meeting, Pleasanton, California, 28 April 2006.

Burrowing owl burrows and wind turbine collisions in the Altamont Pass Wind Resource Area. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, February 8, 2006.

Mitigation at wind farms. Workshop: Understanding and resolving bird and bat impacts. American

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Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Incorporating data from the California Wildlife Habitat Relationships (CWHR) system into an impact assessment tool for birds near wind farms. Shawn Smallwood, Kevin Hunting, Marcus Yee, Linda Spiegel, Monica Parisi. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Toward indicating threats to birds by California's new wind farms. California Energy Commission, Sacramento, May 26, 2005.

Avian collisions in the Altamont Pass. California Energy Commission, Sacramento, May 26, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. EPRI Environmental Sector Council, Monterey, California, February 17, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. The Wildlife Society—Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Associations between avian fatalities and attributes of electric distribution poles in California. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Minimizing avian mortality in the Altamont Pass Wind Resources Area. UC Davis Wind Energy Collaborative Forum, Palm Springs, California, December 14, 2004.

Selecting electric distribution poles for priority retrofitting to reduce raptor mortality. Raptor Research Foundation Meeting, Bakersfield, California, November 10, 2004.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Meeting of the Society for Ecological Restoration, South Lake Tahoe, California, October 16, 2004.

Lessons learned from five years of avian mortality research at the Altamont Pass Wind Resources Area in California. The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

The ecology and impacts of power generation at Altamont Pass. Sacramento Petroleum Association, Sacramento, California, August 18, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Consortium meeting, Hayward, California, February 7, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Symposium, Sacramento, November 2, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. National Wind Coordinating Committee, Washington, D.C., November 17, 2003.

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Raptor Behavior at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

California mountain lions. Ecological & Environmental Issues Seminar, Department of Biology, California State University, Sacramento, November, 2000.

Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. National Wind Coordinating Committee, Carmel, California, May, 2000.

Using a Geographic Positioning System (GPS) to map wildlife and habitat. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Suggested standards for science applied to conservation issues. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

The indicators framework applied to ecological restoration in Yolo County, California. Society for Ecological Restoration, September 25, 1999.

Ecological restoration in the context of animal social units and their habitat areas. Society for Ecological Restoration, September 24, 1999.

Relating Indicators of Ecological Health and Integrity to Assess Risks to Sustainable Agriculture and Native Biota. International Conference on Ecosystem Health, August 16, 1999.

A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Southern California Edison, Co. and California Energy Commission, March 4-5, 1999.

Mountain lion track counts in California: Implications for Management. Ecological & Environmental Issues Seminar, Department of Biological Sciences, California State University, Sacramento, November 4, 1998.

“No Surprises” -- Lack of science in the HCP process. California Native Plant Society Annual Conservation Conference, The Presidio, San Francisco, September 7, 1997.

In Your Interest. A half hour weekly show aired on Channel 10 Television, Sacramento. In this episode, I served on a panel of experts discussing problems with the implementation of the Endangered Species Act. Aired August 31, 1997.

Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Estimating prairie dog and pocket gopher burrow volume. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Ten years of mountain lion track survey. Fifth Mountain Lion Workshop, San Diego, February 27,

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1996.

Study and interpretive design effects on mountain lion density estimates. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Small animal control. Session moderator and speaker at the California Farm Conference, Sacramento, California, Feb. 28, 1995.

Small animal control. Ecological Farming Conference, Asylomar, California, Jan. 28, 1995.

Habitat associations of the Swainson's Hawk in the Sacramento Valley's agricultural landscape. 1994 Raptor Research Foundation Meeting, Flagstaff, Arizona.

Alfalfa as wildlife habitat. Seed Industry Conference, Woodland, California, May 4, 1994.

Habitats and vertebrate pests: impacts and management. Managing Farmland to Bring Back Game Birds and Wildlife to the Central Valley. Yolo County Resource Conservation District, U.C. Davis, February 19, 1994.

Management of gophers and alfalfa as wildlife habitat. Orland Alfalfa Production Meeting and Sacramento Valley Alfalfa Production Meeting, February 1 and 2, 1994.

Patterns of wildlife movement in a farming landscape. Wildlife and Fisheries Biology Seminar Series: Recent Advances in Wildlife, Fish, and Conservation Biology, U.C. Davis, Dec. 6, 1993.

Alfalfa as wildlife habitat. California Alfalfa Symposium, Fresno, California, Dec. 9, 1993.

Management of pocket gophers in Sacramento Valley alfalfa. California Alfalfa Symposium, Fresno, California, Dec. 8, 1993.

Association analysis of raptors in a farming landscape. Plenary speaker at Raptor Research Foundation Meeting, Charlotte, North Carolina, Nov. 6, 1993.

Landscape strategies for biological control and IPM. Plenary speaker, International Conference on Integrated Resource Management and Sustainable Agriculture, Beijing, China, Sept. 11, 1993.

Landscape Ecology Study of Pocket Gophers in Alfalfa. Alfalfa Field Day, U.C. Davis, July 1993.

Patterns of wildlife movement in a farming landscape. Spatial Data Analysis Colloquium, U.C. Davis, August 6, 1993.

Sound stewardship of wildlife. Veterinary Medicine Seminar: Ethics of Animal Use, U.C. Davis. May 1993.

Landscape ecology study of pocket gophers in alfalfa. Five County Grower's Meeting, Tracy, California. February 1993.

Turbulence and the community organizers: The role of invading species in ordering a turbulent

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system, and the factors for invasion success. Ecology Graduate Student Association Colloquium, U.C. Davis. May 1990.

Evaluation of exotic vertebrate pests. Fourteenth Vertebrate Pest Conference, Sacramento, California. March 1990.

Analytical methods for predicting success of mammal introductions to North America. The Western Section of the Wildlife Society, Hilo, Hawaii. February 1988.

A state-wide mountain lion track survey. Sacramento County Dept Parks and Recreation. April 1986.

The mountain lion in California. Davis Chapter of the Audubon Society. October 1985.

Ecology Graduate Student Seminars, U.C. Davis, 1985-1990: Social behavior of the mountain lion; Mountain lion control; Political status of the mountain lion in California.

Other forms of Participation at Professional Meetings

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Berlin, Germany, March 2015.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Stockholm, Sweden, February 2013.
- Workshop co-presenter at Birds & Wind Energy Specialist Group (BAWESG) Information sharing week, Bird specialist studies for proposed wind energy facilities in South Africa, Endangered Wildlife Trust, Darling, South Africa, 3-7 October 2011.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 2-5 May 2011.
- Chair of Animal Damage Management Session, The Wildlife Society, Annual Meeting, Reno, Nevada, September 26, 2001.
- Chair of Technical Session: Human communities and ecosystem health: Comparing perspectives and making connection. Managing for Ecosystem Health, International Congress on Ecosystem Health, Sacramento, CA August 15-20, 1999.
- Student Awards Committee, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.
- Student Mentor, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Printed Mass Media

Smallwood, K.S., D. Mooney, and M. McGuinness. 2003. We must stop the UCD biolab now. Op-

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Ed to the Davis Enterprise.

Smallwood, K.S. 2002. Spring Lake threatens Davis. Op-Ed to the Davis Enterprise.

Smallwood, K.S. Summer, 2001. Mitigation of habitation. The Flatlander, Davis, California.

Entrikan, R.K. and K.S. Smallwood. 2000. Measure O: Flawed law would lock in new taxes. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2000. Davis delegation lobbies Congress for Wildlife conservation. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 1998. Davis Visions. The Flatlander, Davis, California.

Smallwood, K.S. 1997. Last grab for Yolo's land and water. The Flatlander, Davis, California.

Smallwood, K.S. 1997. The Yolo County HCP. Op-Ed to the Davis Enterprise.

Radio/Television

PBS News Hour,

FOX News, Energy in America: Dead Birds Unintended Consequence of Wind Power Development, August 2011.

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Mountain lion attacks (with guest Professor Richard Coss). 23 April 2009;

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Wind farm Rio Vista Renewable Power. 4 September 2008;

KQED QUEST Episode #111. Bird collisions with wind turbines. 2007;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. December 27, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. May 3, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. February 8, 2001;

KDVS Speaking in Tongues (host Ron Glick & Shawn Smallwood), California Energy Crisis: 1 hour. Jan. 25, 2001;

KDVS Speaking in Tongues (host Ron Glick), Headwaters Forest HCP: 1 hour. 1998;

Davis Cable Channel (host Gerald Heffernon), Burrowing owls in Davis: half hour. June, 2000;

Davis Cable Channel (hosted by Davis League of Women Voters), Measure O debate: 1 hour. October, 2000;

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KXTV 10, In Your Interest, The Endangered Species Act: half hour. 1997.

Reviews of Journal Papers (Scientific journals for whom I've provided peer review)

Journal	**Journal**
American Naturalist	Journal of Animal Ecology
Journal of Wildlife Management	Western North American Naturalist
Auk	Journal of Raptor Research
Biological Conservation	National Renewable Energy Lab reports
Canadian Journal of Zoology	Oikos
Ecosystem Health	The Prairie Naturalist
Environmental Conservation	Restoration Ecology
Environmental Management	Southwestern Naturalist
Functional Ecology	The Wildlife Society--Western Section Trans.
Journal of Zoology (London)	Proc. Int. Congress on Managing for Ecosystem Health
Journal of Applied Ecology	Transactions in GIS
Ecology	Tropical Ecology
Wildlife Society Bulletin	Peer J
Biological Control	The Condor

Committees

- Scientific Review Committee, Alameda County, Altamont Pass Wind Resource Area
- Ph.D. Thesis Committee, Steve Anderson, University of California, Davis
- MS Thesis Committee, Marcus Yee, California State University, Sacramento

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Other Professional Activities or Products

Testified in Federal Court in Denver during 2005 over the fate of radio-nuclides in the soil at Rocky Flats Plant after exposure to burrowing animals. My clients won a judgment of $553,000,000. I have also testified in many other cases of litigation under CEQA, NEPA, the Warren-Alquist Act, and other environmental laws. My clients won most of the cases for which I testified.

Testified before Environmental Review Tribunals in Ontario, Canada regarding proposed White Pines, Amherst Island, and Fairview Wind Energy projects.

Testified in Skamania County Hearing in 2009 on the potential impacts of zoning the County for development of wind farms and hazardous waste facilities.

Testified in deposition in 2007 in the case of O'Dell et al. vs. FPL Energy in Houston, Texas.

Testified in Klickitat County Hearing in 2006 on the potential impacts of the Windy Point Wind Farm.

Memberships in Professional Societies

The Wildlife Society
Raptor Research Foundation

Honors and Awards

Fulbright Research Fellowship to Indonesia, 1987
J.G. Boswell Full Academic Scholarship, 1981 college of choice
Certificate of Appreciation, The Wildlife Society—Western Section, 2000, 2001
Northern California Athletic Association Most Valuable Cross Country Runner, 1984
American Legion Award, Corcoran High School, 1981, and John Muir Junior High, 1977
CIF Section Champion, Cross Country in 1978
CIF Section Champion, Track & Field 2 mile run in 1981
National Junior Record, 20 kilometer run, 1982
National Age Group Record, 1500 meter run, 1978

Community Activities

District 64 Little League Umpire, 2003-2007
Dixon Little League Umpire, 2006-07
Davis Little League Chief Umpire and Board member, 2004-2005
Davis Little League Safety Officer, 2004-2005
Davis Little League Certified Umpire, 2002-2004
Davis Little League Scorekeeper, 2002
Davis Visioning Group member
Petitioner for Writ of Mandate under the California Environmental Quality Act against City of Woodland decision to approve the Spring Lake Specific Plan, 2002
Served on campaign committees for City Council candidates

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Representative Clients/Funders

Law Offices of Stephan C. Volker
Blum Collins, LLP
Eric K. Gillespie Professional Corporation
Law Offices of Berger & Montague
Lozeau | Drury LLP
Law Offices of Roy Haber
Law Offices of Edward MacDonald
Law Office of John Gabrielli
Law Office of Bill Kopper
Law Office of Donald B. Mooney
Law Office of Veneruso & Moncharsh
Law Office of Steven Thompson
Law Office of Brian Gaffney
California Wildlife Federation
Defenders of Wildlife
Sierra Club
National Endangered Species Network
Spirit of the Sage Council
The Humane Society
Hagens Berman LLP
Environmental Protection Information Center
Goldberg, Kamin & Garvin, Attorneys at Law
Californians for Renewable Energy (CARE)
Seatuck Environmental Association
Friends of the Columbia Gorge, Inc.
Save Our Scenic Area
Alliance to Protect Nantucket Sound
Friends of the Swainson's Hawk
Alameda Creek Alliance
Center for Biological Diversity
California Native Plant Society
Endangered Wildlife Trust
and BirdLife South Africa
AquAlliance
Oregon Natural Desert Association
Save Our Sound
G3 Energy and Pattern Energy
Emerald Farms
Pacific Gas & Electric Co.
Southern California Edison Co.
Georgia-Pacific Timber Co.
Northern Territories Inc.
David Magney Environmental Consulting
Wildlife History Foundation
NextEra Energy Resources, LLC
Ogin, Inc.
EDF Renewables
National Renewable Energy Lab
Altamont Winds LLC
Salka Energy
Comstocks Business (magazine)
BioResource Consultants
Tierra Data
Black and Veatch
Terry Preston, Wildlife Ecology Research Center
EcoStat, Inc.
US Navy
US Department of Agriculture
US Forest Service
US Fish & Wildlife Service
US Department of Justice
California Energy Commission
California Office of the Attorney General
California Department of Fish & Wildlife
California Department of Transportation
California Department of Forestry
California Department of Food & Agriculture
Ventura County Counsel
County of Yolo
Tahoe Regional Planning Agency
Sustainable Agriculture Research & Education Program
Sacramento-Yolo Mosquito and Vector Control District
East Bay Regional Park District
County of Alameda
Don & LaNelle Silverstien
Seventh Day Adventist Church
Escuela de la Raza Unida
Susan Pelican and Howard Beeman
Residents Against Inconsistent Development, Inc.
Bob Sarvey
Mike Boyd
Hillcroft Neighborhood Fund
Joint Labor Management Committee, Retail Food Industry
Lisa Rocca
Kevin Jackson
Dawn Stover and Jay Letto
Nancy Havassy
Catherine Portman (for Brenda Cedarblade)
Ventus Environmental Solutions, Inc.
Panorama Environmental, Inc.
Adams Broadwell Professional Corporation

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Representative special-status species experience

Common name	Species name	Description
Field experience		
California red-legged frog	*Rana aurora draytonii*	Protocol searches; Many detections
Foothill yellow-legged frog	*Rana boylii*	Presence surveys; Many detections
Western spadefoot	*Spea hammondii*	Presence surveys; Few detections
California tiger salamander	*Ambystoma californiense*	Protocol searches; Many detections
Coast range newt	*Taricha torosa torosa*	Searches and multiple detections
Blunt-nosed leopard lizard	*Gambelia sila*	Detected in San Luis Obispo County
California horned lizard	*Phrynosoma coronatum frontale*	Searches; Many detections
Western pond turtle	*Clemmys marmorata*	Searches; Many detections
San Joaquin kit fox	*Vulpes macrotis mutica*	Protocol searches; detections
Sumatran tiger	*Panthera tigris*	Track surveys in Sumatra
Mountain lion	*Puma concolor californicus*	Research and publications
Point Arena mountain beaver	*Aplodontia rufa nigra*	Remote camera operation
Giant kangaroo rat	*Dipodomys ingens*	Detected in Cholame Valley
San Joaquin kangaroo rat	*Dipodomys nitratoides*	Monitoring & habitat restoration
Monterey dusky-footed woodrat	*Neotoma fuscipes luciana*	Non-target captures and mapping of dens
Salt marsh harvest mouse	*Reithrodontomys raviventris*	Habitat assessment, monitoring
Salinas harvest mouse	*Reithrodontomys megalotus distichlus*	Captures; habitat assessment
Bats		Thermal imaging surveys
California clapper rail	*Rallus longirostris*	Surveys and detections
Golden eagle	*Aquila chrysaetos*	Numerical & behavioral surveys
Swainson's hawk	*Buteo swainsoni*	Numerical & behavioral surveys
Northern harrier	*Circus cyaeneus*	Numerical & behavioral surveys
White-tailed kite	*Elanus leucurus*	Numerical & behavioral surveys
Loggerhead shrike	*Lanius ludovicianus*	Large area surveys
Least Bell's vireo	*Vireo bellii pusillus*	Detected in Monterey County
Willow flycatcher	*Empidonax traillii extimus*	Research at Sierra Nevada breeding sites
Burrowing owl	*Athene cunicularia hypugia*	Numerical & behavioral surveys
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Monitored success of relocation and habitat restoration
Analytical		
Arroyo southwestern toad	*Bufo microscaphus californicus*	Research and report.
Giant garter snake	*Thamnophis gigas*	Research and publication
Northern goshawk	*Accipiter gentilis*	Research and publication
Northern spotted owl	*Strix occidentalis*	Research and reports
Alameda whipsnake	*Masticophis lateralis euryxanthus*	Expert testimony

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CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

August 19, 2015

Ms. Charlene L Wardlow
Director Business Development
ORMAT Nevada
6225 Neil Road
Reno, NV 89511

RE: HEBER 1 GEOTHERMAL ENHANCEMENT PROJECT GENERATING CAPACITY DETERMINATION

Dear Ms. Wardlow:

Energy Commission staff received your email dated July 08, 2015 requesting a jurisdictional assessment of the proposed addition of one new Ormat Energy Converter and its associated equipment to the existing 47-megawatt (MW) (net) Heber 1 geothermal power plant built in 1985, referred to as the Heber 1 Geothermal Enhancement Project (project). The file attachments in your email included the heat and mass balance diagram, Imperial County's Draft Initial Study, and detailed responses to questions in the Energy Commission's "General Methods for Determining Thermal Power Plant Generating Capacity" for the project.

Staff reviewed this information to determine whether the project would fall under the 50 MW (net) threshold of the Energy Commission's licensing jurisdiction. Staff calculated the gross and net generating capacities pursuant to section 2003(b)(3) of the California Code of Regulations (CCR), title 20, and arrived at a net generating capacity increase of 11.8 MW (16.6 MW gross – 4.8 MW auxiliary load) as the result of this project. Because this increase is below 50 MW, staff concludes that the project does not fall under the Energy Commission's licensing jurisdiction. If the project is designed or constructed differently than set forth in that email and its attachments, staff reserves the right to re-examine or change its conclusions regarding jurisdiction.

Please contact Shahab Khoshmashrab of the Engineering Office at (916) 654-3913 or email him at shahab.khoshmashrab@energy.ca.gov should you have any questions.

Sincerely,

ROGER E. JOHNSON
Deputy Director, Siting, Transmission, and Environmental Protection Division

cc: Shahab Khoshmashrab

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BY ELECTRONIC MAIL
July 7, 2015

Mr. Roger Johnson
Deputy Director
Siting, Transmission, and Environmental
Protection Division
California Energy Commission
1516 9th Street
Sacramento, CA 95814
Roger.Johnson @ energy.ca.gov

Subject: Request for California Energy Commission Staff Jurisdictional Assessment
Heber Geothermal Company's Power Plant Enhancement Project, OEC 14
Imperial County

Attention: Mr. Shahab Khoshmashrab, P.E.

Dear Mr. Johnson:

Ormat Nevada, Inc. (Ormat) on behalf of its subsidiary, the Heber Geothermal Company (HGC) submits this request for a jurisdictional assessment by California Energy Commission (CEC) Staff of a proposed enhancement project to the existing Heber 1 flash plant (Heber 1). Because the enhancement project (OEC 14), which will consist of installation of one new Ormat Energy Converter (OEC), will not result in a 50 megawatt or more increase to the generating capacity of Heber 1, Ormat requests written concurrence from CEC Staff that the enhancement project is not subject to the CEC's jurisdiction on or before August 14, 2015.

The existing Heber 1 flash plant was built in 1985 with a net generating capacity of 47 megawatts. The Gould 1 Ormat Energy Converter (Gould 1) project was built in 2006, resulting in an additional 8-12 megawatts of generating capacity However, the existing facilities have degraded over time and are not generating the net megawatts originally installed. The Imperial County Planning and Development Services Department issued conditional use permits for both the Heber 1 and Gould 1 projects, and is currently reviewing the OEC 14.

A Conditional Use Permit application for OEC 14 was filed with Imperial County on May 8, 2015. A copy of the application is enclosed which contains information regarding the Heber 1 and Gould 1, and OEC 14, including the exact location and other information required by Section 2010(b). OEC 14 will increase the net generating capacity of Heber 1 to 52 megawatts. The Conditional Use Permit application for OEC 14 (CUP #15-0013) went before the Imperial County Environmental Evaluation Committee on June 25, 2015 and was referred to the Planning Commission as a Mitigated Negative Declaration. That hearing is tentatively set for September 9, 2015. The County's draft Initial Study is also enclosed for your review.

ORMAT Nevada
6225 Neil Road, Reno, NV, 89511 • Telephone (775) 356-9029 • Facsimile (775) 356-9039

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To meet the requirements of Section 2010(b)(3), Ormat's engineering staff has completed the CEC's engineering questionnaire confirming that the project is not subject to the CEC's jurisdiction.

Please contact me at 775-336-0155 or cwardlow@ormat.com if you have any questions or need additional information.

Sincerely,

Charlene L Wardlow

Charlene L Wardlow
Director Business Development

Enclosures:

CUP application and Initial Study
CEC engineering questionnaire
OEC 14 heat and mass balance

cc: Jeff Ogata, CEC Assistant Chief Counsel, Jeffery.ogata@energy.ca.gov
Shahab Khoshmashrab, CEC Facilities Siting Division, skhoshma@energy.ca.gov
Jim Minnick, Imperial County Planning and Development Services w/out enclosure
Sergio Cabanas, Ormat

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