

Volume II of III

Final Environmental Impact Report

Dogwood Geothermal Energy Project:

- Dogwood Geothermal Energy Project (CUP No. 23-0020)
- Heber 2 Solar Energy Project (CUP No. 23-0021)
- Heber Field Company Geothermal Wells & Pipeline Project (CUP No.23-0022)

SCH No. 2024010510

Imperial County, California

May 2025

Prepared for

County of Imperial
801 Main Street
El Centro, CA 92243

Prepared by

HDR
591 Camino de la Reina, Suite 300
San Diego, CA 92108

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0.3 Responses to Comment Letters Received on the Draft EIR

This section contains responses to all comment letters received on the Draft EIR. The initial public comment period for the Draft EIR was from August 14, 2024 to October 2, 2024. This comment period was extended for an additional 45 days to be from October 1, 2024 to November 11, 2024. Further, in response to the one request for extension, submitted by California Unions for Reliable Energy (CURE's)/Adams Broadwell, the public comment period was extended again from November 23, 2024 to January 13, 2025. In total, the public comment period lasted from August 14, 2024 to January 13, 2025, totaling 152 days. Nine letters were received during the comment period. A copy of each letter with bracketed comment numbers on the right margin is followed by the response for each comment as indexed in the letter. The comment letters are listed in Table 0.3-1.

Table 0.3-1. Dogwood Geothermal Energy Project Draft EIR Comment Letters

Letter	Commenter	Date
A	California Department of Fish and Wildlife	September 30, 2024
B	Imperial Irrigation District	October 1, 2024
C	Imperial County Air Pollution Control District	October 2, 2024
D	Adams Broadwell Joseph & Cardozo	August 15, 2024
E	Adams Broadwell Joseph & Cardozo	September 18, 2024
F	Adams Broadwell Joseph & Cardozo	November 8, 2024
G	Adams Broadwell Joseph & Cardozo	November 14, 2024
H	Defenders of Wildlife	November 13, 2024
I	Imperial County Air Pollution Control District	January 13, 2024



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



September 30, 2024
Sent via email.

Luis Valenzuela
Planner II
County of Imperial, Planning and Development Services Department
801 Main Street
El Centro, CA 92243

RECEIVED

OCT 01 2024

IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

DOGWOOD GEOTHERMAL ENERGY PROJECT (PROJECT)
DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR)
SCH# 2024010510

Dear Mr. Valenzuela:

The California Department of Fish and Wildlife (CDFW) received a Notice of Availability of a DEIR from County of Imperial for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

A-1

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (Id., § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

A-2

PROJECT DESCRIPTION SUMMARY

Proponents: OrHeber 3, LLC; Heber Field Company, LLC; and Second Imperial Geothermal Company

Objective: The objective of the Project is to construct and operate various facilities for three Conditional Use Permits, listed below:

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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1. Dogwood Geothermal Energy Project: construct a 25 net megawatt (MW) geothermal plant, a cooling tower, one substation, two 20,000-gallon isopentane above-ground storage tanks, 7 MW solar photovoltaic facilities, and a medium voltage distribution cable. Primary Project objective is to operate the geothermal plant, parasitic solar facility, and associated ancillary and auxiliary facilities.
2. Heber 2 Solar Energy Project: construct a 15 MW solar facility. Primary Project objectives include the operation of the parasitic solar facility to provide supplemental/auxiliary energy to the existing Heber 2 geothermal plant. This energy would not enter the transmission grid.
3. Heber Field Company Geothermal Wells and Pipeline Project: construct three geothermal production and injection wells, and geothermal fluid pipeline. Primary Project objectives are the operation of the production and injection wells to handle geothermal fluid, and to transport geothermal fluid from the production wells to the power plants.

A-2
cont.

Location: The Project is located on approximately 125 acres of privately-owned lands in southern Imperial County, California. It is approximately 1 mile south of the City of Heber jurisdictional limit and approximately 0.5 mile west from the City of Calexico jurisdictional limit. The Project site is within 3 accessor parcel numbers (APN) 054-250-031, 059020-001, and 054-250-017. The proposed geothermal power plant is generally located north of Jasper Road and west of South Dogwood Road.

Timeframe: 35 months of construction, starting the first quarter of 2025.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist City of Imperial in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document. Based on the Project's avoidance of significant impacts on biological resources with implementation of mitigation measures, including those CDFW recommends in Attachment A, CDFW concludes that an Environmental Impact Report is appropriate for the Project.

A-3

I. Environmental Setting and Related Impact Shortcoming

Would the Project 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 CDFW or USFWS?

COMMENT 1:

DEIR Section 3.5, Page 3.5-5 and Appendix E Section 3.1, Page 3-1

Issue: One biological reconnaissance survey was conducted on February 21, 2023. The *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, March 2018) state that botanical field surveys need to be conducted when plants will be both evident and identifiable, with the appropriate timing (usually during flowering or fruiting) and number of visits to determine presence of special status species and floristic diversity.

A-4

Specific impact: The biological reconnaissance survey was only performed once at the end of the winter season (February 21, 2023). The DEIR determined that the five special-status species historically documented within five miles of the project area have a low potential for occurrence, but two of the species (Abrams' spurge and hairy stickleaf) do not have blooming periods in February. Adequate evaluation of

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the Project's impacts to special-status species relies upon accurate baseline conditions, which botanical field surveys would identify. Also, neither the DEIR nor the *Biological Resources and Burrowing Owl Survey* (Catalyst Environmental Solutions, 2024) include measures to avoid, minimize, or mitigate impacts to any special-status plant species, should they be found on the project site during construction.

Why impact would occur: The single reconnaissance survey conducted on February 21, 2023, does not follow the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, March 2018), and thus may not provide adequate baseline conditions to identify and evaluate impacts to special-status species. If any special-status plant species are found on the project site during construction, no avoidance, minimization, or mitigation measures are provided in the DEIR to ensure that impacts are reduced to less than significant levels.

Evidence impact would be significant: Sensitive plant species are listed under CESA as threatened, or endangered, or proposed candidates for listing; designated as rare under the Native Plant Protection Act; or plants that otherwise meet the definition of rare, threatened, or endangered species under CEQA. Plants constituting California Rare Plant Ranks 1A, 1B, 2A, and 2B generally meet the criteria of a CESA-listed species and should be considered as an endangered, rare or threatened species for the purposes of CEQA analysis. Take of any CESA-listed species is prohibited except as authorized by state law (Fish and Game Code, §§ 2080 & 2085). Fish and Game Code Sections 1900–1913 includes provisions that prohibit the take of endangered and rare plants from the wild and a salvage requirement for landowners.

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Project Description and Related Impact Shortcoming)

To reduce impacts to less than significant: CDFW recommends botanical field surveys following the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, March 2018) be conducted annually prior to the start of construction by qualified personnel. One botanical field survey may be insufficient to detect plants that are not evident and identifiable every year. CDFW recommends mitigation measure BIO-5 Pre-Construction Plant Surveys, listed in Attachment A, to be incorporated into the DEIR.

Would the Project interfere substantially with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede use of native wildlife nursery sites?

COMMENT 2:

Section 3.5.3, Page 3.5-19; and Appendix E, Section 3.3, Page 3-6

Issue: The DEIR does not consider the broader movement of long-billed curlew and northern harrier when assessing Project impacts to these two species. Both species were observed within or directly adjacent to the Project site, but neither species' migratory movements were considered.

Specific impact: During field surveys, both the long-billed curlew and northern harrier were observed within or directly adjacent to the Project site and the DEIR acknowledges that the Project site is within the winter range for long-billed curlew and that the northern harrier moves broadly during winter and migration season. However, Appendix E contradicts the DEIR by stating that no special status species and no habitat that would support special status species were observed in the Project area, other than habitat for burrowing owls.

A-4
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Why impact would occur: The migratory movements of both species may be adversely affected by Project construction and presence, but neither the DEIR nor Appendix E provides analysis or mitigation for this impact. Mitigation measure BIO-2 does not consider the impacts to habitat attributes or spatial habitat, including the loss of foraging habitat and increase in anthropogenic effects. Also, mitigation measure BIO-2 only considers impacts to birds found during nesting season and before construction; it does not consider impacts to birds during non-nesting or non-breeding season.

Evidence impact would be significant: While the long-billed curlew is not a current CDFW Species of Special Concern (SSC), it is a watch list species with a State rank of S2, signifying that the species was formerly an SSC and is imperiled with high risk of extirpation. The long-billed curlew's declining numbers are likely caused by agricultural practices and its breeding range has retracted significantly in the last 80 years (Zeiner et al., 1990).

The northern harrier is a current CDFW-designed Species of Special Concern (CNDDB, July 2024). The primary threats to breeding northern harrier include the loss and degradation of nesting and foraging habitat, nest failure from human disturbance, and agricultural practices (Shuford, 2008).

The project proponent is responsible for complying with Fish and Game Code (FGC) sections (§) 3503, 3503.5, and 3513, which state the following: FGC § 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs or any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto; FGC § 3503.5 states that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the Fish and Game Code or any regulation adopted pursuant thereto; FGC § 3513 states that it is unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 United States Code § 703 et seq.).

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Mitigation Measure or Alternative and Related Impact Shortcoming)

Mitigation Measure BIO-2:

To reduce impacts to less than significant: CDFW recommends a qualified biologist survey the Project area not only for breeding and nesting birds, but also for other bird activity, such as foraging, and for behavior possibly caused by Project activities, such as agitation, stress, and/or nest abandonment.

CDFW provides editorial suggestions for BIO-2 in Attachment A.

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?

COMMENT 3:

Section 3.5.3, Page 3.5-18; Appendix E, Section 3.2, Page 3-2, and Appendix F, Section 3.2, Page 3-2

Issue: There is a discrepancy between the DEIR, Appendix E, and Appendix F regarding the removal of arrow-wood thickets (*Pithecia sericea* Shrubland Alliance), which is recognized by CDFW as a sensitive natural community. No avoidance,

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minimization, or mitigation measures are proposed for the potential impacts to arrow-weed thickets.

Specific impact: Appendix E states that "none of the arrow-weed thickets that occur within the survey area would be removed or disturbed by project activities with the exception of the thickets that would be spanned by the transmission line crossing of Beech Drain, Willoughby Road, Central Main Canal, and Dogwood Lateral 1." However, both the DEIR and Appendix F directly contradicted this analysis in numerous instances – the DEIR states, "none of the arrow-weed thickets that occur within the biological survey area (BSA) would be removed or disturbed by project activities" and Appendix F states, "The proposed transmission line connection would span Beech Drain, Central Main Canal, and Dogwood Lateral 1. A narrow band of arrow-weed thicket is present and would be spanned by the connection and would not be removed or disturbed by project activities."

A-6
cont.

Why impact would occur: Since the DEIR states that none of the arrow-weed thickets within the BSA would be removed or disturbed, the DEIR concludes that the proposed Project would have a less than significant impact to the sensitive natural community and thus, no mitigation measures are required. CDFW is concerned, if Appendix E is accurate in the Project's disturbance activities, then there are no avoidance, minimization, or mitigation measures in the DEIR to ensure that impacts are reduced to less than significant levels.

Evidence impact would be significant: Arrow-weed thickets are listed on the CDFW Vegetation Classification and Mapping Program's (VegCAMP) Sensitive Natural Communities Only by Life Form list (CDFW, June 2023).

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Environmental Setting and Related Impact Shortcoming)

Mitigation Measure BIO-6:

To reduce impacts to less than significant: CDFW recommends the DEIR includes avoidance, minimization or mitigation measures to ensure the project impacts are reduced to a less than significant level.

CDFW recommends mitigation measure BIO-6 Avoidance of Sensitive Natural Communities, listed in Attachment A, to be incorporated into the DEIR.

COMMENT 4:

Section 3.5, Page 3.5-6 to 3.5-7

Issue: The DEIR does not mention the potential occurrence of California black rail (*Lateralus jamaicensis coturniculus*) despite the proximity of the Project site to the species' yearlong range.

Specific impact: The Project site is within an approximate 10-mile radius to California black rail yearlong range that is west of the Project site (Zeiner, 1990). Arrow-weed (*Peltocarya sericea*) is one of the wetland plant species that is commonly associated with black rail distribution and abundance in southern California (Conway and Sulzman, 2007).

A-7

Why impact would occur: The DEIR is unclear on if the arrow-weed thickets on the Project site will be removed (refer to Comment 3 above) and thus does not provide any avoidance measures for potential impacts, nor does it consider the California black rail's potential use of arrow-weed thickets on the Project site. Without clarity on the fate of the arrow-weed thickets on the Project site, California black rail may be

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significantly impacted from loss of potential foraging habitat, nest abandonment, and mortality.

Evidence impact would be significant: Consistent with CEQA Guidelines, Section 15380, the status of the California black rail as a threatened species under the California Endangered Species Act (Fish & G. Code, § 2050 et seq.) and as a Fully Protected species (Fish & G. Code § 3511) qualifies it as an endangered, rare, or threatened species under CEQA.

California black rail populations have been documented as declining in California in recent decades primarily as a result of habitat loss and degradation, particularly in southern California (Evens et al., 1991, Conway and Salzman, 2007). Outside of the San Francisco Bay estuary, where the majority of the population occurs, the sub-species exists in smaller, disjunct sub-populations that may not be sustained without frequent immigration (Evens et al., 1991 and Richmond et al., 2008). Black rail populations and their required habitat features are vulnerable to both human-caused and natural stressors. California black rails require a dense cover of upland vegetation for protection from predators (Eddleman et al., 1994 and Evens and Thome, 2015). Disturbance to nesting rails, such as humans intruding in the marsh, have been reported to cause rails to abandon nests or to try to defend nests, exposing eggs (Flores and Eddleman, 1993). Intrusion can alter habitat and cause mortality through crushing of rails that generally freeze in place and are hesitant to flush (Evens and Thome, 2015).

A-7
cont.

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Environmental Setting and Related Impact Shortcoming)

Mitigation Measure BIO-2:

To reduce impacts to less than significant: CDFW recommends measures to fully avoid impacting California black rail during Project construction. CDFW recommends a qualified biologist survey the Project area not only for breeding and nesting birds, including California black rail, but also for other bird activity, such as foraging, and for behavior possibly caused by Project activities, such as agitation, stress, and/or nest abandonment.

CDFW provides editorial suggestions for BIO-2 in Attachment A.

II. Mitigation Measure or Alternative and Related Impact Shortcoming

Would the Project 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 CDFW or USFWS?

COMMENT 5:

Section 3.5.3, Page 3.5-16; BIO-4; and Appendix E Section 3.4, Page 3-7

Issue: No burrowing owl mitigation was proposed for either direct impacts or indirect impacts, including injury, mortality, possible nest failures, loss of young, loss of nesting and wintering habitat, loss of foraging and dispersal habitat, or anthropogenic effects. CDFW considers measure BIO-4 to be an avoidance and minimization measure instead of a mitigation measure. The DEIR also does not consider or provide an impacts analysis for future temporal anthropogenic effects to burrowing owls or the loss of habitat and its associated attributes.

Specific Impact: The DEIR states that burrowing owls have a moderate potential to occur within the Project site, but BIO-4 only provides avoidance and minimization

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measures for burrowing owls found on the Project site prior to construction. BIO-4 does not mitigate for the potential direct or indirect impacts that may occur as a result of the Project's construction.

Appendix E states that the Project site is suitable habitat for future burrowing owl inhabitation despite lack of current occupation but does not consider that the Project may alter future habitat in the area.

Why impact would occur: Mitigation measure BIO-4 only avoids and minimizes Project impacts for the burrows that are active and occupied at the time of pre-construction surveys. This lacks the temporal consideration of species occupancy and their use of the surrounding landscape for survival. Burrowing owls are dependent on burrows at all times of the year for survival and/or reproduction, evicting them from nesting, roosting, and satellite burrows may lead to indirect impacts or take. Loss of access to burrows will likely result in varying levels of increased stress on burrowing owls and could depress reproduction, increase predation, increase energetic costs, and introduce risks posed by having to find and compete for available burrows (CDFG, 2012).

Evidence impact would be significant: Take, possession or destruction of individual burrowing owls, their nests and eggs is prohibited under Fish and Game Code sections 3503, 3503.5 and 3513. Eviction of burrowing owls is a potentially significant impact under CEQA and mitigation must be roughly proportional to the level of impacts, including cumulative impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). As stated in the Staff Report on Burrowing Owl Mitigation (CDFG, 2012), "the current scientific literature supports the conclusion that mitigation for permanent habitat loss necessitates replacement with an equivalent or greater habitat area for breeding, foraging, wintering, dispersal, presence of burrows, burrow surrogates, presence of fossorial mammal dens, well drained soils, and abundant and available prey within close proximity to the burrow".

Additionally, the California Fish and Game Commission has received a formal petition to list burrowing owls as threatened or endangered pursuant to CESA. This could potentially make take of this species under purview of CESA should the species become a candidate species later this year. This petition, which CDFW found contained sufficient scientific information to indicate the petition may be warranted, states that burrowing owls "face significant impacts from habitat loss caused by development of utility-scale solar" (Center for Biological Diversity et al., 2024).

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Environmental Setting and Related Impact Shortcoming)

Mitigation Measure BIO-4:

To reduce impacts to less than significant: CDFW recommends County of Imperial follow the guidance of mitigating impacts to burrowing owls in the Staff Report on Burrowing Owl Mitigation (CDFG, 2012), including:

- (a) Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced with permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area; and
- (b) Sufficiently large acreage, and presence of fossorial mammals.

A-8
cont.

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CDFW provides a burrowing owl protection and mitigation plan, and editorial suggestions for BIO-4 in Attachment A.

A-8
cont.

III. Editorial Comments and/or Suggestions

A petition to list burrowing owls under the California Endangered Species Act (CESA) has been submitted to the California Fish and Game Commission. Since a determination has not yet been made on the petition, CDFW recommends that avoidance, minimization, and mitigation measures for burrowing owls consider both the potential for CESA listing and the retention of its current Species of Special Concern status. If the burrowing owl is listed as a candidate species under CESA, Project activities will need to either avoid impacts to the species, or the Project proponent obtain an incidental take permit from CDFW and the DEIR define mitigation that will bring the impact to a CESA-listed species to less than significant with mitigation incorporated.

A-9

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDb). The CNDDb field survey form can be filled out and submitted online at the following link: <https://wildlife.ca.gov/Data/CNDDb/Submitting-Data>. The types of information reported to CNDDb can be found at the following link: <https://www.wildlife.ca.gov/Data/CNDDb/Plants-and-Animals>.

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ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs. tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

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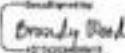
CONCLUSION

CDFW appreciates the opportunity to comment on the DEIR to assist County of Imperial in identifying and mitigating Project impacts on biological resources.

A-12

Questions regarding this letter or further coordination should be directed to Lily Mu, Senior Environmental Scientist (Specialist) at (909) 544-2521 or Lily.Mu@Wildlife.ca.gov.

Sincerely,


Brandy Wood

Brandy Wood
Environmental Project Manager

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Attachments

Attachment A. Draft Mitigation, Monitoring, and Reporting Program

cc: Office of Planning and Research, State Clearinghouse, Sacramento

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Attachment A
Draft Mitigation, Monitoring, and Reporting Program

Draft Mitigation, Monitoring, and Reporting Program (MMRP)
CDFW provides the following language to be incorporated into the MMRP for the Project.

Biological Resources (BIO)		
Mitigation Measure (MM) Description	Implementation Schedule	Responsible Party
<p>BIO-2 Pre-Construction Nesting Bird Survey:</p> <p>If construction or other project activities are scheduled to occur during the bird breeding season (typically February 1 through August 31 for raptors and March 15 through August 31 for the majority of migratory bird species), a preconstruction nesting-bird survey shall be conducted by a qualified avian biologist prior to Project-related disturbance within and adjacent to the Project area. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nesting locations and nesting behavior (including but not limited to copulation, carrying food or nesting materials, nest building, agitation, aggressive interaction, feigning injury, or distraction displays) to ensure that active bird-nests, including those for the northern-harrier, long-billed-owlet, and burrowing-owl, will not be disturbed or destroyed. In addition, any clearing of vegetation that may occur is required to take place outside of the breeding season. The survey shall be completed no more than 3 days prior to initial ground disturbance. The nesting bird survey shall include the project area and all suitable areas, including trees, shrubs, bare ground, burrows, cavities, and structures adjacent areas where project activities have the potential to affect active-nests, either directly or indirectly, due to construction activity or noise. If an active nest is identified, the biologist shall establish an appropriately sized no-work disturbance-limit buffer zone around the nest, which will be based upon the biologist's best professional judgment, the birds' displayed behavior (agitation or stress), the nesting species, its sensitivity to disturbance, nesting stage and expected types, and the intensity and duration of disturbance, using flagging or staking. The no-work buffer zone shall be clearly marked in a way that does not alert predators. Construction activities shall not occur within any no-work disturbance-limit buffer zones until the young birds have successfully fledged and the nest is deemed inactive by the qualified avian biologist.</p>	<p>Prior to the start of Project related activities</p>	<p>Project Proponent</p>
<p>BIO-4 Burrowing Owl Avoidance, and Minimization, and Mitigation</p> <p>Burrowing owl identified on site shall be mitigated per the guidance of the Staff Report on Burrowing Owl Mitigation (CDFG, 2012) such that (a) permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced with permanent</p>	<p>Prior to the start of Project related activities</p>	<p>Project Proponent</p>

Luis Valenzuela, Planner II
County of Imperial
September 30, 2024
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<p>conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals.</p> <p>Take avoidance (pre-construction) surveys for burrowing owl shall be completed during the breeding and non-breeding seasons and within 14 days prior to the start of ground disturbance and 24 hours prior to project construction. Surveys shall be conducted by qualified biologists, as detailed within Appendix D of the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game [CDFG] 2012). If burrowing owl is not detected, construction may proceed.</p> <ul style="list-style-type: none"> • If burrowing owl is identified during the non-breeding season (September 1 through January 31), a minimum 50-meter to 100-meter no-work buffer between active burrows and construction activities shall be established by the qualified biologist biological monitor for low-level disturbance. However, the minimum buffer shall be increased depending on the level of construction disturbance and construction activity (e.g., medium or high). Construction within the buffer will be avoided until a qualified biologist determines that burrowing owl is no longer present or until a CDFW-approved exclusion plan has been implemented. The buffer distance may be reduced if noise attenuation buffers such as hay bales are placed between the occupied burrow and construction activities. • If burrowing owl is identified during the breeding season (February 1 through August 31), then a 100-meter to 250-meter no-work an appropriate buffer will be established by the qualified biologist biological monitor in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012). A qualified biologist shall monitor the burrowing owls for any sign of distress and adjust the buffers as necessary to ensure no take occurs. Construction and disturbance activities within the buffer will be avoided until a qualified biologist determines that burrowing owl is no longer present the burrow is inactive or until young have fledged. The buffer distance may be reduced in consultation with CDFW if noise attenuation buffers such as hay bales are placed between the occupied burrow and construction activities. <p>If active burrows are present within the Project footprint and avoidance is infeasible, the following mitigation measures shall be implemented. If approved by CDFW through the Burrowing Owl Protection and Mitigation Plan (described below), passive relocation methods are to be used by the qualified biologist to exclude the owls out of the impact zone. Passive relocation shall only be done in the non-breeding season, where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent</p>		
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Luis Valenzuela, Planner III
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September 30, 2024
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<p>survival, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG, 2012) and a CDFW-approved Burrowing Owl Protection and Mitigation Plan. This includes covering or excavating all burrows and installing one-way doors into occupied burrows. This will allow any animals inside to leave the burrow but will exclude any animals from re-entering the burrow. If burrowing owls exhibit sign of stress in attempting to re-enter the burrow, the one-way-door shall be removed to prevent take of the individual. A period of at least 1 week is required after the relocation effort to allow the birds to leave the impacted area before construction of the area can begin. Only burrows that will be directly impacted by the Project shall be excavated and filled in to prevent their reuse. Off-site "replacement burrow site(s)" must consist of a minimum of two suitable, unoccupied burrows for every burrowing owl or pair to be passively relocated. As the Project construction schedule and details are finalized, a qualified biologist shall prepare a Burrowing Owl Protection and Mitigation Plan that will detail the approved, site-specific methodology proposed to avoid, minimize and mitigate impacts on this species. Passive relocation, destruction of burrows, construction of artificial burrows, and mitigation shall only be completed upon prior approval by and in coordination with CDFW. The Burrowing Owl Protection and Mitigation Plan shall include success criteria, remedial measures, active monitoring, and an annual report to CDFW, and shall be funded by the Project applicant. For the purposes of this mitigation measure, a "qualified biologist" is a biologist who meets the requirements set forth in CDFW's 2012 Staff Report on Burrowing Owl Mitigation and approved by CDFW.</p>		
<p>BIO-5 Pre-Construction Plant Surveys:</p> <p>Prior to the start of construction, a qualified biologist¹ shall conduct a botanical field survey following the methodology described in <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW, March 2018)</i>. The survey shall be floristic in nature (i.e., identifying all plant species to the taxonomic level necessary to determine rarity), and shall be inclusive of areas proposed for disturbance and indirectly impacted by the Project. The results of the survey shall be documented in a letter report that will be submitted to San Bernardino County and CDFW. The survey shall be conducted annually until start of construction to ensure the floristic diversity is accurately captured and effective avoidance, minimization, and mitigation strategies are developed.</p> <p>If special-status plant species are observed during the pre-construction rare plant survey(s) within the development area of the Project, the Project shall be designed to reduce impacts to these species through the establishment of buffers, to the extent feasible.</p>	<p>Prior to the start of Project related activities</p>	<p>Project Proponent</p>

Luis Valenzuela, Planner II
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¹ Botanical field surveyors should possess the following qualifications: Knowledge of plant taxonomy and natural community ecology; Familiarity with plants of the region, including special status plants; Familiarity with natural communities of the region, including sensitive natural communities; Experience with the CNDDB, DIOG, and Survey of California Vegetation Classification and Mapping Standards; Experience conducting floristic botanical field surveys as described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW, March 2018), or experience conducting such botanical field surveys under the direction of an experienced botanical field surveyor; Familiarity with federal, state, and local statutes and regulations related to plants and plant collecting; and Experience analyzing the impacts of projects on native plant species and sensitive natural communities.

<p>Buffer distances will be determined by the qualified biologist, typically 50 feet or greater from an identified special-status plant species, unless the Qualified Biologist determines a reduced buffer would suffice to avoid impacts to the species.</p> <p>If avoidance of special-status plant species is not feasible, a Special-Status Plant Relocation Plan shall be developed and implemented. The Special-Status Plant Relocation Plan shall address mitigation for special-status plants, including topsoil salvage to preserve seed bank and management of salvaged topsoil; seed collection, storage, possible nursery propagation, and planting; salvage and planting of bulbs as feasible; location of on-site receptor sites; land protection instruments for receptor areas; and funding mechanisms. The Special-Status Plant Relocation Plan shall include methods, monitoring, reporting, success criteria, adaptive management, and contingencies for achieving success.</p> <p>All special-status plant species identified on site shall be mapped onto a site-specific aerial photograph and topographic map and included on the construction, grading, fuel modification, and landscape plans.</p>		
<p>BIO-6 Avoidance of Sensitive Natural Communities:</p> <p>To the greatest extent practicable, Project plans shall avoid impacts to arrow-weed thickets. If arrow-weed thickets cannot be avoided, the Project applicant shall provide compensatory mitigation for direct impacts consisting of habitat acquisition at a minimum of a 3:1 ratio. Habitat acquisition sites shall be biologically equal or superior to existing conditions and must be conserved and managed in perpetuity.</p>	<p>Prior to the start of Project related activities</p>	<p>Project Proponent</p>

Letter A

California Department of Fish and Wildlife

September 30, 2024

- A-1** This comment is an introductory comment and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- A-2** This is an introductory comment that provides a general summary of the project and states the mission of the California Department of Fish and Wildlife (CDFW). This comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- A-3** Comment acknowledged.
- A-4** CDFW specifically mentions that Abrams' spurge and hairy stickleaf do not have blooming periods in February, which is when the biological reconnaissance survey was completed. Abram's spurge flowers from September through November and occurs in sandy flats within Sonoran and Mojavean desert scrub. Hairy stickleaf flowers from April through May (Jepson Flora Project [JFP] 2024) and from March through May according to the California Native Plant Society Rare Plant Program (CNPS 2024). This plant species occurs in washes, fans, slopes, creosote-bush scrub, and Sonoran Desert scrub (rocky) (JPF 2024, CNPS 2024). The rationale for why both these species were determined to have a low potential to occur is due to a lack of habitat and only historic records in the project vicinity. Due to the developed nature of the Project area and high agricultural use, it is unlikely that these plants would be present and, even if they were, they would be restricted to the area within and around irrigation canals, which are the only areas that are not routinely disturbed by agricultural operations. The alfalfa fields are routinely disked and disturbed as part of current operations and access roads throughout are used by vehicles and equipment. The last documented occurrence of Abrams' spurge near the Project was in 1904. The last documented occurrence for hairy stickleaf near the Project was in 1961. Further, the Project does not propose to perform ground-disturbing work in or around the irrigation canals and, accordingly, would not disturb any sensitive plants, even if they were to exist there.

CDFW's recommendations for pre-construction plant surveys have been adopted in the Final EIR in Mitigation Measure BIO-2.

The EIR adopts CDFW's recommendation for two pre-construction botanical surveys, one sometime from September through November, and another in the spring. Due to the developed nature of the project area, ongoing disturbances due to agricultural operations, and lack of suitable habitat to support these rare plant species, it is highly unlikely that any individual plants would be observed within the project's disturbance area. If a rare plant were observed within the disturbance area during a pre-construction survey, it would need to be protected from disturbance, as outlined in Mitigation Measure BIO-2:

Prior to the start of construction, a qualified biologist shall conduct a botanical field survey following the methodology described in Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW, March 2018). The survey shall be floristic in nature (i.e., identifying all plant species to the taxonomic level necessary to determine rarity), and shall be inclusive of

areas proposed for disturbance and indirectly impacted by the Project. The results of the survey shall be documented in a letter report that will be submitted to Imperial County and CDFW. The survey shall be conducted annually until start of construction to ensure the floristic diversity is accurately captured and effective avoidance, minimization, and mitigation strategies are developed.

If special-status plant species are observed during the preconstruction rare plant survey(s) within the development area of the Project, the Project shall be designed to reduce impacts to these species through the establishment of buffers, to the extent feasible. Buffer distances will be determined by the qualified biologist, typically 50 feet or greater from an identified special-status plant species, unless the Qualified Biologist determines a reduced buffer would suffice to avoid impacts to the species.

If avoidance of special-status plant species is not feasible, a Special-Status Plant Relocation Plan shall be developed and implemented. The Special-Status Plant Relocation Plan shall address mitigation for special-status plants, including topsoil salvage to preserve seed bank and management of salvaged topsoil; seed collection, storage, possible nursery propagation, and planting; salvage and planting of bulbs as feasible; location of on-site receptor sites; land protection instruments for receptor areas; and funding mechanisms.

The Special-Status Plant Relocation Plan shall include methods, monitoring, reporting, success criteria, adaptive management, and contingencies for achieving success. All special-status plant species identified on site shall be mapped onto a site-specific aerial photograph and topographic map and included on the construction, grading, fuel modification, and landscape plans.

Botanical field surveyors will possess the following qualifications, and will be approved by Imperial County prior to any botanical field surveys: Knowledge of plant taxonomy and natural community ecology; Familiarity with plants of the region, including special status plants; Familiarity with natural communities of the region, including sensitive natural communities; Experience with the CNDDDB, BIOS, and Survey of California Vegetation Classification and Mapping Standards, Experience conducting floristic botanical field surveys as described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW, March 2018), or experience conducting such botanical field surveys under the direction of an experienced botanical field surveyor; Familiarity with federal, state, and local statutes and regulations related to plants and plant collecting; and Experience analyzing the impacts or projects on native plant species and sensitive natural communities.

A-5 CDFW's comments on Mitigation Measure **BIO-4 (Pre-Construction Nesting Bird Survey)** (formerly Draft EIR Mitigation Measure BIO-2) have been incorporated into the Final EIR. These changes clarify and amplify the mitigation measure to ensure all impacts to bird species, including the long-billed curlew and northern harrier, from construction and other project activities will be reduced to less than significant levels.

A-6 CDFW notes an inconsistency between Appendix E and Appendix F and the Draft EIR in terms of the discussion on potential disturbance to arrow-weed thickets. This is the excerpt from the Biological Resources and Burrowing Owl Survey Report (Appendix E of the Draft EIR):

"Arrow Weed Thicket: The *Pluchea sericea* Shrubland Alliance (arrow weed thickets) occur around springs, seeps, irrigation ditches, canyon bottoms, stream borders, and seasonally

flooded washes (Sawyer et al. 2009). Arrow weed thickets are recognized by CDFW as a sensitive vegetation type. The canals fall within the 500-foot buffer of the project footprint and thus within the survey area; however, none of the arrow weed thickets that occur within the survey area would be removed or disturbed by project activities with the exception of the thickets that would be spanned by the transmission line crossing of Beech Drain, Willoughby Road, Central Main Canal, and Dogwood Lateral 1.”

None of the arrow weed thickets that occur within the survey area would be removed or disturbed by project activities. There are arrow weed thickets present where the proposed distribution line would cross Beech Drain, Willoughby Road, Central Main Canal, and Dogwood Lateral 1, but the crossings would be on existing infrastructure and no vegetation removal or disturbance would be required. The arrow weed thickets would not be disturbed. This clarification has been made to Section 3.5 Biological Resources of the Final EIR.

To reiterate, the canals fall within the 500-foot buffer of the project footprint and thus within the survey area; however, none of the arrow weed thickets that occur within the survey area would be removed or disturbed by project activities. As described in the Draft EIR, Appendix E and Appendix F, no disturbance to arrow-weed thickets would occur as part of the project. All arrow-weed observed within the biological survey area was growing at or below the top of bank of canals. The project would not disturb these canals. Where the distribution line would have canal crossings, it would do so on an existing pipeline:

“A medium voltage distribution cable would cross S Dogwood Road and be attached via trays to the existing pipeline that runs west before turning north to cross the Beech Drain and Main Canal at the existing above-ground pipeline span. The cable would continue to follow the existing pipeline alignment and connect into the new Dogwood OEC. No new footings or foundations are required for the cable trays.”

The Final EIR adopts CDFW’s recommendations for compensatory mitigation for direct impacts via habitat acquisition at a minimum of 3:1 ratio, if arrow-weed thickets cannot be avoided in Mitigation Measure BIO-3. This compensatory mitigation has been adopted as a precautionary measure, as no construction activities that would lead to a disturbance are proposed for the canals.

A-7 As discussed in response to comment A-6, no Project activities are proposed to alter or disturb the local canals and, therefore, no impacts to arrow-weed would occur. All arrow-weed observed within the biological survey area was growing at or below the top of bank of canals. The project would not disturb these canals or the arrow-weed thickets growing along them. CDFW calls out the potential for black rail to be impacted if arrow-weed disturbances occur as a result of the project, because the black rails use arrow-weed habitats to forage and nest. No arrow-weed would be impacted, therefore, no loss of potential foraging habitat for black rail would occur. Moreover, pre-construction survey recommendations have been incorporated as a future precaution.

However, given the presence of arrow-weed thicket within the project area, the EIR has been revised to indicate that there is potential occurrence of California black rail in the vicinity. As discussed on EIR page 3.5-26, California black rail was determined to have a moderate likelihood of occurrence on the project site based on the presence of potentially suitable habitat. Further, as discussed on EIR page 3.5-26, the arrow-weed present at and below the top of bank of Beech Drain within the vicinity of the Project Site could support foraging habitat for California black rail, but this area is not proposed for disturbance. Implementation of

Mitigation Measure BIO-3, Avoidance of Sensitive Natural Communities would prevent adverse impacts to arrow-weed thickets and therefore no loss of potential foraging habitat for California black rail would occur. The impact would be less than significant.

- A-8** CDFW's comment letter contained revisions to the text of Mitigation Measure BIO-4 which included take avoidance surveys to be conducted during the breeding and non-breeding seasons. In response, two focused surveys for burrowing owls were conducted by a qualified biologist utilizing the methods detailed within Appendix D of the CDFG 2012 Staff Report on Burrowing Owl Mitigation. Burrowing owls were confirmed present during these two surveys. The Applicant will prepare an Incidental Take Permit application for submittal to CDFW. Additionally, per CDFW's comment letter, Final EIR Mitigation Measure BIO-7 (formerly Draft EIR Mitigation Measure BIO-4) has been revised to include a robust approach to burrowing owl mitigation, avoidance, and minimization, including the following measures:
- Burrowing Owl Protection and Mitigation Plan
 - Burrowing Owl Pre-Construction Surveys and Physical Barriers
 - Burrowing Owl Construction Monitoring
 - Avoidance
 - Passive Relocation and Land Management Planning
- A-9** As discussed on EIR page 3.5-28, burrowing owls and occupied burrows were confirmed present on the Project Site during surveys conducted in January and February 2025. Because the Project Area provides suitable habitat and was found to be occupied by burrowing owls, development of the Project would potentially impact individuals as well as remove the foraging habitat for the species. Therefore, impacts to burrowing owl and its habitat would be potentially significant. Formal consultation with CDFW and a State Incidental Take Permit (ITP) under California Fish and Game Code Section 2081 would be required and is recommended by CDFW (2025). CDFW recommends an ITP due to the potential for incidental take of burrowing owls and burrows in portions of the project work area where the required buffer distances indicated in the CDFW Staff Report (CDFG 2012) are infeasible due to the already small size of the project footprint. Several mitigation measures, as specified in the EIR and include MM BIO-1, MM BIO-6, MM BIO-7 and MM's BIO-9 through BIO-11, have been developed in consultation with CDFW to reduce impacts to burrowing owls to a less than significant level.
- A-10** Comment acknowledged. The Applicant will submit appropriate special status species and natural communities data identified as part of the project site biological resources surveys to the CNDDDB.
- A-11** The County acknowledges that payment of the environmental document filing fee is required for Project approval. The Project Applicants will provide payment upon submittal of the Notice of Determination of the Final EIR.
- A-12** The contact information for CDFW is received and acknowledged.



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October 1, 2024

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

RECEIVED

By Imperial County Planning & Development Services at 8:53 am, Oct 01, 2024

SUBJECT: NOA of a DEIR for the Dogwood Geothermal Energy Project combined with Heber 2 Solar and Heber Field Drilling Wells

Dear Mr. Valenzuela:

On September 26, 2024, the Imperial Irrigation District received from the Imperial County Planning & Development Services Department, the Notice of Availability of a Draft Environmental Impact Report for the Dogwood Geothermal Energy Project. The project is comprised of three components under separate Conditional Use Permits: The Dogwood Geothermal Energy Project (CUP 23-0020) includes a geothermal plant and associated ancillary and auxiliary facilities, a substation that will connect to the IID grid, a 7 megawatt "behind the meter" PV solar facility for supplemental/auxiliary energy, and a distribution cable from the proposed solar facility to the geothermal plant. The Heber 2 Solar Energy Project (CUP 23-0021) proposes a 15 MW "behind-the-meter" PV solar facility to provide supplemental/auxiliary energy to the existing Heber 2 geothermal plant. The energy generated by the solar facility would be transmitted via a distribution cable like the DGEP. The Heber Field Company Geothermal Wells and Pipeline Project (CUP 23-0022) proposes the development of three geothermal production wells, one new geothermal injection well and 4,500 linear ft. of brine pipelines. The projects will be sited on 125 acres of land one mile south of Heber, CA and 0.5 miles west of Calexico, CA. The sites are within portions of three parcels: APNs 054-250-031, 059-020-001, and 054-250-017. APN 054-250-31 is within the existing Heber 2 Geothermal Energy Complex located at 855 Dogwood Road, Heber, CA, and APNs 059-020-001 and 054-250-017 are immediately southeast and east, respectively, of the H2GEC.

B-1

The IID has reviewed the DEIR and found that the comments provided in the July 3, 2024 and February 22, 2024 district letters (see attached) continue to apply.

B-2

Should you have any questions, please do not hesitate to contact me at 760-482-3009 or at dvargas@iid.com. Thank you for the opportunity to comment on this matter.

B-3

Respectfully,

Donald Vargas
Compliance Administrator II

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

IMPERIAL IRRIGATION DISTRICT • P.O. BOX 937 • IMPERIAL, CA 92251



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Since 1911

July 3, 2024

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

SUBJECT: 1st Admin. DEIR for the Dogwood Geothermal Energy Project

Dear Mr. Valenzuela:

On June 17, 2024, the Imperial Irrigation District received from the Imperial County Planning & Development Services Department, a request for agency comments on the 1st Administrative Draft Environmental Impact Report for the Dogwood Geothermal Energy Project. The project is comprised of the following components that constitute the project under three separate Conditional Use Permit applications: The Dogwood Geothermal Energy Project (CUP No. 23-0020) includes a geothermal plant, associated ancillary and auxiliary facilities, a new substation to connect to the IID grid, a 7 megawatt "behind the meter" PV solar facility for supplemental/auxiliary energy, and a distribution line from the proposed solar facility to the geothermal plant. The Heber 2 Solar Energy Project (CUP No. 23-0021) proposes a 15 MW "behind-the-meter" PV solar facility to provide supplemental/auxiliary energy to the existing Heber 2 geothermal plant. The energy generated by the solar facility would be transmitted via a distribution cable like the DGEF. The Heber Field Company Geothermal Wells and Pipeline Project (CUP No. 23-0022) proposes the development of three geothermal production wells, one new geothermal injection well and 4,500 linear ft. of brine pipelines. The projects will be sited on approximately 125 acres of land approximately one mile south of Heber, California and approximately 0.5 miles west of Calexico, CA. The sites are within portions of three parcels: APNs 054-250-031, 059-020-001, and 054-250-017. APN 054-250-31 is within the existing Heber 2 Geothermal Energy Complex located at 855 Dogwood Road, Heber, CA, and APNs 059-020-001 and 054-250-017 are immediately southeast and east, respectively, of the H2GEC

B-4

The IID has reviewed the 1st Admin. DEIR and in addition to the comments provide in the in the February 22, 2024 district letter (see attached), has the following observations:

1. Per the May 18th 2023 ICPDS Department pre-application meeting, the project will not be seeking a water supply from IID. However, it appears the project will convert some agricultural fields into solar facilities, thereby, eliminating and/or substantially

B-5

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Luis Valenzuela
July 3, 2024
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- | | |
|---|----------------------|
| <p>reducing irrigation to lands, thus altering the flow of discharge to the drains and to the Salton Sea which may result in impacts to protected species and to air quality. Thus, DEIR should address these issues.</p> | <p>B-5
cont.</p> |
| <p>2. IID water facilities that may be impacted by the project include the Date Drain No. 3, Beech Drain, Dogwood Lateral 2, Dogwood Canal, Central Main Canal, and the Beech Canal.</p> | <p>B-6</p> |
| <p>3. To determine magnitude of impacts and reduce impacts to IID Water Department facilities the project's plans (County of Imperial required grading & drainage and fencing plans, etc.) are to be submitted to IID Water Department Engineering Services Section prior to final project design. If the project has a gen-tie transmission line component, early review of alignments is required by IID WDES Section to assess impacts to canals and drains before alignments are finalized. IID WDES Section should be contacted at (760) 339-9265 for additional information.</p> | <p>B-7</p> |
| <p>4. IID canal or drain banks cannot be used to access the project site. Any abandonment of easements or facilities will be approved by the IID based on systems (irrigation, drainage, Power, etc.) needs.</p> | <p>B-8</p> |
| <p>5. For information regarding construction water, the applicant should contact IID's Water Department South End Division at (760) 482-9800.</p> | <p>B-9</p> |
| <p>6. For long-term water supply request and information regarding IID water supply policies, the applicant should contact Justina Gamboa-Arce, Planner Water Resources Senior, at (760) 339-9085 or jgamboaarce@IID.com.</p> | <p>B-10</p> |
| <p>7. In order to obtain a water supply from IID for a non-agricultural project, the applicant will be required to comply with all applicable IID policies and regulations and may be required to enter into a water supply agreement. Such policies and regulations stipulate, among other things, that all potential environmental and water supply impacts of the project be adequately assessed, appropriate mitigation developed if warranted, including any necessary approval conditions adopted by the relevant land use and permitting agencies.</p> | <p>B-11</p> |
| <p>8. An IID encroachment permit is required to utilize existing surface-water drainpipe connections to drains and receive drainage service from IID. Surface-water drainpipe connections are to be modified in accordance with IID Water Department Standards. Before commencing construction and subsequent operation of the project, storm-water permits for construction and operation issued from California Regional Water Quality Control Board will also be required by IID. The project's CRWQCB Storm Water Pollution Prevention Plan and storm-water permits are to be submitted to IID.</p> | <p>B-12</p> |

Luis Valenzuela
July 3, 2024
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9. Encroachment permit(s) are required for long-term facilities; site access driveways crossing canals and drains, industrial canal water service to the facility, surface drainage outlets to IID drains, overhead and underground electric and utilities crossing canals and drains. Site access driveways may require pipelining, which would be performed by IID Water Dept. per the IID Developer Project Guide: <https://www.iid.com/home/showpublisheddocument/2328/637838050015000000>. A water supply agreement is required for industrial canal water service. Project fencing is to be set back from IID canal and drain banks.

B-13

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.

B-14

Respectfully,



Donald Vargas
Compliance Administrator II

Enclosure

Jamie Asbury – General Manager
Mike Pacheco – Manager, Water Dept.
Matthew H. Snelser – Manager, Energy Dept.
Paul Rodriguez – Deputy Mgr., Energy Dept.
Geoffrey Holbrook – General Counsel
Michael P. Kamp – Superintendent General, Fleet Services and Reg. & Environ. Compliance
Luis Cervantes – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.



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February 22, 2024

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

SUBJECT: NOP of a DEIR for the Dogwood Geothermal Energy Project, CUP 23-0020;
Heber 2 Solar Energy Project, CUP 23-0021 and Heber Field Company
Geothermal Wells & Pipeline Project, CUP 23-0022

Dear Mr. Valenzuela:

On January 19, 2024, the Imperial Irrigation District received from the Imperial County Planning & Development Services Department, the Notice of Preparation of a Draft Environmental Impact Report for the Dogwood Geothermal Energy Project, Heber 2 Solar Project and Heber Field Company Geothermal Wells & Pipeline Project, Conditional Use Permits 23-0020, 23-0021 and 23-0022, respectively. The Dogwood Geothermal Energy Project consists of a geothermal plant and associated ancillary and auxiliary facilities, a new substation that proposes to connect to the IID grid, a 7 megawatt "behind the meter" PV solar facility for supplemental energy, and a distribution line from the proposed solar facility to the geothermal plant (that will cross the Beech Drain and Central Main Canal at the existing above-ground pipeline span). The Heber 2 Solar Energy Project proposes a 15 MW "behind-the-meter" PV solar facility to provide supplemental energy to the existing Heber 2 geothermal plant. The energy generated by the solar facility would be transmitted via a distribution line like the Dogwood Geothermal Energy Project. The Heber Field Company Geothermal Wells and Pipeline Project intends to develop three geothermal production wells. The projects will be sites on approximately 125 acres of land in the southern portion of Imperial County, approximately one mile south of Heber, California and approximately 0.5 miles west of Calexico, CA. The sites are within portions of three parcels: APNs 054-250-031, 059-020-001, and 054-250-017. APN 054-250-31 is within the existing Heber 2 Geothermal Energy Complex located at 855 Dogwood Road, Heber, CA, and APNs 059-020-001 and 054-250-017 are immediately southeast and east, respectively, of the H2GEC.

B-15

The IID has reviewed the NOP of the DEIR and has the following comments:

1. To properly assess for potential impacts as covered in the environmental factor titled "UTILITIES AND SERVICE SYSTEMS" of the projects' Environmental Impact

B-16

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Report's Environmental Checklist, and determine if the projects will require or result in the relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects, a facility study, system impact study and/or circuit study/distribution impact study, will have to be performed. Any system improvements or mitigation identified in such studies to accommodate a project shall be the responsibility of the projects' proponent and should be included as part of the project for environmental assessment purposes.

B-16
cont.

2. For projects that will require distribution-rated electrical service for construction and/or operation, proponent should be advised to contact Joel Lopez, Project Development Planner Senior, at (760) 482-3444 or e-mail Mr. Lopez at JLopez@IID.com to initiate the customer service application process. In addition to submitting a formal application (available for download at <http://www.iid.com/home/showdocument?id=12923>), proponent will be required submit, electrical plans, electrical panel size and location, operating voltage, electrical loads, an AutoCAD file of the site plan, construction schedule, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The projects' proponent shall be responsible for all costs and mitigation measures related to providing electrical service to the projects.

B-17

3. The impacts to the Salton Sea, due to loss or reduction of agricultural runoff caused by agricultural land conversion to urban and/or solar use must be assessed in the DEIR. Due to the potential loss or reduction of inflow to the Salton Sea and to IID drains with its concurrent environmental impacts, the projects' proponent should address this issue as well as provide analysis that the projects do not impact the IID Water Conservation and Transfer Draft Habitat Conservation Plan (HCP), the existing Section 7 Biological Opinion and the California Endangered Species Act (CESA) Permit 2081.

Discussion of cumulative impacts considering other non-agricultural facilities whose water use changes (or potential water use changes) would reduce the inflow conveyed to IID drains and the Salton Sea, it is advisable that the projects' proponent present a cumulative impact analysis on inflow to IID drains and the Salton Sea.

B-18

The following are access links to the documents mentioned:

- The HCP is part of the IID Water Conservation and Transfer Project, Final EIR/EIS and can be found at the website [Water/Library/QSA-Water-Transfer/Environmental-Assessment/Permits/Final EIR/EIS; Volume II, Appendix A Species Covered by the HCP](#). The HCP in the Draft EIR/EIS may contain small changes from the final version of the EIR/EIS. It is in a different

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appendix in the draft that the final EIR/EIS (Appendix C). Until the final HCP/Natural Community Conservation Plan is approved, IID uses the draft HCP in the draft document, which can be accessed at [Water/Library/QSA-Water-Transfer/Environmental-Assessment](#).

- The Biological Opinion (federal Endangered Species Act permit) is available at <https://www.iid.com/Imperial-Irrigation-District/Salton-Sea-Areas>.
- The CESA 2081 (the water transfer operates under this state ESA permit until the NCCP is approved) can be found at <https://www.iid.com/water/library/qsa-water-transfer/environmental-assessments-permits/cesa-compliance>.
- The MMRP (Mitigation Monitoring and Report Program) is accessible at <https://www.iid.com/Water/Library/QSA-Water-Transfer/Mitigation>.

B-18
cont.

4. To insure there are no impacts to IID water facilities, construction plans for the projects, including grading & drainage and fencing plans, should be submitted to IID Water Department Engineering Services Section for review prior to final project design. For additional information IID WDES Section should be contacted at (760) 339-9265.

B-19

5. Projects may impact IID drains with project site runoff flows draining into IID drains. To mitigate impacts, a comprehensive IID hydraulic drainage system analysis may be required. IID's hydraulic drainage system analysis includes an associated drain impact fee.

B-20

6. For construction water, the projects' proponent will need to submit a Temporary Water Account Application to the IID. Furthermore, the use of IID water during a project's construction phase will require an encroachment permit. Once a project moves forward an onsite reservoir will need to be designed and constructed by the proponent to ensure that the project has at least a six-day supply of water available in case of maintenance or construction projects on the supply canal. For additional information regarding construction water, the applicant should contact IID's Water Department North End Division at (760) 482-9900.

B-21

7. The projects' proponent will be required to provide rights of way and easements for any proposed power line extensions and/or any other infrastructure needed to serve the projects as well as the necessary access to allow for continued operation and maintenance of any IID facilities located on adjoining properties. Proponent shall provide a surveyed legal description and associated exhibit certified by a licensed surveyor for all rights of way deemed necessary by IID to accommodate a projects' electrical infrastructure. ROWs and easements shall be in a form acceptable to and at no cost to IID for installation, operation, and maintenance of all electrical facilities.

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|---|-------------|
| <p>8. Public utility easements over all private public roads and additional ten (10) feet in width on both side of the private and public roads shall be dedicated to IID for the construction, operation, and maintenance of its electrical infrastructure.</p> | <p>B-23</p> |
| <p>9. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions for its completion are available at the website https://www.iid.com/about-iid/department-directory/real-estate. The district Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements. No foundations or buildings will be allowed within IID's right of way.</p> | <p>B-24</p> |
| <p>10. 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.</p> | <p>B-25</p> |
| <p>11. IID encroachment permit(s) are required for temporary construction water, construction drainage, and construction access crossing canals and drains. IID canal and drain banks are not to be used or obstructed during construction of the projects.</p> | <p>B-26</p> |
| <p>12. Any new, relocated, modified or reconstructed IID facilities required for and by a project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, water deliveries, canals, drains, etc.) need to be included as part of the project's 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 projects proponent.</p> | <p>B-27</p> |
| <p>13. Dividing a project into two or more pieces and evaluating each piece in a separate environmental document (Piecemealing or Segmenting), rather than evaluating the whole of the project in one environmental document, is explicitly forbidden by</p> | <p>B-28</p> |

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CEQA, because dividing a project into a number of pieces would allow a Lead Agency to minimize the apparent environmental impacts of a project by evaluating individual pieces separately, each of which may have a less-than-significant impact on the environment, but which together may result in a significant impact. Segmenting a project may also hinder developing comprehensive mitigation strategies. In general, if an activity or facility is necessary for the operation of a project, or necessary to achieve the project objectives, or a reasonably foreseeable consequence of approving the project, then it should be considered an integral project component that should be analyzed within the environmental analysis. The project description should include all project components, including those that will have to be approved by responsible agencies. The State CEQA Guidelines define a project under CEQA as "the whole of the action" that may result either directly or indirectly in physical changes to the environment. This broad definition is intended to provide the maximum protection of the environment. CEQA case law has established general principles on project segmentation for different project types. For a project requiring construction of offsite infrastructure, the offsite infrastructure must be included in the project description. *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App. 4th 713.

B-28
cont.

Should you have any questions, please do not hesitate to contact me at 760-482-3609 or at dvargas@cid.com. Thank you for the opportunity to comment on this matter.

B-29

Respectfully,


Donald Vargas
Compliance Administrator II

Jamie Aubrey – General Manager
Mike Pacheco – Manager, Water Dept.
Matthew H. Smeiser – Manager, Energy Dept.
Geoffrey Holbrook – General Counsel
Michael P. Kemp – Superintendent General, Fleet Services and Reg. & Environ. Compliance
Laura Cervantes – Supervisor, Real Estate
Jesica Humes – Environmental Project Mgr. Sr., Water Dept.

Imperial Irrigation District

October 1, 2024

- B-1** This comment is an introductory comment and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- B-2** Comment acknowledged.
- B-3** The contact information for the Imperial Irrigation District (IID) is received and acknowledged.
- B-4** This comment provides a general summary of the project and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- B-5** The Draft EIR addresses the potential direct and cumulative impacts of agricultural conversion to IID drains and the Salton Sea HCP in multiple sections of the Draft EIR, including in Section 3.5 (Biological Resources), Section 3.11 (Hydrology), Section 3.17 (Utilities and Service Systems), and Chapter 5.0 (Cumulative Impacts) and concludes that impacts related to protected species and air quality would be less than significant. As discussed below, the Draft EIR found that 1) the reduction in irrigation water reaching IID canals from temporarily converting the site from agricultural to non-agricultural is cumulatively less than significant; 2) the Project would not significantly alter the drainage pattern of the site; and 3) the Interim Water Supply Policy (IWSP) and the Temporary Land Conversion Following Policy (TLCFP) provide a framework to address potential cumulative impacts from non-agricultural uses, such as this Project, on IID's ability to meet its obligations under the Salton Sea HCP. Because of these reasons as discussed in more detail below, the potential impacts to protected species and air quality would be less than significant.

The Reduction in Irrigation Water Reaching IID Canals is Both Directly and Cumulatively Less Than Significant

As provided in Section 5.3.16 (Cumulative Effects – Utilities and Service Systems) of the Draft EIR, implementation of the Project would result in conversion of approximately 106.9 acres of land currently under or available for agricultural production to non-agricultural uses. To provide a quantitative assessment of the reduction of irrigation water entering IID canals, information provided in Section 5.3.16, as follows, has been expanded upon to provide clarification in the Final EIR.

“Additionally, as reported for IID's 2020 Temporary Land Conversion Following Program, solar developments at the end of 2020 converted 12,404 acres of farmland, approximately half the acreage set aside by the County for conversion. These projects had a yield at-river of 65,964 AF of water in 2020 and on average, each agricultural acre converted reduces agricultural demand by 5.1 AFY, which results in a total at-river yield (reduction in consumptive use) of 127,500 AFY, representing a significant cumulative net benefit to IID's water supply.”

Applying the 5.1 AFY rate for agricultural conversion to this Project (approximately 106.9 acres of possible temporarily converted lands – 22.94 acres of Prime farmland and 83.94 of Farmland of Statewide Importance) would result in a reduction of estimate of the amount of irrigated waters reaching IID canals, which assumes that 100% of the irrigated waters sheet

flows into the canals (i.e., does not account for any soil infiltration or evaporation in the canals along 25 miles to the Salton Sea). Based on IID's 2023 Water & QSA Implementation Report, there are 445,000+ annual irrigated acres within their service area. The conversion of approximately 106.9 acres from agriculture to solar facilities, and resulting 545.2 AFY decrease in potential agricultural water reaching IID canals, represents a 0.024% reduction in annual irrigated acres within IID's service area. In 2023, the total water inflow to the Salton Sea was 988,000 acre-feet (TAFY; CNRA 2024); therefore, the conversion of the agricultural land for the Project would result in a maximum reduction of 0.05% (545 AFY/988,000 AFY) of inflow to the Salton Sea. Therefore, the amount of irrigated water draining into IID canals, and the subsequent New and Alamo Rivers and eventually the Salton Sea (25 miles away), would be nominally reduced with no significant impact. The project's reduction of 0.024% in annual irrigated acres would not impact protected species or air quality in the basin, as the reduction in water that ultimately drains to the Salton Sea is not of a magnitude that would result in any potentially significant impacts to species or air quality.

The cumulative impact to biological resources as a result of fallowing agricultural fields would be less than significant.

Assuming that every project provided in Table 5-1 in the Draft EIR would temporarily convert the full amount of project space to non-agricultural use, approximately 40,666 acres are under consideration for renewable energy or battery storage. The proposed Project would temporarily convert 106.9 acres, which represents 0.3% of the total proposed acreage in the cumulative analysis area (Figure 5-1 in Draft EIR). In terms of AFY, the Project would have the potential to generate a reduction of 545.2 AFY from its conversion of 106.9 acres (at 5.1 AFY); this 545.2 AFY represents 0.3% of the overall potential cumulative impact of approximately 207,397 AFY from all projects included in Table 5-1. Because the project represents less than 1% of the potential cumulative impacts, the Project would not significantly contribute to cumulative impacts to IID canals or the Salton Sea HCP, including as it relates to air quality and biological resources.

Furthermore, as discussed in Section 5.3.10 (Cumulative Impacts - Hydrology), land use conversion to non-agricultural uses is not the only reason for potential drawdown of the inflows to the Salton Sea. For example, the Draft EIR sites that "Due to increased demand for water supplies in the region and IID water transfer agreements, increasing amounts of water are being consumed in Imperial Valley. In addition, water is also being transferred out of the Valley to population centers such as San Diego County, thus reducing inflows to the Salton Sea." However, following the end of mitigation water flows at the end of 2017, CNRA reported that total estimated inflows to the Salton Sea remained stable through 2022, and dropped in 2023 by approximately 7 percent from the average of the prior five years of data (1,064 TAFY from 2018 to 2022) (CNRA 2024). Accordingly, the rates of runoff reductions attributable to the temporary conversion of agricultural land discussed above are likely conservative estimates and the impacts would probably be even lower than estimated.

The Project Site Would Not Significantly Alter The Existing Drainage Pattern

The Draft EIR discusses how the Project would not alter the existing drainage pattern of the Project site in several places, including in both direct and cumulative impacts. As discussed in the Draft EIR, the Project would not create a large amount of impervious surfaces and stormwater would continue to directly infiltrate into exposed soils. Therefore, the Project would not significantly alter the drainage pattern of the Project site or surrounding area. The following

excerpts from the Draft EIR discuss and substantiate that stormwater drainage would continue to directly infiltrate after Project construction and during operations.

Section 3.11.3 (Hydrology – Impacts and Mitigation Measures) discusses the potential direct impacts of developing the Project on stormwater facilities and management, as follows:

“Project implementation would not substantially alter the existing drainage pattern of the site or area. The majority of the project site would continue to sheet flow through the pervious native soils. The project will be designed to meet County of Imperial storage requirements (100 percent of the 100-year storm (3 inches of rain)) (refer to the County’s Engineering Guidelines Design Guidelines Manual for the Preparation and Checking of Street Improvement, Drainage and Grading Plans within Imperial County (2008) for storm water runoff, which will result in an impoundment of runoff in excess of the anticipated volume of runoff to be generated by the 100-year storm event. Additionally, implementation of Mitigation Measure HYD-2 requires that the project Drainage Plan adhere to the County’s Engineering Guidelines Manual, IID “Draft” Hydrology Manual, or other recognized source with approval by the County Engineer to control and manage the on- and off-site discharge of stormwater to existing drainage systems. As such, infiltration basins will be integrated into the Drainage Plan to the maximum extent practical. The Drainage Plan shall provide both short- and long-term drainage solutions to ensure the proper sequencing of drainage facilities and management of runoff generated from project impervious surfaces as necessary.

Additionally, after construction is complete, all existing roads would be left in a condition equal to or better than their preconstruction condition. All other areas disturbed by construction activities would be recontoured and decompacted. As such, daily operations and routine maintenance are not anticipated to alter the existing drainage pattern such that flooding (on- or off-site) increases when compared to existing conditions. Lastly, the project site would remain largely impervious over the operational life of the project. Therefore, the proposed project would result in less than significant impacts associated with the alteration of drainage patterns resulting in on- or off-site flooding. Upon implementation of Mitigation Measure HYD-2, impacts would be less than significant.

The Draft EIR also discusses potential cumulative impacts in Section 5.3.10, as follows:

“...Project implementation would not substantially alter the existing drainage pattern of the site or area. The majority of the project site would continue to sheet flow through the pervious native soils. The reduction of runoff to the Salton Sea during project construction and operation is not expected to combine with similar impacts of large scale proposed, approved and reasonably foreseeable renewable energy projects identified in Table 5-1. As such, the projects would not result in a significant cumulatively considerable impact on floodplains by constructing new facilities within an identified flood hazard zone. Likewise, cumulative impacts associated with runoff reduction would be less than cumulatively considerable.”

The IWSP and the TLCFP Provide Adequate Framework for Non-Agricultural Projects

IID has programs and policies in place that plan for and manage water demands from non-agricultural projects or agricultural conversion/fallowing projects in the Interim Water Supply (IWSP) for Non-Agricultural Projects and the Temporary Land Conversion Fallowing Policy (TLCFP). The Draft EIR discusses the Project’s applicability to these programs and sites the ample water budget of 23,800 AFY (of 25,000 AFY total) available for non-agricultural projects.

Collectively, these programs/policies allow IID to provide water to non-agricultural projects but also serve as a planning/management framework for IID to account for non-agricultural projects in the overall water budget, including allocating flows to the Salton Sea.

The Draft EIR discusses these policies and programs in Section 3.17.2 (Utilities and Service Systems) for the IWSP and TLCFP, as follows:

“Imperial Irrigation District Interim Water Supply Policy (IWSP) for Non-Agricultural Projects

The IWSP was adopted by the IID Board on September 29, 2009. The IWSP provides a mechanism to address water supply requests for projects being developed within the IID service area, while the Integrated Regional Water Management Plan was pending approval. The IWSP designates up to 25,000 AFY of IID’s annual Colorado River water supply for new non-agricultural projects, provides a mechanism and process to develop a water supply agreement for any appropriately permitted project, and establishes a framework and set of fees to ensure water used to meet new demands do not adversely affect existing users by funding water conservation or augmentation projects, as needed.”

Depending on the nature, complexity, and water demands of the Project, new projects may be charged a one-time reservation fee and an annual water supply development fee for the contracted water volume used solely to assist in funding new water supply projects. All new industrial use projects are subject to the fee, while new municipal and mixed-use projects shall be subject to the fee if the project water demands exceed certain district-wide average per capita use standards. The applicability of the fee to mixed-use projects will be determined by IID on a case-by-case basis, depending on the proportion of types of land uses and water demand proposed for a project.

Temporary Land Conversion Following Policy (TLCFP)

The Imperial Irrigation District Temporary Land Conversion Following Policy was adopted by the IID Board of Directors on May 8, 2012. This policy developed a framework for a temporary, long-term following program to work in concert with the IWSP, and in line with the coordinated land use/water supply strategy.

The TLCFP works to coordinate land use/ water supply policy that would assign water supplies to categories of use consistent with land use zoning designations and adapt to land use changes as non-agriculture projects are sited in agricultural zones through the County CUP system (i.e., Renewable Energy Overlay). Renewable energy projects may need a short-term water supply for construction and decommissioning activities and longer-term water service for facility operation and maintenance or for water treatment to meet potable water standards. This following program satisfies multiple district objectives and serves to reduce the conservation and water use demands on other IID water users and thus provides district-wide benefits.”

As concluded in Section 3.17.3 (Utilities and Service Systems) of the Draft EIR, “As of February 2023, a balance of 23,800 AFY remains available under the IWSP for new non-agricultural projects. The project’s estimated water demand would not affect IID’s ability to provide water to other users in IID’s water service area.” Therefore, with such a large balance of available water under the IWSP for non-agricultural projects, the Draft EIR concludes that potential impacts to IID’s ability to allocate flows to the Salton Sea would be less than significant.

Additionally, Section 5.3.4 (Cumulative Impacts – Biological Resources) found that IID’s IWSP and TLCFP adequately manage potential indirect and cumulative impacts from fallowing or converting lands to non-agricultural uses, as follows:

“Further, the proposed project would result in a net decrease in water demand, which would provide a benefit to IID’s water budget and available supply for the Salton Sea. Implementation of the project would result in fallowing of currently irrigated agricultural fields. The IID’s “Imperial Valley Natural Community Conservation Plan and Habitat Conservation Plan Planning Agreement No. 2810-2004-001-06” (February 2006) covers water conservation and irrigation and drainage of land to which IID delivers water to which the environmental impacts and various approaches to mitigate potential impacts to the Salton Sea include fallowing agricultural lands as identified in the HCP Final EIR/EIS. EIR Section 3.17.2 discusses the IID’s Interim Water Supply Policy (IWSP) for Non-Agricultural Projects and Temporary Land Conversion Fallowing Policy (TLCFP) adopted by the IID and according to the TLCFP “This fallowing program satisfies multiple district objectives and service to reduce the conservation and water use demands on other IID water uses and thus provide district-wide benefits.”

B-6 The Draft EIR acknowledges the presence of these IID water facilities and discusses potential impacts to the drains/canals in several sections, including:

- Section 3.5.1 (Aquatic Resources)
- Table 3.5-2 (Jurisdictional Waters within Disturbance Area)
- Section 3.5.3 (Impacts 3.5-2; 3.5-3)
- Section 3.6.1 (Cultural Resources – Existing Conditions)
- Section 3.6.3 (Impact 3.6-1)
- Section 3.6.1.2 (History of Imperial Irrigation District Canal System)
- Section 3.11.1 (Hydrology/Water Quality – Existing Conditions)
- Section 3.11.3 (Impacts 3.11-1; 3.11-3; 3.11-4; 3.11-5; 3.11-6)

As noted in these sections, no significant impacts to IID canals or facilities would occur under the Project.

B-7 As provided in Section 2.3, the Project does not propose to alter or disturb any existing IID facilities in the Project area. The Project will create an on-site substation so a gen-tie line is not proposed, and the parasitic solar load will be delivered via a medium voltage cable that will be hooked onto an existing pipeline alignment and IID canal crossing. The Project Applicants will submit the required plans to IID for review to concur with this finding prior to construction.

B-8 As provided in Section 2.3, the Project does not propose to utilize or disturb any IID canals to access the Project site. (See, e.g., Draft EIR pages 2-8, 2-13 [explaining that addition of medium voltage distribution line would use existing pipeline infrastructure to cross Beech Drain and Main Canal, resulting in no new impact to the IID canals].) The Project also does not propose to abandon or retire any IID facilities present on/near the Project site.

B-9 As provided in Section 2.4.5 (Water Use), the Project Applicants proposes to utilize its existing contract with IID to perform “construction activities, including grading and dust control... Water

necessary for these activities would be obtained from local irrigation canals in conformance with IID requirements.”

B-10 As provided in Section 2.4.5 (Water Use), the Applicants will utilize its existing contract with IID to perform operations, “Once operating, up to approximately 325 gpd (0.36 acre-feet per year) of non-potable water will be required and provided by the Project Applicants’ existing IID contract/allocation.”

B-11 Please refer to response to comment B-10.

B-12 The Beech Drain, where the medium voltage cable would hook onto an existing pipeline crossing, has an existing IID encroachment permit. The permit holder may seek to modify the terms of the permit to accommodate this minor addition, if necessary, as determined by IID.

As discussed in Section 1.2, the Project will adhere to the required stormwater permitting process with the Regional Water Quality Control Board and IID.

B-13 Please refer to responses to comments B-10 and B-12.

B-14 The contact information for the IID is received and acknowledged.

B-15 This comment provides a courtesy copy of IID’s comments on the Notice of Preparation of the Draft EIR. These comments were considered by the County in preparing the Draft EIR as part of the scope of the Draft EIR’s analysis.

This comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.

B-16 Please refer to response to comment B-7.

B-17 A new subsection has been included in Section 1.1 (Other Agencies Reviews and/or Consultations) of the Final EIR to include IID’s plan review process, as follows:

Imperial Irrigation District

- Prior to construction, the Applicant will submit project plans to IID Water Department Engineering Services to concur that the Project would not disturb any IID drains, canals, or facilities in the Project area. If IID determines otherwise, a comprehensive IID hydraulic drainage system analysis may be required.
- Prior to construction, the Applicant will submit electrical plans, electrical panel size and location, operating voltage, electrical loads, an AutoCAD file of the site plan, construction schedule, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project.
- Prior to construction, the Applicant will submit the required documents to obtain an encroachment permit from IID to utilize the existing canals to provide water for construction activities.

B-18 Please refer to response to comment B-5. As discussed, because the project represents less than 1% of the potential cumulative impacts, the Project would not significantly contribute to cumulative impacts to IID canals or the Salton Sea HCP, including as it relates to air quality and biological resources, and related regulatory permits.

B-19 Please refer to response to comment B-7.

B-20 Please refer to response to comments B-12 and B-17.

- B-21** Please refer to response to comments B-12 and B-17.
- B-22** The Project would develop an on-site substation and not include any offsite transmission infrastructure; therefore, no ROWs or easements are expected to be required for grid interconnection, and such improvements are not reasonably foreseeable. Further, the Project does not propose to alter site access and IID would continue to have direct access to its facilities. There is no foreseeable need for interconnection to IID infrastructure. The Project proposes to develop a dedicated substation to step-up the power and send it to the grid.
- B-23** The Project does not propose a public utility easement. The Project proposes to develop a dedicated substation to step-up the power and send it to the grid, whereas no off-site transmission improvements are foreseeably needed. This will be confirmed in IID's Executed System Impact Study Agreement process that was initiated in March 2024 and is still in process.
- B-24** Please refer to responses to comments B-12 and B-17.
- B-25** Please refer to responses to comments B-12 and B-17.
- B-26** Please refer to responses to comments B-12 and B-17.
- B-27** Please refer to response to comment B-8.
- B-28** As provided in Chapter 2.0 (Project Description), the Draft EIR addresses potential impacts from three separate CUP actions under one document. This was done to assess the "whole of the action" and avoid any potential segmenting of analysis.
- B-29** The contact information is received and acknowledged.

198 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850



TELEPHONE: (642) 265-1800
FAX: (642) 265-1799

October 2, 2024

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

SUBJECT: Review of Draft Environmental Impact Report for Dogwood Geothermal Energy Project, Heber 2 Parasitic Solar Project, and Heber Field Company Geothermal Wells and Pipeline Project

Dear Mr. Minnick:

The Imperial County Air Pollution Control District (Air District) appreciates the opportunity to review and comment on Administrative Review (ADM) of Draft Environmental Impact Report (DEIR) for Dogwood Geothermal Energy Project, Heber 2 Parasitic Solar Project, and Heber Field Company Geothermal Wells and Pipeline Project (Project). The project proposes the development of an Integrated Two Level Unit (ITLU) Air Cooled Ormat Energy Converter (OEC), two 20,000-gallon isopentane tanks, a 7 MW parasitic solar facility, underground distribution line, and substation under CUP 23-0020. The development of a 15 MW solar energy facility that will provide a parasitic load to the existing Heber 2 plant under CUP 23-0021. Finally, the development of up to six geothermal production wells, one geothermal injection well, and approximately 4,500 linear feet of new pipeline under CUP 23-0022. The project spans across portions of three parcels: Assessor Parcel Numbers (APN) 054-250-031, 059-020-001, and 054-250-017. APN 054-250-31 is within the existing Heber 2 Geothermal Energy Complex (HGEC) located at 855 Dogwood Road, Heber, CA, and APN 059-020-001 and APN 054-250-017 are immediately southeast and east, respectively, of the HGEC.

C-1

The DEIR determined the project's impacts on air quality would be less than significant and identified six mitigation measures identified as AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, and AQ-6 to be implemented for the project. The DEIR identified an Air Quality Analysis (AQA) for the project in the Table of Contents identified as Appendix D – Air Quality and Greenhouse Gas Technical Report. Air District staff reviews all Air Quality Analyses to ensure enforceability and consistency of air analysis methodology to the Imperial County Air Pollution Control District CEQA Air Quality Handbook (Handbook), Air District Rules & Regulations, and Air District guidelines; however, the AQA was not provided for review and the Air District is unable to comment on the AQA or

C-2

C-3

supporting modelling. While the Air District cannot comment on the AQA, given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 – AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation with one update for AQ-4.

C-3
cont.

The DEIR in table 3.4-10 Mitigated Project Construction – Generated Emissions (lbs/day) finds the construction PM10 emissions exceed emission thresholds, however, the DEIR correctly states the guidance in the Handbook is to address construction emissions qualitatively. Given the CalEEMod information the Construction Dust Control Plan as discussed in AQ-4 must be an **Enhanced Dust Control Plan**, which exceeds the standard measures of the Dust Control Plan. The forms for the Construction Dust Control Plan can be found at <https://apcd.imperialcounty.org/planning/#construction>, the Air District also requests the applicant submit a Construction Notification Form 10 days prior to earthmoving beginning for the project.

C-4

The Air District considered the project in portions consisting of the construction and operation of each of the geothermal expansion/wells and the solar field project. Review of office records shows the existing facility identified as Heber 2, as currently constructed and operating, operates under Air District Permit to Operate #2217. Given the proposed developments of the project, the applicant will need to submit an amended application for engineering review of the facility and must be issued an Authority to Construct/Permit to Operate (ATC/PTO) prior to construction of the project beginning. The applicant must submit a permit application for engineering review of the project, pay the applicable review fees, and coordinate with the Air District Engineering and Permitting Division directly to determine the permitting requirements of the project. The solar portion of the project will not fall under engineering permitting.

C-5

AQ-1 – AQ-6 mitigation measures are identified in the EIR as:

AQ-1 Fugitive Dust Control

Pursuant to ICAPCD, all construction sites, regardless of size, must comply with the requirements contained within Regulation VIII – Fugitive Dust Control Measures. ICAPCD will verify implementation and compliance with these measures as part of the grading permit review/approval process.

ICAPCD Standard Measures for Fugitive Dust (PM10) Control

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

C-6

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

Standard Mitigation Measures for Construction Combustion Equipment

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

AQ-2 Construction Equipment.

All off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-road Compression-Ignition Engines as specified in CCR, Title 13, Section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final Engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NOx and particulate matter emissions that are equivalent to Tier 4 engine. Drill Rig engines shall meet a minimum of Tier 4 Interim California Emission Standards. A list of the Construction equipment, including all off-road equipment utilized at the project site by make, model, year, horsepower and expected/actual hours of use, and the associated EPA Tier shall be submitted to the County Planning and Development Services Department and ICAPCD prior to the issuance of a grading permit. The equipment list shall be submitted periodically to ICAPCD to perform NOx Analysis. ICAPCD shall utilize his list to calculate air emissions to verify that equipment use does not exceed the significance thresholds. The Planning and Development Services Department and ICAPCD shall verify implementation of this measure.

C-6
cont.

AQ-3 Dust Suppression.

The project applicant shall employ a method of dust suppression (such as water or chemical stabilization) approved by ICAPCD. All unpaved roads associated with construction shall be effectively stabilized of dust emissions using stabilizers/suppressant before the commencement

of all construction phases. This will be conducted monthly at a rate of 0.1 gallon/ square yard of chemical dust suppressant. The project applicant shall apply chemical stabilization as directed by the product manufacturer to control dust between the panels as approved by ICAPCD, and other non-used areas (exceptions will be the paved entrance and parking area, and Fire Department access/emergency entry/exit points as approved by Fire/Office of Emergency Services [OES] Department).

AQ-4 Dust Suppression Management Plan.

Prior to any earthmoving activity, the applicant shall submit a construction dust control plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

AQ-5 Operational Dust Control Plan.

Prior to issuance of a Certificate of Occupancy, the applicant shall submit an operations dust control plan and obtain ICAPCD and ICPDS approval. ICAPCD Rule 301 Operational Fees apply to any project applying for a building permit. At the time that building permits are submitted for the proposed project, ICAPCD shall review the project to determine if Rule 310 fees are applicable to the project.

AQ-6 Speed Limit.

During construction and operation of the proposed project, the applicant shall limit the speed of all vehicles operating onsite on unpaved roads to 15 miles per hour or less.

C-6
cont.

The construction emissions of both the geothermal expansion/wells and the solar field will be controlled via mitigation measures AQ-1 – AQ-4, AQ-5, and AQ-6, the geothermal expansion/wells construction emissions will also be controlled via the ATC/PTO. Operational emissions of the geothermal expansion will be controlled via the ATC/PTO, which must be maintained active during operation, and relevant Rules and Regulations. Finally, operational emissions of the solar field will be controlled via the approved Operational Dust Control Plan, which is periodically reviewed for consistent implementation.

The Air District requests AQ-1 – AQ-6 be included as conditions of the CUP, with the following changes in language to AQ-4:

AQ-4 Dust Suppression Management Plan.

Prior to any earthmoving activity, the applicant shall submit an **enhanced** construction dust control plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

The Air District also requests a copy of each draft CUP prior to recording for review of relevant conditions of the CUP.

C-7

The Air District would like to remind the applicant that the equipment lists as described in AQ-2 will be used to calculate NOx emissions during construction to ensure emission threshold limits are not exceeded. If the Air District determines NOx thresholds were exceeded the project may be subject to Policy 5 fee requirements. Finally, the Air District would inform the applicant that as

C-8

part of AQ-5, finalization of the Operational Dust Control Plan will require a site visit by Air District staff. C-8
cont.

All Air District rules and regulations can be found for review on our website at <https://apcd.imperialcounty.org/rules-and-regulations/>. Please contact our office at (442) 265-1800 if you have any further questions or concerns. C-9

Respectfully,


Ismael Garcia
Environmental Coordinator


Monica N. Soucier
APC Division Manager

Imperial County Air Pollution Control District

October 2, 2024

- C-1** This comment is an introductory comment and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- C-2** This comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- C-3** Please refer to responses to comments I-2 and I-3. Since submitting this comment, Imperial County Air Pollution Control District (ICAPCD) has reviewed the emissions model and found it to be accurate and consistent with Air District guidelines. As provided in their comment letter, ICAPCD concurs with the findings and mitigation framework in the Draft EIR.
- C-4** Mitigation Measure AQ-4 in the Final EIR will be updated per ICAPCD's updated language for Dust Control Plan to Enhanced Dust Control Plan. This revision will not change any findings or conclusions in the Final EIR. Of note, finalization of the Operational Dust Control Plan per Mitigation Measure AQ-5 will require a site visit by Air District staff, which is standard practice.
- C-5** It is understood that ICAPCD will require an amendment to the existing air permit for Heber 2 site, which will add in the new Dogwood OEC unit and ancillary equipment to consolidate all air permitting into one permit for all facilities within the Heber 2 complex. This will require an application for amendment PTO #2217 and will make the entire Heber 2 facility subject to ICAPCD engineering review. However, for purposes of the Final EIR, Section 3.4.2 (Air Quality – Regulatory Setting) provides a comprehensive breakdown of these regulatory permitting requirements. Air quality impacts from both facilities are considered in the Cumulative Impacts analysis in Section 5.3.3 of the Draft EIR.
- C-6** This comment summarizes the Project's air quality mitigation measures from the Draft EIR and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- C-7** Comment acknowledged. The Project Applicant will provide ICAPCD a copy of each draft CUP for the Project.
- C-8** Comment acknowledged.
- C-9** The ICAPCD rules and regulations and contact information is received and acknowledged.

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
881 GATEWAY BOULEVARD, SUITE 1300
SOUTH SAN FRANCISCO, CA 94080-7937
TEL: (650) 588-1860
FAX: (650) 588-5262
jabravo@adamsbroadwell.com

SACRAMENTO OFFICE
520 CAPITOL MALL, SUITE 200
SACRAMENTO, CA 95814-4721
TEL: (916) 444-8201
FAX: (916) 444-8208

KEVIN T. CARMICHAEL
CHRISTINA M. CARO
THOMAS A. ENGLOW
KELLY D. FEDERMAN
RICHARD M. FRANCO
ANDREW J. GRAF
TANYA A. GULESSERIAN
DARION N. JOHNSTON
RACHAEL E. KOSS
ADAM P. MARSHALL
ALAN R. MCQUIRE
TARA C. RENOIRFO

August 15, 2024

OF COURTESY
MARC D. JOSEPH
DANIEL L. CARDOZO

Via Email and U.S. Mail

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

Blanca Acosta, Clerk of the Board
Imperial County Clerk of the Board
940 West Main Street, Suite 209
El Centro, CA 92243
Email: BlancaAcosta@co.imperial.ca.us

Via Email Only

Laryssa Alvarado, Administrative Secretary
Email: LaryssaAlvarado@co.imperial.ca.us; planninginfo@co.imperial.ca.us

Luis Valenzuela, Planner
Email: luisvalenzuela@co.imperial.ca.us

**Re: Public Records Act Request – Dogwood Geothermal Energy
Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-
0022)**

Dear Mr. Minnick, Ms. Acosta, Ms. Alvarado, and Mr. Valenzuela:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to request a copy of any and all public records related to the Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022), proposed by Ormat Technologies, Inc. (d.b.a. OrHeber 3, LLC, Heber Field Company, LLC, and Second Imperial Geothermal Company) (collectively, the "Applicants"). This request includes, but is not limited to, any and all file materials, applications, correspondence, resolutions, memos, notes, analysis, email messages, files, maps, charts, and any other documents related to the Project.

D-1

The Project includes three Conditional Use Permit (CUP) applications for the construction and operation of the following projects proposed in Imperial County, California: 1) Dogwood Geothermal Energy Project (CUP No. 23-0020), proposed by OrHeber 3, LLC; 2) Heber 2 Solar Energy Project (CUP No. 23-0021), proposed by

D-2

0909-002aep



August 15, 2024
Page 2

Second Imperial Geothermal Company; and 3) Heber Field Company Geothermal Wells and Pipeline Project (CUP No. 23-0022), proposed by Heber Field Company, LLC.

The Dogwood Geothermal Energy Project would include a 25-megawatt (MW) geothermal plant and associated ancillary and auxiliary facilities, new substation, 7 MW parasitic solar photovoltaic (PV) facility, and medium voltage distribution line from the proposed solar facility to the proposed geothermal plant. This project would be located at 855 Dogwood Road, Heber, CA. The Assessor Parcel Number (APN) is 054-250-31.

D-2
cont.

The Heber 2 Solar Energy Project proposes to construct a 15 MW parasitic solar energy facility that would provide supplemental/auxiliary energy to existing the Heber 2 Geothermal Energy Complex (HGEC). This project would be located southeast of the HGEC in the northern portion of APN 059-020-001.

The Heber Field Company Geothermal Wells and Pipeline Project would include three new geothermal productions wells, one new injection well, and interconnecting brine pipelines. The wells will be sited at three of six potential locations (APNs 059-020-001 and 054-250-017). The injection well would be installed within the HGEC, immediately next to the proposed Dogwood geothermal unit.

This request is made pursuant to the **California Public Records Act** (Government Code §§ 7920.000, *et seq.*). This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a Constitutional right of access to information concerning the conduct of government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed.

D-3

We request access to the above records in their original form, as maintained by the agency.¹ Pursuant to Government Code Section 7922.570, if the requested documents are in electronic format, please upload them to a file hosting program such as Dropbox, NextRequest or a similar program. Alternatively, if the electronic documents are 10 MB or less (or can be easily broken into sections of 10 MB or less), they may be emailed to me as attachments.

D-4

¹ Gov. Code § 7922.570; *Sierra Club v. Super. Ct.*, (2013) 57 Cal. 4th 157, 161-62.

August 15, 2024
Page 3

We will pay for any direct costs of duplication associated with filling this request up to \$200.² However, please contact me at (650) 589-1660 with a cost estimate before copying/scanning the materials.

Please use the following contact information for all correspondence:

U.S. Mail

Jane Abrams
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Email

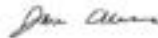
jabrams@adamsbroadwell.com

D-4
cont.

If you have any questions, please call me at (650) 589-1660 or email me at jabrams@adamsbroadwell.com. Thank you for your assistance with this matter.

D-5

Sincerely,



Jane S. Abrams
Legal Assistant

JSA:acp

² Gov. Code §§ 7922.530, 7922.575; *North County Parents v. Dept. of Education* (1994) 23 Cal.App.4th 144; *County of Los Angeles v. Super. Ct.* (2000) 82 Cal.App.4th 819, 826.

0939-002acp



Adams Broadwell Joseph & Cardozo

August 15, 2024

- D-1** On August 20, September 3, and November 21, 2024, Imperial County responded to the records requests by providing the requested technical documents/materials.
- D-2** This comment provides a general summary of the project and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- D-3** Comment acknowledged.
- D-4** Comment acknowledged, please refer to response to comment D-1.
- D-5** The contact information is received and acknowledged.

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
801 GATEWAY BOULEVARD, SUITE 1000
SOUTH SAN FRANCISCO, CA 94080-7037
TEL: (650) 588-1860
FAX: (650) 588-8262
afederman@adamsbroadwell.com

KEVIN T. CARMICHAEL
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SACRAMENTO OFFICE
520 CAPITOL MALL, SUITE 200
SACRAMENTO, CA 95814-4721
TEL: (916) 444-8201
FAX: (916) 444-8208

OF COUNSEL
MARC D. JOSEPH
DANIEL L. CARDOZO

September 18, 2024

Via Email and U.S. Mail

Jim Minnick, Director
Luis Valenzuela, Planner I
Planning & Development Services
Imperial County
801 Main Street
El Centro, CA 92243
Emails:
JimMinnick@co.imperial.ca.us
luisvalenzuela@co.imperial.ca.us

**Re: Request for an Extension of the Comment Period for the Draft
Environmental Impact Report Prepared for the Dogwood
Geothermal Energy Project (2024010510)**

Dear Mr. Minnick, Mr. Valenzuela, Ms. Acosta:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to respectfully request that the County of Imperial ("County") extend the public review and comment period of the Draft Environmental Impact Report ("DEIR")¹ prepared for the Dogwood Geothermal Energy Project (SCH No. 2024010510) ("Project"), which currently ends October 2, 2024² by at least 30 days due to the County's failure to provide timely access to documents referenced and relied upon in the DEIR and public records in the County's possession related to the Project.

E-1

We ask that the County fully and immediately comply with our August 15, 2024 request for immediate access to all documents referenced and incorporated by

E-2

¹ Imperial County Planning & Development Services Department, Draft Environmental Impact Report for the Dogwood Geothermal Energy Project (August 2024)

² Imperial County Planning & Development Services Department, Notice of Availability of a Draft Environmental Impact Report for the Dogwood Geothermal Energy Project (August 14, 2024), available at: https://files.coqanet.opr.ca.gov/294700-2/attachment/81to_m63EqLgalecsaFYB_GRYgxdEETqIDYwUMPmlAhlIcXnNets7_WIvoLdssu7K4F2w6nmxKVFXt0.

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Page 2

reference in the DEIR by providing access to outstanding DEIR reference documents, including, but not limited to the following:

1. Unlocked excel spreadsheets supporting CalEEMod emission calculations.
2. Documents referenced in the Initial Study and Notice of Preparation
 - a. Federal Emergency Management Agency (FEMA). 2008. Flood Insurance Rate Map (Panel 06025C2075C).
3. Documents referenced in DEIR Appendix E – Biological Resources and Burrowing Owl Report
 - a. California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. 34 pp.
 - b. Gervais, J.A., Rosenberg, D.K, and Comrack, L.A. 2008. Burrowing Owl (*Athene cunicularia*). *Studies of Western Birds* 1:218-226, 2008.
 - c. U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Soil Resource Report for Imperial County, California, Imperial Valley Area.
4. Documents referenced in DEIR Appendix F – Preliminary Jurisdictional Report
 - a. U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Soil Resource Report for Imperial County, California, Imperial Valley Area.
5. Documents referenced in DEIR Appendix H - Geotechnical Site Assessment
 - a. California Department of Water Resources (DWR). 2004. Bulletin 118, Imperial Valley Groundwater Basin, Hydrologic Region Colorado River, Groundwater Basin Number: 7-30. February 27, 2004.
 - b. Imperial County. 2015. Final EIR - SEPV Dixieland East and West Solar Farm Projects (SCH No. 2015051043). December 2015.
 - c. Imperial County Planning and Development Services (ICPDS). 2015. Baseline Environmental Inventory Report, Imperial County Conservation and Open Space Element Update. June 2015.
 - d. Landmark Consultants, Inc. (Landmark). 2019. Geotechnical Report Update, Heber 2 Repower Project, Heber, California. Prepared for SIGC/ORMAT Nevada. April 2019.
 - e. Landmark. 2007. Geotechnical Investigation, Proposed Heber South Geothermal Plant, Dogwood Road, Heber, California. Prepared for SIGC/ORMAT. May 2007.

E-2
cont.

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- f. Landmark. 2005. Geotechnical Report, New Turbine Generator and Cooling Tower, Heber 2 Geothermal Plant, Heber, California. Prepared for SIGC/ORMAT. January 2005.
- g. Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey, National Cooperative Soil Survey. Report generated on June 5, 2019.

On August 15, 2024, our office submitted a request, pursuant to the California Environmental Quality Act ("CEQA"),³ for immediate access to any and all documents referenced or relied upon in the Draft Environmental Impact Report.⁴

⁵ CEQA's section 21092(b)(1) and CEQA Guidelines section 15087(c)(5) require that "all documents referenced" and "all documents incorporated by reference" in an environmental impact report shall be "readily accessible to the public during the lead agency's normal working hours" during the entire public comment period.⁶

E-2
cont.

On Tuesday September 17, 2024, our office emailed the County to follow up on CURE's request. To date, the County has failed to provide members of the public with access to all documents referenced and relied upon in the DEIR, as required by CEQA.

CEQA compels a lead agency to make all documents referenced in an environmental impact report "available for review" during the entire public comment period.⁷ The courts have held that the failure to provide even a few pages of a CEQA document for a portion of the public review period invalidates the entire CEQA process, and that such a failure must be remedied by permitting additional public comment.⁸ It is also well settled that a CEQA document may not rely on hidden studies or documents that are not provided to the public.⁹

³ Pub. Resources Code §§ 21000 et seq.

⁴ **Exhibit A** – Letter to Jim Minnick, Blanca Acosta, Laryssa Alvarado, Luis Valenzuela, Imperial County from Jane Abrams, Adams Broadwell Joseph & Cardozo re: Request for Immediate Access to Public Records – Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022) (August 15, 2024).

⁵ The same day, our office submitted a separate public records request pursuant to the Public Records Act ("PRA") for access to other public records related to the Project. **Exhibit B** – Letter to Jim Minnick, Blanca Acosta, Laryssa Alvarado, Luis Valenzuela, Imperial County from Jane Abrams, Adams Broadwell Joseph & Cardozo re: Public Records Act Request – Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022) (August 15, 2024).

⁶ Pub. Resources Code § 21092(b)(1); 14 C.C.R. § 15087(c)(5).

⁷ *Id.*

⁸ *Ultramar v. South Coast Air Quality Man. Dist.* (1993) 17 Cal.App.4th 689, 699.

⁹ *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3rd 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.").

09/30-014acp



September 18, 2024

Page 4

By failing to make all documents and underlying data referenced in the DEIR readily available during the entirety of the public comment period, the County is depriving members of the public the ability to meaningfully comment on the potentially significant environmental impacts of the Project and is violating the procedural mandates of CEQA.

In sum, we request the County:

- 1) Extend the public review and comment period **for at least 30 days from the date on which the County releases all DEIR reference documents** for public review.
- 2) Immediately provide access to the DEIR reference documents referenced herein.

E-2
cont

Given the short time before the current comment deadline ends, please contact me as soon as possible with your response to this request, but no later than close of business on **Friday September 20, 2024**.

E-3

Thank you for your prompt attention and response to this matter.

Sincerely,



Kelilah D. Federman

Attachments

KDF:acp

6909-014acp



Adams Broadwell Joseph & Cardozo

September 18, 2024

- E-1** The initial public comment period was from August 14 to October 2, 2024. This comment period was extended 45-days to be from October 1 to November 11, 2024. Further, in response to the one request for extension, submitted by California Unions for Reliable Energy (CURE's)/Adams Broadwell, the public comment period was extended again from November 23, 2024 to January 13, 2025. In total, the public comment period lasted from August 14, 2024 to January 13, 2025, totaling 152 days. The standard Draft EIR public comment period in situations where the Draft EIR is submitted to the State Clearinghouse (as is the case for the proposed project) is 45 days [pursuant to CEQA §21091(a) and the public comment period for the Dogwood Draft EIR exceeded the standard comment period by approximately 105days (3 ½ months). Therefore, the County provided ample opportunity to review and comment on the Draft EIR and its supporting technical materials.
- E-2** Please refer to responses to comments D-1 and E-1. On November 21, 2024, Imperial County provided the requested documents and materials. As stated in response to comment E-1, the public comment period was extended to January 14, 2025 to provide ample time to review and comment on these materials.
- E-3** The contact information is received and acknowledged.

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
801 GATEWAY BOULEVARD, SUITE 1300
SOUTH SAN FRANCISCO, CA 94080-7937
TEL: (650) 558-1860
FAX: (650) 558-5262
afederman@adamsbroadwell.com

SACRAMENTO OFFICE
520 CAPITOL MALL, SUITE 200
SACRAMENTO, CA 95814-4721
TEL: (916) 444-8201
FAX: (916) 444-8208

OF COUNSEL
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DANIEL L. CARDOZO

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TANYA A. GULESSERIAN
DARION N. JOHNSTON
RACHAEL E. ROSS
ADAM P. MARSHALL
ALAN R. MCGUIRE
TARA C. RENGIFO

November 8, 2024

Via Email and U.S. Mail

Jim Minnick, Director
Luis Valenzuela, Planner I
Planning & Development Services
Imperial County
801 Main Street
El Centro, CA 92243

Emails:

JimMinnick@co.imperial.ca.us
luisvalenzuela@co.imperial.ca.us

**Re: Third Request for Access to Documents Referenced in the
Draft Environmental Impact Report for Dogwood Geothermal
Energy Project (SCH No. 2024010510) and Second Request to Extend
the Public Review and Comment Period**

Dear Mr. Minnick and Mr. Valenzuela:

On behalf of California Unions for Reliable Energy ("CURE") we respectfully submit this letter as a third request for access to outstanding documents referenced and relied upon in the Draft Environmental Impact Report ("DEIR") for the Dogwood Geothermal Energy Project (SCH No. 2024010510), proposed by Ormat Technologies, Inc. (d.b.a. OrHeber 3, LLC, Heber Field Company, LLC, and Second Imperial Geothermal Company) (collectively, the "Applicants"). We also request that Imperial County ("County") further extend the public review and comment period for the DEIR, which currently ends on November 14, 2024, by at least 45 days from the date on which the County releases the outstanding reference documents, due to the County's ongoing failure to provide timely access to the supporting documents for the DEIR.

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This request is made pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code ("PRC") §§ 21000 et seq. CEQA section 21092(b)(1) and CEQA Guidelines section 15087(c)(5) require that "all documents referenced" and "all documents incorporated by reference" in an environmental impact report

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shall be "readily accessible to the public during the lead agency's normal working hours" during the entire public comment period.¹

On August 15, 2024, we submitted a letter to the County, requesting "**immediate access to any and all records referenced**" in the DEIR (emphasis added).^{2, 3}

On August 20, 2024, the County provided a partial response to our August 15, 2024 letter, which included a set of electronic documents, files, and email correspondence.⁴ On September 3, 2024, the County provided a further response to the August 15, 2024 letter, which included more email correspondence.⁵ During our subsequent review of the documents and files produced by the County, CURE identified numerous documents and files that are referenced or relied upon in the DEIR, but which were not provided in either the County's August 20, 2024 or September 3, 2024 response.

On September 17, 2024, our office sent a follow-up email to the County, including a list that identified over 12 missing DEIR reference documents, to which the County did not respond.⁶

On September 18, 2024, we submitted a second letter to the County requesting access to the outstanding DEIR reference documents. The September 18, 2024 letter included the list of missing DEIR reference documents, and requested

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cont.

¹ Pub. Resources Code ("PRC") § 21092(b)(1); 14 Cal. Code Regs. ("CCR") § 15087(c)(5).

² **Exhibit A** – Letter to Jim Minnick, Blanca Acosta, Laryssa Alvarado, Luis Valenzuela, Imperial County from Jane Abrams, Adams, Broadwell, Joseph & Cardozo ("ABJC") re: Request for Immediate Access to Public Records – Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022) (August 15, 2024).

³ The same day, our office submitted a separate public records request pursuant to the Public Records Act ("PRA") for access to other public records related to the Project. **Exhibit B** – Letter to Jim Minnick, Blanca Acosta, Laryssa Alvarado, Luis Valenzuela, Imperial County from Jane Abrams, ABJC re: Public Records Act Request – Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022) (August 15, 2024).

⁴ **Exhibit C** – Letter to Jane Abrams, ABJC from Eric Havens, Andrew Briseno, Imperial County re: Public Records Act – PRA-24-069 PDS – August 16, 2024 concerning: "Dogwood Geothermal Energy Project (SCH No. 2024010510); OrHeber 3 LLC CUP23-0020/IS23-0026 APN 054-250-031-001; Second Imperial Geothermal Company LLC RP23-0002/CUP23-0021 APN 059-020-001; & Heber Field Company LLC RP23-0003/CUP23-0022" (August 20, 2024).

⁵ **Exhibit D** – Letter to Jane Abrams, ABJC from Eric Havens, Andrew Briseno, Imperial County re: Public Records Act – PRA 24-069 PDS – August 16, 2024 concerning: "Dogwood Geothermal Energy Project (SCH No. 2024010510); OrHeber 3 LLC CUP23-0020/IS23-0026 APN 054-250-031-001; Second Imperial Geothermal Company LLC RP23-0002/CUP23-0021 APN 059-020-001; & Heber Field Company LLC RP23-0003/CUP23-0022" (September 3, 2024).

⁶ Email to Imperial County from Jane Abrams, ABJC (September 17, 2024).

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an extension of the DEIR's public review and comment period due to the County's failure to provide access to the documents during the public comment period on the DEIR, as required by CEQA.⁷

On October 10, 2024, the County responded to the extension request and prepared a revised Notice of Availability which extended the DEIR's public comment period to November 14, 2024.⁸ The County advised our office that the outstanding DEIR reference documents were being compiled for release. However, the County has not since provided any of the missing reference documents.

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cont.

On October 22, 2024, we sent a follow-up email reiterating our request for access to outstanding DEIR reference and provided the same list of missing DEIR reference documents identified in September.⁹

The following DEIR reference documents, which were specifically requested by CURE, were not provided in the County's August 20, 2024 or September 3, 2024 document productions, and are still outstanding:

1. Unlocked excel spreadsheets supporting CalEEMod emission calculations.
2. Documents referenced in the Initial Study and Notice of Preparation
 - a. Federal Emergency Management Agency (FEMA). 2008. Flood Insurance Rate Map (Panel 06025C2075C).
3. Documents referenced in DEIR Appendix E – Biological Resources and Burrowing Owl Report
 - a. California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. 34 pp.
 - b. Gervais, J.A., Rosenberg, D.K. and Comrack, L.A. 2008. Burrowing Owl (*Athene cunicularia*). *Studies of Western Birds* 1:218-226, 2008.
 - c. U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Soil Resource Report for Imperial County, California, Imperial Valley Area.
4. Documents referenced in DEIR Appendix F – Preliminary Jurisdictional Report

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⁷ **Exhibit E** – Letter to Jim Minnick, Luis Valenzuela, Imperial County from Kelilah Federman, ABJC re: Request for an Extension of the Comment Period for the Draft Environmental Impact Report Prepared for the Dogwood Geothermal Energy Project (2024010510) (September 18, 2024).

⁸ **Exhibit F** – Notice of Availability of a Draft Environmental Impact Report for the Dogwood Geothermal Energy Project (October 10, 2024)

⁹ Email to Imperial County from Jane Abrams, ABJC (October 22, 2024).

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- a. U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Soil Resource Report for Imperial County, California, Imperial Valley Area.
5. Documents referenced in DEIR Appendix H - Geotechnical Site Assessment
 - a. California Department of Water Resources (DWR). 2004. Bulletin 118, Imperial Valley Groundwater Basin, Hydrologic Region Colorado River, Groundwater Basin Number: 7-30. February 27, 2004.
 - b. Imperial County. 2015. Final EIR - SEPV Dixieland East and West Solar Farm Projects (SCH No. 2015051043). December 2015.
 - c. Imperial County Planning and Development Services (ICPDS). 2015. Baseline Environmental Inventory Report, Imperial County Conservation and Open Space Element Update. June 2015.
 - d. Landmark Consultants, Inc. (Landmark). 2019. Geotechnical Report Update, Heber 2 Repower Project, Heber, California. Prepared for SIGC/ORMAT Nevada. April 2019.
 - e. Landmark. 2007. Geotechnical Investigation, Proposed Heber South Geothermal Plant, Dogwood Road, Heber, California. Prepared for SIGC/ORMAT. May 2007.
 - f. Landmark. 2005. Geotechnical Report, New Turbine Generator and Cooling Tower, Heber 2 Geothermal Plant, Heber, California. Prepared for SIGC/ORMAT. January 2005.
 - g. Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey, National Cooperative Soil Survey. Report generated on June 5, 2019.

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cont.

These missing reference documents form the basis of much of the DEIR's environmental and health impact analyses and its proposed mitigation measures. Without access to these fundamental reference documents during the public comment period on the DEIR, CURE and other members of the public are precluded from having the meaningful opportunity to comment on the DEIR that is required by CEQA.

The County's failure to make the underlying DEIR documents available during the public comment period is a violation of CEQA's disclosure requirements and of CURE's due process rights to have access to public records upon request.¹⁰ The County has not provided any of the missing reference documents requested in

¹⁰ PRC § 21092(b)(1); 14 CCR § 15087(c)(5); Gov. Code § 6253(a) (requires public records to be "open to inspection at all times during the office hours of the state or local agency" and provides that "every person has a right to inspect any public record.")

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CURE's September 18, 2024 letter. The County has also failed to advise CURE of the location of the outstanding missing documents, and to state when (or whether) the County would provide access to the remaining missing documents. It is inexcusable for the CEQA lead agency to deny the public access to "all documents referenced in the EIR" during the CEQA public comment period, as the County continues to do here.¹¹ The courts have held that the failure to provide even a few pages of a CEQA document for even a portion of the CEQA review period invalidates the entire CEQA process, and that such a failure must be remedied by permitting additional public comment.¹² It is also well settled that an EIR may not rely on hidden studies or documents that are not provided to the public.¹³

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cont.

Accordingly, we request that the County:

- 1) Provide immediate access to the outstanding missing reference documents requested in our August 15 and September 3, 2024 letters.
- 2) Extend the DEIR's public review and comment period for at least 45 days from the date on which the Port releases these documents for public review.¹⁴

As the comment period ends on November 14, 2024, please contact me as soon as possible with your response to this request, but no later than Monday, November 11, 2024.

If you have any questions, please feel free to email me at kfederman@adamsbroadwell.com. Thank you for your assistance with this matter.

F-4

Sincerely,



Kelilah D. Federman

Attachments
ARM:acp

¹¹ PRC § 21092(b)(1); 14 CCR § 15087(c)(5).

¹² *Ultramar v. South Coast Air Quality Man. Dist.* (1993) 17 Cal.App.4th 689, 699.

¹³ *Santiago County Water District v. County 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.").

¹⁴ This Project has a 45-day public comment period, pursuant to Public Resources Code §§ 21091(a) and (b) (projects where a state agency is a responsible agency).

09/09-015acp



EXHIBIT A



ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
801 GATEWAY BOULEVARD, SUITE 1300
SOUTH SAN FRANCISCO, CA 94080-7937
TEL: (650) 558-1860
FAX: (650) 558-5262
jabravo@adamsbroadwell.com

KEVIN T. CARMICHAEL
CHRISTINA M. CARO
THOMAS A. ENGLOW
KELLY D. FEDERMAN
RICHARD M. FRANCO
ANDREW J. GRAF
TANYA A. GULESSERIAN
DARION N. JOHNSTON
RACHAEL E. KOSS
ADAM P. MARSHALL
ALAN R. MCGUIRE
TARA C. RENOIFO

SACRAMENTO OFFICE
520 CAPITOL MALL, SUITE 280
SACRAMENTO, CA 95814-4721
TEL: (916) 444-8201
FAX: (916) 444-8208

OF COUNSEL
MARC D. JOSEPH
DANIEL L. CARDOZO

August 15, 2024

Via Email and U.S. Mail

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

Blanca Acosta, Clerk of the Board
Imperial County Clerk of the Board
940 West Main Street, Suite 209
El Centro, CA 92243
Email: BlancaAcosta@co.imperial.ca.us

Via Email Only

Laryssa Alvarado, Administrative Secretary
Email: LaryssaAlvarado@co.imperial.ca.us; planninginfo@co.imperial.ca.us

Luis Valenzuela, Planner
Email: luisvalenzuela@co.imperial.ca.us

**Re: Request for Immediate Access to Public Records – Dogwood
Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-
0020, 23-0021, and 23-0022)**

Dear Mr. Minnick, Ms. Acosta, Ms. Alvarado, and Mr. Valenzuela:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to request ***immediate access*** to any and all records referenced in the Environmental Impact Report (EIR) for the Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022), proposed by Ormat Technologies, Inc. (d.b.a. OrHeber 3, LLC, Heber Field Company, LLC, and Second Imperial Geothermal Company) (collectively, the "Applicants"). This request includes, but is not limited to, any and all file materials, applications, correspondence, resolutions, memos, notes, analysis, email messages, files, maps, charts, and any other documents related to the Project.

The Project includes three Conditional Use Permit (CUP) applications for the construction and operation of the following projects proposed in Imperial County, California: 1) Dogwood Geothermal Energy Project (CUP No. 23-0020), proposed by

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Page 2

OrHeber 3, LLC; 2) Heber 2 Solar Energy Project (CUP No. 23-0021), proposed by Second Imperial Geothermal Company; and 3) Heber Field Company Geothermal Wells and Pipeline Project (CUP No. 23-0022), proposed by Heber Field Company, LLC.

The Dogwood Geothermal Energy Project would include a 25-megawatt (MW) geothermal plant and associated ancillary and auxiliary facilities, new substation, 7 MW parasitic solar photovoltaic (PV) facility, and medium voltage distribution line from the proposed solar facility to the proposed geothermal plant. This project would be located at 855 Dogwood Road, Heber, CA. The Assessor Parcel Number (APN) is 054-250-31.

The Heber 2 Solar Energy Project proposes to construct a 15 MW parasitic solar energy facility that would provide supplemental/auxiliary energy to existing the Heber 2 Geothermal Energy Complex (HGEC). This project would be located southeast of the HGEC in the northern portion of APN 059-020-001.

The Heber Field Company Geothermal Wells and Pipeline Project would include three new geothermal productions wells, one new injection well, and interconnecting brine pipelines. The wells will be sited at three of six potential locations (APNs 059-020-001 and 054-250-017). The injection well would be installed within the HGEC, immediately next to the proposed Dogwood geothermal unit.

This request is made pursuant to the **California Public Records Act** (Government Code §§ 7920.000, *et seq.*). This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a Constitutional right of access to information concerning the conduct of government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed.

We request access to the above records in their original form, as maintained by the agency.¹ Pursuant to Government Code Section 7922.570, if the requested documents are in electronic format, please upload them to a file hosting program such as Dropbox, NextRequest or a similar program. Alternatively, if the electronic

¹ Gov. Code § 7922.570; *Sierra Club v. Super. Ct.* (2013) 57 Cal. 4th 157, 161-62.

August 15, 2024

Page 3

documents are 10 MB or less (or can be easily broken into sections of 10 MB or less), they may be emailed to me as attachments.

We will pay for any direct costs of duplication associated with filling this request up to \$200.² However, please contact me at (650) 589-1660 with a cost estimate before copying/scanning the materials.

Please use the following contact information for all correspondence:

U.S. Mail

Jane Abrams
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Email

jabrams@adamsbroadwell.com

If you have any questions, please call me at (650) 589-1660 or email me at jabrams@adamsbroadwell.com. Thank you for your assistance with this matter.

Sincerely,



Jane S. Abrams
Legal Assistant

JSA:acp

² Gov. Code §§ 7922.530, 7922.575; *North County Parents v. Dept. of Education* (1994) 23 Cal.App.4th 144; *County of Los Angeles v. Super. Ct.* (2000) 82 Cal.App.4th 819, 826.

0939-003acp



EXHIBIT B

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
801 GATEWAY BOULEVARD, SUITE 1300
SOUTH SAN FRANCISCO, CA 94080-7937
TEL: (650) 558-1860
FAX: (650) 558-5262
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SACRAMENTO OFFICE
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SACRAMENTO, CA 95814-4721
TEL: (916) 444-8201
FAX: (916) 444-8208

OF COUNSEL
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August 15, 2024

Via Email and U.S. Mail

Jim Minnick, Director
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Imperial County
801 Main Street
El Centro, CA 92243
Email: JimMinnick@co.imperial.ca.us

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940 West Main Street, Suite 209
El Centro, CA 92243
Email: BlancaAcosta@co.imperial.ca.us

Via Email Only

Laryssa Alvarado, Administrative Secretary
Email: LaryssaAlvarado@co.imperial.ca.us; planninginfo@co.imperial.ca.us

Luis Valenzuela, Planner
Email: luisvalenzuela@co.imperial.ca.us

**Re: Public Records Act Request – Dogwood Geothermal Energy
Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-
0022)**

Dear Mr. Minnick, Ms. Acosta, Ms. Alvarado, and Mr. Valenzuela:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to request a copy of any and all public records related to the Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022), proposed by Ormat Technologies, Inc. (d.b.a. OrHeber 3, LLC, Heber Field Company, LLC, and Second Imperial Geothermal Company) (collectively, the "Applicants"). This request includes, but is not limited to, any and all file materials, applications, correspondence, resolutions, memos, notes, analysis, email messages, files, maps, charts, and any other documents related to the Project.

The Project includes three Conditional Use Permit (CUP) applications for the construction and operation of the following projects proposed in Imperial County, California: 1) Dogwood Geothermal Energy Project (CUP No. 23-0020), proposed by OrHeber 3, LLC; 2) Heber 2 Solar Energy Project (CUP No. 23-0021), proposed by

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August 15, 2024
Page 2

Second Imperial Geothermal Company; and 3) Heber Field Company Geothermal Wells and Pipeline Project (CUP No. 23-0022), proposed by Heber Field Company, LLC.

The Dogwood Geothermal Energy Project would include a 25-megawatt (MW) geothermal plant and associated ancillary and auxiliary facilities, new substation, 7 MW parasitic solar photovoltaic (PV) facility, and medium voltage distribution line from the proposed solar facility to the proposed geothermal plant. This project would be located at 855 Dogwood Road, Heber, CA. The Assessor Parcel Number (APN) is 054-250-31.

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The Heber Field Company Geothermal Wells and Pipeline Project would include three new geothermal productions wells, one new injection well, and interconnecting brine pipelines. The wells will be sited at three of six potential locations (APNs 059-020-001 and 054-250-017). The injection well would be installed within the HGEC, immediately next to the proposed Dogwood geothermal unit.

This request is made pursuant to the **California Public Records Act** (Government Code §§ 7920.000, *et seq.*). This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a Constitutional right of access to information concerning the conduct of government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed.

We request access to the above records in their original form, as maintained by the agency.¹ Pursuant to Government Code Section 7922.570, if the requested documents are in electronic format, please upload them to a file hosting program such as Dropbox, NextRequest or a similar program. Alternatively, if the electronic documents are 10 MB or less (or can be easily broken into sections of 10 MB or less), they may be emailed to me as attachments.

¹ Gov. Code § 7922.570; *Sierra Club v. Super. Ct.* (2013) 57 Cal. 4th 157, 161-62.

0909-002aep



August 15, 2024
Page 3

We will pay for any direct costs of duplication associated with filling this request up to \$200.² However, please contact me at (650) 589-1660 with a cost estimate before copying/scanning the materials.

Please use the following contact information for all correspondence:

U.S. Mail

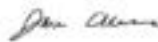
Jane Abrams
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Email

jabrams@adamsbroadwell.com

If you have any questions, please call me at (650) 589-1660 or email me at jabrams@adamsbroadwell.com. Thank you for your assistance with this matter.

Sincerely,



Jane S. Abrams
Legal Assistant

JSA:acp

² Gov. Code §§ 7922.530, 7922.575; *North County Parents v. Dept. of Education* (1994) 23 Cal.App.4th 144; *County of Los Angeles v. Super. Ct.* (2000) 82 Cal.App.4th 819, 826.

0939-002acp



EXHIBIT C

Eric Havens
County Counsel

Mistelle Abdelmagied
Assistant County Counsel



County Counsel
County Administration Center
940 West Main Street, Suite 205
El Centro, CA 92243
Telephone (442) 265-1120
Fax No. (760) 353-9347
countycounsel@co.imperial.ca.us

August 20, 2024

Jane S. Abrams, Legal Assistant
Adams, Broadwell, Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037



RE: Public Records Act – PRA-24-099 PDS – August 16, 2024 concerning: "Dogwood Geothermal Energy Project (SCH No.2024010510); OrHeber3 LLC CUP23-0020/IS23-0026 APN 054-250-031-001; Second Imperial Geothermal Company LLC RP23-0002/CUP23-0021 APN 059-020-001; & Heber Field Company LLC RP23-0003/CUP23-0022"

Dear Jane S. Abrams, Legal Assistant,

Pursuant to your request accompanying find this County's first production of material concerning the above referenced projects. Produced records are on a DVD/CD which accompanies this letter.

Your request involves the need to continue the search for, collect and examine a voluminous amount of separate and distinct records. The "I.T." Department and County Counsel's Office which currently are seeking to locate and screen material to be turned over to you pursuant to your request. Accordingly, pursuant to Government Code §§7922.535(b) and (c), the period of time within which Imperial County PDS will again respond to the above-referenced request will be extended to September 3, 2023.

Eric Havens,
County Counsel,

By 
Andrew Briseno,
Deputy County Counsel.

enclosure:



EXHIBIT D



*Eric Havens
County Counsel*

*Mistelle Abdelmagied
Assistant County Counsel*

*County Counsel
County Administration Center
940 West Main Street, Suite 205
El Centro, CA 92243
Telephone (442) 265-1120
Fax No. (760) 353-9347
countycounsel@co.imperial.ca.us*

September 3, 2024

Jane S. Abrams,
Legal Assistant
ADAMS BROADWELL JOSEPH & CARDOZO, A P.C.
Attorneys At Law
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

RE: Public Records Act – PRA-24-099 PDS – August 16, 2024 concerning: "Dogwood Geothermal Energy Project (SCH No.2024010510); OrHeber3 LLC CUP23-0020/IS23-0026 APN 054-250-031-001; Second Imperial Geothermal Company LLC RP23-0002/CUP23-0021 APN 059-020-001; & Heber Field Company LLC RP23-0003/CUP23-0022"

Dear Legal Assistant Jane S. Abrams,

Pursuant to your request accompanying find this County's second production of material concerning the above referenced project. We apologize for the unavoidable delay due to county wide staffing shortages. The County did engage in a comprehensive IT search concerning your request which generated records, an electronic copy of which (in a CD format), accompanies this transmittal letter. This completes the response to these Public Records Act request.

Thank you for your interest and concern.

Eric Havens,
County Counsel,

By 
Andrew Briseno,
Deputy County Counsel.

enclosure



COUNTY COUNSEL
COUNTY OF IMPERIAL
COUNTY ADMINISTRATION CENTER
940 MAIN STREET, SUITE 205
EL CENTRO, CA 92243-2869

PRESORTED
FIRST CLASS



JANE S. ABRAMS, LEGAL ASSISTANT
ADAMS BROADWELL JOSEPH & CARDOZO, A.P.C.
601 GATEWAY BOULEVARD, SUITE 1000
SOUTH SAN FRANCISCO, CA 94080-7037

94080\$7037 0035



EXHIBIT E

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
801 GATEWAY BOULEVARD, SUITE 1000
SOUTH SAN FRANCISCO, CA 94080-7037
TEL: (650) 588-1860
FAX: (650) 588-8262
afederman@adamsbroadwell.com

SACRAMENTO OFFICE
520 CAPITOL MALL, SUITE 200
SACRAMENTO, CA 95814-4721
TEL: (916) 444-8201
FAX: (916) 444-8208

KEVIN T. CARMICHAEL
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TARA C. RENGIFO

September 18, 2024

OF COUNSEL
MARC D. JOSEPH
DANIEL L. CARDOZO

Via Email and U.S. Mail

Jim Minnick, Director
Luis Valenzuela, Planner I
Planning & Development Services
Imperial County
801 Main Street
El Centro, CA 92243
Emails:
JimMinnick@co.imperial.ca.us
luisvalenzuela@co.imperial.ca.us

**Re: Request for an Extension of the Comment Period for the Draft
Environmental Impact Report Prepared for the Dogwood
Geothermal Energy Project (2024010510)**

Dear Mr. Minnick, Mr. Valenzuela, Ms. Acosta:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to respectfully request that the County of Imperial ("County") extend the public review and comment period of the Draft Environmental Impact Report ("DEIR")¹ prepared for the Dogwood Geothermal Energy Project (SCH No. 2024010510) ("Project"), which currently ends October 2, 2024² by at least 30 days due to the County's failure to provide timely access to documents referenced and relied upon in the DEIR and public records in the County's possession related to the Project.

We ask that the County fully and immediately comply with our August 15, 2024 request for immediate access to all documents referenced and incorporated by

¹ Imperial County Planning & Development Services Department, Draft Environmental Impact Report for the Dogwood Geothermal Energy Project (August 2024)

² Imperial County Planning & Development Services Department, Notice of Availability of a Draft Environmental Impact Report for the Dogwood Geothermal Energy Project (August 14, 2024), available at: https://files.coqanet.opr.ca.gov/294700-2/attachment/81to_m63EqLgalecsaFYB_GRYgxdEETqIDYwUMPmlAhlIcXnNets7_WIvoLdssa7K4F2w6nnxKVFXt0.

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reference in the DEIR by providing access to outstanding DEIR reference documents, including, but not limited to the following:

1. Unlocked excel spreadsheets supporting CalEEMod emission calculations.
2. Documents referenced in the Initial Study and Notice of Preparation
 - a. Federal Emergency Management Agency (FEMA). 2008. Flood Insurance Rate Map (Panel 06025C2075C).
3. Documents referenced in DEIR Appendix E – Biological Resources and Burrowing Owl Report
 - a. California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. 34 pp.
 - b. Gervais, J.A., Rosenberg, D.K, and Comrack, L.A. 2008. Burrowing Owl (*Athene cunicularia*). *Studies of Western Birds* 1:218-226, 2008.
 - c. U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Soil Resource Report for Imperial County, California, Imperial Valley Area.
4. Documents referenced in DEIR Appendix F – Preliminary Jurisdictional Report
 - a. U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Soil Resource Report for Imperial County, California, Imperial Valley Area.
5. Documents referenced in DEIR Appendix H - Geotechnical Site Assessment
 - a. California Department of Water Resources (DWR). 2004. Bulletin 118, Imperial Valley Groundwater Basin, Hydrologic Region Colorado River, Groundwater Basin Number: 7-30. February 27, 2004.
 - b. Imperial County. 2015. Final EIR - SEPV Dixieland East and West Solar Farm Projects (SCH No. 2015051043). December 2015.
 - c. Imperial County Planning and Development Services (ICPDS). 2015. Baseline Environmental Inventory Report, Imperial County Conservation and Open Space Element Update. June 2015.
 - d. Landmark Consultants, Inc. (Landmark). 2019. Geotechnical Report Update, Heber 2 Repower Project, Heber, California. Prepared for SIGC/ORMAT Nevada. April 2019.
 - e. Landmark. 2007. Geotechnical Investigation, Proposed Heber South Geothermal Plant, Dogwood Road, Heber, California. Prepared for SIGC/ORMAT. May 2007.

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- f. Landmark. 2005. Geotechnical Report, New Turbine Generator and Cooling Tower, Heber 2 Geothermal Plant, Heber, California. Prepared for SIGC/ORMAT. January 2005.
- g. Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey, National Cooperative Soil Survey. Report generated on June 5, 2019.

On August 15, 2024, our office submitted a request, pursuant to the California Environmental Quality Act ("CEQA"),³ for immediate access to any and all documents referenced or relied upon in the Draft Environmental Impact Report.⁴ ⁵ CEQA's section 21092(b)(1) and CEQA Guidelines section 15087(c)(5) require that "all documents referenced" and "all documents incorporated by reference" in an environmental impact report shall be "readily accessible to the public during the lead agency's normal working hours" during the entire public comment period.⁶

On Tuesday September 17, 2024, our office emailed the County to follow up on CURE's request. To date, the County has failed to provide members of the public with access to all documents referenced and relied upon in the DEIR, as required by CEQA.

CEQA compels a lead agency to make all documents referenced in an environmental impact report "available for review" during the entire public comment period.⁷ The courts have held that the failure to provide even a few pages of a CEQA document for a portion of the public review period invalidates the entire CEQA process, and that such a failure must be remedied by permitting additional public comment.⁸ It is also well settled that a CEQA document may not rely on hidden studies or documents that are not provided to the public.⁹

³ Pub. Resources Code §§ 21000 *et seq.*

⁴ **Exhibit A** – Letter to Jim Minnick, Blanca Acosta, Laryssa Alvarado, Luis Valenzuela, Imperial County from Jane Abrams, Adams Broadwell Joseph & Cardozo re: Request for Immediate Access to Public Records – Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022) (August 15, 2024).

⁵ The same day, our office submitted a separate public records request pursuant to the Public Records Act ("PRA") for access to other public records related to the Project. **Exhibit B** – Letter to Jim Minnick, Blanca Acosta, Laryssa Alvarado, Luis Valenzuela, Imperial County from Jane Abrams, Adams Broadwell Joseph & Cardozo re: Public Records Act Request – Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022) (August 15, 2024).

⁶ Pub. Resources Code § 21092(b)(1); 14 C.C.R. § 15087(c)(5).

⁷ *Id.*

⁸ *Ultramar v. South Coast Air Quality Man. Dist.* (1993) 17 Cal.App.4th 689, 699.

⁹ *Santiago County Water District v. County 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.").

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By failing to make all documents and underlying data referenced in the DEIR readily available during the entirety of the public comment period, the County is depriving members of the public the ability to meaningfully comment on the potentially significant environmental impacts of the Project and is violating the procedural mandates of CEQA.

In sum, we request the County:

- 1) Extend the public review and comment period **for at least 30 days from the date on which the County releases all DEIR reference documents** for public review.
- 2) Immediately provide access to the DEIR reference documents referenced herein.

Given the short time before the current comment deadline ends, please contact me as soon as possible with your response to this request, but no later than close of business on **Friday September 20, 2024**.

Thank you for your prompt attention and response to this matter.

Sincerely,



Kelilah D. Federman

Attachments

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EXHIBIT F

**NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR
THE DOGWOOD GEOTHERMAL ENERGY PROJECT**

October 10, 2024

NOTICE IS HEREBY GIVEN that the Imperial County Planning & Development Services Department (County), as lead agency, is circulating for public review a Draft Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (CEQA) for the proposed Dogwood Geothermal Energy Project. The County is hereby providing notice that the public review period end date for the subject project has been extended to November 14, 2024.

Project Title: Draft Environmental Impact Report for the Dogwood Geothermal Energy Project (State Clearinghouse [SCH] #2024010510).

Project Location: The project site is located on approximately 125 acres of privately-owned land in the southern portion of Imperial County, California, approximately one mile south of the City of Heber jurisdictional limit and approximately 0.5 miles west from the City of Calexico jurisdictional limit. The project site is within portions of on three parcels: Assessor Parcel Numbers (APN) 054-250-031, 059-020-001, and 054-250-017. APN 054-250-31 is within the existing Heber 2 Geothermal Energy Complex (HGEC) located at 855 Dogwood Road, Heber, CA, and APN 059-020-001 and APN 054-250-017 are immediately southeast and east, respectively, of the HGEC. The project site is located within the Geothermal Overlay Zone, which is considered as part of the County's Renewable Energy Overlay Zone.

Project Description (brief): The project applicant, OrHeber 3, LLC, Heber Field Company, LLC, and the Second Imperial Geothermal Company (collectively, the "Applicants", and all wholly owned subsidiaries of Ormat Technologies, Inc. [Ormat]) has filed three separate Conditional Use Permits (CUP) applications with the County of Imperial for the construction and operation of various facilities. The three CUP applications are described below. Collectively, these three CUP applications are herein referred to as the "project."

1. Dogwood Geothermal Energy Project– CUP No. 23-0020

The Dogwood Geothermal Energy Project includes a geothermal plant and associated ancillary and auxiliary facilities, new substation, 7 megawatt (MW) solar facility, and medium voltage distribution cable from the proposed solar facility to the geothermal plant. These project components are summarized below.

- a. **ORMAT Energy Converter (Geothermal Energy Production Unit):** The proposed ORMAT Energy Converter (OEC) unit would be a two-turbine combined cycle binary unit, operating on a subcritical Rankine cycle, with isopentane as the motive fluid. The OEC system consists of a generator, turbines, a vaporizer, Air Cooled condensers, preheaters and recuperators, and an evacuation skid/vapor recovery maintenance unit (VRMU) for purging and maintenance events. The design capacity for the unit is 25 MW (net).
- b. **Isopentane Storage Tanks:** Two double-walled 20,000-gallon above-ground storage tanks would be installed for motive fluid (isopentane) storage. Numerous safety and fire prevention measures would be installed on/near the ABST, including the following:
 - Concrete foundations with blast walls separating the tank from the OEC.
 - An automated water suppression system.
 - Concrete containment areas.
 - Two flame detectors, which will immediately detect any fire and immediately trigger the

automatic fire suppression system.

- A gas detector, which will immediately detect any isopentane leak and notify the control room (manned 24/7).
- c. **Cooling Tower:** A cooling tower array will perform air-cooling operations of the geothermal fluid. The cooling tower will include a series of heat-absorbing evaporators and condensers to capture and transfer heat stored in the geothermal fluid. No water is necessary.
- d. **Dogwood Substation:** The proposed Dogwood geothermal plant will require a new substation to step up the low voltage electrical energy generated at the Dogwood geothermal unit to the higher voltage required for commercial transmission. No upgrades to off-site transmission facilities are necessary and the new Dogwood substation will connect directly to the existing point of interconnection with the Imperial Irrigation District (IID) controlled grid. The substation will include a 13.8 kV circuit breaker to protect the electric generator, a minimum of 80 megavolt ampere 13.8 kV/115 kV transformer, and 115 kV potential and current transformers for metering and system protection. A main control building would contain instrumentation and telecommunications equipment located within the greater HGEC.

The substation footprint would measure up to 145 feet by 66 feet and would be surrounded by an eight-foot-tall chain link fence with vehicle and personnel access gates. The surface of the substation would be covered by gravel and the substation equipment would be placed onto concrete foundations.

- e. **Parasitic Solar Energy Facility:** A 7 MW solar facility would provide supplemental/auxiliary energy to the proposed Dogwood geothermal plant. The solar facility is classified as behind-the-meter and would provide supplemental energy directly to the Dogwood geothermal unit (OEC). This energy would not enter the transmission grid.
- f. **Medium Voltage Distribution Line:** The energy generated by the proposed Dogwood solar facility would be collected at an on-site XMD and switch on the western edge of the Heber 2 Project site, adjacent to South (S) Dogwood Road. A medium voltage distribution cable would cross S Dogwood Road and be attached via trays to the existing pipeline that runs west before turning north to cross the Beech Drain and Main Canal at the existing above-ground pipeline span. The cable would continue to follow the existing pipeline alignment and connect into the new Dogwood OEC. No new footings or foundations are required for the cable trays.

2. Heber 2 Solar Energy Project – CUP No. 23-0021

- a. **Parasitic Solar Energy Facility:** A 15 MW solar facility would provide supplemental/auxiliary energy to the existing Heber 2 geothermal plant. The solar facility is classified as behind-the-meter and would provide supplemental energy directly to the Heber 2 geothermal unit (OEC). This energy would not enter the transmission grid. The energy generated by the solar facility would be collected by an on-site XMD and switch and transmitted via a medium voltage distribution cable (as described above).

3. Heber Field Company (HFC) Geothermal Wells and Pipeline Project – CUP No. 23-0022

- a. **Geothermal Production and Injection Wells:** Production wells flow geothermal fluid to the surface, and injection wells are used to inject geothermal fluid from the energy plant back into the geothermal reservoir. Injection ensures the longevity and renewability of the geothermal resource. The Applicant proposes to develop three geothermal production wells, all within the Imperial County Geothermal Overlay Zone. The wells will be sited at three locations within APNs 059-020-001 and 054-250-017. The injection well would be installed within the HGEC, immediately next to the proposed Dogwood OEC.

- b. Geothermal Fluid Pipeline:** Approximately 4,500 feet (0.85 miles) of geothermal fluid production pipeline are proposed for installation on APN 059-020-001. This new segment of pipeline will connect to an existing pipeline collection point that will deliver the geothermal brine to the proposed Dogwood OEC. The well on APN 054-250-017 would connect to the existing pipeline segment adjacent to the proposed well pad site. The pipeline would be used to transport geothermal fluid from the production wells to the power plants.

The County Land Use Ordinance, Division 17, includes the Renewable Energy Overlay Zone, which authorizes the development and operation of renewable energy projects, with an approved CUP. As shown in Figure 1, the project site is located within the Geothermal Overlay Zone, which is considered as part of the County's Renewable Energy Overlay Zone.

Implementation of the project would require the approval of CUPs by the County to allow for the construction and operation of the proposed facilities.

Probable Environmental Effects: Agricultural Resources; Air Quality; Biological Resources; Cultural Resources; Cumulative Impacts; Geology and Soils; Energy, Hazards and Hazardous Materials; Hydrology/Water Quality; and Tribal Cultural Resources.

Availability: The Draft EIR can be reviewed by appointment at the following location: Imperial County Planning and Development Services Department, 801 Main Street, El Centro, CA 92243. To make an appointment please contact Luis Valenzuela at (442) 265-1749. The document can be reviewed on-line at: www.icpds.com.

Comments: Written comments regarding the Draft EIR should be directed to Luis Valenzuela, Imperial County Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 and must be received no later than November 14, 2024 (public review period is from August 14, 2024, to November 14, 2024). A Final EIR incorporating public input will be prepared for consideration by the Imperial County Planning Commission and Board of Supervisors at a future public meeting. For environmental review information for this project, please contact Luis Valenzuela at (442) 265-1749.

This notice was published in the Imperial Valley Press on October 10, 2024.

Adams Broadwell Joseph & Cardozo

November 8, 2024

- F-1** On August 20, September 3, and November 21, 2024, Imperial County responded to the records requests by providing the requested technical documents/materials. Please also refer to responses to comments E-1 and E-2.
- F-2** Please refer to response to comment F-1.
- F-3** Please refer to response to comment F-1.
- F-4** The contact information is received and acknowledged.

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
601 GATEWAY BOULEVARD, SUITE 1000
SOUTH SAN FRANCISCO, CA 94080-7037
TEL: (650) 589-1800
FAX: (650) 589-2662
afederman@adamsbroadwell.com

SACRAMENTO OFFICE
620 CAPITOL MALL, SUITE 350
SACRAMENTO, CA 95814-6721
TEL: (916) 444-8281
(916) 444-8289

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PLANNING & DEVELOPMENT SERVICES

November 14, 2024

OF Counsel
MARC D. JOSEPH
DANIEL L. CARDOZO

Via Email and Overnight Mail

Luis Valenzuela, Planner II
Imperial County Planning &
Development Services Department
801 Main Street
El Centro, CA 92243
Email:
luisvalenzuela@co.imperial.ca.us

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

**Re: Comments on Draft Environmental Impact Report for Dogwood
Geothermal Project SCH No. 2024010510**

Dear Mr. Valenzuela and Mr. Minnick:

On behalf of Citizens for Responsible Industry ("Citizens" or "Commenters"), we submit these comments on the Draft Environmental Impact Report ("DEIR") prepared by Imperial County ("County") for the Dogwood Geothermal Energy Project (SCH No. 2024010510; CUP Nos. 23-0020, 23-0021, and 23-0022) ("Project") proposed by Ormat Technologies, Inc. (d.b.a. OrHeber 3, LLC, Heber Field Company, LLC, and Second Imperial Geothermal Company) (collectively, the "Applicants"). The Project site is located on approximately 125 acres of privately-owned land in the southern portion of Imperial County, California. The project site is within portions of on three parcels: Assessor Parcel Numbers (APN) 054-250-031, 059020-001, and 054-250-017. APN 054-250-31 is within the existing Heber 2 Geothermal Energy Complex ("HGEC") located at 855 Dogwood Road, Heber, CA, and APN 059-020-001 and APN 054-250-017 are immediately southeast and east, respectively, of the HGEC. The project site is located within the Geothermal Overlay Zone, which is considered as part of the County's Renewable Energy Overlay Zone.

G-1

The proposed Project includes three Conditional Use Permit ("CUP") applications for the construction and operation of the following: 1) Dogwood Geothermal Energy Project (CUP No. 23-0020), proposed by OrHeber 3, LLC; 2) Heber 2 Solar Energy Project (CUP No. 23-0021), proposed by Second Imperial

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Geothermal Company; and 3) Heber Field Company Geothermal Wells and Pipeline Project (CUP No. 23-0022), proposed by Heber Field Company, LLC. The three projects are analyzed as a single project in the DEIR and are collectively referred to as "Project" herein.

The Dogwood Geothermal Energy Project would include a 25-megawatt (MW) geothermal plant (ORMAT Energy Converter ("OEC") Geothermal Energy Production Unit with a two-turbine combined cycle binary unit, operating on a subcritical Rankine cycle, with isopentane as the motive fluid. Isopentane would be stored onsite in two double-walled 20,000-gallon above-ground storage tanks. The Project would also include a new substation and ancillary and auxiliary facilities. A 7 MW parasitic solar photovoltaic ("PV") facility would provide supplemental auxiliary energy to the Project. The solar facility is classified as behind-the-meter and would provide supplemental energy directly to the Dogwood geothermal unit OEC, this energy would not enter the transmission grid. The Project includes a cooling tower to perform air-cooling operations of the geothermal fluid. The cooling tower will include a series of heat-absorbing evaporators and condensers to capture and transfer heat stored in the geothermal fluid. No water is required. The Project also requires a medium voltage distribution line from the proposed solar facility to the proposed geothermal plant. This project would be located at 855 Dogwood Road, Heber, CA. The Assessor Parcel Number (APN) is 054-250-31.

G-1
cont.

The Heber 2 Solar Energy Project proposes to construct a 15 MW parasitic solar energy facility that would provide supplemental/auxiliary energy to existing the Heber 2 Geothermal Plant. The solar facility is classified as behind-the-meter and would not enter the transmission grid. This project would be located southeast of the HGEC in the northern portion of APN 059-020-001.

The Heber Field Company Geothermal Wells and Pipeline Project would include three new geothermal production wells, one new injection well, and 4,500 feet (0.85 miles) of geothermal production pipeline to connect an existing pipeline collection point that will deliver the geothermal brine to the proposed Dogwood OEC.

We have reviewed the DEIR, its technical appendices, and reference documents with assistance of Commenters' expert consultants, whose comments and qualifications are attached. Based on our review of the DEIR, it is clear that the DEIR fails as an informational document under CEQA and lacks substantial evidence to support its conclusions that the Project's significant impacts would be mitigated to the greatest extent feasible. There is also substantial evidence demonstrating that the Project's potentially significant environmental impacts are

G-2

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far more extensive than disclosed in the DEIR. Commenters and their expert consultants have identified numerous potentially significant impacts that the DEIR either mischaracterizes, underestimates, or fails to identify. Moreover, many of the mitigation measures described in the DEIR will not, in fact, mitigate impacts to the extent claimed.

G-2
cont.

For example, Citizens' air quality expert Komal Shukla, Ph.D. finds that the DEIR fails to adequately quantify Project components, resulting in significant underestimation of Project emissions. Dr. Shukla's comments provide substantial evidence that Project emissions will exceed applicable significance thresholds, operational emissions associated with isopentane will be significant, the risk of Valley Fever is significant and unmitigated, and that Best Available Control Technology ("BACT") is required to reduce operational emissions to less than significant levels.¹

G-3

Further, Citizens' agricultural consultant Gregory House finds that Project construction will have significant permanent impacts to Important Agricultural areas that are not adequately analyzed or mitigated in the DEIR. As discussed further herein, the mitigation measures proposed to offset the permanent loss of agricultural lands are inadequate because they do not create new Important Farmland and fail to include performance standards to ensure efficacy.²

G-4

Citizens' expert biological Shawn Smallwood, Ph.D. concludes that the Project will have potentially significant and unmitigated impacts to special status wildlife and sensitive natural communities including Arrow weed, Burrowing owls, American kestrel, Verdin, Silver-haired bat, Spotted bat, Mexican free-tailed bat, long-billed curlew, Northern Harrier, and other special status species.³

G-5

We have prepared our comments on noise and vibration with the assistance of Jack Meighan, acoustics, noise, and vibration expert of Wilson Ihrig.⁴ Mr. Meighan's Comments identify significant and unmitigated noise impacts from construction and operation of the Project. Moreover, the DEIR fails to adequately analyze the existing environmental setting against which to analyze the Project's noise and vibration impacts. The attached expert reports are incorporated by

G-6

¹ See Exhibit A, Komal Shukla, Ph.D., P.E., Comments on the Draft Environmental Impact Report for the Dogwood Geothermal Energy Project (September 27, 2024) ("Shukla Comments").

² See Exhibit B, Gregory House, Review of Mitigation Measures Proposed for Agriculture and Forestry Resources, Dogwood Geothermal Project DEIR (September 19, 2024) ("House Comments").

³ See Exhibit C, Shawn Smallwood, M.S., Comments on Dogwood Geothermal Energy Project (September 19, 2024) ("Smallwood Comments").

⁴ Mr. Meighan's Comments ("Meighan Comments") and Mr. Meighan's CV are attached hereto as Exhibit D.

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reference into this comment letter as if fully set forth herein and must be considered part of the record for this Project. Citizens reserves the right to submit supplemental comments at any later hearings and proceedings related to the Project.⁵

G-6
cont.

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 resident David Almodovar 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. 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.

G-7

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

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.
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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.

G-7
cont'd

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.

I. THE DEIR FAILS TO PROVIDE A COMPLETE AND ACCURATE PROJECT DESCRIPTION

The DEIR does not meet CEQA's requirements because it fails to include an accurate, complete and stable Project description, rendering the entire analysis inadequate. CEQA requires that an EIR "set forth a project description that is sufficient to allow an adequate evaluation and review of the environmental impact."⁶ An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.⁷ "An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR."⁸ Accordingly, a lead agency may not hide behind its failure to obtain a complete and accurate project description.⁹

G-8

"Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal ... and weigh other alternatives in the balance."¹⁰ As articulated by the court in *County of Inyo v. City of Los Angeles*, "a curtailed, enigmatic or unstable project description draws a red herring across the path of public input."¹¹ Without a complete project description, the environmental analysis under CEQA is impermissibly limited, thus minimizing the project's impacts and undermining meaningful public review.¹²

⁶ *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 654 (citing 14 C.C.R. § 15124).

⁷ *McQueen v. Board of Directors* (1988) 202 Cal. App. 3d 1136, 1143.

⁸ *Santiago County Water Dist. v. County of Orange* 118 Cal. App. 3d 818, 829-830.

⁹ *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 311 ("*Sundstrom*").

¹⁰ *Santiago County Water Dist. v. County of Orange* 118 Cal. App. 3d 818, 829-830.

¹¹ *Id.* at 197-198.

¹² See, e.g., *Laurel Heights Improvement Assn. v. Regents of the Univ. of Cal.* (1988) 47 Cal.3d 376, 6929-016acp.

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The purpose of an EIR is to reveal to the public “the basis on which its responsible officials either approve or reject environmentally significant action,” so that the public, “being duly informed, can respond accordingly to action with which it disagrees.”¹³ Further, “[t]o be adequate, the EIR must include sufficient detail to enable those who did not participate in its preparation to understand and ‘meaningfully’ consider the issues raised by the proposed project.”¹⁴

G-8
cont’d

A. The DEIR’s Project Description is Inadequate Because it Fails to Provide an Adequate Description of the Project’s Contaminant Emitting Equipment

The DEIR fails to disclose the number of seals, flanges, pumps, and valves and all air contaminant-emitting equipment, resulting in artificially reduced air pollutant emissions calculations.¹⁵ Further, the DEIR fails to include an adequate description of key Project components, including turbines, air-cooled condensers, preheaters, recuperators, as well as existing pipelines, storage tanks, and wells.¹⁶ The DEIR’s failure to include these components is critical, because the DEIR relies on the reduced number of seals, flanges, pumps, valves, etc. associated with the Project equipment as compared to existing units from 2019 and 2020 to estimate specific isopentane maintenance, purging, and fugitive emissions from the Project.¹⁷

G-9

Dr. Shukla provides substantial evidence that, where the actual number of equipment units is unreported, emissions during both construction and operation phases will be underestimated, leading to potential non-compliance with air quality regulations and significant environmental impacts.¹⁸ Load factors, operational hours, and fuel consumption are based on equipment quantity.¹⁹ Failure to quantify these units results in a potentially significant underestimation of emissions of pollutants like nitrogen oxides (“NOx”), carbon monoxide (“CO”), particulate matter 10 (“PM₁₀”) and particulate matter 2.5 (“PM_{2.5}”).²⁰

¹³ *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 392

¹⁴ *California Oak Foundation v. City of Santa Clarita* 133 Cal.App.4th 1219, 1237 quoting *Santa Clarita Organization for Planning the Environment* 106 Cal.App.4th 715, 721; see also *Concerned Citizens of Costa Mesa Inc. v. 32nd Dist. Agricultural Assn.* (1986) 42 Cal.3d 929, 935 [“To facilitate CEQA’s informational role, the EIR must contain facts and analysis, not just the agency’s bare conclusions or opinions”].

¹⁵ Shukla Comments at p. 6.

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

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Dr. Shukla's comments demonstrate that the DEIR's air quality, GHG, and health risk analysis is therefore inadequate for failure to quantify the accurate emissions associated with Project components, which are likely to be underestimated. The DEIR's failure to provide an accurate calculation of the air contaminant-emitting equipment results in a failure to proceed in the manner required by law. The DEIR fails to provide an accurate, finite, and stable Project Description. The DEIR must be revised and recirculated to include an adequate description of the Project's contaminant emitting equipment.

G-9
cont'd

B. The Project Description is Inadequate for Failure to Include Project Development Pending Imperial Irrigation District Review

The DEIR's Project Description provides that significant changes to the Project may occur pending Imperial Irrigation District ("IID") review.²¹ The DEIR provides that:

[A] new substation will be required to step up the low voltage electrical energy generated at the Dogwood geothermal unit to the higher voltage required for commercial transmission. Pending Imperial Irrigation District (IID) review, no upgrades to off-site transmission facilities are necessary. If upgrades to off-site facilities are later deemed necessary through an IID transmission study, recommendations could include protection upgrades and metering replacements at existing IID substations and/or upgrades to telecommunications, distribution lines, and transmission lines. Such upgrades would use existing infrastructure, easements, right-of-way, and corridors to the extent practicable. The new Dogwood substation will connect directly to the existing point of interconnection with the IID controlled grid.

G-10

The DEIR's Project Description analysis must include the determination of whether the Project will necessitate additional infrastructure. The DEIR must include analysis of impacts associated with the IID transmission study. Failure to include the foreseeable "upgrades [of] existing infrastructure, easements, right-of way, and corridors" associated with the Project results in the impermissible piecemealing of the Project with reasonably foreseeable Project components. The failure to address this "likely" element of the Project is impermissible piecemealing under CEQA.²²

²¹ DEIR at p. 2-13.

²² 14 14 Cal. Code Regs. ("CCR") § 15165, 6609-016acp

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CEQA forbids piecemeal review of the significant environmental impacts of a project.²³ Agencies cannot allow “environmental considerations [to] become submerged by chopping a large project into many little ones—each with a minimal potential impact on the environment—which cumulatively may have disastrous consequences.”²⁴ The CEQA Guidelines provide “[w]here an individual project is a necessary precedent for action on a larger project, or commits the Lead Agency to a larger project, with significant environmental effect, an EIR must address itself to the scope of the larger project.”²⁵ Here, construction of the Project and related upgrades, metering replacements at existing IID substations and/or upgrades to telecommunications, distribution lines, and transmission lines would result in significant environmental effects, which must be analyzed in this DEIR to avoid violating CEQA for impermissibly piecemealing the Project from foreseeable future Project components.

G-10
cont.

The DEIR must be revised and recirculated to adequately analyze the whole of the Project, including foreseeable improvements to IID infrastructure associated with the Project.

II. THE DEIR'S DESCRIPTION OF THE ENVIRONMENTAL SETTING IS INADEQUATE

The DEIR fails to adequately describe the environmental setting against which the Project's environmental impacts are to be measured for several critical aspects of the Project. This contravenes the fundamental purpose of the environmental review process, which is to determine whether there is a potentially substantial, adverse change compared to the existing setting. CEQA requires that a lead agency include a description of the physical environmental conditions, or “baseline,” in the vicinity of the project as they exist at the time environmental review commences.²⁶ As the courts have repeatedly held, the impacts of a project must be measured against the “real conditions on the ground.”²⁷ The description of

G-11

²³ 14 CCR § 15165; *Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1222; *Berkeley Jets*, 91 Cal.App.4th at 1358.

²⁴ *Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 283-284.

²⁵ 14 CCR § 15165.

²⁶ 14 CCR § 15125(a); *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal. 4th 310, 321 (“*CBE v. SCAQMD*”).

²⁷ *CBE v. SCAQMD*, 48 Cal. 4th at 321; *Save Our Peninsula Com. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 121-22; *City of Carmel-by-the-Sea v. Bd. of Supervisors of Monterey County* (1986) 183 Cal.App.3d 229, 246.

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the environmental setting constitutes the “baseline” physical conditions against which the lead agency assesses the significance of a project’s impacts.²⁸

G-11
cont.

**A. The DEIR Fails to Accurately Describe the Existing
Environmental Setting Related to Biological Resources**

The DEIR fails to provide a complete and accurate description of the Project’s environmental setting related to special-status species of wildlife, and thus, the DEIR’s impact assessment and proposed mitigation for impacts to biological resources are not supported by substantial evidence.

Dr. Smallwood’s comments provide substantial evidence that 121 special-status species of wildlife are known to occur near enough to the site to warrant analysis of occurrence potential.²⁹ Of these species, 13 were recorded on the project site, and another 10 species have been documented within 1.5 miles of the site (‘Very close’), another 20 within 1.5 and 4 miles (‘Nearby’), and another 71 within 4 to 30 miles (‘In region’).

G-12

Dr. Smallwood’s comments provide substantial evidence, based on visits to the Project site as well as empirical research, that the Project site supports multiple special-status species of wildlife which the DEIR omits and carries the potential for supporting many more special-status species of wildlife based on proximity of recorded occurrences.³⁰ The site is far richer in biodiversity of special-status species than is characterized in the Biological Resources and Burrowing Owl Survey Report and the DEIR’s Environmental Setting analysis.

**a. The DEIR Fails to Provide an Accurate Baseline
Environmental Setting for Bats**

The DEIR incorrectly states that bats have no potential for occurrence in the project area due to a lack of suitable habitat despite bat reports in the CNDDB database cited in the DEIR, and direct bat observations by Dr. Smallwood.³¹

G-13

Dr. Smallwood identified three species of bats acoustically, and one species of bat visually during his field survey of the Project site.³² Dr. Smallwood identified the Silver-haired bat which is rated as Moderate level of conservation concern by the Western Bat Working Group.³³ Dr. Smallwood identified a spotted bat, which is

²⁸ 14 CCR § 15125(a); *CBE v. SCAQMD*, 48 Cal. 4th at 321.

²⁹ Smallwood Comments at p. 14.

³⁰ *Id.*

³¹ DEIR at p. 3.5-7.

³² Smallwood Comments at 4.

³³ *Id.* at 21.

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a California Species of Special Concern and rated as High level of conservation concern by the Western Bat Working Group.³⁴ Spotted bats are exceedingly rare.³⁵ As of September 16, 2024, iNaturalist includes only five records of spotted bats in California.³⁶ Dr. Smallwood also detected 33 bat passes within 30 feet of our detector and within 90 minutes of survey, or one pass every 2 minutes and 43 seconds on average.³⁷ By contrast, the DEIR is not supported by evidence based on any surveys of bats, even though the geographic ranges of many bat species overlap the project site.³⁸ Dr. Smallwood concludes that the DEIR lacks substantial evidence to conclude that bats have no potential for occurrence on the Project site. The environmental setting analysis with respect to bats is therefore unsupported by substantial evidence.

G-13
cont.

**b. The DEIR Fails to Provide an Accurate Baseline
Environmental Setting for Burrowing Owls**

The DEIR states that burrowing owl only have a moderate potential for occurring on the Project site.³⁹ This is incorrect. Dr. Smallwood conducted a site visit and determined that burrowing owls were in fact present on the Project site.⁴⁰ Dr. Smallwood identified three burrowing owls on the Project site.⁴¹ Dr. Smallwood also identified suitable habitat for burrowing owls in burrows on the Project site.⁴² The DEIR's environmental impact analysis and mitigation for burrowing owls is unsupported by an environmental baseline analysis supported by substantial evidence with respect to burrowing owls.

G-14

**c. The DEIR Fails to Analyze the Existing Environmental
Setting With Respect to Desert Pupfish**

The Project site is within the Imperial Valley Natural Community Conservation Plan and Habitat Conservation Plan ("HCP").⁴³ The HCP includes

G-15

³⁴ *Id.*

³⁵ *Id.* at 14.

³⁶ *Id.*

³⁷ *Id.*

³⁸ Smallwood Comments at 12.

³⁹ DEIR at p. 3.5-6.

⁴⁰ Smallwood Comments at 11.

⁴¹ *Id.*

⁴² *Id.*

⁴³ Imperial Irrigation District, the California Department of Fish and Game, and the United States Fish and Wildlife Service Imperial Valley Natural Community Conservation Plan and Habitat Conservation Plan (Feb. 2006) p. 6 available at: <https://www.iid.com/home/showpublisheddocument/2260/635648001335730000.6339-016acp>

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Desert pupfish as a Covered Species.⁴⁴ Desert pupfish are known to occur in this area of the "Salton Sea year-round and breed in this habitat in the HCP area."⁴⁵ Desert pupfish are known to be "residents in drains" within the IID canals and drains system.⁴⁶ Desert pupfish have a potential to occur at the Project site's canals and drains, but the DEIR and Appendix E – the Biological Resources and Burrowing Owl Survey Report fail to make any mention of desert pupfish. The DEIR fails as an informational document for failing to analyze the existing environmental setting with respect to desert pupfish.

G-15
cont'd

Desert pupfish are known to be present "In region" of the Project area.⁴⁷ Desert pupfish are endangered under both state and federal designation.⁴⁸ "Habitat destruction and alteration, combined with the introduction of non-native species are the primary reasons for the decline of desert pupfish populations. Currently, natural populations of desert pupfish occur in the Salton Sea and nearby shoreline pools, freshwater ponds and irrigation drains, as well as in portions of creeks/washes that are tributary to the Salton Sea."⁴⁹ Impacts to desert pupfish should have been analyzed in the DEIR but were not, and the presence of desert pupfish should have been conclusively described in the Environmental Setting analysis of the DEIR.

d. The DEIR Fails to Accurately Analyze the Existing Environmental Setting Related to Arrow Weed

The DEIR provides that:

As shown in Figure 3.5-1, arrow weed thicket occurs within the BSA. Arrow weed thickets are recognized by CDFW as a sensitive natural community. Arrow weed thickets were found along canals and drains below the ordinary high-water mark. The canals fall within the BSA, however, none of the arrow weed thickets that occur within the BSA would be removed or disturbed by project activities. Therefore, the proposed project would not have substantial

G-16

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.* at C2-57.

⁴⁷ Smallwood Comments at p. 18.

⁴⁸ California Department of Fish and Wildlife, Desert Pupfish (*Cyprinodon macularis*), <https://wildlife.ca.gov/Regions/6/Desert-Fishes/Desert-Pupfish#:~:text=Habitat%20destruction%20and%20alteration%2C%20combined,mouths%20of%20other%20washes/tributaries.>

⁴⁹ *Id.*

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adverse effects on sensitive natural communities, and this is considered a less than significant impact.⁵⁰

Dr. Smallwood's comments, supported by direct evidence from his site visit, demonstrate that the DEIR's analysis of the amount of arrow weed thickets is not supported by substantial evidence.⁵¹ The DEIR (Figure 3.5-1) depicts arrow weed thickets in smaller patches than Dr. Smallwood observed.⁵² The DEIR fails to calculate or accurately report the acreage of arrow weed, but Dr. Smallwood documented about 1.16 acres of arrow weed.⁵³ The DEIR's environmental setting analysis with respect to arrow weed is therefore not supported by substantial evidence. Moreover, the DEIR's Appendix F Preliminary Jurisdictional Report ("PJD") determination that the ditches do not support riparian vegetation/habitat⁵⁴ is not supported by substantial evidence.⁵⁵

G-16
cont.

The DEIR must be revised and recirculated to accurately reflect the existing environmental setting related to arrow weed before the Project can lawfully be approved.

B. The DEIR Fails to Accurately Describe the Existing Environmental Setting Related to Wetlands

According to the PJD Report⁵⁶, approximately 0.11 acres of the disturbance area also meet the definition of State jurisdictional waters as outlined in Sections 1600-1616 of the CDFW Code, and approximately 0.11 acres of the disturbance area meet the federal definition of "waters of the United States" as outlined in 33 CFR Part 328.

G-17

Dr. Smallwood concludes that impacts to wetlands may be significant as a result of Project construction and operation. Dr. Smallwood found a significant potential impact to wetlands from modifications to wetland features, as well as from the project's two double-walled 20,000-gallon above-ground isopentane storage tanks.⁵⁷ Isopentane is a volatile flammable liquid that on contact can irritate and burn skin, eyes and lungs.⁵⁸ Dr. Smallwood explains that storing up to 40,000

⁵⁰ DEIR at p. 3.5-18.

⁵¹ Smallwood Comments at p. 25.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ DEIR at p. 4-14.

⁵⁵ Smallwood Comments at p. 24.

⁵⁶ EIR Appendix F at p. 4-14.

⁵⁷ Smallwood Comments at p. 24.

⁵⁸ *Id.*

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gallons of isopentane near wetlands would potentially jeopardize wetlands.⁵⁹ A release of isopentane could result in significantly decreased water quality and contamination of surface waters.⁶⁰ Isopentane is acutely toxic to fish, invertebrates, with long term toxicity to fish, and aquatic vertebrates.⁶¹ Isopentane could infiltrate soils, resulting in toxicity impairing root systems and vegetative health.⁶² Contamination from a release of isopentane could have lasting effects and result in long-term degradation of the wetland habitat. The DEIR should be revised to analyze this potentially significant impact.

G-17
cont'd

C. The DEIR Fails to Adequately Describe the Environmental Setting for Air Quality Due to Inaccurate Monitoring Station Data

Dr. Shukla demonstrates that the DEIR fails to adequately analyze the existing environmental setting for air quality due to its reliance on distant meteorological data for emissions analysis.⁶³ The DEIR relies on data from a weather station that is not representative of local conditions, and fails to include data from nearby, more relevant sources.⁶⁴ By not utilizing data from stations closer to the project site, the DEIR fails to account for localized meteorological conditions that could influence the dispersion of pollutants.⁶⁵ Thus, the DEIR relies on inaccurate meteorological data and the subsequent emissions modeling is unsupported.⁶⁶

G-18

The Project relies on unrepresentative data from the Imperial City station located at Frank Wright Middle School, despite the proximity of closer stations in El Centro and Calexico. The Imperial City station is approximately 11.8 miles from the Project site, whereas El Centro and Calexico are located only 5.5 miles and 5.1 miles away, respectively. Dr. Shukla's comments demonstrate that in order to ensure accurate representation, the modeling should incorporate localized micrometeorological data, which can be obtained from the El Centro meteorological station, closer to the Project site.⁶⁷

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ https://balchem.com/performance-gases/wp-content/uploads/sites/5/2021/02/10289gb_CLP_II_134_ATP4_0000_isopentane_balchem.pdf

⁶² Smallwood Comments at p. 24.

⁶³ Shukla Comments at p. 10.

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ Shukla Comments at p. 10.

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Utilizing data from a more distant station introduces several uncertainties and variations that can compromise the accuracy and reliability of air quality assessments.⁶⁸ Localized conditions such as meteorology, topography, traffic, and industrial activities can cause significant variations in pollutant concentrations across relatively short distances.⁶⁹ The data from a station 11.8 miles away may not accurately represent the air quality conditions at the Project site, potentially leading to underestimations or overestimations of pollutant levels.⁷⁰ This misrepresentation can affect the accuracy of emissions modeling, the assessment of potential impacts on human health, and the evaluation of whether the Project meets air quality standards.⁷¹ Absent a representative and site-specific air quality analysis, the Project's environmental setting analysis is unsupported by substantial evidence.

G-18
cont'd

III. THE DEIR FAILS TO ACCURATELY ANALYZE, QUANTIFY, AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS TO AIR QUALITY

A. The DEIR Fails to Analyze the Project's Significant Impacts from Isopentane Fugitive Emissions

Substantial evidence in Dr. Shukla's comments demonstrates that the Project results in significant impacts from fugitive emissions of isopentane.⁷² Isopentane is a reactive organic gas ("ROG"). Dr. Shukla determined that the DEIR fails to accurately quantify fugitive isopentane emissions.⁷³ Dr. Shukla found that the DEIR underestimates isopentane emissions by a factor of three.⁷⁴ Accounting for this discrepancy, Dr. Shukla calculated that fugitive isopentane emissions will be approximately 203.31 pounds per day ("lbs/day"), significantly exceeding the ROG significance threshold of 137 lbs/day.⁷⁵

G-19

Further, Dr. Shukla calculated that, when accounting for all emissions sources, including from purging emissions, isopentane emissions are even higher than estimated in the DEIR.⁷⁶ Dr. Shukla calculated that purging emissions will

⁶⁸ *Id.*
⁶⁹ *Id.*
⁷⁰ *Id.*
⁷¹ *Id.*
⁷² *Id.* at 36.
⁷³ *Id.*
⁷⁴ *Id.*
⁷⁵ *Id.*
⁷⁶ *Id.* at 35.
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result in approximately 17 gallons per day of isopentane emissions.⁷⁷ This is equivalent to 112 lbs/day, resulting in 315.31 lbs/day of total isopentane emissions.⁷⁸ Isopentane emissions result in a significant environmental impact requiring analysis and mitigation in a revised and recirculated DEIR.

G-19
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Dr. Shukla's comments also provide substantial evidence that the DEIR fails to account for isopentane emissions that may result from deliveries and transportation of isopentane.⁷⁹ The DEIR does not provide an isopentane loss rate, "which is critical for accurately estimating the frequency of isopentane replenishment required to maintain the total site volume of 122,140 gallons."⁸⁰ The DEIR fails to analyze isopentane emissions associated with delivery and transportation of isopentane, which may result in "potentially significant environmental impacts associated with ongoing isopentane replenishment."⁸¹ The DEIR's isopentane emissions analysis is therefore unsupported by substantial evidence.

B. The DEIR Fails to Incorporate Best Available Control Technology for ROG Emissions of Isopentane

Imperial County Air Pollution Control District ("ICAPCD") Rule 207(C)(1)(c) requires that BACT shall be applied for each pollutant(s) for which a threshold is exceeded. Isopentane is a ROG pollutant.⁸² The ROG significance threshold of 75 pounds per day is exceeded because isopentane emissions may exceed 315 lbs/day.⁸³ BACT is therefore required for Project operation in order for the Project to comply with ICAPCD Rule 207. The DEIR must be revised and recirculated to incorporate BACT.

G-20

C. The DEIR Fails to Analyze the Project's Significant Impacts from Ammonia

The DEIR fails to adequately analyze the Project's potentially significant impacts associated with ammonia. Dr. Shukla's comments provide substantial evidence that ammonia may be emitted during well drilling, steam separation, and venting processes due to its presence in geothermal fluids.⁸⁴ Ammonia is a

G-21

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ Shukla Comments at p. 37.

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *Id.*

⁸³ DEIR at 3.4-12; Shukla Comments at p. 43.

⁸⁴ *Id.* at 39.

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precursor to secondary particulate matter formation.⁸⁵ Ammonia emissions from geothermal operations can interact with other pollutants, contributing to air quality degradation and potential health impacts.⁸⁶

Failure to include ammonia emissions in the DEIR's analysis overlooks a significant source of air pollution, resulting in underestimated environmental and health impacts.⁸⁷ Proper evaluation for ammonia emissions is critical to prevent harmful effects.⁸⁸ The lack of consideration for ammonia within the emissions inventory and modeling undermines the reliability of the DEIR's conclusions on air quality and public health protections. The omission of any analysis of ammonia in the DEIR results in an air quality analysis unsupported by substantial evidence.

G-21
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D. The DEIR Fails to Adequately Analyze the Project's Significant Ozone Emissions

Dr. Shukla's comments provide substantial evidence that the DEIR fails to adequately analyze impacts from ozone ("ozone" or "O3"). The DEIR concludes, absent substantial evidence, that ozone emissions are less than significant. The DEIR provides that:

[T]he proposed project's impact could be cumulatively considerable because the Imperial County portion of the SSAB is nonattainment already for O3 and PM10 under state standards and for O3 and PM2.5 federal standards. Thus, existing O3 and PM10 levels in the SSAB are at unhealthy levels during certain periods. Additionally, the cumulative construction effects could again be experienced in the future during decommissioning and site restoration activities.⁸⁹

G-22

The DEIR goes on to conclude, "the project would not contribute to long-term cumulatively considerable air quality impacts and the projects would not result in cumulatively significant air quality impacts, and cumulative impacts would be less than significant."⁹⁰ This conclusion is not supported by substantial evidence in the record.

⁸⁵ *Id.*

⁸⁶ *Id.* at 40.

⁸⁷ Shukla Comments at p. 10.

⁸⁸ *Id.*

⁸⁹ DEIR at 5-10.

⁹⁰ *Id.* at 5-11.

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Dr. Shukla's comments demonstrate that, absent detailed analysis or modeling, the DEIR fails to adequately assess the Project's contributions to ozone levels, which is especially egregious in an area that with ozone levels in nonattainment and "at unhealthy levels during certain periods."⁹¹ Dr. Shukla finds that due to the "lack of [ozone] modeling, [] the Project does not account for the combined effects of reactive organic gases (ROGs) and nitrogen oxides (NOx), which are critical in forming ground-level ozone, a major air pollutant that poses significant health risks."⁹²

G-22
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Dr. Shukla's comments demonstrate that ozone emissions from the Project result in a cumulatively considerable increase in ozone pollution, for which the Project region is in nonattainment under state air quality standards.⁹³ Dr. Shukla's comments provide substantial evidence that the Project will result in emissions of ozone precursors like oxides of NOx and "ROGs, as well as emissions of volatile organic compounds ("VOCs") which will result in cumulatively significant "negative implications for community health"⁹⁴ The DEIR fails to adequately analyze or quantify this impact.

E. The DEIR Fails to Adequately Analyze the Project's Significant NOx Emissions Impacts

Substantial evidence in Dr. Shukla's comments demonstrate that the Project may result in even more significant NOx emissions than the DEIR analyzed.⁹⁵ Dr. Shukla found that key NOx emissions sources were omitted from the DEIR's analysis, including emissions associated with well drilling and flow testing.⁹⁶ NOx emissions may therefore be more significant than analyzed and must be accurately quantified in a revised and recirculated DEIR before the Project can be approved.

G-23

F. The DEIR Fails to Incorporate Best Available Control Technology for Significant Emissions of PM2.5

ICAPCD Rule 207(C)(1)(a) requires an applicant to apply BACT on a pollutant by pollutant basis to any new emissions unit with a potential to emit of 25 pounds per day or more of any nonattainment pollutant or its precursors.⁹⁷ For

G-24

⁹¹ DEIR at 5-11.

⁹² Shukla Comments at p. 9.

⁹³ DEIR at p. 3.4-21.

⁹⁴ Shukla Comments at p. 29.

⁹⁵ *Id.* at 8.

⁹⁶ *Id.*

⁹⁷ Imperial County Air Pollution Control District Rule 207(C)(1)(a).
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PM2.5 this provision applies only to emissions units located in the PM2.5 Nonattainment Area of Imperial County.⁹⁸ The Project is within a PM2.5 Nonattainment Area of Imperial County.⁹⁹

Dr. Shukla calculated that the sand separators, along with road dust and wind erosion associated with unpaved areas will result in significant PM2.5 emissions that the DEIR failed to adequately analyze or mitigate.¹⁰⁰ The CalEEMOD files include zeros for daily PM2.5 emissions during site preparation, these outputs are not supported by substantial evidence.¹⁰¹ Comprehensive assessment and accurate modeling of these emissions are essential to ensure effective mitigation and compliance with air quality standards.¹⁰² The omission of critical PM2.5 emissions, particularly from road dust, wind erosion, and on-site diesel truck emissions, renders the DEIR's analysis unsupported by substantial evidence.

G-24
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Further, Dr. Shukla calculated that, when considering the Project's overall PM2.5 emissions, including those from site preparation, erosion, and on-site truck operations, the total would likely be more than three times the DEIR's estimated emissions.¹⁰³ The total would be approximately 800 lbs/day for both 2025 and 2026.¹⁰⁴ Dr. Shukla's comments provide substantial evidence that the Project results in PM2.5 emissions far exceeding the 550 lbs/day ICAPCD significance threshold and necessitating the implementation of BACT for PM2.5 to mitigate significant adverse impacts on air quality and public health.¹⁰⁵

G. The DEIR Fails to Adequately Analyze the Project's Significant Odor Impacts from Hydrogen Sulfide

The DEIR provides, absent substantial evidence that odor impacts from hydrogen sulfide would be less than significant.¹⁰⁶ This conclusion is unsupported by evidence in the DEIR and substantial evidence in Dr. Shukla's comments and cited reports. Dr. Shukla's comments provide substantial evidence that the Project may result in significant impacts from hydrogen sulfide ("H2S") emissions, which "Upon release into the atmosphere, it emits a characteristic "rotten egg" odor and

G-25

⁹⁸ *Id.*

⁹⁹ DEIR at p. 5-9.

¹⁰⁰ Shukla Comments at p. 38.

¹⁰¹ *Id.*

¹⁰² *Id.* at 37.

¹⁰³ *Id.* at 33.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ DEIR at p. 3.4-23.

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poses serious environmental and health hazards.”¹⁰⁷ Prolonged exposure to elevated concentrations of H₂S can lead to significant respiratory issues, eye irritation, and, in severe cases, neurological and cardiovascular damage.¹⁰⁸ The Project fails to provide quantified H₂S emissions from construction activities, noting only that odors could persist from several hours to up to 45 days at each well site, this is a significant amount of time and is not a mere “temporary basis during drilling” as the DEIR suggests.¹⁰⁹

The DEIR states:

H₂S emissions would be the most important non-condensable gas from a health-risk and odor nuisance standpoint. The potential exists that this gas and other non-condensable gases may be emitted intermittently on a short-term and temporary basis during drilling. During well cleanout and flow testing, geothermal fluids would likely be pumped into large tanks. H₂S may temporarily be released from the geothermal fluid for several hours to up to 30 days during these activities. The local H₂S emissions during these activities could exceed the ICAPCD sulfur compound emission standard (Rule 405) of 0.2 percent by volume (calculated as SO₂ and measured at a point of discharge) and could produce an objectionable “rotten egg” odor in the immediate vicinity of each well. However, these concentrations would not be expected to pose a health hazard and would not reach far beyond the vicinity of the wells under normal conditions. In addition, potential H₂S emissions resulting from these activities would be temporary at each well development site and would occur for a relatively short period of several hours to up to 45 days at each well site.¹¹⁰

G-25
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Dr. Shukla's comments provide substantial evidence that H₂S emissions would, in fact, be cumulatively significant.¹¹¹ The Project is within an area with 17 existing geothermal plants, all of which contribute to the cumulatively significant H₂S emissions.¹¹² The Project's H₂S emissions exacerbate existing H₂S emissions conditions, resulting in significant cumulative impacts that the DEIR fails to

¹⁰⁷ *Id.*

¹⁰⁸ “Hydrogen Sulfide.” Centers for Disease Control and Prevention, October 21, 2014.

<https://www.cdc.gov/TSP/MMG/MMG>

¹⁰⁹ Refer to Para. 2 on Pg. 4-14 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024

¹¹⁰ DEIR at p. 3.4-23.

¹¹¹ Shukla Comments at 17.

¹¹² *Id.*

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disclose and mitigate.¹¹³

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The H₂S emissions from the Project may also be individually significant. The DEIR recognizes that "H₂S may temporarily be released from the geothermal fluid for several hours to up to 30 days during these activities. The local H₂S emissions during these activities could exceed the ICAPCD sulfur compound emission standard (Rule 405) of 0.2 percent by volume (calculated as SO₂ and measured at a point of discharge) and could produce an objectionable "rotten egg" odor in the immediate vicinity of each well."¹¹⁴ The DEIR's conclusion that, "given the temporary nature of construction activities and the lack of sensitive receptors in the immediate vicinity of project components, odor nuisances that would be associated with project construction activities are expected to be negligible and impacts would be less than significant."¹¹⁵ H₂S impacts lasting 30 or 45 days would not be a temporary or negligible impact, and may result in significant health and odor nuisance impacts to nearby sensitive receptors.¹¹⁶

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Dr. Shukla's comments provide substantial evidence that H₂S emissions from the Project may result in significant impacts to nearby residents and workers, especially in downwind conditions.¹¹⁷ Dr. Shukla cites to a study that found exceedances of health impact and odor thresholds from H₂S within a 30km radius of geothermal power plants.¹¹⁸

Dr. Shukla's comments provide substantial evidence that Project emissions of H₂S may result in significant impacts to nearby sensitive receptors at Heber Elementary School.¹¹⁹ Dr. Shukla found that the DEIR fails to adequately evaluate the potential health impacts on students and staff at the school.¹²⁰ Dr. Shukla's comments demonstrate that "[f]or the elementary school, a primary concern is the potential degradation of air quality due to elevated levels of hydrogen sulfide (H₂S),

¹¹³ Shukla Comments at 17.

¹¹⁴ DEIR at p. 3.4-23.

¹¹⁵ *Id.*

¹¹⁶ Shukla Comments at 17.

¹¹⁷ L.C. Aguilar-Dodier a, a, b, c, d, e, 1, et al. "Spatial and Temporal Evaluation of H₂S, SO₂ and NH₃ Concentrations near Cerro Prieto Geothermal Power Plant in Mexico." *Atmospheric Pollution Research*, September 28, 2019.

<https://www.sciencedirect.com/science/article/abs/pii/S1309104219304659#:~:text=Power%20generati on%20is%20associated%20with,has%20health%20and%20environmental%20effects.>

¹¹⁸ Shukla Comments at p. 17; S. Olafsdottir, et al. "Spatial distribution of hydrogen sulfide from two geothermal power plants in complex terrain." *Atmospheric Environment*, January 2014. <https://www.sciencedirect.com/science/article/abs/pii/S1352231013007668>.

¹¹⁹ Shukla Comments at p. 18.

¹²⁰ *Id.*

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which could adversely affect students' health."¹²¹ Dr. Shukla demonstrates that, "[a]bsent comprehensive impact assessments and mitigation strategies to safeguard these sensitive receptors, air quality and health risk impacts remain significant and unmitigated."¹²²

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The DEIR fails to adequately analyze, quantify, and mitigate impacts from H₂S which may be cumulatively and individually significant. The DEIR must be revised and recirculated to adequately analyze and mitigate impacts from H₂S on the community before the Project can be approved.

H. The Project Results in Significant Unmitigated Impacts from Valley Fever

Valley fever, an infectious disease caused by inhaling *Coccidioides* spores, poses a significant health risk when soil containing these spores is disturbed during Project construction and operation.¹²³ The disease is endemic (native and common) to semiarid regions of the United States, including Imperial County.¹²⁴

Valley Fever spores are small, have slow settling rates, and can remain airborne for long periods, traveling significant distance.¹²⁵ Invisible to the human eye, these spores can persist in seemingly clear air, rendering the DEIR's nonbinding best management practices insufficient to protect site workers or the public.¹²⁶ Standard fugitive dust mitigation measures, like those proposed in AQ-1, do nothing to prevent the spread of the fungus and are not effective at controlling Valley Fever because they are largely focused on controlling visible dust or larger dust particles.¹²⁷ These measures fall short in protecting against Valley Fever.

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Dr. Shukla demonstrates that mitigation measures AQ-3 and AQ-4 fail to mitigate impacts to PM₁₀, which are larger particles than Valley Fever spores, and are also ineffective to mitigate the release of smaller Valley Fever spores which are not controlled by standard dust control mitigation.¹²⁸ Dr. Shukla's comments point to data in the DEIR which indicate that PM₁₀ levels exceed the thresholds established by ICAPCD even after the proposed mitigation measures are

¹²¹ Shukla Comments at p. 18

¹²² *Id.*

¹²³ PSA at p. 5.10-6.

¹²⁴ Cal. Lab. Code § 6709(a).

¹²⁵ Shukla Comments at p. 25.

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.* at 27.

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implemented (as shown in Table 3.4-10).¹²⁹ The DEIR does not provide sufficient evidence to demonstrate that these mitigation strategies will effectively prevent significant impacts related to Valley Fever.

Table 3.4-10. Mitigated Project Construction-Generated Emissions (lbs/day)

Construction Year	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2025	9.90	83.42	466.38	1.12	2,238.7	226.62
2026	10.72	87.06	520.46	1.30	2,351.7	238.04
ICAPCD Significance Threshold	75	100	550	--	150	--
Exceed Threshold?	No	No	No	--	[Yes] ¹	--

Source: Appendix D of this EIR

Notes:

¹ Guidance provided in the ICAPCD CEQA Air Quality Handbook (2017) specifies that the approach of the CEQA analyses for construction particulate matter impacts should be qualitative as opposed to quantitative. As such, further analysis of construction-related fugitive particulate matter is provided.

Dr. Shukla's comments provide substantial evidence that impacts from Valley Fever remain significant and unmitigated. Construction workers, agricultural workers, and ranchers are among the most vulnerable to Valley Fever infection due to their frequent exposure to dust and disturbed soil in common regions.¹³⁰ Construction personnel working directly on the Project are at high risk of inhaling airborne fungal spores, while nearby agricultural and ranching activities could face secondary exposure from airborne dust and soil particles.¹³¹ Additionally, the DEIR does not sufficiently consider the potentially significant Valley Fever impacts on nearby sensitive receptors at adjacent properties, including Heber Elementary School, El Torro Cattle and Land Co., and Holtz Ranch.¹³² These sites are at risk due to their proximity to the proposed project and the likelihood of dust generation during extensive ground disturbance resulting in significant Valley Fever exposure.¹³³

I. The DEIR Fails to Adequately Mitigate Impacts from Valley Fever

Dr. Shukla's comments demonstrate that impacts from Valley Fever remain significant and unmitigated.

¹²⁹ Shukla Comments at p. 27.

¹³⁰ "Valley Fever (Coccidioidomycosis) - Overview," Occupational Safety and Health Administration. Accessed September 19, 2024. <https://www.osha.gov/valley-fever>

¹³¹ Shukla Comments at p. 25.

¹³² *Id.*

¹³³ *Id.*

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The DEIR's requirement that the Applicant prepare a Construction Dust Control Plan after Project approval constitutes impermissibly deferred mitigation under CEQA. CEQA Guidelines § 15126.4(a)(1)(B) provide that formulation of mitigation measures shall not be deferred until some future time.¹³⁴ "Impermissible deferral of mitigation measures occur when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR."¹³⁵ Here, Mitigation Measure AQ-4 states that a Dust Suppression Management Plan ("DSMP") shall be submitted prior to any earthmoving activity, requiring that the applicant submit a construction dust control plan and obtain ICAPCD and Imperial County Planning and Development Services Department ("ICPDS") approval.¹³⁶

"An EIR is inadequate if '[t]he success or failure of mitigation efforts ... may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR.'" ¹³⁷ Here, the DSMP would require additional analysis and provide mitigation measures that should have been included for public review in the DEIR. The DEIR fails as an informational document for impermissibly deferred analysis and mitigation.

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The CEQA Guidelines provide that "[t]he specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project's environmental review..."¹³⁸ The DEIR does not state why specifying these DSMP performance standards was impractical or infeasible at the time the DEIR was drafted. In *Preserve Wild Santee v. City of Santee*, the city impermissibly deferred mitigation where the EIR did not state why specifying performance standards for mitigation measures "was impractical or infeasible at the time the EIR was certified."¹³⁹ The court determined that although the City must ultimately approve the mitigation standards, this does not cure these informational defects in the EIR.¹⁴⁰ Further, the court in *Endangered Habitats League, Inc. v. County of Orange*, held that mitigation that does no more than require a report to be prepared and followed, or allow

¹³⁴ 14 CCR 15126.4(a)(1)(B).

¹³⁵ *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 915-916.

¹³⁶ DEIR at p. 3.4-20.

¹³⁷ *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, quoting *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 92, quoting *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645 670.

¹³⁸ 14 CCR § 15126.4(a)(1)(B).

¹³⁹ *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 281.

¹⁴⁰ *Id.*

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approval by a county department without setting any standards is inadequate.¹⁴¹ Here, the fact that the DSMP will be approved later by the APCD does not cure the informational defects in this DEIR.¹⁴²

The Project's impacts associated with Valley Fever are not sufficiently mitigated by ICAPCD Regulation VIII, Fugitive Dust Rules. Moreover, Imperial Valley Code of Ordinances 91702.01(N) does not sufficiently mitigate against impacts of Valley Fever. Imperial Valley Code of Ordinances requires that "Fugitive dust emission shall be controlled by dust control measures (e.g., watering) clean gravel, application of soil stabilizers or oil on well site access roads, limiting public access on unpaved areas, and posting roadways with reduced speeds."

In order to reduce the Project's potentially significant Valley Fever impacts to the greatest extent feasible, Dr. Shukla recommends that the Project include the following measures from the South Coast Air Quality Management District to mitigate fugitive dust:

- 1) Apply water every 4 hours to the area within 100 feet of a structure being demolished, to reduce vehicle trackout.
- 2) Use a gravel apron, 25 feet long by road width, to reduce mud/dirt trackout from unpaved truck exit routes.
- 3) Apply dust suppressants (e.g., polymer emulsion) to disturbed areas upon completion of demolition.
- 4) Apply water to disturbed soils after demolition is completed or at the end of each day of cleanup.
- 5) Prohibit demolition activities when wind speeds exceed 25 mph. This measure is particularly key because the DEIR recognizes that "Imperial County experiences periods of extremely high wind speeds. Wind speeds can exceed 31 miles per hour (mph), and this occurs most frequently during the months of April and May."¹⁴³
- 6) Apply water every 3 hours to disturbed areas within a construction site.
- 7) Require minimum soil moisture of 12% for earthmoving by use of a moveable sprinkler system or a water truck. Moisture content can be verified by lab sample or moisture probe.
- 8) Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.
- 9) Replace ground cover in disturbed areas as quickly as possible.

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¹⁴¹ *Endangered Habitats League, Inc. v. County of Orange*, (2005) 131 Cal.App.4th 777, 794.

¹⁴² See *Cal. Clean Energy Comm. v. City of Woodland* (2014) 225 Cal.App.4th 173, 194.

¹⁴³ DEIR at p. 3.4-1.

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- 10) All trucks hauling dirt, sand, soil, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of 12 inches.¹⁴⁴

The DEIR includes Section 2.7 "Applicant Proposed Measures and Best Management Practices" but these measures are not included in the Mitigation Measure section of the DEIR, they are therefore not enforceable and do not constitute adequate mitigation to reduce the Project's potentially significant impacts.

Section 2.7 provides:

- Any equipment breakdown resulting in air emissions shall be reported to ICAPCD and promptly corrected (within 24 hours when possible).
- To minimize unnecessary emissions, Project equipment and worker vehicles shall be turned off when not in use and not left idling.
- Water shall be applied to the development site and during 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 and areas will be restricted to 5 mph to control fugitive dust.
- During windy conditions, barriers shall be constructed and/or additional watering will occur to minimize fugitive dust.
- Vehicle access shall be restricted to the disturbance area via signage and/or fencing.
- Equipment shall be operated according to best practices and maintained according to design specifications.
- Construction equipment shall be equipped with an engine designation of EPA Tier 3 (Tier 3) if commercially available and feasible. 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. Prior to the issuance of a grading permit, ORMAT will submit a list of all construction equipment, including off road equipment, by make, model, year, horsepower, expected/actual hours of use, and EPA to the County Planning and Development Services Department and ICAPCD.

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¹⁴⁴ SCAQMD, Fugitive Dust Mitigation Measure Table XI-A, <http://www.aqmd.gov/docs/default-source/ceqa/handbook/mitigation-measures-and-control-efficiencies/fugitive-dust/fugitive-dust-table-xi-a.doc?sfvrsn=2>, 6039-016acp



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- The project shall implement the following measures as part of its construction Best Management Practices (BMPs): providing Valley Fever awareness training for workers; providing respirators to workers when requested, including the provision of 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.

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The DEIR does not include all of these measures as binding mitigation, but should. Mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments.¹⁴⁵ Failure to include enforceable mitigation measures is considered a failure to proceed in the manner required by CEQA.¹⁴⁶ In order to meet this requirement, mitigation measures must be incorporated directly into the EIR to be enforceable.¹⁴⁷ The Project's impacts from Valley Fever therefore remain significant and unmitigated.

IV. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE SIGNIFICANT IMPACTS FROM GREENHOUSE GAS EMISSIONS

CEQA requires the lead agency to use scientific data to evaluate GHG impacts directly and indirectly associated with a project.¹⁴⁸ The analysis must "reasonably reflect evolving scientific knowledge and state regulatory schemes."¹⁴⁹ In determining the significance of GHG emission impacts, the agency must consider the extent to which the project may increase GHG emissions compared to the existing environmental setting and the "extent to which the project complies with

G-29

¹⁴⁵ 14 CCR §15126.4(a)(2).

¹⁴⁶ *San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal.App.4th 645, 672.

¹⁴⁷ *Lotus v. Dept of Transportation* (2014) 223 Cal. App. 4th 645, 651-52.

¹⁴⁸ 14 CCR § 15064.4(a) (lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project); 14 C.C.R. § 15064(d) (evaluating significance of the environmental effect of a project requires consideration of reasonably foreseeable indirect physical changes caused by the project); 14 C.C.R. § 15358(a)(2) (defining "effects" or "impacts" to include indirect or secondary effects caused by the project and are "later in time or farther removed in distance, but are still reasonably foreseeable" including "effects on air"); CEQA Guidelines, Appendix G, § VIII: Greenhouse Gas Emissions (stating agencies should consider whether the project would "generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.").

¹⁴⁹ 14 C.C.R. § 15064.4(b); see also *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 504 (holding that lead agencies have an obligation to track shifting regulations and to prepare EIRs in a fashion that keeps "in step with evolving scientific knowledge and state regulatory schemes").

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regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.”¹⁵⁰

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A. The DEIR Fails to Adequately Analyze and Mitigate Impacts from Sulfur Hexafluoride (SF6)

The DEIR provide that Sulfur hexafluoride (“SF6”) is an extremely potent GHG.¹⁵¹ The DEIR provides that SF6 is very persistent, with an atmospheric lifetime of more than 1,000 years.¹⁵² Thus, a relatively small amount of SF6 can have a significant long-term impact on global climate change.¹⁵³ SF6 is human-made, and the primary user of SF6 is the electric power industry.¹⁵⁴ Because of its inertness and dielectric properties, it is the industry’s preferred gas for electrical insulation, current interruption, and arc quenching (to prevent fires) in the transmission and distribution of electricity.¹⁵⁵ SF6 is used extensively in high voltage circuit breakers and switchgear, and in the magnesium metal casting industry.¹⁵⁶

The DEIR’s emissions modeling for SF6 is unsupported by substantial evidence. Dr. Shukla confirmed that the CalEEMod outputs in the DEIR’s Appendix D Air Quality and Greenhouse Gas Technical Report do not substantiate the claim that the Project results in 97 MTCO2e of operational GHG emissions.¹⁵⁷ Absent detailed documentation of all assumptions and calculations supporting the DEIR’s conclusions related to operational GHG emissions, the DEIR’s conclusions are unsupported by substantial evidence.¹⁵⁸ Appendix D of the DEIR provides that construction emissions would result in a maximum of 17,592 MTCO2e per year.¹⁵⁹ However, the methodology and specific calculations behind this figure are unclear and inadequately documented in the modeling outputs.¹⁶⁰

G-30

Dr. Shukla’s comments provide substantial evidence demonstrating that, absent leak detection measures in place for sulfur hexafluoride, emissions of sulfur hexafluoride will result in significant greenhouse gas emissions impacts over the

¹⁵⁰ 14 C.C.R. § 15064.4(b)(1); (3).

¹⁵¹ DEIR at 3.9-2.

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ Shukla Comments at p. 44.

¹⁵⁸ *Id.*

¹⁵⁹ DEIR Appendix D at p. 4-15.

¹⁶⁰ Shukla Comments at p. 44.

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lifetime of the Project.¹⁶¹ The DEIR omits the implementation of a leak detection methodology for sulfur hexafluoride.¹⁶² As an extremely potent greenhouse gas, SF6 poses significant environmental risks, particularly due to potential leaks from transmission system infrastructure, including electrical switchgear and circuit breakers.¹⁶³ Effective containment of SF6 requires robust insulation of equipment, as inadequate sealing can lead to severe operational failures such as overheating, component melting, or even fires.¹⁶⁴ Given SF6's high global warming potential any emissions, no matter how minimal, can have significant detrimental effects on climate change.¹⁶⁵ The Project's emissions of SF6 are significant and must be mitigated through a robust leak detection system before the Project can lawfully be approved.

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cont.

V. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE SIGNIFICANT IMPACTS ON BIOLOGICAL RESOURCES

The failure to provide information required by CEQA is a failure to proceed in the manner required by CEQA.¹⁶⁶ 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 conclusions.¹⁶⁷ In reviewing challenges to an agency's approval of an EIR based on a lack of substantial evidence, the court will "determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements."¹⁶⁸

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Even when the substantial evidence standard is applicable to agency decisions to certify an EIR and approve a project, reviewing courts will not "uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference."¹⁶⁹

¹⁶¹ *Id.* at 56.

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236.

¹⁶⁷ *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.

¹⁶⁸ *Id.*, *Madera Oversight Coal., Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102.

¹⁶⁹ *Berkeley Jets*, 91 Cal.App.4th at 1355.

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A. The DEIR Fails to Adequately Analyze the Project's Significant Impacts Due to Interference with Wildlife Movement

The DEIR concludes, absent substantial evidence, that "the project site does not contain nor is near any wildlife movement corridors, linkages, or Significant Ecological Areas / FWS Critical Habitat."¹⁷⁰ Dr. Smallwood demonstrates that the Project site represents a significant habitat linkage and movement corridor and that the Project would result in significant impacts with wildlife movement in the region.¹⁷¹ Dr. Smallwood observed during his site visit that the Project site contained "near constant flight activity of birds crossing the alfalfa stands on their ways to Beech Drain, Dogwood Canal and other destinations [then] flying back across the alfalfa."¹⁷²

G-32

Dr. Smallwood's comments provide substantial evidence that the Project site is an important feature which serves as a connection between habitat patches.¹⁷³ Dr. Smallwood's comments state, "[m]ost of the birds recorded at the site are migratory birds, and because such expansive utility-scale solar projects have been developed in the region, the site is located within one of the last remaining patches of open space available to any of these and other birds that need to move through the region. The project site is important to wildlife movement in the region, all the more important due to substantial recent habitat fragmentation."¹⁷⁴ The Project results in significant environmental impacts due to its substantial interference with the movement of native resident or migratory wildlife species or with established native resident or migratory wildlife corridors.¹⁷⁵

B. The Project Results in Significant Unmitigated Impacts to Burrowing Owl

As detailed below and in Dr. Smallwood's comments on the DEIR, construction and operation of the Project will result in significant impacts to burrowing owls due to collision with Project components and habitat degradation.¹⁷⁶ The Project's significant impacts on burrowing owl must be analyzed and mitigated in a revised and recirculated EIR.

G-33

¹⁷⁰ DEIR at p. 3.5-11.

¹⁷¹ Smallwood Comments at 27.

¹⁷² *Id.*

¹⁷³ DEIR at p. 3.5-11.

¹⁷⁴ Smallwood Comments at p. 27.

¹⁷⁵ CEQA Guidelines Appendix G(IV)(d).

¹⁷⁶ Smallwood Comments at p. 27-34.

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The Project's significant impacts to burrowing owls results in nonconformance with the Imperial Valley Natural Community Conservation Plan and HCP which provides that the HCP's goal is to "[p]rovide for the conservation and management of Covered Species."¹⁷⁷ Burrowing owl are a Covered Species within the Plan.¹⁷⁸ The failure of the DEIR to provide for the conservation and management of burrowing owl contravenes the HCP. Further, the HCP provides that it is a goal of the HCP to "[p]reserve aquatic and terrestrial resources through conservation partnerships with IID."¹⁷⁹ The significant impacts of the Project on aquatic and terrestrial resources further contravenes the HCP. These impacts must be analyzed and mitigated in a revised and recirculated EIR before the Project can lawfully be approved.

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C. The Project Results in Significant Unmitigated Impacts to Birds from Collision with the Solar PV Panels and Structures

Dr. Smallwood provides substantial evidence in his comments that the Project may result in significant impacts to birds due to collisions with the photovoltaic PV panels and associated structures on the Project site. The following birds may be harmed or killed due to collisions with the solar PV panels and associated structures on the Project site: Burrowing owls, American kestrel, Verdin, Silver-haired bat, Spotted bat, Mexican free-tailed bat, long-billed curlew, Northern Harrier.¹⁸⁰ Specifically, Dr. Smallwood finds that collision mortality with solar panels is highest for mourning doves, horned larks, western meadowlarks, American coots, soras, burrowing owls, American kestrels, and many small bird species including yellow warblers.¹⁸¹ At the project site, Dr. Smallwood observed mourning doves, western meadowlarks, burrowing owls and American kestrel.¹⁸² Dr. Smallwood concludes that impacts to birds and bats will be significant due to collision with PV panels.

G-34

Dr. Smallwood demonstrates that birds and bats are known to collide with PV panels in utility scale solar projects.¹⁸³ A leading hypothesis for these collisions is known as the Lake Effect, which consists of birds misperceiving arrays of solar

¹⁷⁷ Imperial Irrigation District, the California Department of Fish and Game, and the United States Fish and Wildlife Service Imperial Valley Natural Community Conservation Plan and Habitat Conservation Plan (Feb. 2006) p. 6 available at: <https://www.iid.com/home/showpublisheddocument/2260/635648001335730000>.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ Smallwood Comments at p. 28.

¹⁸¹ *Id.*

¹⁸² *Id.*

¹⁸³ *Id.*

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panels as bodies of water.¹⁸⁴ However, other causal factors must also account for many of the collisions, because many of the birds that collide with PV panels are songbirds and raptors and other species in addition to water birds.¹⁸⁵

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Dr. Smallwood's comments provide substantial evidence demonstrating that Project PV panels will result in significant impacts to birds and bats.¹⁸⁶ Dr. Smallwood calculated that the Project will result in approximately 255 bird collision fatalities per year.¹⁸⁷ This constitutes a significant impact under CEQA. The DEIR fails to adequately analyze or mitigate this significant impact.

D. The Project Results in Significant Impacts to Birds from Collision with the Distribution Lines

Dr. Smallwood's comments provide substantial evidence that the Project will result in significant impacts to special status birds due to collision mortality with the Project's overhead distribution and transmission lines.¹⁸⁸ The following species may be significantly impacted due to strikes with distribution lines: Burrowing owls, American kestrel, Verdin, Silver-haired bat, Spotted bat, Mexican free-tailed bat, long-billed curlew, Northern Harrier.¹⁸⁹ Dr. Smallwood calculated that, over the Project's operation, collision with the overhead distribution and transmission lines will result in 222 fatalities per year.¹⁹⁰ This constitutes a significant impact and must be analyzed and mitigated in a revised and recirculated EIR. The DEIR must include feasible mitigation to reduce impacts to birds from collisions with Project components, including bird markers on distribution lines, with enforceable monitoring and maintenance.

G-35

Project construction may also result in significant impacts to birds because night lighting could also attract birds and bats to areas which could result in collisions on Project components.¹⁹¹ Additionally, certain lighting may attract insects which in turn may attract birds and bats to forage.¹⁹²

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ *Id.* at 29.

¹⁸⁹ Smallwood Comments at p. 30.

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

¹⁹² *Id.*

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E. The Project Results in Significant Impacts to Birds from Collision with the Security Fences

Dr. Smallwood's comments provide substantial evidence that the security fencing required for the Project will result in significant impacts to birds and bats. Dr. Smallwood found collision mortality with fencing at solar projects to be highest for road runners, canyon bats, western meadowlarks, northern flickers, burrowing owls, yellow-headed blackbirds and northern harriers.¹⁹³ At the project site, Dr. Smallwood detected greater roadrunner, western meadowlarks, and burrowing owls.¹⁹⁴ Dr. Smallwood calculated that over the course of the Project's construction and operation, the entire length of fencing would kill 56 birds and 10 bats per year.¹⁹⁵ This constitutes a significant and unmitigated impact to birds and bats.

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F. The Project Results in Significant Impacts to Birds from Collision with Traffic

The DEIR includes nonbinding measures to purportedly reduce impacts to biological resource from traffic on the Project site. The DEIR, on page 2-25 provides that as part of the Applicant Proposed Measures and Best Management Practices, "[s]peed limits of 5 mph will be observed on the site in order to minimize dust, avoid collision, and incidental mortality of local wildlife."¹⁹⁶ This measure is not incorporated into the DEIR's Mitigation Monitoring and Reporting Program, and is not identified as mitigation. Therefore, it is not binding and does not adequately reduce impacts associated with impacts from traffic collisions to less than significant levels. Mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments.¹⁹⁷ Failure to include enforceable mitigation measures is considered a failure to proceed in the manner required by CEQA.¹⁹⁸ In order to meet this requirement, mitigation measures must be incorporated directly into the EIR to be enforceable.¹⁹⁹

G-37

Dr. Shawn Smallwood demonstrates that given the substantial vehicle traffic associated with construction and operation of the Project, significant vehicle collision impacts to avian species onsite will result.²⁰⁰ Dr. Smallwood provides substantial evidence that "[p]roject-generated traffic would endanger wildlife that must, for various reasons, cross roads used by the project's traffic to get to and from

¹⁹³ Smallwood Comments at p 31.

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ DEIR at p. 2-25.

¹⁹⁷ 14 CCR §15126.4(a)(2).

¹⁹⁸ *San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal.App.4th 645, 672.

¹⁹⁹ *Lotus v. Dept of Transportation* (2014) 223 Cal. App. 4th 645, 651-52.

²⁰⁰ Smallwood Comments at p. 32.

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the project site, including along roads far from the project footprint.”²⁰¹ Vehicle collisions have accounted for the deaths of thousands of amphibian, reptile, mammal, bird, and arthropod fauna, and the impacts have often been found to be cumulatively significant at the population level.²⁰² Across North America traffic impacts have taken devastating tolls on wildlife.²⁰³ In Canada, 3,562 birds were estimated killed per 100 km of road per year, and the US estimate of avian mortality on roads is 2,200 to 8,405 deaths per 100 km per year, or 89 million to 340 million total per year.²⁰⁴

G-37
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Based on the construction vehicle miles traveled (“VMT”) and operational VMT, Dr. Smallwood calculated that given the 9,509 construction trips and 85 daily operational trips, the Project will result in significant wildlife collisions during and operation.²⁰⁵ Given that the Applicant Proposed Measures and Best Management Practices are not binding mitigation, this impact remains significant and unmitigated. The DEIR must be revised and recirculated to adequately analyze and mitigate the Project’s significant impacts from vehicle collisions to species on during construction and operation of the Project.

G. The DEIR Must be Revised and Recirculated to Include Additional Feasible Mitigation to Reduce Significant Impacts to Biological Resources

Dr. Smallwood proposed substantial feasible mitigation to reduce impacts to biological resources.

First, in order to mitigate the Project’s significant impacts from bird collisions with medium-voltage distribution lines, Dr. Smallwood provides numerous feasible mitigation measures. The most effective method to avoid or minimize collision mortality with power lines would be to underground the lines, thereby avoiding the potential impact altogether.²⁰⁶ The second method is to mark the lines.²⁰⁷ Dr. Smallwood provides substantial evidence that line markers reduce mortality due to bird strikes.²⁰⁸ However, these markers often break, entangle and their colors fade within only a few years of installation.²⁰⁹ Markers are less likely to

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²⁰¹ *Id.*

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ Smallwood Comments at p. 39.

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ *Id.*

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tangle or break when they include dampers and swinging plates, both of which have been documented to reduce mortality.²¹⁰ The DEIR should include a measure to require line markers and include a binding commitments to their long-term maintenance and monitoring to measure their efficacy.²¹¹ If measured efficacy is below a pre-defined threshold, Dr. Smallwood recommends additional feasible mitigation measures should be required.²¹² Absent additional mitigation measures to reduce bird strikes with power lines, the Project's impacts to biological resources remains significant and unmitigated.²¹³ The DEIR must be revised and recirculated to adequately mitigate impacts due to bird strikes with distribution lines before the Project can lawfully be approved.

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Second, the DEIR should be revised to include compensatory mitigation to mitigate impacts associated with mortality to species due to project-generated road traffic.²¹⁴ Feasible compensatory mitigation includes directing funding toward research to identify fatality patterns and effective impact reduction measures such as reduced speed limits and wildlife under-crossings or overcrossings of particularly dangerous road segments.²¹⁵ Due to the Project's potentially significant impacts to animals associated with collisions with automobiles and Project infrastructure, Dr. Smallwood recommends "funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care."²¹⁶

Third, Dr. Smallwood provides substantial evidence demonstrating that absent wildlife surveys pre- and post- construction, impacts to wildlife and habitat loss remain significant.²¹⁷ Dr. Smallwood provides examples of feasible mitigation to adequately avoid and reduce impacts by conducting robust pre-construction and post-construction biological resource surveys to adequately quantify, monitor, and avoid special status species on the Project site.²¹⁸ Absent additional mitigation and additional biological resource surveys, the DEIR fails to adequately analyze or mitigate impacts to biological resources, as demonstrated herein and in Dr. Smallwood's comments.

²¹⁰ *Id.*

²¹¹ *Id.*

²¹² *Id.* at 40.

²¹³ *Id.*

²¹⁴ Smallwood Comments at p. 41.

²¹⁵ *Id.*

²¹⁶ *Id.*

²¹⁷ *Id.*

²¹⁸ Smallwood Comments at 41-42.

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VI. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE SIGNIFICANT IMPACTS ON AGRICULTURAL RESOURCES

The County General Plan's Agricultural Element explains that "all agricultural land in the County is considered [] Important Farmland" and should be reserved for agricultural use, with limited exceptions provided for geothermal purposes.²¹⁹ According to the California Department of Conservation's ("DOC") California Important Farmland Finder, portions of the project site contain Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Urban and Build-Up Land.²²⁰ The DEIR states that the Project would temporarily convert approximately 106.88 acres of Important Farmland currently under or available for agricultural production to non-agricultural uses.²²¹ Specifically, the DEIR states that approximately 5.31 acres of the Dogwood parasitic solar facility footprint are classified as Prime Farmland and 34.67 acres are classified as Farmland of Statewide Importance.²²² Approximately 17.63 acres of the Heber 2 parasitic solar facility footprint are classified as Prime Farmland and 49.27 acres are classified as Farmland of Statewide Importance.²²³ The DEIR fails to analyze the impacts from the permanent conversion of this Important Farmland, and fails to address the Project's inconsistencies with the General Plan Agricultural Element due to the conversion to a non-geothermal solar farm. The DEIR's mitigation measures are also inadequate and fail to mitigate the Project's significant impacts from the conversion of Important Farmland.

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CEQA requires the agency to identify whether the Project will cause significant environmental effects.²²⁴ An EIR must then propose and describe mitigation measures to minimize the significant environmental effects identified in the EIR.²²⁵ CEQA Appendix G requires the County to analyze several impacts to agricultural resources from implementation of the Project, including whether the Project would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use

²¹⁹ DEIR, p. 3.3-5, citing General Plan.

²²⁰ DEIR, p. 3.3-1 to 3.3-3, Figure 3.3-1, Table 3.3-1.

²²¹ Draft Environmental Impact Report: Dogwood Geothermal Energy Project, p. 3.3-9 available at: <https://www.icpds.com/assets/DEIR-Dogwood-Geothermal-Energy-Project-1723556647.pdf> ("DEIR").

²²² DEIR at p. 3.3-9.

²²³ *Id.*

²²⁴ PRC § 21002.

²²⁵ *Id.*; 14 CCR § 15126.4.

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- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.²²⁶

The DEIR concludes that the Project would not conflict with zoning or Williamson Act contracts due to its location in the County's A-2 zone, which allows geothermal and solar energy uses, and because all Williamson Act contracts in Imperial County were terminated in 2018.²²⁷ However, the DEIR acknowledges that the loss of agricultural land designated as Prime Farmland and Farmland of Statewide Importance would result in a significant impact requiring mitigation.²²⁸ The DEIR's impact assessment relies on an assumption that the loss would be temporary, rather than permanent, and overlooks the Project's inconsistencies with the Agricultural Element.

The Imperial County General Plan Agricultural Element provides that:

Since the County's economy has historically been dependent upon agricultural production, and this dependency will exist in the foreseeable future, *the permanent conversion of significant amounts of important farmland to non-agricultural uses will negatively impact the local economy and the County's ability to provide important agricultural products to the nation and elsewhere.*²²⁹

The Project's conversion of Important Farmland to Industrial use constitutes a significant unmitigated impact under CEQA, contravenes the General Plan's Agricultural Element, and lacks adequate mitigation in the DEIR, as detailed herein.

1. The DEIR Fails to Adequately Analyze Impacts to Farmland

The DEIR concludes that the Project's conversion of agricultural land is a temporary impact and that the Project would not involve other changes in the existing environment which could result in the conversion of agricultural land for

²²⁶ CEQA Appendix G, Section II, Agricultural and Forestry Resources; DEIR, p. 3.3-8.

²²⁷ DEIR at p. 3.3-12.

²²⁸ DEIR at pp. 3.3-9 to 3.3-10.

²²⁹ Imperial County General Plan, Agricultural Element (2015), p. 18 available at: <https://www.icpda.com/assets/planning/agricultural-element-2015.pdf>.
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non-agricultural use.²³⁰ The DEIR lacks substantial evidence to support these conclusions and fails to properly analyze the Project's potentially significant impacts to farmland.

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a. *Permanent Impacts*

The DEIR characterizes the Project's conversion of Important Farmland as a temporary impact because the Project applicant proposes to restore the Project site to preexisting conditions following Project operations.²³¹ The DEIR fails to adequately support this claim that the conversion would only be temporary and thus, fails to analyze the Project's conversion of farmland as a permanent impact.

G-41

To assess the impact of a proposed project on the environment, CEQA requires the lead agency to examine the changes to existing environmental conditions that would occur in the affected area if the proposed project were implemented.²³² All phases of the project must be considered, including planning, acquisition, development, and operation.²³³

Here, the DEIR repeatedly claims, without support, that the Project's conversion of Important Farmland is temporary.²³⁴ For instance, the DEIR fails to provide an end date or decommissioning date for the Project. The DEIR acknowledges that Project activities could affect the future health and productivity of the soil,²³⁵ but fails to analyze the severity of these impacts during the life of the Project and lacks adequate mitigation to ensure that adverse impacts to soil would be fully remediated following decommissioning so that they do not interfere with the ability to farm certain crops in the future.²³⁶ Instead, the DEIR merely states that preparation of a site reclamation plan would ensure that the Project site is returned to its current agricultural conditions.²³⁷

Citizens' agricultural expert Mr. House concludes that the DEIR fails to consider that the Project is a permanent land use.²³⁸ Substantial evidence in Mr. House's comments demonstrate that it is reasonably foreseeable that the Project

²³⁰ DEIR at pp. 3.3-9 and 3.3-13.

²³¹ DEIR at pp. 3.3-9-3.3-10 and 5-7-5-8.

²³² CEQA Guidelines § 15126.2(a); *San Joaquin Raptor Rescue Ctr. V. County of Merced* (2007) 149 CA4th 645.

²³³ CEQA Guidelines § 15126.

²³⁴ DEIR at p. 3.3-9.

²³⁵ DEIR, p. 3.3-13.

²³⁶ *Id.* at p. 3.3-10.

²³⁷ *Id.*

²³⁸ House Comments at p. 12.
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will result in the permanent conversion of Important Farmland, because “the likelihood of decommissioning of the project such that its site will return to agricultural uses is extremely remote, given the quantity and cost of infrastructure that will go into the development and operations of the project.”²³⁹

Mr. House's comments provide substantial evidence demonstrating that the Project is unlikely to be returned to agricultural use. Mr. House's past research on this subject found that no solar farms and no battery storage sites have been returned to agricultural use following their useful life.²⁴⁰ Rather, he has found the opposite. Mr. House points to a case study from Davis, California, where one of the oldest photovoltaic-generation facilities in the United States is located.²⁴¹ This 86-acre project was originally installed in 1986 by Pacific Gas & Electric Company as a research facility, and subsequently commercially operated from 2003 to generate 650 kilo-watts of electricity by the companies Clean Energy Assets and CleanPath Ventures.²⁴² CleanPath received permission from the Davis City Council in 2010 to expand power production to as much as 15 megawatts.²⁴³ Thus, the Davis project, upon reaching the end of its originally planned useful life – approximately twenty-five years in 2012 – was not being decommissioned in 2012 but was instead being refurbished and expanded for continued use into the indefinite future.²⁴⁴ Mr. House's comments provide substantial evidence that the Project would likely not be decommissioned and returned to agricultural use. The DEIR must be revised and recirculated to analyze the significant impacts from the Project's permanent conversion of Important Farmland for non-agricultural uses.

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b. Leapfrogging Development Pattern

The General Plan's Agricultural Element details the significant environmental impacts associated with “leapfrogging patterns of nonagricultural developments in agricultural areas.”²⁴⁵ The Agricultural Element provides: “Agricultural fields typically become bounded by new residential or urban land uses, and often become isolated as they are cut off from existing farmland. This isolation or stranding of fields leads to several major problems relating to agricultural operations including irrigation, the application of pesticides and other chemicals by aerial spraying and other means, and access by tractors, trucks and

G-42

²³⁹ *Id.*

²⁴⁰ House Comments at p. 12.

²⁴¹ *Id.*

²⁴² *Id.*

²⁴³ *Id.* at pp. 12–13.

²⁴⁴ *Id.* at p. 13.

²⁴⁵ *Id.*

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other farm equipment. Eventually, these fields become too small or circumscribed by other land uses to be economically or conveniently farmed.”²⁴⁶

The DEIR concludes that the development of the Project would not contribute to a “leapfrogging” pattern of development, because the proposed facilities are located in proximity to existing industrial uses such as the Heber 2 Geothermal Energy Complex.²⁴⁷ As Mr. House explains, the DEIR fails to adequately analyze the impacts related to leapfrogging or checkerboard pattern of development that the Project might have on other surrounding parcels that are all in active agriculture.²⁴⁸

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Mr. House explains that the proposed locations for agricultural conversion on the Project site would result in precisely the type of leapfrogging development pattern than the General Plan seeks to avoid. He explains that the presence of active agriculture to the east (APNs 054-25-047 and 054-250-048, both zoned A-2) is located between the project and the city of Calexico. Similarly, APNs 054-25-010 and 054-250-011, which adjoin the project on its north, are in active agriculture and are sandwiched between the Project and the urban community of Heber. Other adjacent parcels, all in active agriculture, are APNs 054-160-023, 054-250-037, 054-250-037, 054-250-038, 054-250-039, and 054-25-042.²⁴⁹ Mr. House concludes that the Project will further separate agricultural uses from each other, placing new conversion pressure these parcels which is not addressed in the DEIR.

1. The Loss of Agricultural Land Caused by the Project is Inconsistent with the Imperial County General Plan Agricultural Element

The Project’s impacts to agricultural land conflict with the Imperial County General Plan Agriculture Element (“Agriculture Element”). The Agriculture Element provides that:

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Since the County’s economy has historically been dependent upon agricultural production, and this dependency will exist in the foreseeable future, *the permanent conversion of significant amounts of important farmland to non-agricultural uses will negatively impact the local economy and the County’s ability to provide important agricultural products to the nation and elsewhere.*²⁵⁰

²⁴⁶ *Id.*

²⁴⁷ DEIR at p. 3.3-13.

²⁴⁸ House Comments at p. 12.

²⁴⁹ House Comments at p. 12.

²⁵⁰ Imperial County General Plan, Agriculture Element (2015), p. 18 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>. 6939-016acp

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CEQA requires the agency to determine whether the Project would “[c]ause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.”²⁵¹

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Here, the DEIR fails to adequately disclose and analyze how the Project's conversion of agriculture land for non-agriculture purposes contravenes the goals and objectives listed in the Agriculture Element, including:

Goal 1	All Important Farmland, including the categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance...should be reserved for agricultural. ²⁵²
Objective 1.1	Maintain existing agricultural land uses outside of urbanizing areas and allow only those land uses in agricultural areas that are compatible with agricultural activities. ²⁵³
Objective 1.3	Conserve Important Farmland for continued farm related (non-urban) use and development while ensuring its proper management and use. ²⁵⁴
Objective 1.4	Discourage the location of development adjacent to productive agricultural lands. ²⁵⁵
Objective 1.5	Direct development to less valuable farmland (i.e., Unique Farmland and Farmland of Local Importance rather than Prime Farmland or Farmland of Statewide Importance) when conversion of agricultural land is justified. ²⁵⁶
Objective 1.6	Recognize and preserve unincorporated areas of the County, outside of city sphere of influence areas, for irrigation agriculture, livestock production, aquaculture, and other special uses. ²⁵⁷

²⁵¹ 14 CCR § 15000 Appendix G.

²⁵² Imperial County General Plan, Agricultural Element (2015), p. 29 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁵³ Imperial County General Plan, Agricultural Element (2015), p. 29 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁵⁴ Imperial County General Plan, Agricultural Element (2015), p. 29 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁵⁵ Imperial County General Plan, Agricultural Element (2015), p. 29 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁵⁶ Imperial County General Plan, Agricultural Element (2015), p. 29 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁵⁷ Imperial County General Plan, Agricultural Element (2015), p. 29 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

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Objective 1.8	Allow conversion of agricultural land to non-agricultural uses including renewable energy only where a clear and immediate need can be demonstrated, based on economic benefits, population projections and lack of other available land (including land with incorporated cities) for such non-agricultural uses. Such conversion shall also be allowed only where such uses have been identified for non-agricultural use in a city general plan or the County General Plan, and are supported by a study to show a lack of alternative sites. ²⁵⁸
Objective 1.12	Support conversion of State and Federal lands suitable for irrigation agriculture to private ownership and into agricultural production. ²⁵⁹
Goal 2	Adopt policies that prohibit “leapfrogging” or “checkerboard” patterns of nonagricultural development in agricultural areas and confine future urbanization to adopted Sphere of Influence area. ²⁶⁰

G-43
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The Project conflicts with these goals and policies for several reasons. First, as discussed above, the Project's conversion of agriculture land is likely permanent.²⁶¹ Because it is highly unlikely that the Project site will be returned to agriculture use at the end of its life²⁶², the Project directly conflicts with the County's goals and objectives aimed at preserving Important Farmland for agricultural use (e.g., Goal 1, Objectives 1.1, 1.3, 1.4, 1.5, 1.8, and 1.12).²⁶³ Second, Objective 1.8 requires a study to be conducted, demonstrating that there are no alternative sites available to support a Project's non-agricultural use.²⁶⁴ An alternative site study was not conducted for the Dogwood Geothermal Power Plant site. Finally, as explained in Mr. House's comments, the proposed locations for agricultural conversion at the Project site would result in precisely the type of “leapfrogging” development pattern that the General Plan seeks to avoid.²⁶⁴ This directly conflicts with the County's goal to prohibit “leapfrogging” (e.g., Goal 2). The DEIR's failure to adequately disclose and analyze these inconsistencies constitutes a significant impact under CEQA.

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²⁵⁸ Imperial County General Plan, Agricultural Element (2015), p. 30 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁵⁹ Imperial County General Plan, Agricultural Element (2015), p. 30 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁶⁰ Imperial County General Plan, Agricultural Element (2015), p. 30 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁶¹ House Comments at p. 12.

²⁶² House Comments at p. 12.

²⁶³ Imperial County General Plan, Agricultural Element (2015), p. 30 available at: <https://www.icpds.com/assets/planning/agricultural-element-2015.pdf>.

²⁶⁴ House Comments at p. 12.

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The DEIR must be revised and recirculated to include an informed analysis of the Project's inconsistencies with the General Plan, before the Project can lawfully be approved.

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2. The DEIR's Proposed Mitigation Measures Are Inadequate And Fail To Mitigate The Project's Significant Impacts to Agricultural Resources

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The DEIR concludes that impacts from the temporary conversion of agricultural land would be minimized to a level less than significant through the implementation of Mitigation Measures AG-1a and AG-1b.²⁶⁵ This conclusion is not supported by substantial evidence.

The DEIR offers three alternative mitigation options for mitigating impacts to Non-Prime Farmland.²⁶⁶ Mitigation Measure AG-1a proposes mitigating impacts to Non-Prime Farmland by requiring implementation of one of the following:

- (1) Provide agricultural conservation easements,
- (2) Pay agricultural in-lieu mitigation fee, or
- (3) Entering into a public benefit agreement or development agreement.²⁶⁷

The DEIR provides four alternative mitigation options for mitigating impacts to Prime Farmland.²⁶⁸ Mitigation Measure AG-1a proposes mitigating impacts to Prime Farmland by requiring implementation of one of the following:

- (1) Provide agricultural conservation easements,
- (2) Pay agricultural in-lieu mitigation fee, or
- (3) Entering into a public benefit agreement or development agreement
- (4) Avoid Prime Farmland where the Permittee must revise their Conditional Use Permit Application/Site Plan to avoid Prime Farmland.²⁶⁹

Mitigation Measure AG-1b proposes submission of a reclamation plan to Imperial County prior to issuance of a grading permit.²⁷⁰ However, no draft reclamation plan is included in the DEIR and the measure lacks performance standards. The DEIR lacks substantial evidence to support the conclusion that the

²⁶⁵ DEIR at p. 3.3-12

²⁶⁶ *Id.*

²⁶⁷ *Id.* at 3.3-10.

²⁶⁸ *Id.* at 3.3-11.

²⁶⁹ *Id.*

²⁷⁰ *Id.*

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conversion of agricultural land will actually be mitigated if these measures are implemented.

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a. Option 1: Provide Agricultural Conservation Easement

The DEIR in Mitigation Measure AG-1a, Option 1 provides for Compensation for loss of agricultural land through a conservation easement.²⁷¹ The proposed conservation easement would not "replace or provide a substitute resource" for the loss of important farmland as required by CEQA.²⁷²

The Court in *King & Gardiner Farms, LLC v. County of Kern* determined that agricultural conservation easements ("ACEs") are not effective at reducing the project's conversion of agricultural land to a less than significant level for purposes of CEQA.²⁷³ This holding was later clarified in *V Lions Farming, LLC v. County of Kern*, which held that ACEs constitute effective mitigation under CEQA by preserving substitute resources even though ACEs may not ensure that the project causes no net loss of farmland.²⁷⁴ The court interpreted the phrase "providing substitute resources" in CEQA Guidelines Section 15370(e) to include preserving or permanently protecting existing agricultural land.²⁷⁵ Consequently, the Court held that ACEs are a type of compensatory mitigation for the conversion of agricultural land even though, they do not replace the converted land or otherwise result in no net loss of agricultural land.²⁷⁶

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Here, the DEIR states that a conservation easement would be procured on a 1 on 1 basis (for non-prime farmland) or a 2 on 1 basis (for prime farmland) on land of equal size, of equal quality farmland, outside the path of development.²⁷⁷ It also states that the conservation easement shall meet DOC regulations.²⁷⁸

In accordance with the holding in *King & Gardiner Farms*, this mitigation measure, alone, does not mitigate the impacts of the Project to a less than significant level because it does not create any new Important Farmland.²⁷⁹ It also

²⁷¹ *Id.* at p. 3.3-10.

²⁷² CEQA Guidelines § 15370(e); *Friends of Kings River v. County of Fresno* (2014) 232 Cal.App.4th 106,123.

²⁷³ *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814.

²⁷⁴ *V Lions Farming, LLC v. County of Kern* (2024) 318 Cal.Rptr.3d 879, 884.

²⁷⁵ *Id.*

²⁷⁶ *Id.*

²⁷⁷ DEIR at pp. 3.3-10 and 3.3-11.

²⁷⁸ *Id.*

²⁷⁹ *Id.*

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lacks sufficient detail to demonstrate that its implementation would actually mitigate for the Project's conversion of agricultural land, as required by *V Lions*.

Mr. House explains that the DEIR's proposed conservation easement requirement is deficient, commenting that the DEIR needs to unequivocally state whether the conservation will be permanent.²⁸⁰ Mr. House further states that the DEIR also needs to define land of "equal quality", land "outside the path of development", and what would meet "DOC regulations."²⁸¹

The DEIR lacks substantial evidence that Mitigation Measure AG-1a, Option 1 will adequately reduce significant impacts to agricultural resources to less than significant levels. In order to ensure that the mitigation is effective, and the conservation easement is placed on farmland of "equal quality," Mr. House explains that a Land Assessment and Site Evaluation ("LESA") model should be used.²⁸² The California Department of Conservation ("DOC") has created its own version of the LESA, which "evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score."²⁸³ Mr. House concludes that the DOC's California Agricultural LESA Model applied to the subject Project acres would provide the necessary information to adequately define "equal quality" farmland.²⁸⁴

To define what criteria would meet "DOC regulations," Mr. House suggests using the conservation easement model from the DOC's website or looking to the standards for the various funding programs for agricultural-conservation easements that the DOC administers.²⁸⁵ Mr. House concludes that the DEIR must be revised to clarify which DOC regulations govern the implementation of agricultural-conservation easements to ensure their efficacy for mitigating impacts associated with the Project.

The DEIR must be revised to include adequate evidence that the proposed conservation easement will actually mitigate significant environmental impacts associated with the Project's conversion of agricultural land.

²⁸⁰ House Comments at p. 5.

²⁸¹ *Id.* at p. 5-6.

²⁸² *Id.* at p. 6.

²⁸³ Department of Conservation, Land Evaluation & Site Assessment Model, available at: https://www.conservation.ca.gov/dlrp/Pages/ql_lesa.aspx.

²⁸⁴ House Comments at p. 6.

²⁸⁵ Department of Conservation, Agricultural Conservation Easements, available at: https://www.conservation.ca.gov/dlrp/grant-programs/Pages/ACE_Overview.aspx. 6939-016aep

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b. Option 2: Agricultural In-Lieu Mitigation Fee

The DEIR in Mitigation Measure AG-1a, Option 2 proposes an agricultural in-lieu mitigation fee in the amount of 20 percent (for non-prime farmland) or 30 percent (for prime farmland) of the fair market value per acre for the total acres of the proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis.²⁸⁶ The DEIR states that the agricultural in-lieu mitigation fee will be placed in a trust account administered by the Imperial County Agricultural Commissioner's office and will be used for such purposes as the acquisition, stewardship, preservation, and enhancement of agricultural lands within Imperial County.²⁸⁷ This option fails to adequately mitigate for the Project's conversion of Important Farmland.²⁸⁸

G-49

A commitment to pay fees is not adequate mitigation if there is no evidence that mitigation will actually result.²⁸⁹ Here, the County lacks substantial evidence to demonstrate that an in-lieu fee would result in adequate mitigation for the conversion of Important Farmland. Mr. House explains that the proposed in-lieu mitigation fee will not mitigate the Project's impacts for the following reasons.

First, the DEIR attempts to define "fair market value" of the project's land by specifying a valuation "based on five comparable sales."²⁹⁰ This is not a definition of value and seriously conflicts with professional appraisal standards as well as existing, established definitions of fair market value.²⁹¹ The DEIR does not even attempt to describe any parameters required for identifying the comparable sales.²⁹² Furthermore, fair market value can only be established by a professional appraiser with the experience and expertise based on generally accepted valuation standards as promulgated by the Uniform Standards of Professional Appraisal Practice.²⁹³ The DEIR lacks these basic performance standards. The DEIR should be revised to include an in-lieu mitigation fee based on a real appraisal that follows the current guidelines of the California Department of General Services, and be performed by a qualified, licensed professional.²⁹⁴

²⁸⁶ DEIR at 3.3-10 and 3.3-11.

²⁸⁷ *Id.*

²⁸⁸ House Comments at p. 6.

²⁸⁹ *Preservation Action Council of San Jose v. City of San Jose* (2023) 91 CA5th 517, 539-4140; *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 CA5th 814, 877.

²⁹⁰ House Comments at p. 7.

²⁹¹ *Id.*

²⁹² *Id.*

²⁹³ *Id.*

²⁹⁴ *Id.*

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Second, in-lieu mitigation fees cannot guarantee adequate mitigation for the Project's conversion of agricultural land.²⁹⁵ Mr. House explains that valuation by percentage is improper because "any proposed partial percentage of fee value as in-lieu fees will not assure adequate funding to obtain comparable land."²⁹⁶ Moreover, valuation by percentage fails to follow basic industry standards – it is not allowed by the Uniform Standards of Professional Appraisal Practice, nor is it approved by the California Department of Conservation.²⁹⁷ Additionally, an in-lieu fee of any type, whether a predetermined set amount or established by formula or ration, cannot guarantee equal acres conserved for equal acres converted because of the bureaucratic nature of the procedure.²⁹⁸ Further, the in-lieu fee administrative costs, like land values, can be predicted to increase every year (though not necessarily at a predictable rate).²⁹⁹ Therefore, Mr. House concludes that any delays more than one year in acquisition of the easement will inevitably reduce the utility of the sum of funding held for mitigation, defeating the acre-for-acre intent of the mitigation plan.³⁰⁰ Mr. House suggests that a conservation easement rather than an in-lieu mitigation fee be used to mitigate the Project's impacts because it is the only proven method to efficiently and equivalently mitigate the conversion of Important Farmland.³⁰¹

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The DEIR should be revised to include effective and enforceable mitigation measures that will actually mitigate the conversion of agricultural land.

c. Option 3: Public Benefit Agreement

The DEIR in Mitigation Measure AG-1a, Option 3 proposes a public benefit agreement.³⁰² This option would involve the County of Imperial voluntarily entering into an enforceable public-benefit-agreement or development agreement that includes a payment of an agricultural-benefit fee.³⁰³ The public benefit agreement does not adequately mitigate the significant impact of converting agricultural land into non-agricultural land.³⁰⁴ As demonstrated in Mr. House's comments, a commitment to pay fees is not adequate mitigation if there is no

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²⁹⁵ *Id.*

²⁹⁶ *Id.* at p. 8.

²⁹⁷ *Id.*

²⁹⁸ *Id.*

²⁹⁹ House Comments at p. 8.

³⁰⁰ *Id.*

³⁰¹ *Id.*

³⁰² DEIR at p. 3.3-11.

³⁰³ *Id.*

³⁰⁴ House Comments at p. 6.

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evidence that the mitigation measure will actually reduce the Project's significant impacts.³⁰⁵

Here, the proposed public benefit agreement includes an "Agricultural Benefit Fee payment" that must be held by the County in a restricted account to be used by the County only for such purposes as the stewardship, preservation and enhancement of agricultural lands within Imperial County and to implement the goals and objectives of the Agricultural Benefit Program.³⁰⁶

This fails to mitigate the conversion of agricultural land for non-agricultural purposes because it does not create new agricultural land or preserve existing agricultural land.³⁰⁷ While one of the authorized uses for the funds includes preservation of agricultural lands, this does not guarantee that the funds will actually be used for that purpose. The other authorized uses (i.e., stewardship and enhancement of agricultural lands) do not compensate for the conversion of agricultural land. Mr. House agrees, stating that it "does not actually preserve agriculture land through the establishment of a permanent agricultural-conservation easement – and therefore completely fails in the purpose of mitigating agricultural-land conversion...."³⁰⁸

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The DEIR should be revised and recirculated to propose mitigation measures that will actually mitigate the impact of converting agricultural land to non-agricultural use.

d. Option 4: Avoid Prime Farmland

The DEIR in Mitigation Measure AG-1(a)(B) Option 4 provides that in order to mitigate impacts to Prime Farmland, the Permittee may choose as an alternative to Options 1, 2, and 3, to revise their Conditional Use Permit Application/Site Plan to avoid Prime Farmland. While avoidance would prevent the loss of Prime Farmland, it would not avoid impacts on other Important Farmland and is not sufficient mitigation under CEQA. This mitigation measure is identical to Alternative 2: Reduced Project Site whose purpose is to "avoid the Prime Farmland

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³⁰⁵ *Preservation Action Council of San Jose v City of San Jose* (2023) 91 CA5th 517, 539-4140; *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 CA5th 814, 877.

³⁰⁶ DEIR at p. 3.3-11.

³⁰⁷ House Comments at p. 9.

³⁰⁸ House Comments at p. 9.

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located within the project site.”³⁰⁹ Mitigation measures must be distinct and not already included in the proposed action or alternatives.³¹⁰

As described under CEQA Guidelines Section 15370, “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.

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*Lotus v. Department of Transportation*³¹¹ clarified the requirements of CEQA Guideline 15370. In *Lotus*, the court held that “avoidance, minimization and/or mitigation measures,” are not “part of the project.”³¹² Rather, they are mitigation measures designed to reduce or eliminate environmental impacts of the Project, and must be treated as such. Mitigation measures cannot be incorporated in an EIR’s initial calculation of the Project’s unmitigated impacts because the analysis of unmitigated impacts, by definition, must accurately assess such impacts before any mitigation measures to reduce those impacts are applied.³¹³ An EIR that compresses the analysis of impacts and mitigation measures into a single issue disregards the requirements of CEQA. Because mitigation measure AG-1(a)(B) duplicates an existing Project alternative and CEQA and *Lotus* prohibit the compressing of a mitigation measure with a Project, the measure AG-1(a)(B) Option 4 is not sufficient mitigation under CEQA. The DEIR should be revised to adequately analyze and mitigate the Project’s significant impacts to agricultural resources.

e. Mitigate Measure AG-1b: Site Reclamation Plan

The DEIR provides that pursuant to Mitigation Measure AG-1b, the applicant will submit a Reclamation Plan to Imperial County prior to issuance of a

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³⁰⁹ DEIR at p. 7-6.

³¹⁰ *Lotus v. Dept. of Transportation* (2013) 223 Cal.App.4th 650.

³¹¹ *Lotus v. Dept. of Transportation* (2013) 223 Cal.App.4th 650.

³¹² *Id.* at 656.

³¹³ *Id.* at 651 - 52.

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grading permit.³¹⁴ However, the DEIR fails to include a draft plan, and fails to discuss its proposed terms, including when and how the reclamation plan will be implemented, to support the conclusion that it will actually mitigate the impacts from the conversion of agricultural land.³¹⁵

CEQA identifies restoration of land for productive agricultural use as a measure that compensates for a project's impact.³¹⁶ However, mitigation measures must not be remote and speculative³¹⁷ or so vague that it is impossible to gauge their effectiveness.³¹⁸

Here, the reclamation plan proposed in the DEIR merely states that "it shall document the procedures by which the project site will be returned to its current agricultural condition."³¹⁹ It fails to specify when reclamation will occur and the specific standards that will be applied to ensure restoration is effective. This constitutes impermissibly deferred mitigation under CEQA Guidelines § 15126.4(a)(1)(B) which provide that formulation of mitigation measures shall not be deferred until some future time.³²⁰ Impermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR.³²¹ The CEQA Guidelines provide that "[t]he specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project's environmental review..."³²² The DEIR does not state why specifying the reclamation plan performance standards was impractical or infeasible at the time the DEIR was drafted.

In *Preserve Wild Santee v. City of Santee*, the city impermissibly deferred mitigation where the EIR did not state why specifying performance standards for mitigation measures "was impractical or infeasible at the time the EIR was certified."³²³ The court determined that although the City must ultimately approve the mitigation standards, this does not cure these informational defects in the

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³¹⁴ DEIR at p. 3.3-11.

³¹⁵ House Comments at p. 9.

³¹⁶ CEQA Guidelines § 15370(e).

³¹⁷ *Federation of Hillside & Canyon Ass'ns v. City of Los Angeles* (2000) 83 CA4th 1252, 1260.

³¹⁸ *Sierra Watch v. County of Placer* (2021) 69 CA5th 86, 110.

³¹⁹ DEIR at pp. 3.3-11 and 3.3-12.

³²⁰ 14 CCR 15126.4(a)(1)(B).

³²¹ *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 915-916.

³²² 14 CCR § 15126.4(a)(1)(B).

³²³ *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 281.

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EIR.³²⁴ Further, the court in *Endangered Habitats League, Inc. v. County of Orange* held that mitigation that does no more than require a report to be prepared and followed, or allow approval by a county department without setting any standards is inadequate.³²⁵

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The DEIR also recognizes that Project activities may negatively affect the health and productivity of the soil, which could "significantly limit the types of crops...that may be grown within the project site in the future."³²⁶ However, it fails to provide a solution and instead concludes, without evidence, that implementation of Mitigation Measures AG-1b and AG-2 would reduce this impact to a level less than significant.³²⁷ Mr. House states that "without definition of a detailed site reclamation plan, this statement is mere bravado".³²⁸

Mr. House also calls the reclamation plan "grossly inadequate as presented".³²⁹ He comments that the DEIR must provide a detailed explanation of how the site-reclamation plan will achieve its requirement of returning the agricultural land to its current condition.³³⁰ The explanation should include a detailed documentation of the current condition and productivity of the land before the issuance of a grading permit for initiation of the project.³³¹

More specifically, Mr. House says that, in order to restore the Project site to its current agricultural condition, the DEIR should include the following things:³³² First, an agronomic-baseline report prepared by a professional agronomist that establishes a baseline agronomic condition.³³³ Second, a detailed schedule of agriculture that clearly states the operations to be undertaken and the time required for their completion.³³⁴ The schedules should include at a minimum: (1) a land releveing survey with topsoil yardage needs; (2) a schedule of planned machinery operations, such as removal of rubble and buried pipes and cables, grading, ripping, and other operations to re-establish soil tilth; (3) a schedule of soil

³²⁴ *Id.*

³²⁵ *Endangered Habitats League, Inc. v. County of Orange*, (2005) 131 Cal.App.4th 777, 794.

³²⁶ DEIR at pp. 3.3-13 and 3.3-16.

³²⁷ *Id.*

³²⁸ House Comments at p. 9.

³²⁹ *Id.*

³³⁰ *Id.*

³³¹ *Id.*

³³² *Id.* at p. 10.

³³³ *Id.*

³³⁴ *Id.*

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amendments provided; and (4) a schedule of revegetation and re-establishment of soil microbiology.³³⁵

Lastly, the DEIR requires that a bond be posted to cover the cost of the site-reclamation plan.³³⁶ As Mr. House explains, the DEIR fails to adequately assure that a bond will actually cover the costs of the reclamation plan because it does not specify a definite time frame in which to estimate future costs.³³⁷

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The DEIR should be revised to include a detailed explanation of how the reclamation will achieve its purpose of restoring the farmland to its original state and a definite time period for either the permitted or "useful life" of the project.³³⁸

IV. THE DEIR FAILS TO ADEQUATELY DISCLOSE, ANALYZE, AND MITIGATE THE PROJECT'S SIGNIFICANT NOISE IMPACTS

The DEIR claims that impacts from Project noise are less than significant.³³⁹ This conclusion is not supported by substantial evidence.

CEQA requires an EIR to include a description of the physical environmental conditions in the vicinity of the project.³⁴⁰ The environmental setting as it exists when the CEQA review process begins should ordinarily be treated as the baseline physical conditions by which a lead agency determines whether an impact is significant.³⁴¹ CEQA uses the term "ambient noise" to describe the physical condition that could be changed by a project.³⁴² When evaluating noise impacts, CEQA requires evaluation of whether a project would cause a "substantial temporary or permanent increase in ambient noise levels."³⁴³ Similarly, the Imperial County Noise Element states that "the [environmental] report shall describe, the existing noise environment, the proposed project, the projected noise impact and, if required, the proposed mitigation to ensure conformance with applicable standards."³⁴⁴

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³³⁵ *Id.*

³³⁶ DEIR at p. 3.3-12.

³³⁷ House Comments at p. 10.

³³⁸ *Id.*

³³⁹ DEIR, p. 3.13-9.

³⁴⁰ CEQA Guidelines §§15125(a).

³⁴¹ CEQA Guidelines §§15125(a)(1), 15126.2(a). See *Save Our Peninsula Comm. V. Monterey County Bd. Of Supervisors* (2001) 87 CA4th 99, 125.

³⁴² CEQA Guidelines § 15360.

³⁴³ CEQA Guidelines Appendix G: Environmental Checklist Form, XII, Noise.

³⁴⁴ Imperial County Noise Element, p. 22, available at: <https://www.icpds.com/assets/planning/noise-element-2015.pdf>. 6039-016acp.

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One of CEQA's basic policies is to provide Californians with "freedom from excessive noise."³⁴⁵ Based on CEQA Guidelines Appendix G, project impacts related to noise and vibration are considered significant if any of the following occur:

- Generate 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.
- Generate excessive groundborne vibration or groundborne noise levels
- For a project located in 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.³⁴⁶

The noise questions in the checklist do not define what maximum level of noise, or increase in the level of noise, constitutes a significant impact. Thus, lead agencies must choose the significance thresholds to be applied, either in general or to a particular project.³⁴⁷ Lead agencies do not have discretion, however, to consider only maximum noise levels and ignore increases in noise relative to existing conditions. In applying significance thresholds, the lead agency must consider both the "absolute noise level" associated with a project as well as the increase in the level of noise that will result from a project.³⁴⁸

As discussed further below, the City's noise analysis fails to adequately analyze the Project's potentially significant noise impacts because it relies on unsupported baseline data and does not analyze potentially significant impacts from construction and operational noise.

1. The DEIR's Noise Analysis Relies on Unsupported Baseline Data

The DEIR fails to establish adequate baseline noise levels against which to measure the Project's environmental impacts with regard to noise.

³⁴⁵ Public Resources Code § 21001(b).

³⁴⁶ CEQA Guidelines Appendix G: Environmental Checklist Form, XII, Noise; DEIR at p. 3.13-6.

³⁴⁷ *King & Gardiner Farms, LLC v County of Kern* (2020) 45 CA5th 814, 884.

³⁴⁸ *King & Gardiner Farms, LLC v County of Kern* (2020) 45 CA5th 814, 887 and 893; See also *Keep Our Mountains Quiet v County of Santa Clara* (2015) 236 CA4th 714, 733 (negative declaration case holding that increase in noise level must be considered, not just absolute noise level).

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Mr. Meighan explains that “[w]ithout knowing how loud the environment is, it is impossible to determine if the new project will increase noise in the surrounding community.”³⁴⁹ Baseline noise measurements are the preferred way to determine background noise sources.³⁵⁰ If baseline noise conditions are not established before any new development occurs, decision-makers cannot effectively determine whether the Project complies with noise regulations nor identify any potential adverse effects on the surrounding environment and communities.³⁵¹

The DEIR obtains the noise threshold by referencing Community Noise Equivalent Level (CNEL) reference levels from Table 3 of the Imperial County's Noise Element.³⁵² Mr. Meighan comments that the DEIR does not consider any measurements that reflect current conditions near the sensitive receivers.³⁵³ Specifically, the cited levels only consider traffic noise.³⁵⁴ Mr. Meighan points out that this is not the only ambient noise source near sensitive receivers at the Project site.³⁵⁵ There is noise from “freight train horns/operations, noise from agricultural use, and noise from nearby power plants and industrial uses.”³⁵⁶ Because the DEIR fails to account for all of the ambient noise sources at the Project site, the baseline noise levels used for analyzing the Project's noise impacts are “poorly supported.”³⁵⁷

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To remedy these inadequacies, Mr. Meighan comments that “[n]oise levels should be physically measured to be accurately determined.”³⁵⁸ Additionally, “[t]he Project should conduct properly documented ambient measurements near sensitive receptors, that capture the worst case (quietest) baseline conditions, to determine impact.”³⁵⁹ More specifically, Mr. Meighan recommends full 24-hour measurements be used to determine ambient noise for residential receivers of interest because the County of Imperial Codified Ordinances establish a 50 dB daytime and 45 dB nighttime noise limit.³⁶⁰ Or, at the very least, Mr. Meighan comments that a minimum of three one-hour Equivalent Sound Level (Leq) noise measurements (peak-hour roadway traffic, typical midday conditions, and typical nighttime

³⁴⁹ Meighan Comments, p. 1-2.

³⁵⁰ Meighan Comments, p. 2.

³⁵¹ *Id.*

³⁵² Meighan Comments, p. 1; Imperial County Noise Element, available at: <https://www.icpds.com/assets/planning/noise-element-2015.pdf>.

³⁵³ Meighan Comments, p. 1.

³⁵⁴ Meighan Comments, p. 2.

³⁵⁵ *Id.*

³⁵⁶ *Id.*

³⁵⁷ Meighan Comments, p. 1.

³⁵⁸ Meighan Comments, p. 2.

³⁵⁹ *Id.*

³⁶⁰ County of Imperial Codified Ordinances, Title 9, Division 7.
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conditions) to estimate the Day-Night Sound Level (Ldn) at site be used to establish baseline noise conditions for the project, including the CNEL.³⁶¹

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2. The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Significant Noise Impacts

Under CEQA, if there is any substantial evidence in the record that an environmental impact may be significant, the impact must be described and analyzed in the EIR.³⁶² This includes direct and indirect environmental impacts.³⁶³ The DEIR violates CEQA by omitting potentially significant construction and operational noise impacts.

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a. The DEIR Omits Potentially Significant Construction Noise Impacts

The DEIR fails to consider potentially significant construction noise impacts for sensitive receivers.³⁶⁴

Imperial County Codified Ordinance Section 91702.01(B) states that each "operator shall limit drilling noise to a sound level equivalent to CNEL sixty (60) db(A)" and that "the level shown may be exceeded by ten percent (10%) if the noise is intermittent and during daylight hours."³⁶⁵

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As explained in Mr. Meighan's comments, the DEIR fails to comply with this drilling standard. First, the drilling noise from the Project is not intermittent or limited to daylight hours.³⁶⁶ Table 3 of Appendix K in the DEIR states that a drill rig will be used for 15 daytime hours and 9 nighttime hours for 180 days.³⁶⁷ Mr. Meighan explains that this represents 24-hour operation, for roughly half a year.³⁶⁸ Second, the 24-hour CNEL levels are over the Imperial County Codified Ordinance

³⁶¹ Meighan Comments, p. 2; Federal Transit Administration's 2018 Transit Noise and Vibration Impact Assessment Manual, Appendix E, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

³⁶² 14 Cal. Code Regs § 15126.2(a); *League to Save Lake Tahoe v. County of Placer* (2022) 75 Cal.App.5th 63, 96.

³⁶³ 14 Cal. Code Regs § 15126.2(a).

³⁶⁴ Meighan Comments, p. 2.

³⁶⁵ Imperial County Codified Ordinance § 91702.01(B).

³⁶⁶ DEIR, p. 2.

³⁶⁷ DEIR, Appendix K, p. 4-2.

³⁶⁸ Meighan Comments, p. 2.

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drilling standard threshold.³⁶⁹ Mr. Meighan came to this conclusion by re-modelling the construction noise from the Project's predicted drilling activities.³⁷⁰ In his model, Mr. Meighan interpreted the Imperial County Codified Ordinance as establishing two criteria (1) a daytime criterion of 66dBA and (2) a CNEL of 60 dBA.³⁷¹ Next, Mr. Meighan assumed that, for the CNEL, the noise from the drill was constant and applied the established nighttime penalties.³⁷² Mr. Meighan's new model reveals that the CNEL noise impacts from the Project's drilling activities will exceed the Imperial County Codified Ordinance drilling standard threshold by 3 dBA, resulting in a significant impact that the DEIR did not account for.³⁷³

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Because the DEIR did not include this potential impact in their analysis, Mr. Meighan comments that mitigation should be considered, such as a temporary sound wall.³⁷⁴ Therefore, the DEIR must be revised to disclose and mitigate this significant construction noise impact.

b. The DEIR Omits Potentially Significant Operational Noise Impacts

The DEIR fails to consider potentially significant operational noise impacts.³⁷⁵

The DEIR uses noise data from the ORMAT Tungsten Mountain facility, which is similar in design to the Proposed Project, to model noise associated with geothermal plant operations using SoundPLAN Essential methodology for industrial sites.³⁷⁶ Based on this, the DEIR assumed that the operation of the power plant would generate an average noise level of 62 dBA at 450 feet with continuous operation and that the proposed Project wells would generate an average noise level of 72 dBA at 25 feet with continuous operation.³⁷⁷

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However, the DEIR also mentions that existing geothermal facilities and geothermal wells adjacent to the Project site have a sound power level in the range of 113 dBA and that operational noise levels of an existing geothermal facility in

³⁶⁹ Meighan Comments, p. 3.

³⁷⁰ *Id.*

³⁷¹ Meighan Comments, p. 2.

³⁷² Meighan Comments, pp. 2-3; Los Angeles World Airports, *How do we Describe Aircraft Noise?*, available at: https://www.lawa.org/-/media/lawa-web/noise-management/files/aircraft_noise_lax.ashx.

³⁷³ Meighan Comments, p. 3.

³⁷⁴ *Id.*

³⁷⁵ *Id.*

³⁷⁶ DEIR, Appendix K, p. 5-1.

³⁷⁷ *Id.*

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Imperial County were recorded at 70 dBA Leq at approximately 100 feet.³⁷⁸ Mr. Meighan comments that if the noise measurements from these adjacent facilities are consistent with the new facility, they have a potential to exceed the noise thresholds set by the Imperial County Noise Ordinance.³⁷⁹ Mr. Meighan explains that whether noise thresholds are exceeded depends on what the ambient noise levels are at the Project site.³⁸⁰ If ambient levels are elevated, they may be above the noise threshold and thus these levels may not increase noise levels.³⁸¹ However, the ambient levels may be below the noise thresholds and the Project's impact could be even greater compared to ambient levels.³⁸² Because of this, Mr. Meighan says that in addition to establishing proper ambient noise levels for the project site, the DEIR should be updated to include potential mitigation for this potentially significant operational noise impact, such as a sound wall.³⁸³

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Therefore, the analysis of the Project's noise impact is inadequate and needs to be revised and recirculated in a new DEIR.

VII. THE DEIR FAILS TO ADEQUATELY ANALYZE CUMULATIVE IMPACTS

CEQA requires an EIR's cumulative impacts analysis evaluate the incremental impact of the project in conjunction with, or collectively with, other closely related past, present, and reasonably foreseeable probable future projects.³⁸⁴ "Cumulative impacts" are defined as "two or more individual effects, which, when considered together, are considerable or which compound or increase other environmental impacts."³⁸⁵ The purpose of this requirement is to avoid "piecemeal" approval of projects without consideration of the total environmental effects the project would have when taken together.³⁸⁶ The adequacy of an EIR's discussion of cumulative impacts is determined by standard of practicality and reasonableness.³⁸⁷

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³⁷⁸ DEIR, Appendix K, p. 4-2.

³⁷⁹ Meighan Comments, p. 3.

³⁸⁰ *Id.*

³⁸¹ *Id.*

³⁸² *Id.*

³⁸³ *Id.*

³⁸⁴ 14 CCR § 15355(b); *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 905.

³⁸⁵ 14 CCR § 15355.

³⁸⁶ Cecily Talbert Barclay and Matthew S. Gray, *California Land Use and Planning Law* (Solano Press, 37th ed. 2020) p. 180.

³⁸⁷ *Environmental Protection & Information Center v. California Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 525; 14 CCR § 15130(b).

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A. The DEIR Fails to Adequately Analyze Cumulative Impacts to Biological Resources

The DEIR fails to adequately analyze the Project's cumulatively significant impacts associated with habitat loss to burrowing owls and other special status birds.

The DEIR provides, absent substantial evidence, that impacts on biological resources would not be cumulatively considerable.³⁸⁸ In fact, substantial evidence demonstrates that the Project's impacts to habitat degradation and species decline is significant and unmitigated. Dr. Smallwood calculated that habitat loss associated with development of the Project would result in the loss of 945 birds per year.³⁸⁹ Dr. Smallwood's comments demonstrate that "[p]redicted annual collision mortality averages 255 birds and 1.3 bats with the project's PV solar panels, 222 birds with the medium-voltage distribution lines, 56 birds and 10 bats with the security fence, and 17 vertebrate animals with project-generated traffic for a combined annual mortality of 561 vertebrate animals. The total quantifiable deficit of vertebrate wildlife would be at least 1,506, and that is before attempting to quantify the numbers of small mammals and bats that would be lost."³⁹⁰

Substantial evidence demonstrates that "[t]he project's contribution to cumulative impacts would be substantial and highly significant."³⁹¹ Dr. Smallwood's comments demonstrate that the DEIR underestimated the impacts associated with cumulative development in the Project's area. Dr. Smallwood calculated that the cumulative geothermal and battery energy storage projects being developed in the region will result in cumulatively significant impacts to burrowing owl due to habitat lost and mortality.³⁹²

Dr. Smallwood calculated the cumulative annual mortality estimates at 84,010 birds and 434 bats at solar PV panels, 24,055 birds at gen-ties, and 5,990 birds and 1,062 bats at securing fencing for Projects in the region.³⁹³ Cumulative annual bird collision fatalities are estimated to be 114,056 birds and 1,497 bats at solar projects among the list of projects in Table 5-1 of the DEIR. Dr. Smallwood calculated that cumulative annual burrowing owl collision fatalities based on the list of projects in Table 5-1 of the DEIR is estimated to be 1,317 – "an excessive

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³⁸⁸ DEIR at p. 5-12.

³⁸⁹ Smallwood Comments at p. 30.

³⁹⁰ *Id.*

³⁹¹ *Id.*

³⁹² *Id.*

³⁹³ *Id.*; DEIR Table 5-1.

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mortality that is likely helping to extirpate burrowing owls from Imperial County.”³⁹⁴

The DEIR fails to adequately mitigate significant cumulative impacts to burrowing owls. The DEIR fails to require survey requirements, because “no breeding-season detection surveys have been completed.”³⁹⁵ CEQA Guidelines §15064(h)(3) state, “When relying on a plan, regulation or program, the lead agency should explain how implementing the particular requirements in the plan, regulation or program ensure that the project’s incremental contribution to the cumulative effect is not cumulatively considerable.” Dr. Smallwood’s comments provide substantial evidence, that the Project’s reliance on local plans and regulations does not adequately mitigate the Project’s cumulatively significant impacts to biological resources. Cumulative biological resource impacts must be adequately analyzed and mitigated in a revised and recirculated EIR before the Project can be lawfully approved.

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VIII. THE DEIR FAILS TO ANALYZE THE PROJECT’S LAND USE INCONSISTENCIES

The CEQA Guidelines require a lead agency conducting environmental review of a project to consider whether the project would “conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over a project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.”³⁹⁶ Here, the County failed to adequately analyze and mitigate the Project’s conflicts with the Imperial County Code of Ordinances, in violation of CEQA.

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The project parcels are zoned as A-2-G-SPA and A-2-G-U, for agricultural purposes. The Project is within both the “Urban Area” pursuant to the Imperial County General Plan and the Heber Specific Plan Area.³⁹⁷ Under Division 17 of the Imperial County Land Use Ordinance, renewable energy projects located within the renewable energy overlay zone may be developed and operated with an approved conditional use permit (“CUP”).³⁹⁸ The Dogwood Geothermal Energy Project is part of the Imperial County Geothermal Overlay Zone and thus must obtain a CUP.³⁹⁹

³⁹⁴ *Id.*

³⁹⁵ Smallwood Comments at 36.

³⁹⁶ 14 CCR § 15000 Appendix G.

³⁹⁷ DEIR at p. 3.12-1.

³⁹⁸ Imperial County Code of Ordinances § 91701.03

³⁹⁹ DEIR at Figure 2-1.

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Imperial County Code of Ordinances Section 91702.00 provides the following specific standards to geothermal projects:

- A. All geothermal drilling sites including test facilities and ponds shall be as small as possible and in no case larger than five acres on farmable land. Exceptions may be considered on a well-by-well basis.
- B. All geothermal drilling and production sites shall try to protect the fragile ecological balance of the wetlands and surrounding desert by assuring that natural resources will be considered in their location. Consideration shall be given to intermittent noise levels which may affect wildlife.
- C. Every site shall be designed to retain the maximum amount of usable agricultural land and the site shall not interfere with the irrigation and drainage pattern, and shall comply with requirements and regulations of Imperial irrigation district. Drill sites shall be constructed adjacent to existing roads in so far as possible. Well density shall be justified and in accordance with good reservoir engineering practices.

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The Project exceeds the Imperial County Code requirement that geothermal drilling sites not exceed five acres of farmable land. The Project results in the conversion of 446.61 acres of farmable land for geothermal and solar use.⁴⁰⁰ Therefore, an exception must be made for the Project. The DEIR makes no mention of this nonconformance which constitutes a significant impact under CEQA.

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XI. CONCLUSION

For the reasons discussed above, the DEIR for the Project remains wholly inadequate under CEQA. It must be thoroughly revised to provide legally adequate analysis of, and mitigation for, all of the Project's potentially significant impacts. These revisions will necessarily require that the DEIR be recirculated for public review. Until the DEIR has been revised and recirculated, as described herein, the County may not lawfully approve the Project.

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⁴⁰⁰ DEIR at 3.3-3.
0029-016acp

November 14, 2024
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Thank you for your attention to these comments. Please include them in the
record of proceedings for the Project.

G-66

Sincerely,



Kelilah D. Federman
Alaura R. McGuire

Attachments
KDF:acp

8839-016acp



EXHIBIT A

Adams Broadwell Joseph Cardozo
601 Gateway Blvd. Suite 1000
South San Francisco, CA 94080

November 14, 2024
Proposal No. EN8462

Attention: Kelilah Federman

Subject: Comments on Dogwood Geothermal Energy Project Draft Environmental Impact Report (DEIR) Imperial County, California

Dear Ms. Federman,

Dr. Komal Shukla of Group Delta Consultants, Inc. (Group Delta) is pleased to provide comments to Adams Broadwell Joseph & Cardozo (ABJC) regarding the comprehensive review of the Draft Environmental Impact Report (DEIR) for the Dogwood Geothermal Energy Project (DGEP). This report was prepared by the Applicants, OrHeber 3, LLC, Heber Field Company, LLC, and Second Imperial Geothermal Company.¹

G A-1

Introduction

The Dogwood Geothermal Energy Project (Project) is a proposed development located in the unincorporated region of Imperial County, California, approximately one mile south of the City of Heber and 0.5 miles west of the City of Calexico. The Project aims to generate renewable energy by constructing a new 25 megawatt (MW) geothermal power plant, supported by a 7 MW solar energy facility dedicated to providing parasitic power to the geothermal operations.

In addition to the Dogwood facility, the Project includes the development of a 15 MW parasitic solar energy facility to support the existing Heber 2 geothermal plant. This comprehensive energy initiative also involves the drilling of up to six new geothermal production wells, the construction of one new injection well, and the installation of supporting brine pipelines.

G A-2

The Dogwood Project (CUP No. 23-0020), to be developed by OrHeber 3, LLC, will consist of one Integrated Two Level Unit (ITLU) Air-Cooled ORMAT Energy Converter (OEC) generating unit, two 20,000-gallon isopentane tanks for motive fluid storage, a substation, and various ancillary systems including a compressed air system and a fire prevention system. A 7 MW solar photovoltaic field will be dedicated to powering the Dogwood geothermal plant, with interconnecting cable lines linking the solar and geothermal facilities.

¹ Refer to Para. 2 on Pg. 2-1 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

The Heber 2 Parasitic Solar Energy Facilities (CUP No. 23-0021), developed by Second Imperial Geothermal Company, will consist of a 15 MW solar photovoltaic field dedicated to powering the Heber 2 geothermal plant, with interconnecting cables linking the two facilities.

G A-2
cont'd

The Heber Field Company (CUP No. 23-0022) will be responsible for drilling up to six new geothermal production wells and constructing one new injection well. The proposed infrastructure also includes brine pipelines that will connect the new wells to the Dogwood geothermal facility and existing well systems.

The DGEP is situated within the Imperial County Geothermal Overlay Zone, which allows for Major Geothermal Projects through a Conditional Use Permit (CUP) process as outlined in the Imperial County General Plan and the Renewable Energy and Transmission Element of the County's General Plan (2015). This strategic location, near the existing geothermal energy complex on Dogwood Road, makes it an ideal site for harnessing geothermal energy to contribute to California's renewable energy goals.

As detailed in the DEIR, the primary components of the Project include:

Dogwood Geothermal Energy Project

- 25 net MW geothermal power plant.
- Installation of one Integrated Two-Level Unit (ITLU) utilizing an air-cooled ORMAT Energy Converter (OEC) as the primary power generation unit.
- OEC system comprises several key components, including a generator, turbines, a vaporizer, air-cooled condensers, preheaters, recuperators, and an evacuation skid/vapor recovery maintenance unit (VRMU) designed for purging and maintenance activities.
- Two double-walled 20,000-gallon above-ground isopentane storage tanks for motive fluid. These storage tanks will be mounted on concrete foundations and protected by blast walls. Additional safety measures include an automated water suppression system, concrete containment areas, two flame detectors, and one gas detector to monitor for potential isopentane leaks.
- One dry cooling tower array for air-cooling the geothermal fluid. This cooling tower will be equipped with a series of heat-absorbing evaporators and condensers designed to capture and transfer heat from the geothermal fluid.
- One project substation for electricity transmission to the power grid.
- Ancillary and auxiliary infrastructure, including a compressed air system and a fire prevention system.
- A 7 MW solar photovoltaic (PV) array designed to support the Dogwood geothermal facility. It will feature a 13.8 Kilovolt (kV) circuit breaker for generator protection, an 80-megavolt ampere 13.8 kV/115 kV transformer, and 115 kV potential and current transformers for metering and system protection.
- A medium voltage distribution line linking the Dogwood solar field with the geothermal plant.



Heber 2 Parasitic Solar Project

- A 15 MW solar photovoltaic field designed to provide supplemental energy to the existing Heber 2 geothermal plant.
- An interconnection cable linking the Heber 2 solar facilities with the Heber 2 geothermal plant.

Heber Field Company (HFC)

- Drilling of up to six new production wells approximately 5,000 feet deep (three already sited, and three awaiting site determination within APNs 059-020-001 and 054-250-017.)
- Drilling of one new injection well within the existing Heber 2 Geothermal Energy Complex (HGEC).
- Installation of approximately 0.85 miles of brine pipelines for geothermal fluid transportation.

G A-2
cont'd



Figure 1: Project Location Dogwood Geothermal Energy Project Imperial County, California

G A-2
cont'd

1. Project Description

The Project aims to develop a geothermal power plant with a minimal environmental footprint by siting the facility on an already disturbed industrial site. Its primary objective is to generate clean, renewable geothermal energy within the Heber Geothermal Zone, in alignment with the Imperial County General Plan. The site was chosen for its proximity to existing energy facilities and electrical transmission infrastructure. Additionally, the Project will integrate solar PV technology to support geothermal operations, using proven, low-maintenance systems. The plant will provide renewable baseload energy to help California meet its goals under Senate Bill 100 and the State's Renewables Portfolio Standard program.² A key focus is on minimizing and mitigating any potential impacts on sensitive environmental resources in the Project area.

The Project construction process is divided into multiple phases, each with a series of activities and specific timelines.³

Site Preparation (2 months)

- The initial phase involves site preparation activities, which include construction kickoff and staging (1 week), demolition and site clearing (1 week), and rough grading (2 weeks). Following these activities, fine/pad grading and excavation for underground utilities and stormwater management will take place over the course of 1 month.

Project Construction (16 months)

This phase focuses on key construction activities, starting with well pad construction, which will last 3 months. The parasitic solar energy system will be built over a 6-month period, while medium voltage distribution cable installation will take 4 months. The installation of the ORMAT Energy Converter (OEC) unit will also span 6 months, and landscaping, lighting, and architectural finishes will take place in the final month of this phase.

Well Drilling & Pipeline Interconnection (12 months)

The drilling of geothermal wells and pipeline interconnection will occur simultaneously, starting with well drilling and completion (4 months), followed by flow testing (4 months) and the installation and interconnection of pipelines (4 months).

² Refer to Para. 5 on Pg. 2-6 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

³ Refer to Table 2-2 on Pg. 2-21 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

Substation Development & Interconnection (4 months)

- This phase involves the development of the Project substation, which will take 3 months. The interconnection with the grid will be completed in 2 weeks, followed by a 2-week testing period.

G A-2
cont'd

Testing & Operational (1 month)

- The final phase includes a 2-week testing period to ensure all systems are functioning properly. After this, all facilities will become fully operational, marking the conclusion of the construction and development process.

Overall, the total duration of the Project construction, including all phases, is approximately 35 months, or just under 3 years.

The geothermal power plant will operate continuously, 24 hours per day, with regular maintenance as needed. Solar facilities will be remotely monitored, with site visits conducted as necessary. Routine inspections will be scheduled to avoid peak load periods, while unplanned maintenance will be performed as required.⁴ Emergency response equipment includes a 400-kilowatt (kW) emergency diesel generator (540-horsepower) and a 300-horsepower emergency diesel fire pump, each with limited operational hours per year.

The Project will aim to avoid using sulfur hexafluoride (SF₆), a potent greenhouse gas, in new circuit breakers. However, if SF₆-insulated equipment is used, up to 75 pounds of SF₆ gas may be required at the site.⁵ The Project's operational equipment, such as turbines and condensers, are not fully listed, raising concerns about potential environmental impacts from these components.

1.1 Incomplete Listing of Air-Contaminant-Emitting Equipment

The DEIR lacks a detailed inventory of critical operational equipment, particularly those with potential environmental impacts. Key components, such as turbines, air-cooled condensers, preheaters, recuperators, as well as existing pipelines, storage tanks, and wells, are not clearly specified.

G A-3

The DEIR asserts that site-specific isopentane maintenance, purging, and fugitive emissions were estimated using worst-case quarterly emissions data from 2019 and 2020. It also claims that maintenance and fugitive emission estimates were adjusted to reflect the reduced complexity of

⁴ Refer to Para. 3 on Pg. 2-24 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

⁵ Refer to Para. 5 on Pg. 3.9-11-12 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024



the new units compared to the existing units from those years.⁶ Specifically, the Project's proposed equipment has fewer seals, flanges, pumps, and valves relative to the existing equipment.

G A-3
cont'd

This lack of detailed equipment enumeration can result in significant inaccuracies in emissions calculations. If the actual number of equipment units is underreported, emissions during both construction and operation phases could be underestimated, leading to potential non-compliance with air quality regulations. Load factors, operational hours, and fuel consumption are typically based on equipment quantity, and deviations in these assumptions will directly affect the projected emissions of pollutants like nitrogen oxides (NOx), carbon monoxide (CO), particulate matter 10 (PM₁₀) and particulate matter 2.5 (PM_{2.5}).

Furthermore, air quality mitigation measures are generally scaled according to the number and activity level of equipment. Omitting certain equipment may result in underestimating the mitigation needed, potentially resulting in emissions exceeding projected levels. Incomplete equipment data may also cause the cumulative emissions to be underestimated, leading to the omission of a significant contribution to regional air quality deterioration. This lack of comprehensive data hinders the ability to assess whether the Project will remain within regulatory thresholds, thus jeopardizing compliance with environmental standards.

Failure to account for all relevant equipment distorts the emissions inventory, risking regulatory violations and underestimating the Project's overall environmental impact.

1.2 Omission of Fugitive Emissions

The DEIR fails to adequately address fugitive emissions originating from various components critical to the geothermal plant's operations, including valves, flanges, control systems, and storage tanks. These components are integral to geothermal fluid handling and are known sources of potential emissions. Fugitive emissions from such equipment, particularly in a geothermal setting, can contribute to the release of volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and other trace gases, which may have significant cumulative effects on local air quality.

G A-4

While the DEIR does account for fugitive dust emissions resulting from vehicular travel on unpaved roads, it overlooks emissions that can escape from the numerous seals, joints, and connectors in equipment like pumps, compressors, and pipelines. Valves and flanges are particularly prone to leaks, and over time, even small emissions from these sources can

⁶ Refer to Para. 1 on Pg. 3.4-14 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024



contribute to a significant release of pollutants such as hydrogen sulfide (H₂S), methane (CH₄), and other non-condensable gases (NCGs), which are common in geothermal fluid.⁷

G A-4
cont'd

1.3 Significant Oversight in Emission Estimates from Well Drilling and Flow Testing

The DEIR indicates that AQ-2 mitigation measures will be implemented for construction equipment to ensure compliance with significance thresholds and prevent exceedances. However, it fails to properly estimate the impact of the construction of six new wells. The new wells are planned to be drilled to a depth of 5,000 feet, with well drilling and flow testing anticipated to span approximately eight months (four months for each activity).⁸ While the DEIR provides emission estimates for well pad construction, it omits the emissions associated with well drilling and flow testing. Furthermore, the analysis does not account for the emissions from the drill rig, which operates on diesel fuel, runs continuously for 24 hours, and is rated at 500 horsepower with a load factor of 0.5.⁹ The combustion process in these engines generates NO_x emissions due to high temperatures and pressures, which cause nitrogen and oxygen in the air to react. Given that the Project's estimated emissions for NO_x are already approaching the Imperial County Air Pollution Control District (ICAPCD) threshold after mitigation, as seen in Table 1, the failure to consider the drill rig's impact could compromise the Project's compliance with air quality standards.

G A-5

The calculations presented in the DEIR indicate that NO_x emissions from drilling activities could surpass established threshold levels, marking a significant area of non-compliance that necessitates further investigation and corrective action (Table 1 and Table 2). Drilling operations inherently involve various processes that can substantially elevate NO_x levels. Heavy machinery and equipment, including drilling rigs, compressors, and generators, are typically powered by fossil fuels, leading to the direct emission of NO_x during combustion.¹⁰ Additionally, auxiliary activities such as the transportation of equipment and materials, site preparation, and routine maintenance further contribute to NO_x emissions.

The omission of key NO_x emission sources from the impact report represents a critical oversight, especially given that the Project's current estimate of 87.08 lbs./day is narrowly below the 100 lbs./day regulatory threshold. Emissions from activities such as well drilling, and flow testing have the potential to push NO_x levels beyond this limit. A comprehensive reevaluation of emissions

⁷ EPA. Accessed September 17, 2024. <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-fifth-edition-volume-i-chapter-8-inorganic-1>

⁸ Refer to Table 2-2 on Pg. 2-21 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024.

⁹ Refer to Table 3 on Pg. 1-6 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024.

¹⁰ "Why Monitor NO₂ and PM Emissions from Construction Sites?" Why monitor NO₂ and PM emissions from construction sites? Accessed September 27, 2024. <https://www.aerogual.com/blog/why-monitor-no2-and-pm-at-construction-sites>



calculations is necessary to accurately account for these sources, ensuring compliance with air quality standards and adequately assessing the Project's environmental impacts.

G A-5
cont'd

Table 11. ICAPCD Daily Construction Emission Thresholds

Pollutant	Threshold (lbu/day)
PM ₁₀	150
RDG	75
NO _x	100
CO	550

Source: ICAPCD 2017

Table 1: ICAPCD Daily Construction Emission Thresholds

Table 13. Mitigated Project Construction-Generated Emissions

Construction Year	Pollutant (lbu/day) ¹					
	RDG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2025	9.90	83.42	466.38	1.12	2,238.7	226.62
2026	10.72	87.08	520.46	1.30	2,351.7	238.04
Threshold	75	100	550	—	150	—
Exceed Threshold?	No	No	No	—	[Yes] ²	—

Source: CalREMmod Results in Attachment A

Notes:

- Emissions are representative of the maximum daily output (i.e., maximum of summer or winter results)
- Guidance provided in the ICAPCD CEQA Air Quality Handbook (2017) specifies that the approach of the CEQA analyses for construction particulate matter impacts should be qualitative as opposed to quantitative. As such, further analysis of construction-related fugitive particulate matter is provided below.

Table 2: Mitigated Project Construction-Generated Emissions

1.4 Withheld Emissions of Particulate Matter, Ozone and Ammonia

The Project fails to properly disclose emissions of particulate matter, ozone (O₃), and ammonia (NH₃) from all potential sources within the report. The Project acknowledges the potential impact of emissions from sources like construction activities and operational equipment like valves, flanges, and tanks handling geothermal fluid. The Project inaccurately reports PM emissions as zero and dismisses them as negligible, citing mitigation measures as sufficient justification for assuming these emissions are insignificant. This approach is particularly concerning because it involves withholding critical emissions data and applying incorrect assumptions that fail to reflect the true impact on health and the environment. By using misleading or incomplete data, the Project significantly underestimates potential air quality and health risks, violating standard environmental assessment practices and undermining informed decision-making about the Project's potential harm.

G A-6



Ozone emissions are dismissed as insignificant in the DEIR, without conducting any detailed analysis or modeling. This omission is problematic because it fails to quantitatively assess the Project's contributions to ozone levels, especially in an area that may already be struggling with non-attainment status for ozone. The lack of O₃ modeling means that the Project does not account for the combined effects of reactive organic gases (ROGs) and nitrogen oxides (NO_x), which are critical in forming ground-level ozone, a major air pollutant that poses significant health risks. This oversight severely undermines the accuracy of the emissions calculations, leading to an incomplete evaluation of environmental and health impacts.

G A-6
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Ammonia emissions are completely unaddressed in the Project, despite acknowledging ammonia's presence in nearby water bodies, which poses a risk of environmental contamination if these waters are utilized.¹¹ This omission is particularly concerning because ammonia is a common non-condensable gas emitted from geothermal operations. Failure to include ammonia emissions in the analysis overlooks a significant source of air and water pollution, potentially leading to underestimated environmental and health impacts. Proper evaluation for ammonia emissions is critical to prevent these harmful effects.

2. Environmental Setting

The DEIR significant flaws in accurately defining the Project's environmental setting. These flaws result in a failure to adhere to the requirements of in CEQA Section 15125(a), which mandates that an Environmental Impact Report (EIR) include a description of the physical environmental conditions in the vicinity of the project as they exist at the time the notice of preparation is published, or if no notice is published, at the commencement of environmental analysis, from both local and regional perspectives.¹² The DEIR overlooks crucial aspects such as the use of appropriate meteorological data and receptor locations. This oversight undermines the integrity of the report and raises concerns about its ability to fully assess the potential environmental and health risks associated with the proposed Project.

G A-7

2.1 Nonrepresentative Meteorological Station Data

The DEIR does not adhere to the Imperial County Air Pollution Control District (ICAPCD) regulations, particularly Rule 207, which governs new and modified stationary sources.¹³ ICAPCD Rule 207 requires a thorough assessment of new and modified stationary sources, including the evaluation of cumulative air quality impacts from existing sources in proximity.¹⁴ A key deficiency is the use of distant meteorological data for emissions analysis. The DEIR relies

¹¹ Refer to Para. 3 on Pg. 3.11-5 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024.

¹² Cal. Code Regs. Tit. 14, § 15125.

¹³ Imperial County Air Pollution Control District Rule 207. Accessed September 27, 2024.
<https://apcd.imperialcounty.org/wp-content/uploads/2020/01/1RULE207.pdf>

¹⁴ *Ibid.*



on data from a weather station that is not representative of the local conditions, failing to include data from nearby, more relevant sources. This deviation from standard procedure creates significant uncertainty in the analysis of emissions and their dispersion.

G A-7
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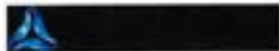
By not utilizing data from stations closer to the project site, the DEIR fails to account for localized meteorological conditions that could greatly influence the dispersion of pollutants. The inaccuracies in meteorological data selection and the subsequent emissions modeling call into question the overall validity of the air quality impact assessment. As a result, the potential for exacerbating pollutant gradients due to the addition of new geothermal plants is likely underestimated, leading to an incomplete evaluation of cumulative impacts.

The DEIR acknowledges the availability of monitoring stations within Imperial County, yet it opts to use data from an inappropriate and more distant station. Specifically, the Project relies on data from the Imperial City station located at Imperial County Airport (KIPL), despite the proximity of closer stations in El Centro and Calexico.¹⁵ The Imperial City station is approximately 11.8 miles from the Project site, whereas El Centro and Calexico are located only 5.5 miles and 5.1 miles away, respectively.

Utilizing data from a more distant station introduces several issues that can compromise the accuracy and reliability of air quality assessments. Localized conditions such as meteorology, topography, traffic, and industrial activities can cause significant variations in pollutant concentrations across relatively short distances. The data from a station 11.8 miles away may not accurately represent the air quality conditions at the Project site, potentially leading to underestimations or overestimations of pollutant levels. This misrepresentation can affect the accuracy of emissions modeling, the assessment of potential impacts on human health, and the evaluation of whether the Project meets air quality standards. In contrast, using data from closer stations in El Centro or Calexico would provide a more representative and site-specific air quality profile, resulting in a more accurate evaluation of the Project's potential environmental impacts.

The decision to use data from a distant monitoring station thus undermines the credibility of the DEIR's air quality analysis and raises concerns about the adequacy of the mitigation measures proposed.

¹⁵Imperial County Airport (KIPL, WBAN ID: 03144) Weather Underground, May 11, 2020, <https://www.wunderground.com/history/monthly/us/ca/imperial/kipl>, as mentioned in Hazard Assessment report ORMAT, DOGWOOD GEOTHERMAL POWER GENERATION FACILITY HEBER, CALIFORNIA





G A-7
cont'd

Figure 7: Project Location in respect to monitoring stations – Imperial City, El Centro, and Calexico





Figure 2: Distance Between Project Site and Salton Sea

G A-7
cont'd

2.4 Failure to Analyze Air Quality and Health Risk Impacts to Nearby Receptors

As seen in Figure 5, the Project site is situated in close proximity to numerous sensitive receptors, which are inadequately addressed in the DEIR. Specifically, the site is approximately 1.3 miles from Heber Elementary School District, 1.1 miles from El Toro Land & Cattle Co., and 1.2 miles from Holtz Ranch. The DEIR does not adequately evaluate the potential health impacts on these nearby locations. For the elementary school, a primary concern is the potential degradation of air quality due to elevated levels of hydrogen sulfide (H₂S), which could adversely affect students' health. For the cattle export plot, emissions and odors from the geothermal plant may compromise the environmental quality for livestock, potentially impacting their health and that of the workers on-site. Similarly, the nearby ranch could face disruptions from possible contamination of water sources as a result of geothermal operations. These environmental

G A-8



impacts could significantly affect the daily operations of both the ranch and the cattle export plot. Absent comprehensive impact assessments and mitigation strategies to safeguard these sensitive receptors, air quality and health risk impacts to nearby sensitive receptors remain significant and unmitigated.

G A-8
cont'd



Figure 5: Project Site Location (Depicted in Dark Orange) and Nearby Sensitive Receptors (Including the Elementary School, Land & Cattle Export, and Ranch, Depicted in Yellow).



2.5 Project Site Proximity and Current Air Quality Considerations

The Project Site is within an area identified as a disadvantaged community under Senate Bill 535 (Figure 6).¹⁶ This bill identifies disadvantaged communities based on socioeconomic indicators, including high poverty rates, low median income, and elevated levels of pollution. The DEIR fails to recognize this designation. This designation highlights that the area is particularly vulnerable to environmental and economic disparities, often facing higher burdens from pollution and reduced access to resources and services. The presence of the Project in such a community raises significant environmental justice concerns as residents of these communities are frequently exposed to greater environmental risks and have fewer resources to address or mitigate these impacts. It is imperative for the DEIR to thoroughly assess and address the potential adverse effects of the Project on this population, not only the direct environmental impacts but also the broader social and economic effects.

The Imperial Valley Air District is also classified as being in non-attainment for ozone concentrations based on the 8-hour Federal standard, non-attainment for ozone based on the 1-hour and 8-hour California standards, and non-attainment for PM₁₀ based on the California standard. The non-attainment status of the Imperial Valley Air District underscores the need for stringent air quality management and control measures. It highlights the importance of thoroughly evaluating the potential impacts of new projects, such as the proposed geothermal plant, on the already compromised air quality in the region.

G A-9

¹⁶ California, State of. "California Climate Investments to Benefit Disadvantaged Communities." CalEPA. Accessed September 20, 2024. <https://calepa.ca.gov/envjustice/cbdiinvest/>





G A-9
 cont'd

Figure 6: Disadvantaged Communities in California: Geospatial Analysis of Proximity to Geothermal Power Plants

3. Assessment of Valley Fever Impacts and Mitigation Strategies



3.1 Failure to Address Impacts from Exposure to *Coccidioides Immitis* (Valley Fever Cocci) from Construction Activities

The DEIR fails to properly address the known issue of Valley Fever, also known as *Coccidioides Immitis*, within the Imperial Valley region. This fungus typically resides within the upper 2 to 12 inches of soil and when disturbed by wind, construction, or other activities, the spores become airborne. Once airborne, the spores pose a significant risk of inhalation by workers directly involved in soil disturbance and residents or other populations downwind. As the spores are not prone to environmental degradation, any soil entrainment during land development could exacerbate health risks and impact future site development.

The DEIR states that the proposed project will require two months of site preparation on APNs¹⁷ 054-250-031 and 059-020-001 with corresponding acreages of 39.93 acres and 246.61 acres. Furthermore, the Project will involve four months of well drilling and an additional four months of flow testing. While flow testing may result in less direct soil disturbance compared to other phases, it still presents a risk if proper monitoring and dust control measures are not implemented.¹⁷ The total land area to be developed is 123.27 acres, and soil disturbances will occur over a 10-month period.

G A-10

3.2 Failure to Consider Impacts from *Coccidioides Immitis* (Valley Fever Cocci) Transport from Project Site to Nearby Sensitive Receptors

The DEIR fails to properly address the possibility of impacting nearby sensitive receptors and other at-risk populations in the vicinity of the Project. Construction workers, agricultural workers, and ranchers are among the most vulnerable to Valley Fever infection due to their frequent exposure to dust and disturbed soil in common regions.¹⁸ Construction personnel working directly on the Project are at high risk of inhaling airborne fungal spores, while nearby agricultural and ranching activities could face secondary exposure from airborne dust and soil particles.

Additionally, the DEIR does not sufficiently consider the potential impacts on adjacent properties, including Heber Elementary School, El Torro Cattle and Land Co., and Holtz Ranch. These sites are at risk due to their proximity to the proposed project and the likelihood of dust generation during extensive ground disturbance.

G A-11

¹⁷ Refer to Para. 4 on Pg. 3.12-1 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

¹⁸ "Valley Fever (Coccidioidomycosis) - Overview," Occupational Safety and Health Administration. Accessed September 19, 2024. <https://www.osha.gov/valley-fever>



The Applicants must prepare a thorough assessment of the public health implications associated with extensive soil disruption. Furthermore, before any construction or site activity begins, comprehensive testing for Valley Fever spores should be conducted to ensure that proper mitigation measures are in place, safeguarding the health of workers and the surrounding community.

G A-11
cont'd

Table 2-2. Project Construction Process/Phasing

Construction Phase	Construction Activity	Activity Duration	Phase Duration
Site Preparation	Construction Kick-off/Staging	1 week	2 months
	Demolition/Site Clearing	1 week	
	Site Preparation/Rough Grading	2 weeks	
	Final/Pad Grading, Excavation for Underground Conduit/Utilities, Stormwater	1 month	
Project Construction	Well Pad Construction	3 months	10 months
	Plastic Solder Construction	6 months	
	Medium Voltage Distribution Cable	4 months	
	OEC Installation	6 months	
	Landscaping, Lighting, Architectural Finishes	1 month	
Well Drilling & Pipeline Interconnection	Well Drilling and Completion	4 months	12 months
	Flow Testing	4 months	
	Pipeline Install and Interconnection	4 months	
Substation Development & Interconnection	Project Substation Development	3 months	4 months
	Interconnection with grid	2 weeks	
	Testing	2 weeks	
Testing & Operational	Testing Phase	2 weeks	1 month
	All Facilities Operational	2 weeks	

Table 5: Project Construction Process/Phasing



Table 3.12-1. Project Assessor Parcel Numbers, Acreages, General Plan Land Use, and Zoning

APN	APN Acreage	Site Component Acreage	General Plan Land Use	Zoning
054-250-031	39.93	-5.68	Heber Specific Plan Area	A-2-G-SPA
059-020-001	246.61	-117.59	Urban	A-2-G-U
054-250-017	160.08	-2	Heber Specific Plan Area	A-2-G-SPA
Total	446.62	-125.27	—	—

APN=assessor parcel number; A-2-G-SPA=General Agriculture with Geothermal Overlay in Special Plan Area; A-2-G-U=General Agriculture with Geothermal Overlay in Urban Area

Table 6: Project Assessor Parcel Numbers, Acreages, General Plan Land Use, and Zoning

G A-11
cont'd

3.3 Lack of Evidence to Support Proper Mitigation Measures from Exposure to Valley Fever

The DEIR acknowledges the potential risk of Valley Fever during construction and proposes Best Management Practices (BMPs) alongside Mitigation Measures AQ-3 and AQ-4. However, data indicate that PM₁₀ levels exceed the thresholds established by ICAPCD even after the proposed mitigation measures are implemented (as shown in Table 7). The DEIR does not provide sufficient evidence to demonstrate that these mitigation strategies will effectively prevent significant impacts related to Valley Fever.

The DEIR asserts, "Accordingly, with implementation of Mitigation Measures AQ-1 through AQ-4 and Mitigation Measure AQ-6, the project would not exceed the ICAPCD's thresholds of significance during construction."¹⁹ It further details that Mitigation Measure AQ-3 mandates the application of additional dust suppression techniques, such as water or chemical stabilization, on all unpaved roads associated with construction activities. Mitigation Measure AQ-4 requires the development and implementation of a dust suppression management plan prior to any earthmoving activities, while Mitigation Measure AQ-6 imposes a speed limit of 15 miles per hour for all vehicles operating on dirt roads onsite²⁰

However, the mere assertion of these measures' implementation without presenting empirical evidence to support their efficacy is inadequate. Elevated PM₁₀ levels significantly exacerbate the

G A-12

¹⁹ Refer to Para. 2 on Pg. 3.4-17 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

²⁰ Ibid



risk of Valley Fever by enhancing the likelihood of inhalation of fine particulate matter that may harbor *Coccidioides immitis* spores. The disturbance of soil during construction activities can lead to increased airborne dust concentrations, further elevating the risk of exposure.

Table 3.4-10. Mitigated Project Construction-Generated Emissions (lbs/day)

Construction Year	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2025	9.90	83.42	466.38	1.12	2,238.7	226.62
2026	10.72	87.08	520.46	1.30	2,351.7	238.04
ICAPCD Significance Threshold	75	100	650	--	150	--
Exceed Threshold?	No	No	No	--	[Yes] ¹	--

Source: Appendix D of this EIR

Notes:

¹ Guidance provided in the ICAPCD CEQA Air Quality Handbook (2017) specifies that the approach of the CEQA analyses for construction particulate matter impacts should be qualitative as opposed to quantitative. As such, further analysis of construction-related fugitive particulate matter is provided.

Table 7: Mitigated Project Construction-Generated Emissions (lbs/day)

3.5 Inadequate Plan for Addressing Exposure to Valley Fever from Particulate Matter Emitted by the Site

The DEIR fails to present a comprehensive enforcement strategy for the proposed Dust Suppression Management Plan, thereby limiting opportunities for public review and critical examination. This omission raises significant concerns, as it reflects an impermissible deferral of analysis and the formulation of necessary mitigation measures, which contravenes the requirements of the California Environmental Quality Act (CEQA).

Furthermore, conventional dust control practices are insufficient for effectively preventing the transmission or management of Valley Fever^{21,22}, as they primarily target larger particulate matter (PM₁₀) rather than the much finer particles where *Coccidioides immitis* spores are located. The DEIR's claim that merely watering the soil will provide adequate on-site protection and mitigate the spread of these spores to nearby receptors is misguided. It overlooks the limitations of such measures and fails to account for the environmental dynamics involved in the dispersal of fine particulates.

²¹ See, e.g., Cummings and others, 2010, Pg. 509; Schneider et al., 1997, Pg. 908 ("Primary prevention strategies (e.g., dust control measures) for coccidioidomycosis in endemic areas have limited effectiveness.").

²² F. S. Fisher, M. W. Bultman, S. M. Johnson, D. Pappagianis, and E. Zaborsky, *Coccidioides* Niches and Habitat Parameters in the Southwestern United States: A Matter of Scale, *Annals of the New York Academy of Sciences*, 1111, 2007, 47–72. Exhibit 6.



G A-12
cont'd

G A-13

3.6 Failure to Suggest Further Mitigation Measures to Address the Impacts of Valley Fever Exposure from Particulate Matter Emitted by the Site

G A-14

The DEIR recognizes the substantial impact of Valley Fever associated with construction activities; however, it does not evaluate the necessity for supplementary mitigation measures to mitigate these impacts to a level that is considered less than significant.

The Applicants should implement the following additional measures to actively suppress the spread of Valley Fever during construction and related activities:

1. Valley Fever Dust Management Plan:

- o Develop a site-specific Dust Management Plan that includes a Site-Specific Work Plan (SWP) and a Sampling and Analysis Plan (SAP) to assess the presence of *Coccidioides immitis* in the soil before any ground-disturbing activities.
- o The SWP and SAP should outline the investigation goals, sample collection methods, sample quantity, and detection requirements. Results should be submitted to the Imperial County Air Pollution Control District (ICAPCD) for review and approval to ensure compliance.

2. Injury and Illness Prevention Program:

- o Incorporate specific safeguards into the Project's Injury and Illness Prevention Program (IIPP) to prevent the spread of Valley Fever.²³

3. Dust Control Measures:

- o Apply chemical dust stabilizers at least 24 hours before expected high-wind events.
- o Water all disturbed areas at least three times daily, increasing to four times if visible wind-driven fugitive dust is detected.
- o Provide workers, particularly those with a prior history of Valley Fever, with NIOSH-approved respirators.
- o Use half-face respirators equipped with N-95 filters for workers near surface disturbance activities.
- o During digging operations, workers should wear respirators with N-100 or P-100 filters.

²³ Cal. Code of Regulations, Tit. 8, §3203



- o Prohibit eating and smoking on the worksite and establish clean, separate eating areas with hand-washing facilities.
- o Avoid construction operations during high-wind conditions or dust storms.
- o Limit outdoor construction to essential activities during the fall, when Valley Fever risk is highest.

4. Preventing Spore Transport:

- o Thoroughly clean all equipment and vehicles before moving them offsite.
- o Ensure haul trucks are loaded with at least a 6-inch freeboard and apply water or use covers to prevent dust emissions.
- o Provide workers with daily coveralls and locker facilities to separate work and street clothing.
- o Train workers to recognize that spores can be transported offsite on equipment, clothing, or shoes.
- o Consider installing boot-washing stations and limit visitor access, particularly for those without proper training and respiratory protection.

5. Medical Surveillance:

- o Ensure employees have prompt access to medical care for work-related illnesses and symptoms related to Valley Fever.
- o Collaborate with medical professionals to develop protocols for the evaluation and treatment of symptomatic employees.
- o Contract with 1-2 local clinics and ensure providers are aware of Valley Fever risks in the area, improving the likelihood of prompt diagnosis and consistent medical care.
- o Implement a respirator clearance program that includes medical evaluations for new employees, annual re-evaluations, fit testing, and training.
- o In the event of a Valley Fever diagnosis, a physician must determine whether the employee should be removed from work, when they can return, and which activities they are cleared to perform.

These measures will help mitigate the risk of exposure and spread of Valley Fever during the Project's soil-disturbing activities, safeguarding both workers and the surrounding community.

G A-14
cont'd



4. Faulty Emissions Assessment For Ozone, Isopentane, Particulate Matter, Hydrogen Sulfide and GHGs

G A-15

4.1 Inadequate Analysis of Ozone Emissions

The Project, located in a non-attainment area for ozone, fails to evaluate compliance with the 2017 Imperial County Plan for the 2008 8-hour O₃ standard and does not adjust its analysis to meet the federal 8-hour NAAQS for ozone of 0.070 ppm.²⁴ The region already exceeds both the 1-hour and 8-hour ozone standards, as outlined in Table 8 and Table 9. Ozone is known to exacerbate respiratory conditions such as asthma and chronic bronchitis.²⁵ The formation of O₃ in the atmosphere from precursor pollutants like NO_x and ROG_s, which are commonly emitted from motor vehicles and industrial sources, represents a larger problem than addressed within the DEIR.²⁶ The DEIR underestimates the broader implications of these precursor emissions and fails to adequately address the Project's potential impact on local air quality. The increased VOC emissions associated with the Project could exacerbate the existing non-attainment status by contributing additional ozone precursors, hindering compliance with ozone standards and violating Rule 409-A. The omission of detailed emissions inventories and modeling undermines the credibility of the Project's emissions assessment, neglects necessary mitigation measures, and raises concerns about the Project's compliance with air quality management goals and its broader negative implications for community health. Without adequately quantifying these emissions, the DEIR's claims of minimal ozone impact are unfounded, casting doubt on its assessment of the Project's environmental impact in a region already struggling with ozone non-compliance.

²⁴ Refer to Para. 1 on Pg. of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024

²⁵ Refer to Table 5 on Pg. 2-2 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024

²⁶ Refer to Para. 1 & 4 on Pg. 2-4 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



Table 5. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Period	California Standard	Federal Standard
Ozone (O_3)	1 hour	0.20 ppm (180 $\mu g/m^3$)	Revoked
Ozone (O_3)	8 hour	0.070 ppm (137 $\mu g/m^3$)	0.07 ppm (137 $\mu g/m^3$)
Respirable Particulate Matter (PM_{10})	24 hour	50 $\mu g/m^3$	150 $\mu g/m^3$
PM_{10}	Annual	20 $\mu g/m^3$	Revoked
Fine Particulate Matter ($PM_{2.5}$)	24 hour	none	35 $\mu g/m^3$
$PM_{2.5}$	Annual	12 $\mu g/m^3$	12 $\mu g/m^3$
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)
CO	8 hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm (329 $\mu g/m^3$)	0.100 ppm (188 $\mu g/m^3$)
NO_2	Annual	0.030 ppm (57 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)
Lead (Pb)	30 Day Average	1.5 $\mu g/m^3$	—
Pb	Rolling three month period, evaluated over a three-year period	—	0.15 $\mu g/m^3$
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm (655 $\mu g/m^3$)	0.075 ppm (196 $\mu g/m^3$)
SO_2	3 hour	—	0.5 ppm (1,300 $\mu g/m^3$)
SO_2	24 hour	0.04 ppm (105 $\mu g/m^3$)	0.14 ppm (for certain areas)

Table 8 State and Federal Ambient Air Quality Standards

G A-15
cont'd

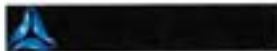


Table 8: Attainment Status – Imperial Valley Portion of the SSAB

Pollutant	California Designation	Federal Designation
Ozone (O_3)	Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Nonattainment	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Unclassified/Attainment
Nitrogen Dioxide (NO_2)	Attainment	Unclassified/Attainment
Lead (Pb)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO_2)	Attainment	Unclassified/Attainment
Hydrogen Sulfide (H_2S)	Unclassified	No Federal Standards
Sulfates	Attainment	No Federal Standards
Visibility Reducing Particles	Unclassified	No Federal Standards

Source: CARB 2023

Table 9: Attainment Status – Imperial Valley Portion of the SSAB

4.2 Failure to Address Hydrogen Sulfide Emissions

The Project's failure to address H_2S emissions from well operations is a significant oversight, as these emissions can exceed local sulfur compound limits, posing odor and health risks. H_2S , commonly released during well drilling, testing, and cleanout operations, is known for its "rotten egg" odor and potential health impacts, including respiratory irritation and other acute effects. Additionally, the Project predicts that the smell from H_2S can be present in the air for extended periods, ranging from several hours to 45 days per site.²⁷ Despite recognizing these risks, the Project does not propose monitoring, mitigation, or cumulative impact assessments, leaving sensitive receptors vulnerable and potentially leading to non-compliance with ICAPCD Rule 405. This lack of specific emissions control measures could result in localized air quality degradation, public nuisance complaints, and increased health risks for nearby communities, particularly during prolonged H_2S release periods. The absence of a robust monitoring plan underscores the inadequacy of the Project's air quality management strategies, compromising regional air quality and community health standards.

²⁷ Refer to Para. 2 on Pg. 4-14 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



The DEIR recognizes H₂S as a common issue associated with geothermal power plants, as H₂S is naturally present in geothermal fluids.²⁸ Upon release into the atmosphere, it emits a characteristic "rotten egg" odor and poses serious environmental and health hazards. Prolonged exposure to elevated concentrations of H₂S can lead to significant respiratory issues, eye irritation, and, in severe cases, neurological and cardiovascular damage.²⁹ The Project fails to provide quantified H₂S emissions from construction activities, noting only that odors could persist from several hours to up to 45 days at each well site.³⁰ It also acknowledges that H₂S emissions could exceed the ICAPCD sulfur compound standard (Rule 405) of 0.2 percent by volume.³¹

G A-16
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Despite the recognition of potential H₂S emissions surpassing the ICAPCD standards, the DEIR indicates no intent to monitor current H₂S levels for compliance. Additionally, the Project site is within an area with 17 existing geothermal plants, all of which contribute to the cumulatively significant H₂S emissions that could affect nearby receptors, including residents and workers.³² These nearby receptors are vulnerable to H₂S exposure, especially in downwind conditions.³³ However, despite acknowledging these risks, the Project outlines no specific plans to mitigate or monitor H₂S emissions, raising concerns about public health and regulatory compliance.

²⁸ Refer to Para. 3 on Pg. 3.4-23 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

²⁹ "Hydrogen Sulfide." Centers for Disease Control and Prevention, October 21, 2014.

<https://www.cdc.gov/TSP/MMG/MMG>

³⁰ Refer to Para. 2 on Pg. 4-14 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024

³¹ Ibid

³² S. Olafsdottir, et al. "Spatial distribution of hydrogen sulfide from two geothermal power plants in complex terrain." Atmospheric Environment, January 2014.

<https://www.sciencedirect.com/science/article/abs/pii/S1352231013007668>

³³ L.C. Aguilar-Dodier a, a, b, c, d, e, 1, et al. "Spatial and Temporal Evaluation of H₂S, SO₂ and NH₃ Concentrations near Cerro Prieto Geothermal Power Plant in Mexico." Atmospheric Pollution Research, September 28, 2019.

<https://www.sciencedirect.com/science/article/abs/pii/S1309104219304659#:~:text=Power%20generation%20is%20associated%20with,has%20health%20and%20environmental%20effects>



Pollutant	Averaging Period	California Standard	Federal Standard
Hydrogen Sulfide (H ₂ S)	1 Hour	0.03 ppm (42 µg/m ³)	—
Sulfates	24 hour	25 µg/m ³	—
Vinyl Chloride	24 hour	0.010 ppm (26 µg/m ³)	—
Visibility-Reducing Particles	8 hour	Extinction coefficient of 0.23 per kilometer (visibility of ten miles or more due to particles when relative humidity is less than 70 percent)	—

Notes: ppm = parts per million; ppb = parts per billion; mg/m³ = milligram per cubic meter; µg/m³ = micrograms per cubic meter; "—" = no standard.

Table 4: State and Federal Ambient Air Quality Standards

G A-16
cont'd

4.3 Inadequate Analysis of Particulate Matter Emissions

G A-17

The Project exhibits a critically flawed emissions assessment concerning particulate matter due to the exclusion of essential sources from its analysis. This deficiency is particularly alarming given that the site is situated in an area already designated as non-attainment for PM levels (Table 10). Exposure to PM_{2.5} and PM₁₀ is associated with heightened risks of long-term health complications, including chronic respiratory diseases, cancer, and increased mortality rates. Additional health impacts include exacerbated respiratory stress, diminished lung function, structural changes in lung tissue, and compromised respiratory defense mechanisms.³⁴

The DEIR outlines state and federal ambient air quality standards for PM_{2.5}³⁵ but fails to quantify PM_{2.5} emissions or assess whether the construction and operational emissions associated with the Project would lead to or contribute to a violation of these ambient air quality standards, as

³⁴ Refer to Section 2.1.3 on Pg. 2-4 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024

³⁵ Refer to Table 6 on Pg. 2-3 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



mandated by CEQA.³⁶ Moreover, the DEIR fails to adequately determine the significance of Project construction emissions; it does not compare these emissions to any thresholds of significance, nor does it model PM_{2.5} concentrations in ambient air to ascertain whether ambient air quality standards for PM_{2.5} would be exceeded. For the assessment of Project operational emissions, the Draft EIR relies on the ICAPCD's Rule 207 thresholds for offset requirements, which notably do not include a significance threshold for PM_{2.5} (Table 11 and Table 12). However, the absence of a significance threshold does not relieve the County from the obligation to conduct a site-specific analysis of air quality impacts. This oversight further undermines the integrity of the emissions assessment and raises significant concerns about potential health risks associated with particulate matter exposure.

G A-17
cont'd

Table 6: Attainment Status – Imperial Valley Portion of the SSAB

Pollutant	California Designation	Federal Designation
Ozone (O ₃)	Nonattainment	Nonattainment
Respirable Particulate Matter (PM ₁₀)	Nonattainment	Attainment
Fine Particulate Matter (PM _{2.5})	Attainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Unclassified/Attainment
Nitrogen Dioxide (NO ₂)	Attainment	Unclassified/Attainment
Lead (Pb)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO ₂)	Attainment	Unclassified/Attainment
Hydrogen Sulfide (H ₂ S)	Unclassified	No Federal Standards
Sulfates	Attainment	No Federal Standards
Visibility Reducing Particles	Unclassified	No Federal Standards

Source: CARB 2023

Table 10: Attainment Status – Imperial Valley Portion of the SSAB

Table 10: ICAPCD Daily Operational Emission Thresholds

Pollutant	Tier I	Tier II
NO _x and Reactive Organic Gases (ROG)	Less than 137 lbs/day	Greater than 137 lbs/day
PM ₁₀ and SO _x	Less than 150 lbs/day	Greater than 150 lbs/day
CO and PM _{2.5}	Less than 550 lbs/day	Greater than 550 lbs/day

Source: ICAPCD 2017

Table 11: ICAPCD Daily Operational Emission Thresholds

³⁶ Refer to Para. 1 on Pg. 4-8 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



Table 12. Unmitigated Project Construction-Generated Emissions

Construction Year	Pollutant (lbs/day) ¹					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2025	27.52	246.06	268.98	0.80	2,243.9	221.29
2026	29.95	272.17	307.92	0.84	2,356.6	242.47
Threshold	75	300	550	—	150	—
Exceed Threshold?	No	Yes	No	—	(Yes) ²	—

Source: CalREM Results in Attachment A

G A-17
 cont'd

Table 12: Unmitigated Project Construction-Generated Emissions

The Project's evaluation of PM emissions during the site preparation phase is inadequate and fails to address key sources that can significantly affect local air quality. Given that the construction phase is projected to last 2 months,³⁷ various activities will inherently elevate PM levels. However, the current emissions modeling fails to account for major contributors to PM, which undermines the credibility of the air quality impact analysis. Potential emission sources from site preparation that should be considered include:

- Dust generation from equipment movement and site setup.
- Dust from demolition activities and clearing debris.
- Emissions from soil disturbance, grading, and heavy machinery operations.
- Dust emissions from fine grading, excavation, and utility installations.

However, the Project's modeling analysis disregards these sources, inaccurately labeling key contributors like "dust from material movement" as zero (Table 13). This oversight is problematic because these site preparation activities can emit substantial amounts of PM, exacerbating localized air pollution and posing health risks to nearby communities. With the proper emissions inputs, the estimated emissions would be much more significant. Comprehensive assessment and accurate modeling of these emissions are essential to ensure effective mitigation and compliance with air quality standards.

³⁷ DEIR, p. 2-21.



Criteria Pollutants (b/daily for daily, w/yr for annual) and GHGs (b/daily for daily, M/yr for annual)															
	CO ₂ e	PM _{2.5}	PM ₁₀	O ₃	SO ₂	NO _x	VOCs	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	CO ₂	CH ₄	N ₂ O
Coke	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Daily Summe (Mn)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Daily Winte (Mn)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Offsite E Equati on	3.87	3.75	17.9	21.3	0.08	0.94	--	0.94	0.17	--	0.17	--	0.307	0.307	0.08
15-16															
Coquest v2 Detailed Report, 7/16/2024															
Dust From Material Movement	--	--	--	--	--	--	0.00	0.00	--	0.00	0.00	--	--	--	--
Onsite Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00
Average Daily	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Offsite E Equati on	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	--	0.00	--	0.00	0.00	0.00
Dust From Material Movement	--	--	--	--	--	--	0.00	0.00	--	0.00	0.00	--	--	--	--
Onsite Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00
Average Daily	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Offsite E Equati on	0.12	0.10	0.10	0.11	<0.005	0.03	--	0.03	0.03	--	0.03	--	0.00	0.00	0.00
Dust From Material Movement	--	--	--	--	--	--	0.00	0.00	--	0.00	0.00	--	--	--	--
Onsite Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00
Offsite E Equati on	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Daily Summe (Mn)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Daily Winte (Mn)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Offsite E Equati on	0.19	0.17	0.21	0.22	0.00	0.14	--	0.14	0.14	--	0.14	--	0.04	0.04	0.00

Table 13: Site Preparation (2025) Unmitigated

G A-17
cont'd

4.3(a) Particulate Matter Emissions Trigger BACT

The Project inadequately addresses PM emissions resulting from road dust and wind erosion associated with unpaved areas, sand separators, and precursors such as ammonia, despite acknowledging the potential for significant emissions from these sources. The DEIR lacks a comprehensive description of the sand separators and their potential associated emissions, nor

GA-18



does it provide sufficient justification for the emission factors utilized to estimate emissions from these sources. The construction phase will involve grading approximately 125.27 acres of land over a 10-month period, which is likely to generate substantial PM emissions.³⁸ Nonetheless, the DEIR fails to incorporate these additional sources of PM into its emissions assessment (all the site preparation PM_{2.5} emissions are shown as 0 in CalEEMOD files). As seen in section 3.1 of Appendix D, Attachment A, emissions from onsite truck activity and dust generated by material movement were listed as 0 for all emission categories (Table 13). Onsite vehicles encompass various operational units, including water trucks for dust suppression, flatbed trucks for transporting materials, service vehicles for maintenance and repairs, and dump trucks for hauling excavated materials and aggregates. The site preparation and construction phases will necessitate the use of these vehicles and using a baseline value of zero for emissions can lead to critical errors in the Project's emissions assessment and further complicate the calculated concentration.

G A-18
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Furthermore, the DEIR neglects to account for ammonia emissions, which are crucial precursors to PM formation. This omission leads to a fundamentally flawed quantitative analysis of PM emissions, thereby compromising the integrity of the emissions assessment and the efficacy of proposed mitigation measures.

The omission of key PM emission sources in the Project triggers the need for Best Available Control Technology (BACT) due to the significant potential for PM emissions exceeding regulatory thresholds. BACT is required when a source has the potential to emit pollutants at levels that could significantly impact air quality, particularly in non-attainment areas.

Comprehensive assessment and accurate modeling of these emissions are essential to ensure effective mitigation and compliance with air quality standards. The omission of critical PM_{2.5} emissions, particularly from road dust, wind erosion, and on-site diesel truck emissions, triggers the requirement for BACT.

In the DEIR, emissions from site preparation activities, including those from trucks, excavators, and rollers, have been inaccurately assessed as zero. Furthermore, the total PM_{2.5} emissions from the emergency generator are reported as 0.02 lbs/day, while the fire pump is recorded as <0.005 lbs/day, both of which are claimed to be mitigated 100%. These figures are implausibly low for a geothermal plant of this scale, indicating that daily construction activities would produce significantly higher emissions.

The DEIR also states that PM_{2.5} emissions from Construction Vehicle Control Strategies would reduce emissions by 55%. For example:

- Watering unpaved roads twice daily is claimed to achieve a 55% reduction in both PM10 and PM2.5.

³⁸ Refer to Table 3.12-1 on Pg. of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024



- Limiting vehicle speeds on unpaved roads to 25 mph is estimated to reduce emissions by 44%.

In conclusion, the DEIR must comprehensively include PM_{2.5} emissions from various significant sources that have been overlooked. These sources encompass dust generation from equipment movement and site setup, dust from demolition activities and debris clearance—which the DEIR currently assesses as zero—emissions resulting from soil disturbance, grading, and heavy machinery operations, as well as dust emissions from fine grading, excavation, and utility installations, which are similarly recorded as zero in DEIR CalEEMOD files.

These omissions lead to an overestimation of emissions reductions and fail to account for the realistic contributions from construction earthmoving activities, which cannot justifiably be deemed negligible. If these emissions were accurately accounted for, the projected PM_{2.5} emissions for 2025 alone would likely exceed 550 lbs/day. The Morton Bay Geothermal Project (MBGP) Preliminary Staff Assessment (PSA) has been referenced to create a more accurate emissions profile.³⁹ The MBGP is a similar type of geothermal project with emission values derived based on the assumption of onsite construction emissions occurring over a 20-hour duration.⁴⁰ The following table presents a more realistic input of emissions for onsite vehicles and dust generated from material movement, illustrating the shortcomings of relying on a zero baseline. These values were extracted from the source emissions summary on a monthly basis and converted to daily figures, using the highest emission output when a range was provided over several months. This comparative analysis underscores the importance of incorporating a comprehensive range of emissions sources to establish a robust and scientifically valid modeling framework.

Emission Type	Morton Bay Onsite Construction Vehicles (lbs/day)	Dogwood Onsite Construction Vehicles (lbs/day)	Morton Bay Onsite Construction Vehicles Idling (lbs/day)	Dogwood Onsite Construction Vehicles Idling (lbs/day)	Morton Bay Onsite Fugitive Dust (lbs/day)	Dogwood Onsite Fugitive Dust (lbs/day)
CO	0.059	0	0.0433	0	-	-
VOC	0.002	0	0.00267	0	-	-
NO _x	0.00367	0	0.044	0	-	-
CH ₄	1.84*10 ⁻⁷	0	1.50*10 ⁻⁸	0	-	-
PM ₁₀	0.00033	0	-	-	4.449	0
PM _{2.5}	0.5017	0	-	-	0.2883	0

³⁹ Morton Bay Geothermal Project Preliminary Staff Assessment, Docket Number: 23-AFC-01 (TN #: 257470)
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-01>

⁴⁰ Refer to Morton Bay Geothermal Project Air Quality Construction Emissions Spreadsheet, Source Emission Summary, Docket Number: 23-AFC-01 (TN #: 253226)



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Table 14: Comparison of Realistic Construction Emissions: Morton Bay Project vs. Dogwood Project

To contextualize the data in the previous table, a brief analysis is shown below. The Project is projected to span 34 months, with the site preparation phase lasting 2 months. Assuming a 30-day month, this equates to 21 working days per month to simulate a standard 5-day work week. Consequently, the total duration for site preparation is calculated to be 42 working days.

Referring to Table 14, the estimated PM_{2.5} emissions from fugitive dust are projected at 0.2883 lbs/day; therefore, the anticipated emissions during the site preparation phase would be approximately 12.11 lbs of PM_{2.5} solely from fugitive dust.

This calculation can be verified as follows:

Total Site Preparation Duration:

$$2 \text{ months} \times 21 \text{ working } \frac{\text{days}}{\text{month}} = 42 \text{ working days}$$

Total PM_{2.5} Emissions:

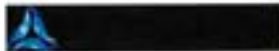
$$42 \text{ days} \times 0.2883 \frac{\text{lbs}}{\text{day}} \approx 12.11 \text{ lbs}$$

Thus, the emissions estimate for the site preparation phase indicates approximately 12.11 lbs of PM_{2.5} generated from fugitive dust, which is not accounted for in the Project's initial analysis.

When considering the overall PM_{2.5} emissions—including those from site preparation, erosion, and on-site truck operations—the total would likely be more than three times the current emissions, approaching nearly 800 lbs./day for both 2025 and 2026. This significant increase necessitates the implementation of Best BACT management for PM_{2.5} to mitigate the potential adverse impacts on air quality and public health.

In summary, the failure to adequately assess PM_{2.5} emissions from key sources not only undermines the Project's compliance with air quality standards but also raises significant public health concerns, necessitating stringent emissions control measures to ensure adherence to regulatory requirements. The reliance on a zero-emissions baseline for crucial contributors skews the Project's concentration estimates, leading to a significant underestimation of actual emissions and inaccurate concentration calculations.

G A-18
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4.4 Incorrect Representation of Purging Emissions of Isopentane

The Project's fugitive emission calculations rely on emission factors derived from the worst-case quarterly emissions data from 2019 and 2020. A reduction factor of 50% was applied based on assumptions about fewer leak sites and equipment failures, attributed to the use of a reduced number of components such as seals, flanges, pumps, and valves.⁴¹ This approach yielded a purge emission factor of 1.45×10^5 pounds per day per 1000 gallons (lbs/day/1,000 gal), as seen in Table 14. However, this analysis is critically flawed due to inaccuracies in the assessment of equipment components and purge systems, leading to a significant underestimation of emissions.

A comprehensive analysis of the purge systems should include detailed quantification of all equipment, and parts involved. The proposed OEC and Isopentane Thermal Liquid Unit (ITLU) have a combined isopentane volume of 82,140 gallons, while the two isopentane storage tanks add an additional 40,000 gallons. The Project has a cumulative on-site isopentane volume of 122,140 gallons.⁴² Given the vapor recovery units (VRU) are 95% efficient, it is expected that 5% of the isopentane vapors would be emitted. Based on the total volume of isopentane, the expected emissions from the purge systems should be approximately 17 gallons per day (i.e. 112 lbs/day), calculated as follows:

$$\frac{122,140 \text{ gallons/year} \times 0.05}{365 \text{ days/year}} = 16.73 \text{ gallons/day}$$

This calculation suggests that the reported emissions are significantly underestimated (DEIR shows that emissions are below 75 lbs/day and do not trigger BACT). Purging emissions alone trigger BACT for isopentane emissions management. The DEIR does not provide a definitive count or assessment of the equipment, and parts used, further compromising the quality and accuracy of the quantitative analysis. The emission factors currently used lack empirical support and are likely misrepresenting the true scale of emissions. A comprehensive evaluation, including precise quantification of all emission sources and contributing components is essential to ensure the emission estimates and compliance with environmental standards.

G A-19

⁴¹ Refer to Para. 1 on Pg. 4-3 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024

⁴² Refer to Para. 2 on Pg. 4-3-4 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



Table 8. Project-Specific Isopentane Emission Factors

Emission Category	Site-Specific Emission Factor Based on 2019 and 2020 Emissions (lb/day/1,000 gallons)	Emissions Reduction Due to Reduced Complexity	Project-Specific Emission Factor
Maintenance	0.45	50%	0.23
Purging	2.9×10^{-5}	0%	3.45×10^{-5}
Fugitive	1.20	50%	0.60

Source: ICAPCD ATC 42217A-6 (September 28, 2021)

Table 14: Project-Specific Isopentane Emission Factors

G A-19
cont'd

4.5 Unaccounted Isopentane Emissions from Accidental Releases

The DEIR neglects to consider the potential for accidental releases of isopentane as a ROG, which is a precursor to ozone formation. The Project is projected to maintain a total volume of 122,410 gallons of isopentane on-site. Accidental releases may occur via various mechanisms, including equipment malfunctions, human error, or external factors such as natural disasters. Such incidents could result in the release of substantial quantities of isopentane into the atmosphere, thereby intensifying ozone formation and its associated adverse health effects.

G A-20

The Clean Air Act (CAA) Section 112(r)(1) General Duty Clause (GDC) establishes regulatory requirements for all stationary sources that manage regulated substances or other extremely hazardous substances, regardless of the quantity involved.^{43,44} Isopentane is recognized as a regulated substance under California law due to its flammability and potential health risks. The GDC requires that owners and operators of such facilities implement all reasonable measures to prevent accidental releases and mitigate their impacts should they occur.

The Imperial County California Accidental Release Prevention (CalARP) Program focuses on preventing accidental hazardous chemical releases from stationary sources, which pose risks to communities.⁴⁵ Facilities handling substances like ammonia, sulfur dioxide, and butane must submit Risk Management Plans (RMPs) detailing safety measures and past incidents. The Project's failure to address accidental releases in its report compromises the DEIR's assessment by neglecting the cumulative impact of isopentane emissions on local air quality and public health, leaving critical risks unassessed.

⁴³ EPA, Accessed September 26, 2024, <https://www.epa.gov/enforcement/national-enforcement-and-compliance-initiative-reducing-risks-accidental-releases>

⁴⁴ Clean Air Act Section 114 Information Collection request ... Accessed September 27, 2024.

https://www.epa.gov/system/files/documents/2022-01/chemical-manufacturing-section-114_enclosure-1-6_0.pdf

⁴⁵ Imperial CUPA California Accidental Release Prevention Program | Department of Toxic Substances Control



The exclusion of these potential emissions from the DEIR significantly undermines the thoroughness of the environmental assessment, as it fails to consider the cumulative impacts of isopentane releases in relation to local air quality standards. Additionally, this oversight has broader implications for public health, as it does not provide a comprehensive risk assessment related to isopentane emissions.

G A-20
cont'd

4.6 Inadequate Analysis of ROG/Isopentane Emissions

The DEIR presents multiple shortcomings in identifying and analyzing the sources and impacts of Reactive Organic Gases (ROGs) emissions associated with the Project. The anticipated increased in emissions are linked to isopentane releases and emissions resulting from the use of landscaping equipment during routine maintenance activities.⁴⁶ However, key infrastructure components such as the purge system, heat exchangers, well heads, vapor recovery systems, and underground piping are not considered despite being substantial sources of fugitive ROG emissions. The inadequacy of the DEIR in addressing these sources, along with emissions generated from well drilling and operational activities, leads to an unsupported ROG emission estimate of 107 pounds per day (lbs/day). In fact, the regulatory threshold of 137 lbs/day is exceeded when all emission sources are duly considered.

G A-21

Table 15. Unmitigated Project Operational Emissions

Emission Source	Pollutant (lb/day) ¹					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area ²	38.56	1.98	234.91	0.01	0.42	0.32
Mobile ³	0.03	0.02	0.26	<0.005	6.87	0.69
Energy ⁴	0.00	0.00	0.00	0.00	0.00	0.00
Stationary ⁵	0.12	0.34	0.31	<0.005	0.02	0.02
Fugitive Isopentane ⁶	67.77	0.00	0.00	0.00	0.00	0.00
TOTAL	106.48	2.34	235.16	0.02	7.31	1.03
Threshold	137	137	550	150	150	550
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod Results in Attachment A

Table 15: Unmitigated Project Operational Emissions

The DEIR's emission calculations are unsupported due to a significant underestimation of ROG emissions resulting from equipment leaks, which are typically underestimated by factors ranging from three to twenty when relying on conventional emission factors. This discrepancy has been corroborated by studies conducted by the U.S. Environmental Protection Agency (USEPA) and research findings from Sweden.⁴⁷ This underestimation is reflected in the DEIR's emission

⁴⁶ Refer to Para. 3 on Pg. 4-9 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024

⁴⁷ U.S. EPA, VOC Fugitive Losses: New Monitors, Emissions Losses, and Potential Policy Gaps, 2006



calculations. This underestimation has profound implications for the overall emissions inventory presented in the DEIR.

When adjusted by a factor of three, the minimum range of underestimation identified in the studies suggests that fugitive isopentane emissions would approximate 203.31 lbs/day, significantly exceeding the established threshold. Furthermore, the Project's isopentane emissions may be further elevated due to the exclusion of leakage from critical components as previously noted. This omission, coupled with flawed calculations, poses a serious risk to the integrity of the Project's comprehensive assessment.

Further when 17 gallons/day (equivalent to 112 lbs/day) of isopentane (from purging emissions) is added, this would result in 315.31 lbs/day of isopentane emissions. This is higher than the standard threshold of 75 lbs/day and triggers BACT management of isopentane emissions. ICAPCD Rule 207(C)(1)(c) requires that BACT shall be applied for each pollutant(s) for which a threshold is exceeded. Here, the ROG significance threshold utilized in the DEIR is 75 pounds per day.⁴⁸ Isopentane emissions are therefore significant and must be mitigated.

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GA-21
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4.7 Undocumented Isopentane Deliveries

The DEIR fails to adequately address the frequency and volume of isopentane deliveries necessary to maintain acceptable operational levels, which raises concerns regarding potential emissions that remain unassessed. This oversight not only introduces uncertainties regarding the actual emissions generated from these delivery activities but also amplifies the inaccuracies inherent in the overall emissions assessment. The unassessed isopentane emissions could result in higher-than-anticipated levels of VOCs in the atmosphere, further contributing to the formation of ground-level ozone and other secondary pollutants. Without a clear understanding of how often isopentane must be delivered and the volumes required to sustain operations, there is a high likelihood that associated emissions remain unquantified, leaving a critical gap in the Project's environmental analysis.

The DEIR contends that the temporary nature of construction activities, including the use of on-site heavy-duty equipment, material deliveries, and debris removal, warrants the classification of associated impacts as negligible.⁴⁹ This rationale is used to justify the omission of delivery and transportation emissions associated with isopentane handling. However, as isopentane circulates within the system, it will inevitably be lost through fugitive emissions and other release

GA-22

International Workshop (Oct. 25-27, 2006), at 23. See also results of Swedish studies in this same report at Pg. 213.

⁴⁸ DEIR at 3.4-12.

⁴⁹ Refer to Para. 3 on Pg. 4-14-15 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024.



mechanisms. Over time, these losses will be contaminated with air and water, necessitating the periodic replacement of isopentane to maintain operational levels.

The DEIR does not provide a loss rate, which is critical for accurately estimating the frequency of isopentane replenishment required to maintain the total site volume of 122,140 gallons. A properly calculated loss rate would allow for a more precise determination of how frequently isopentane deliveries would be needed to sustain the minimum operational volume.

Replacing the lost isopentane will necessitate regular deliveries involving transport vehicles, which operate as on-site heavy-duty equipment. The DEIR fails to quantify the frequency of these deliveries and their associated emissions, leading to an unsupported assumption that delivery and transportation emissions are negligible. This omission significantly undermines the environmental assessment's validity, as it overlooks the emissions and potentially significant environmental impacts associated with ongoing isopentane replenishment. Comprehensive quantification of these emissions is essential for an accurate and realistic evaluation of the project's overall environmental impact.

Overall, the failure to comprehensively identify and quantify ROG emissions undermines the integrity of the emissions assessment and poses significant risks to air quality and public health in the surrounding region.

G A-22
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4.8 Incorrect and unclear projection of Greenhouse Gas Emissions

DEIR states that an estimated 0.375 pounds of SF₆ would be released annually. Using the GWP for SF₆ of 23,300 as summarized in Table 7 (above), annual emissions of 0.375 pounds of SF₆ gas would be equivalent to approximately 3.96 metric tons carbon dioxide equivalent (MTCO₂e) as shown in Table 16. The GWP used here is outdated and needs to be updated to calculate correct SF₆ leaks.

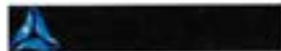
Correction of SF₆ Global Warming Potential (GWP) -The assessment inaccurately cites the GWP for sulfur hexafluoride (SF₆) as 23,300. The correct GWP value is 23,900¹⁰. This discrepancy is critical as it impacts the estimated annual emissions attributed to SF₆.

Revised SF₆ Emissions Calculation: Given that three circuit breakers will utilize SF₆, with an estimated total of 75 pounds of SF₆ gas, the calculation of emissions should be as follows:

Total SF₆ Required: 75 pounds

Annual Leakage Rate: 0.5%

¹⁰ <https://ww2.arb.ca.gov/our-work/programs/sulfur-hexafluoride-non-electric-non-semiconductor-sources/about#:~:text=Research%20Division,About,Intergovernmental%20Panel%20on%20Climate%20Change.>



G A-23

Annual Leakage Calculation:

Annual Leakage = Total SF6 × Leakage Rate

= 75 pounds × 0.005

= 0.375 pounds/year

Conversion of Pounds to Metric Tons:

Annual Leakage in MT = 0.375 pounds / 2204.62 pounds/MT

= 0.000170 MT

Annual GHG Emissions in MTCO2e:

Using the corrected GWP of 23,900:

Annual Emissions (MTCO2e) = Annual Leakage in MT × GWP

= 0.000170 MT × 23,900

= 4.06 MTCO2e

Discrepancies in Emissions from CalEEMod Modeling

The assessment states that "additional sources of GHG emissions associated with operations include those related to landscape equipment use for routine maintenance work, water use, and operation of auxiliary stationary equipment (i.e., emergency diesel generator and emergency diesel fire pump)," which were estimated to contribute approximately 97 MTCO2e per year. However, upon reviewing the CalEEMod files, it appears that:

- **Lack of Clarity:** The CalEEMod outputs do not substantiate the claim of 97 MTCO2e for operational emissions. The files should provide detailed documentation of all assumptions and calculations related to these operational activities.
- **Construction Emissions Modeling:** The report mentions that construction emissions would result in a maximum of 17,592 MTCO2e per year. However, the methodology and specific calculations behind this figure are unclear and inadequately documented in the modeling outputs.

G A-23
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Table 17. Proposed Project Amortized Annual GHG Emissions

Emission Source	GHG (MT CO ₂ e/year)
Construction (amortized over 30-year life of Project)	839.93
Operations (i.e., mobile, area, water)	97
Leaking SF ₆	1.96
TOTAL	940.89

G A-23
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Table 16: Proposed Project Amortized Annual GHG Emissions

4.9 Unaddressed Ammonia Emissions

The DEIR fails to acknowledge or address ammonia emissions related to the Project, which is a significant oversight given the relevance of NH₃ as a precursor to secondary particulate matter formation. NH₃ is another important atmospheric pollutant that can be emitted from geothermal plants. Airborne NH₃ neutralizes acids coming from oxides of sulfur and nitrogen to produce aerosols and smog.⁵¹ Geothermal plants typically emit NH₃ during well drilling, steam separation, and venting processes due to its [NH₃] presence in geothermal fluids. This omission highlights a critical gap in the emissions assessment, as NH₃ emissions from geothermal operations can interact with other pollutants, contributing to air quality degradation and potential health impacts. The lack of consideration for NH₃ within the emissions inventory and modeling undermines the reliability of the DEIR's conclusions on air quality and public health protections.

G A-24

4.10 Overlooked Analysis of Nitrogen Oxides Emissions from Drilling Activities

The DEIR reveals that NO_x emissions will exceed established regulatory thresholds, specifically during construction (Table 17 and Table 18). The drilling process, lasting four months, involves heavy machinery such as drilling rigs and generators, which operate on fossil fuels. The combustion process of the fossil fuels directly releases NO_x into the atmosphere and contribute to air quality degradation. The project's failure to accurately quantify these emissions not only undermines compliance efforts but also compromises the integrity of environmental assessments. This oversight poses a serious risk to public health, particularly for vulnerable

G A-25

⁵¹ L.C. Aguilar-Dodier a, a, b, c, d, e, 1, et al. "Spatial and Temporal Evaluation of H₂S, SO₂ and NH₃ Concentrations near Cerro Prieto Geothermal Power Plant in Mexico." Atmospheric Pollution Research, September 28, 2019. <https://www.sciencedirect.com/science/article/abs/pii/S1309104219304659#:~:text=Power%20generation%20is%20associated%20with,has%20health%20and%20environmental%20effects.>



populations living near the drilling site, who may experience worsened respiratory conditions and other health issues.

Table 11. ICAPCD Daily Construction Emission Thresholds

Pollutant	Threshold (lbs/day)
PM ₁₀	150
ROG	75
NO _x	100
CO	550

Source: ICAPCD 2017

Table 17: ICAPCD Daily Construction Emission Threshold

Table 12. Unmitigated Project Construction-Generated Emissions

Construction Year	Pollutant (lbs/day) ¹					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2025	27.52	246.06	368.98	0.80	2,243.9	231.29
2026	29.55	272.17	307.92	0.84	2,356.6	242.47
Threshold	75	100	550	—	150	—
Exceed Threshold?	No	Yes	No	—	[Yes] ²	—

Source: CalEEMod Results in Attachment A

Notes:

¹ Emissions are representative of the maximum daily output (i.e., maximum of summer or winter results).

² Guidance provided in the ICAPCD CEQA Air Quality Handbook (2017) specifies that the approach of the CEQA analysis for construction particulate matter impacts should be qualitative as opposed to quantitative. As such, further analysis of construction-related fugitive particulate matter is provided below.

Table 18: Unmitigated Project Construction-Generated Emissions

5. Unaccounted and Underestimated Health Risks

5.1 Failure to Provide Evaluation of Ozone Compliance and Associated Health Risks

The DEIR fails to assess the potential impact of volatile organic compound (VOC) emissions, particularly from isopentane, which is commonly used in geothermal power plants. Isopentane, a VOC, can contribute to the formation of ground-level ozone through photochemical reactions when exposed to sunlight. This omission raises serious concerns about the project's potential to worsen existing air quality violations or contribute to new non-compliance with federal ozone



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standards, particularly in regions like the Imperial Valley that already struggle with air quality issues.

Health risks associated with elevated ozone levels are well-documented and can have severe implications for public health. Short-term exposure to high ozone concentrations can result in respiratory problems, including exacerbation of asthma, reduced lung function, and increased susceptibility to respiratory infections. Long-term exposure can lead to chronic respiratory diseases, cardiovascular issues, and detrimental effects on lung development in children.⁵²

G A-26
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Additionally, the presence of ozone can adversely affect sensitive populations, including the elderly, children, and individuals with pre-existing health conditions. By failing to adequately assess the implications of VOC emissions and their contribution to ozone formation, the DEIR overlooks critical public health risks associated with air quality degradation in the Imperial Valley region. This omission warrants a more thorough evaluation to ensure that potential health impacts are fully understood and addressed.

5.2 Omission of Particulate Matter Health Impacts

The DEIR fails to adequately address emissions of particulate matter from several significant sources and does not include relevant data in its analysis. Unpaved areas, such as construction sites and agricultural lands, are particularly prone to wind erosion and vehicular activity, which can release fine particulate matter (PM₁₀ and PM_{2.5}) into the atmosphere. Additionally, sand separators, used to filter sand from geothermal fluid, can generate particulate emissions during the handling and transport of sand, further contributing to air quality concerns.

G A-27

Particulate matter, particularly PM₁₀ and PM_{2.5}, poses well-documented health risks. These fine particles can penetrate deep into the respiratory system, leading to respiratory irritation, exacerbation of asthma, and chronic respiratory diseases such as COPD. Long-term exposure has been linked to cardiovascular issues and even premature mortality. Vulnerable populations, including children, the elderly, and those with pre-existing conditions, face heightened risks, especially in areas already struggling with poor air quality, such as the Imperial Valley.⁵³

The DEIR does not even provide modeling to estimate the potential emissions from unpaved areas or sand separators, which significantly undermines the report's air quality impact assessment. This omission prevents a proper evaluation of how these emissions could contribute to regulatory non-compliance and ignores the need for adequate protective measures. Considering the public health risks posed by elevated levels of particulate matter, a

⁵² EPA. Accessed September 19, 2024. <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>

⁵³ EPA. Accessed September 19, 2024. <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>



comprehensive reevaluation—including proper emissions modeling—is necessary to protect vulnerable populations and ensure the project meets environmental regulations.

The DEIR fails to adequately assess the significance of PM_{2.5} emissions, despite claiming that implementation of Mitigation Measures AQ-1 through AQ-5 would prevent exceedances of ICAPCD thresholds.³⁴ This lack of a detailed evaluation is particularly concerning, as the report does not provide any air quality modeling to substantiate these claims. The omission of such critical modeling prevents a comprehensive understanding of the potential emissions and their impacts on air quality. This lack of evaluation also poses significant public health concerns, as PM_{2.5} can penetrate deep into the lungs and bloodstream, leading to serious respiratory and cardiovascular issues. In regions like the Imperial Valley, already in non-attainment for air quality standards, this omission is particularly troubling. The failure to evaluate cumulative PM_{2.5} impacts risks exacerbating existing health disparities in these vulnerable communities.

G A-27
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A rigorous analysis, including proper air quality modeling, is essential to ensure that the proposed mitigation measures are effective, and that public health is adequately protected. The current lack of data and modeling in the DEIR raises serious concerns about the potential for underestimating the true impact of PM_{2.5} emissions.

5.4 Underestimated Isopentane Health Risks due to Incorrect Meteorological Data

The DEIR underestimates health risks from hazardous air pollutants due to inaccuracies in both emission data and meteorological inputs, leading to flawed health impact assessments.

A key issue is the reliance on meteorological data from Imperial City, which is 11.8 miles away from the project site, instead of closer stations in El Centro or Calexico, located just 5.8 and 5.1 miles away, respectively. As shown in Table 19, the Project utilizes average meteorological data, including a wind speed of 1.5 m/s, an ambient temperature of 77°F, and a wind direction from the west. However, these parameters are not accurate for the Project site. The wind direction is based on wind rose plots from the Imperial County meteorological station, which is located a significant distance from the Project site, resulting in data that is not representative. The local wind patterns at the site are expected to be oriented towards the southeast rather than the west. Consequently, the ALOHA modeling employs incorrect meteorological inputs, including wind direction, wind speed, and temperature, that do not reflect the Project's specific conditions. As a result, the modeling outputs inaccurate isopentane emission concentrations and associated health impact assessments. To ensure accurate representation, the modeling should incorporate localized micrometeorological data, which can be obtained from the El Centro meteorological station, closer to the Project site (Figure 7). The meteorological data should be spatially and climatologically representative of the project area. The decision to use data from a more distant

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³⁴ Refer to Para. 1 on Pg. 4-13 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



location introduces inaccuracies into air dispersion modeling, as local wind patterns and environmental conditions are not properly accounted for. As a result, the DEIR's assessment of pollutant dispersion and its impact on air quality is highly underestimated, further compounded using generalized data from EPA RMP regulations instead of accurate, station-specific surface and upper air measurements.⁵⁵ A reevaluation using local meteorological data is essential to ensure a more accurate analysis of the project's air quality impacts.

G A-28
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$$C(x, y, z) = \frac{Q}{\pi u \sigma_y \sigma_z} \exp\left(-\frac{y^2}{2\sigma_y^2}\right) \exp\left(-\frac{(z-H)^2}{2\sigma_z^2}\right)$$

Figure 9: Dispersion Modeling Equation

The dispersion modeling equation commonly used for meteorological data (Figure 9) is based on the Gaussian dispersion model, which calculates the concentration of pollutants in the air based on several factors, including wind speed, atmospheric stability, and source characteristics. The general form of the equation can be expressed as:

Where:

- $C(x, y, z)$, $C(x, y, z)$, $C(x, y, z)$ is the pollutant concentration at a specific location,
- Q is the emission rate,
- u is the wind speed,
- H is the effective stack height,
- σ_y and σ_z are the standard deviations of the concentration distribution in the horizontal and vertical directions, respectively.

Using incorrect meteorological parameters in dispersion modeling can lead to significant inaccuracies in predicting pollutant concentrations. For instance, inaccurate wind speed or direction can misrepresent how far isopentane travels and where it is ultimately deposited. Similarly, temperature and wind speed are directly related to the concentration, resulting in either overestimations or underestimations of isopentane's impacts on air quality. Ultimately, these inaccuracies could compromise regulatory compliance assessments and public health evaluations, thereby exposing communities to unrecognized health risks associated with isopentane exposure.

⁵⁵ Refer to Para. 2 on Pg. 8 of Ormat, Dogwood Geothermal Power Generation Facility, April 2024



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

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	122°F	As per 40 CFR §68.22 (g), "for worst case, [R] 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 ⁽¹⁾ for Imperial, CA (closest available city with temperature history) and the highest daily maximum temperature from the previous 3 years was identified.

G A-28
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Table 19: Worst Case Release Scenario Dispersion Modeling Parameters



Compounding this issue, the DEIR also fails to properly identify sensitive receptors near the project site, such as an elementary school and two ranches (Table 20). These omissions are critical, as these receptors represent vulnerable populations—including children and agricultural workers—who are more susceptible to the harmful effects of air pollution. Proximity to the pollution source significantly influences exposure levels, and children at the nearby elementary school face heightened risks due to their still-developing respiratory systems. Ranch workers, who spend extended periods outdoors, are similarly at risk from long-term exposure to pollutants such as PM_{2.5} and ozone precursors like NO_x. The DEIR's failure to recognize these sensitive receptors leads to a significant underestimation of the cumulative health impacts, particularly in a region already burdened with air quality challenges from agriculture and transportation sources.

The combination of inaccurate meteorological data and the failure to account for sensitive receptors severely undermines the DEIR's health impact assessment. These errors result in an incomplete understanding of both quantitative and qualitative health risks, particularly for vulnerable populations. Without accurate data and consideration of these factors, the DEIR fails to develop adequate mitigation measures, ultimately leaving the surrounding community exposed to greater environmental health risks. Addressing these critical gaps is necessary to ensure a thorough evaluation and to protect public health.

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cont'd



Table 9: Summary of Sensitive and Environmental Receptors

RECEPTOR	WCU	ARS
	(0.063 Mi)	(0.832 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

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cont'd

Table 20: Summary of Sensitive and Environmental Receptors





Figure 10: Locations of Meteorological Stations (Imperial, El Centro, and Calexico) Relative to the Project Site (Highlighted in Red)

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6. Insufficient Analysis of Cumulative Impacts

The EIR's omission of a comprehensive assessment of cumulative impacts from multiple sources in proximity to the proposed project is a critical oversight. The omission is particularly concerning given the proximity of sensitive receptors, including a nearby school, a cattle export, a ranch, and the Heber 2 Parasitic Solar Facility, with the former being located approximately 540 feet from the Project site.⁵⁴ These receptors could experience compounded effects from emissions generated by the Project, yet no measures have been proposed to evaluate or mitigate these impacts. This failure undermines the accuracy of the Air District's evaluation and violates Section 15355 of the CEQA guidelines. Which states that "cumulative impacts" as the combined effects

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⁵⁴ Refer to Para. 1 on Pg. 4-15 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



of two or more individual actions that, when considered together, are significant or exacerbate other environmental impacts. This includes:¹⁷

1. Individual effects that can occur from a single project or multiple separate projects.
2. Cumulative impact resulting from several projects, which is the change in the environment caused by the incremental effect of the project when added to other closely related past, present, and reasonably foreseeable future projects.
 - a. These impacts can emerge from individually minor projects that, collectively, have a significant effect over time

G A-29
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The DEIR inadequately addresses the potential impacts of the proposed Project on, and from, the 17 existing geothermal plants within the Imperial County region, as illustrated in Figure 3 and Figure 4. These plants, from closest to furthest, include Heber Geothermal, Second Imperial, Ormesa I, II, and III, North Brawley, Salton Sea Power LLC Unit 5, Salton Sea Power Co LLC Unit 4, Salton Sea Power Co LLC Unit 3, Salton Sea Power Co LLC Unit 1, Salton Sea Power Co LLC Unit 2, Vulcan-BN Geothermal Power Company, Del Ranch Company, CE Turbo LLC, CE Leathers, Elmore Company, and John L. Featherstone Plant. This omission encompasses several critical areas, including environmental impacts, resource management, regulatory and permitting challenges, operational interference, and infrastructure capacity assessment.

Heber Geothermal and Second Imperial Plants should be included to perform a comprehensive cumulative environmental evaluation. This entails not only evaluating the direct effects of the proposed Project but also analyzing how it interacts with and potentially exacerbates the effects of existing geothermal facilities. Neglecting to account for existing plants in the assessment could result in incomplete or misleading conclusions regarding the Project's overall environmental impact.

Proper evaluation is essential for understanding the status of the geothermal resource. Analyzing the impact of existing plants on the geothermal reservoir is crucial for understanding whether the proposed Project could intensify resource depletion or affect the sustainability of geothermal energy production. Additionally, the new Project could face regulatory and permitting challenges if it fails to account for the cumulative impacts of existing plants. Regulatory authorities may require further assessments or modifications to ensure that the proposed development does not adversely affect the region.

The proposed Project may also interfere with the operations of existing geothermal plants, such as affecting steam fields or reservoir management, which could compromise their efficiency and operational stability. Furthermore, evaluating the environmental setting must include an assessment of existing infrastructure capacity to determine whether it can accommodate the

¹⁷ Cal. Code Regs. Tit. 14 § 15355



additional strain from the new project or if upgrades are necessary. Without this analysis, the Project might inadvertently place excessive demand on existing systems or resources.

Using data obtained from the U.S. Energy Information Administration⁵⁸ and Grid Info Electricity Generation Insight⁵⁹, Table 3 was created to show the 17 existing geothermal plants within Imperial County, their cumulative net capacities, and commercial operating dates.

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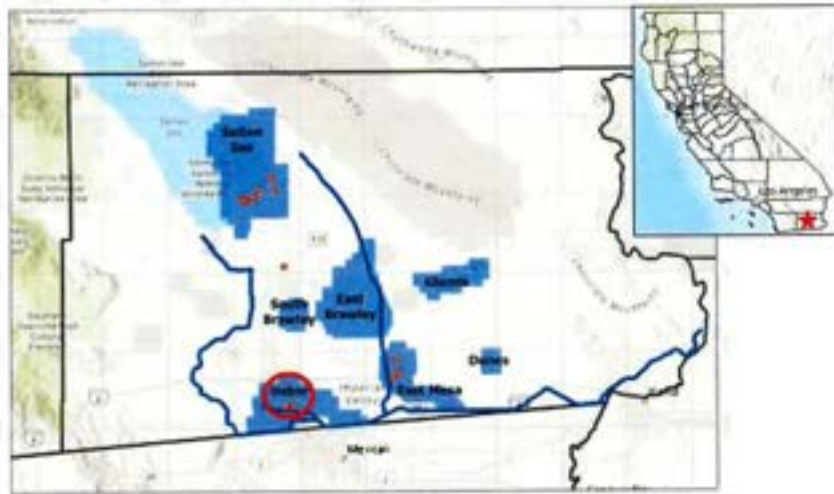
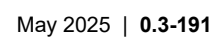
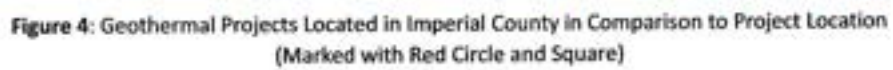


Figure 3: Map of Known Geothermal Resource Areas (KGRA) (Shaded in Blue), Existing Geothermal Power Plants (Indicated by Orange Dots), Project Site (Circled in Red), and the Imperial County Region (Highlighted with a Red Star).

⁵⁸U.S. Energy Information Administration - EIA - Independent Statistics and Analysis. "Electricity Data Browser." Accessed September 19, 2024. <https://www.eia.gov/electricity/data>

⁵⁹Directory of power plants in the United States. Accessed September 17, 2024. <https://www.gridinfo.com/plants?se>





Project Name/Location	Net Capacity (MW)	Commercial Operation Date
Heber Geothermal	91.5	1985
Second Imperial	74.5	1993
Ormesa I	26.4	1986
Ormesa II	24.0	1989
Ormesa III	24.0	2009
North Brawley	80.0	2009
CE Turbo LLC	11.5	2000
CE Leathers	45.5	1989
John L. Featherstone Plant	55.0	2012
Elmore Company	45.5	1988
Vulcan-BN Geothermal Power Company	39.6	1985
Del Ranch Company	42.0	1989
Salton Sea Power LLC unit 5	58.3	2000
Salton Sea Power Co LLC unit 4	47.5	1996
Salton Sea Power Co LLC unit 3	53.9	1989
Salton Sea Power Co LLC unit 2	19.5	1990
Salton Sea Power Gen Co Unit 1	10.0	1982
Total Existing	747.7	

Table 3: Geothermal Power Plants Operating in Imperial County

The failure to include nearby sources in the cumulative impact analysis is a serious methodological flaw. Background concentrations play a critical role in developing accurate air quality concentration estimates for cumulative impact analysis.⁴⁰ According to regulatory guidelines, emissions from individual sources near the project area, especially those not adequately captured by ambient monitoring data, should be explicitly modeled to ensure accurate assessment.⁴¹ In many cases, sources contributing to significant concentration gradients in the vicinity are not sufficiently represented by background ambient monitoring alone, necessitating a more detailed emissions modeling approach.⁴² The Guidelines recommend two essential steps in such scenarios: (1) explicit modeling of emissions from nearby sources and (2) using adequately representative ambient monitoring data to characterize contributions from

⁴⁰ 40 C.F.R. Pt. 51, App. W § 8.3.1.

⁴¹ *Id.* §§ 8.3.1.1, 8.3.1.3.

⁴² *Id.* §§ 8.3.1.1, 8.3.1.3.



G A-29
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other sources.⁶³ The omission of these steps leads to an incomplete and potentially misleading evaluation of the project's environmental and public health impacts.

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6.1 Inadequate Consideration of Cumulative Impacts from Existing Geothermal Facilities

The DEIR fails to consider 17 existing geothermal plants in the Imperial County from its cumulative impact assessment creates significant gaps in evaluating the project's full environmental and public health impacts.

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Existing geothermal facilities in Imperial County contribute to elevated levels of PM, O₃, and H₂S, pollutants that have well-documented adverse effects on air quality and health. The nearby existing geothermal plants, including Heber Geothermal and Second Imperial (as seen in (Figure 11 and Table 21), should be explicitly included in the cumulative impact modeling as required by regulatory guidelines. Without incorporating these nearby sources, such as Heber Geothermal and Second Imperial, the DEIR fails to fully assess the additive impacts of PM, O₃, and H₂S from multiple facilities operating in proximity. This exclusion can result in an underestimation of the total pollutant load, leading to inadequate mitigation strategies and potentially exacerbating non-compliance with air quality standards in an already compromised region like the Imperial Valley.

By neglecting the cumulative contributions of these existing plants, the DEIR risks overlooking key sources of pollution and underestimating the region's environmental burdens. This could result in a failure to adequately protect public health and ensure regulatory compliance, particularly for vulnerable populations in a region already facing significant air quality challenges.

⁶³ 40 C.F.R Pt. 51, App. W § 8.3.1.3.a.





Figure 11: Geothermal Projects Located in Imperial County in Comparison to Project Location
(Marked with Red Circle and Red Square)



Project Name/Location	Net Capacity (MW)	Commercial Operation Date
Heber Geothermal	91.5	1985
Second Imperial	74.5	1993
Onmesa I	26.4	1986
Onmesa II	24.0	1989
Onmesa III	24.0	2009
North Brawley	90.0	2009
CE Turbo LLC	11.5	2000
CE Leathers	45.5	1989
John L. Featherstone Plant	55.0	2012
Elmore Company	45.5	1988
Vulcan-BN Geothermal Power Company	39.6	1985
Del Ranch Company	42.0	1989
Salton Sea Power LLC unit 5	58.3	2000
Salton Sea Power Co LLC unit 4	47.5	1996
Salton Sea Power Co LLC unit 3	53.9	1989
Salton Sea Power Co LLC unit 2	19.5	1990
Salton Sea Power Gen Co Unit 1	10.0	1982
Total Existing	747.7	

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Table 21: Geothermal Power Plants Operating in Imperial County

The DEIR's failure to comply with ICAPCD guidelines, particularly in relation to the selection of representative meteorological data and the inclusion of nearby sources, significantly compromises the integrity of its cumulative impact analysis. By neglecting to incorporate emissions data from nearby geothermal plants and relying on distant meteorological data, the report fails to capture the true environmental and health risks posed by the project. The absence of localized data introduces inaccuracies in air dispersion modeling, leading to a potentially flawed evaluation of pollutant concentrations, such as PM_{10} , $PM_{2.5}$, O_3 , and H_2S , in the surrounding area.

A reevaluation of the air quality assessment is essential to address these deficiencies. Proper adherence to ICAPCD guidelines would require the use of meteorological data from closer, more representative stations, as well as the explicit modeling of emissions from all significant nearby sources. This would provide a more accurate portrayal of cumulative impacts, allowing for a more effective and data-driven approach to mitigation. Without such comprehensive analysis, the



project risks exacerbating existing air quality issues and posing significant public health risks, particularly in already vulnerable communities in the Imperial Valley. Implementing a more rigorous and accurate assessment will ensure compliance with environmental regulations and better protect public health.

G A-30
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7. Insufficient Mitigation Strategies for Various Emissions

7.1 Particulate Matter and Ozone Emissions Trigger BACT

The exclusion of critical PM and ozone (O_3) sources results in inadequate mitigation strategies, as the estimated PM emissions are substantially lower than what would realistically occur. The region is already designated as non-attainment for both $PM_{2.5}$ and O_3 , as explained in section 4.1, and the Project is expected to release considerable quantities of these pollutants from multiple operational sources. The failure to include these emissions in the modeling process ultimately results in significant mismodeling of the air quality impacts associated with the Project.

G A-31

Moreover, the Project does not disclose ammonia emissions, which are a precursor to the formation of secondary $PM_{2.5}$. It also neglects to address the reaction of NO_x emissions with ROGs, such as isopentane which contribute to ozone formation—a significant concern given the area's existing non-attainment status for ozone. This oversight is particularly concerning as it triggers the need for Best Available Control Technology (BACT) to mitigate the impacts of unaccounted ozone and particulate matter emissions. Additionally, ammonia emitted from the Project can interact with sulfur trioxide (SO_3) and nitrogen dioxide (NO_2) in the atmosphere, leading to the formation of secondary particulate matter in the form of ammonium sulfate ($(NH_4)_2SO_4$), ammonium bisulfate ($(NH_4)HSO_4$), and ammonium nitrate (NH_4NO_3).^{64,65,66} The failure to consider these chemical processes (including the formation of secondary particulate matter emissions and the full accounting of total particulate matter emissions) not only exacerbates air quality issues but also undermines the Project's compliance with regulatory standards and public health protections. Effective mitigation measures must be based on accurate modeling and comprehensive emissions assessments to ensure that the Project does not contribute to the already challenging air quality conditions in the region. If the accurate $PM_{2.5}$ emissions are calculated by including the previously overlooked sources (see Section 4.3), it is highly likely that the overall concentration of $PM_{2.5}$ will significantly increase. This elevated

⁶⁴ John H. Seinfeld and Spyros N. Pandis, *Atmospheric Chemistry and Physics*, John Wiley & Sons, Inc., New York, 1998, Pg. 529-534.

⁶⁵ S. Matsuda, T. Kama, A. Kato, and F. Nakajima, Deposition of Ammonium Bisulfate in the Selective Catalytic Reduction of Nitrogen Oxides with Ammonia, *Ind. Eng. Chem. Prod. Res. Dev.*, v. 21, 1982, Pg. 48-52.

⁶⁶ J.M. Burke and K.L. Johnson, Ammonium Sulfate and Bisulfate Formation in Air Preheaters, Report EPA-600/7-82-025a, April 1982.



concentration could trigger the necessity for implementing BACT to manage emissions effectively. Consequently, failing to account for these sources not only compromises the integrity of the emissions assessment but also raises serious concerns about regulatory compliance and public health, as unmitigated PM_{2.5} emissions can have detrimental effects on air quality and community well-being.

The methodology for conducting a top-down BACT analysis, incorporated into California law under Health and Safety Code §42506, as follows:

Key Steps in the "Top-Down" BACT Process:⁶⁷

- **Step 1: Identify All Control Technologies**
 - Create a comprehensive list, including Lowest Achievable Emission Rate (LAER) technologies.
- **Step 2: Eliminate Technically Infeasible Options**
 - Clearly document technical infeasibility, demonstrating through physical, chemical, and engineering principles that technical difficulties would prevent successful use of the control option on the emission unit under review.
- **Step 3: Rank Remaining Control Technologies by Control Effectiveness**
 - Rank the feasible technologies based on:
 - Control effectiveness (percentage reduction of the targeted pollutant)
 - Anticipated emission rates (tons per year)
 - Projected emission reductions (tons per year)
 - Energy requirements and impacts (BTU, kWh)
 - Environmental impacts (other media impacts and emissions of toxic/hazardous air pollutants)
 - Economic impacts (total cost-effectiveness, incremental cost-effectiveness)
- **Step 4: Evaluate Most Effective Controls and Document Results**
 - Perform a detailed case-by-case evaluation of the most effective controls, considering energy consumption, environmental, and economic impacts.
 - If the highest-ranked option is not selected as BACT, evaluate the next most effective control option.
- **Step 5: Select BACT**

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⁶⁷ Health and Safety Code §42506.



- o The most effective control option that is not rejected becomes BACT.

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Overall, the failure to accurately model and assess these emissions jeopardizes public health and compliance with regulatory standards, necessitating more effective mitigation strategies to address the region's already compromised air quality

7.2 Insufficient Waste Management Plan

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The DEIR outlines comprehensive waste management strategies for the project during both construction and operation phases, including proper refuse disposal by workers, provision of sanitary facilities maintained by local contractors, and compliance with all local, state, and federal waste disposal regulations. ⁴⁸Solid waste will be routinely collected and sent to an approved landfill, specifically the Calexico Solid Waste Site, which has sufficient capacity and is expected to operate until 2079 (CalRecycle 2019). The project's waste generation is anticipated to be minimal and within regulatory thresholds, ensuring no adverse impact on local waste management infrastructure or solid waste reduction goals. ⁴⁹The project will adhere to the California Integrated Waste Management Act of 1989 and the California Solid Waste Reuse and Recycling Access Act of 1991, maintaining compliance with state mandates for waste management and recycling.

To enhance the waste management plan proposed in the DEIR, implementing the following structured waste management strategies can significantly improve its effectiveness and compliance with environmental standards:⁵⁰

- **Collection:** Establish clear waste collection methods that meet health and safety standards.
- **Segregation:** Sort waste into specific categories (hazardous, recyclable, compostable) at the source for better management.
- **Accumulation/Storage:** Set criteria for waste storage locations, including documentation and safety requirements.
- **Monitoring:** Institute protocols for monitoring waste management activities to identify issues in real-time.

⁴⁸ Refer to Section 2.7.6 on Pg. 2-26 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

⁴⁹ Refer to Para. 5 on Pg. 6-3 of Draft Environmental Impact Report: Dogwood Geothermal Energy Project, SCH No. 2024010510, Imperial County, CA August 2024

⁵⁰ Pre-incident all-hazards waste management plan guidelines. Accessed September 27, 2024. See 'V. Waste Management Strategies/Options'. https://www.epa.gov/sites/default/files/2019-05/documents/4_steps_document.pdf



By incorporating these strategies into the waste management plan, the project can enhance its compliance with local, state, and federal regulations while promoting environmental sustainability. Clear definitions, monitoring procedures, and proper segregation of waste types will not only reduce environmental impacts but also improve the overall efficiency and effectiveness of waste management practices.

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7.3 Lack of LDAR Measures for Isopentane

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The DEIR fails to implement all feasible mitigation measures necessary to address ROG emissions resulting from fugitive leaks, which is crucial for compliance with CEQA. Notably, the DEIR does not incorporate low-leak technology or establish a comprehensive Leak Detection and Repair (LDAR) program. LDAR programs serve as essential tools for monitoring and mitigating ROG emissions, employing techniques to measure concentrations at component interfaces and mandating immediate repairs when leak concentrations surpass specified thresholds. The efficacy of an LDAR program centers around several critical factors, including the established leak rate, the time interval between leak detection and mandatory repair, the frequency of monitoring activities, and the number of components included in the program. A rigorous LDAR initiative can substantially reduce emissions by enabling early leak identification and ensuring timely repairs, thereby minimizing the potential for fugitive emissions to enter the atmosphere. The lack of such a program compromises the effectiveness of emissions controls and results in noncompliance with BACT requirements.

Additionally, the DEIR is deficient in establishing a comprehensive Emission Management Plan that should encompass BACT emission limits, compliance verification protocols, recordkeeping procedures, and methods for accurately determining isopentane volumes, calculating loss rates, detecting breakdowns, and preventing leaks. The implications of this noncompliance are profound, as elevated ROG emissions contribute to the formation of ground-level ozone, exacerbating respiratory health issues in nearby communities. Adequate documentation is critical for demonstrating compliance with local, state, and federal emissions regulations. An accurate emissions inventory is essential for understanding the potential emissions from operations and for calculating actual emissions outputs. Specifically, the loss rates of isopentane are indicative of the quantity of the substance released into the atmosphere, enabling better estimates of actual emissions and the formulation of effective mitigation strategies. Furthermore, timely leak detection and repair are vital for reducing the duration and volume of harmful emissions.

7.4 Inadequate Mitigation Measures: MM AQ-3 and MM AQ-4

G A-34

The current mitigation strategies in place are insufficiently detailed and lack the rigor necessary for effective implementation. Specifically, MM AQ-3 (Dust Suppression) and MM AQ-4 (Dust Suppression Management Plan) exhibit notable weaknesses in their enforceability due to a lack of comprehensive guidelines.



MM AQ-3 outlines the requirement for approval from the ICAPCD approval to ensure oversight and accountability. It mandates the stabilization of unpaved roads and specifies the application of a quantified rate of 0.1 gallons per square yard of chemical dust suppressant, in accordance with product manufacturer instructions. However, the term "effective stabilization" remains ambiguous, lacking a clear definition that delineates acceptable performance standards. Furthermore, there are no specific requirements for monitoring the effectiveness of dust suppression measures or for reporting results to the ICAPCD. Additionally, explicit guidelines detailing the conditions under which dust suppressants should be applied are notably absent, which undermines the operational integrity of this measure.

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MM AQ-4 details that a dust control plan must be submitted prior to any earthmoving activities and requires approval from both ICAPCD and the Imperial County Planning and Development Services (ICPDS). While this establishes a necessary pre-activity framework for review and oversight, the plan lacks detailed stipulations regarding its content. Specifically, it does not outline the necessary components that should be included in the dust control plan, such as:

- **Methods of Dust Suppression:** Clear identification of the techniques to be employed for effective dust control.
- **Monitoring Protocols:** Requirements for how dust suppression effectiveness will be monitored over time.
- **Personnel Responsibilities:** Designation of specific individuals responsible for implementing and overseeing dust control measures.
- **Procedures for Exceedances:** Clear instructions on actions to be taken if dust emissions exceed regulatory thresholds^{71,72}

The deficiencies in both MM AQ-3 and MM AQ-4 illustrate a critical need for more stringent and detailed guidelines to enhance their enforceability and effectiveness in mitigating dust emissions associated with project activities.

7.6 Lack of Isopentane Management Plan

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The DEIR must incorporate BACT emission limits that are enforceable in practical terms. This necessitates the inclusion of appropriate averaging times, compliance verification procedures, and recordkeeping requirements, as outlined in the New Source Review (NSR) Manual.⁷³

⁷¹ ICAPCD, "Rule 403: Fugitive Dust" SSAQMP - documents. Accessed September 27, 2024.
https://saltonseaprogram.com/aqm/docs/Salton_Sea_Air_Quality_Mitigation_Program.pdf

⁷² California Environmental Quality Act (CEQA) Guidelines

⁷³ NSR Manual, Pg. B.56



Currently, the DEIR lacks enforceability due to the omission of critical methods necessary for determining compliance with these limits.

To rectify this deficiency, the following methods should be clearly defined and incorporated into the report:

- **Daily Isopentane Volume Assessment:** A standardized methodology for quantifying the daily volume of isopentane present on the project site.
- **Loss Rate Calculation:** A systematic approach to calculating the loss rate of isopentane during various operational phases.
- **Detection and Reporting of Breakdown Events:** An established protocol for promptly detecting and reporting incidents of equipment breakdown that may lead to isopentane emissions.
- **Leak Repair Protocol:** A robust plan for the immediate repair of leaks identified during monitoring activities to minimize emissions.
- **Maintenance and Monitoring Plan:** A comprehensive maintenance plan that includes routine monitoring and preventive measures to avert isopentane leaks.

Inclusion of these methodologies in the report is essential for the BACT determination and must be made available for public review. The absence of this critical information raises significant concerns regarding the integrity and reliability of the environmental assessment, and it is imperative that these details be provided to ensure comprehensive evaluation and compliance.

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7.7 No Leak Detection Technology for SF₆

The Project recognizes Measure MM AQ-4, which mandates comprehensive record-keeping of greenhouse gas emissions during operational phases. However, it notably omits the implementation of a leak detection plan specifically for sulfur hexafluoride (SF₆). As an extremely potent greenhouse gas, SF₆ poses significant environmental risks, particularly due to potential leaks from transmission system infrastructure, including electrical switchgear and circuit breakers. Effective containment of SF₆ requires robust insulation of equipment, as inadequate sealing can lead to severe operational failures such as overheating, component melting, or even fires. Given SF₆'s high global warming potential any emissions, no matter how minimal, can have disproportionately detrimental effects on climate change.

In 2007, the California Air Resources Board (CARB) instituted regulations aimed at mitigating SF₆ emissions from electrical transmission and distribution systems. This initiative culminated in the

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formal adoption of regulations in 2010 that imposed strict limits on SF₆ emissions, delineated a phased reduction strategy, and mandated comprehensive reporting practices.⁷⁴

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The Project anticipates utilizing approximately 25 pounds of SF₆ gas per circuit breaker, aggregating to a total of 75 pounds at the site, with an estimated annual release of 0.375 pounds (equating to 3.96 metric tons of CO₂ equivalent per year).⁷⁵ Despite these figures, the absence of a dedicated leak detection plan is a significant oversight. Without such a plan, the Project cannot effectively monitor or mitigate SF₆ emissions, thereby jeopardizing compliance with regulatory standards and exacerbating its environmental footprint. A comprehensive leak detection strategy is essential not only for safeguarding the integrity of the equipment and operational safety but also for ensuring adherence to state regulations aimed at reducing the impact of SF₆ emissions.

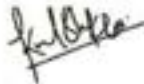
Conclusion

Following the expert review, it is clear that the DEIR lacks a comprehensive emissions assessment for pollutants such as ozone and particulate matter. The project also triggers BACT for particulate matter (PM_{2.5}). The DEIR inaccurately calculates isopentane emissions and neglects the health risks associated with various pollutants. Furthermore, the assessment fails to adequately address cumulative impacts, and its proposed mitigation measures are flawed. Therefore, the Project must develop an EIR that thoroughly addresses these issues. Currently, the DEIR does not provide accurate emissions data, which could lead to significant adverse effects if the project proceeds.

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Sincerely,

GROUP DELTA CONSULTANTS, INC.



Dr. Komal Shukla
Technical Director – Air Quality

⁷⁴ "California Air Resources Board." Electricity Transmission and Distribution Greenhouse Gas Emissions | California Air Resources Board. Accessed September 26, 2024. <https://ww2.arb.ca.gov/our-work/programs/elec-tandd/about>

⁷⁵ Refer to Para. 2 on Pg. 4-16 of Dogwood Geothermal Energy Project, Air Quality and Greenhouse Gas Technical Report, Prepared for: Imperial County Planning & Development Services, July 16, 2024



Komal Shukla, Ph.D., M.Sc., B.Sc
Air Quality Scientist



Education

Ph.D. in Photochemical Modeling of Air Pollution (Environmental Engineering), Indian Institute of Technology Delhi-IIT Delhi (Photochemical Modeling of Ground Level Ozone), Delhi, India; Visiting Ph.D. Student, Institute Fellow, Gees, University of Birmingham, UK; MPhil Environment and Sustainable Development, IESD, Banaras Hindu University, Varanasi, India; M.Sc. Environment Management, University School of Environment Management (Sustainable and Low Carbon Energy Plan for Delhi), Delhi, India; B.Sc Chemistry (with honors) in Chemistry, University of Delhi, India

Years of Experience: 7

Years with Group Delta: 1

Dr. Shukla has a Ph.D. in air quality and atmospheric phenomenon modeling, with a strong technical background in tropospheric chemistry, industrial and city level environmental solutions, regulatory and global model applications, trace gases and particulate matter impact on human health and climate, and observations data analytic. Dr. Shukla is an air quality emissions modeler with nearly a decade of technical and research experience. She served as an in-house lead in federal contract scientific projects supporting the EPA's mission. Related experience includes:

Litigation, Compliance, Environmental Justice, On-Road Emissions, Industrial Emissions, California: As Air Quality Modeling Scientist, Ms. Shukla completed two major projects, including: Project I: Source apportionment of ozone and particulate matter pollution using photochemical modeling techniques, and Project II: Transportation and near-road air quality and emissions projection.

Environment and Climate Change Canada (ECCC), Toronto, Canada: As Research Scientist (Air Quality Modeling and Compliance in Alberta), Ms. Shukla completed two significant projects, including: Project I: Developing a photo-chemical transport model to understand oil and sands region emissions in North America and Project II: Modeling applications in delineating chemistry of tropospheric tracers.

University of North Carolina, Institute of Environment, Chapel Hill, North Carolina: As Postdoctoral Research Associate (Air Quality – NYSERDA Led Air Quality Model Development, Ms. Shukla worked on critical projects including: Project I: Air quality modeling of various city level sources and health exposure sciences in New York City, - funded by NYSERDA and Project II: TRECH project (<https://www.hsph.harvard.edu/c-change/news/trechstudy/>) - Transportation, Equity, Climate & Health CMAQ based modeling of vehicular emission and policy assessment on the East Coast.

Indian Institute of Technology Delhi (IIT Delhi), Delhi, India: As Research Associate, Ms. Shukla worked on Project I: Quantification and contribution of paddy stubble burning emissions in Haryana to estimate PM_{2.5} concentrations in its surrounding cities and Delhi. Role: Modelling meteorology and PM_{2.5} for north India using WRF-chem and Project II: A Systems Approach to Air Pollution in Delhi (ASAAP) mobility grant funded by GCRF and NERC. Role: Monitored outdoor PM_{2.5} concentrations at two flyovers in Delhi and assessed pavement dwellers exposure to air pollution of PM_{2.5} near heavily trafficked roads to see impact on dwellers.

Various Technical Skills

Languages: T and C Shell-script, MATLAB, Fortran, Python, NCL, R, and NETCDF satellite data retrievals and analysis
Models: WRF-Chem, GEM-MACH, CMAQ, GCAM, CTOOLS, AERMOD, CALPUFF, ADMS, MOVES, InMAP and COBRA.



Photochemical pollutant and aerosol/dust modeling and urban air quality. Expertise in tropospheric chemistry, machine learning aided regression models, WRF-Chem/CMAQ (Chemical transport models), dispersion models.

Air Quality: CTOOLS/AERMOD/ADMS/R-LINE and satellite data assessment (OMI-AURA and MODIS). USEPA observation and meteorology handling, anthropogenic/energy emission inventory QA and preparation (MOVES), and impacts-benefits.

Select Research Papers:

- Shukla, K., Seppanen, C., Naess, B., Chang, C., Cooley, D., Maier, A., .. & Arunachalam, S. (2022). ZIP Code Level Estimation of Air Quality and Health Risk Due to Particulate Matter Pollution in New York City. *Environmental Science & Technology*.
- Shukla, K., Kumar, P., Mann, G. S., & Khare, M. (2020). Mapping spatial distribution of particulate matter using Kriging and Inverse Distance Weighting at supersites of megacity Delhi. *Sustainable cities and society*, 54, 101997.
- Shukla, K., Srivastava, P. K., Banerjee, T., & Aneja, V. P. (2017). Trend and variability of atmospheric ozone over middle Indo-Gangetic Plain: Impacts of seasonality and precursor gases. *Environmental Science and Pollution Research*, 24(1), 164-179.
- Shukla, K., Dadheech, N., Kumar, P., & Khare, M. (2021). Regression-based flexible models for photochemical air pollutants in the national capital territory of megacity Delhi. *Chemosphere*, 272, 129611.
- Gulia, S., Khanna, I., Shukla, K., & Khare, M. (2020). Ambient air pollutant monitoring and analysis protocol for low- and middle-income countries: An element of comprehensive urban air quality management framework. *Atmospheric Environment*, 222, 117120.
- Khare, M., & Shukla, K. (2020). Outdoor and Indoor Air Pollutant Exposure. In *Environmental Pollutant Exposures and Public Health* (pp. 95-114).
- Kumar, G. S., Sharma, A., Shukla, K., & Nema, A. K. (2020). Dynamic programming-based decision-making model for selecting optimal air pollution control technologies for an urban setting. In *Smart Cities- Opportunities and Challenges* (pp. 709-729). Springer, Singapore.

Select Technical Conferences:

- Shukla, K., Ojha, N., & Khare, M., (2019) Air Quality Simulations over Delhi Using WRF-Chem in Conference of Indian Aerosol Science and Technology Association 2018 "Aerosol Impacts: Human Health to Climate Change" 2018 <http://cas.iitd.ac.in/iasta2018/pdf/>
- Shukla, K., Xiaoming, C., Ojha, N., & Khare, M., (2018), Air Quality Simulations over Delhi Using WRF-Chem: Effects of Local Pollution and Regional-Scale Transport , A42A-01 presented at 2018 Fall Meeting, AGU, Washington, D.C., 10-14 Dec. <http://abstractsearch.agu.org/meetings/2018/FM/A42A-01.htm1> (Talk)
- Shukla, K., & Khare M., (2019) Behaviour of Ground Level Ozone and Its Association with Precursors and Meteorology in Delhi, India, AS17-A023, *Atmospheric Chemistry in Highly Polluted Environments: Emissions, Fates, and Impacts*, AS17-A023 presented at 2019 16th Annual meeting AOGS, Singapore, 28th -2nd August (Poster)
- Shukla, K., Kumar, S., & Nema A., (2019) Environmental Characterization of Two Chromium-based Industrial Waste Contaminated Sites of India, accepted as BIH-2219, to be presented in presented at 2019 Fall Meeting, AGU, San Francisco, CA, USA 09-13 Dec. (Poster)
- Shukla, K., & Khare M., (2019), Behavioral Chemistry of ground level ozone formation in heavily polluted environment of Delhi city, accepted as A21G-2645, to be presented in presented at 2019 Fall Meeting, AGU, San Francisco, CA, USA 09-13 Dec.
- (Poster) Kumar, S, Sharma, A., Shukla K., Nema, A.K., (2019). Dynamic programming based decision-making model for selecting optimal air pollution control technologies for an urban setting. Presented at 1st smart cities conference, Delhi, India (Talk).

Komal Shukla, Ph.D., M.Sc., B.Sc.

International Panelist

Air Pollution, Environmental Management and Policy Related Invited Talks:

- Minimizing air pollution in Delhi city, Pure Earth, NY, USA, Boston College, 2019
- Photochemical pollution in heavily polluted environments of India and China" in the Development of Traffic Pollution Dispersion Models based upon Artificial Intelligence Technology, Chang'an University, Xian, 2019, China
- Air Pollution Challenges and Mitigation Opportunities in Delhi, CADTIME, Newcastle University, 2019, UK
- Indoor Air Quality: Problems and Initiatives", 2nd Indian International National Conference on Air Quality Management (IIAQM 2017): Health and Exposure, Indian Institute of Technology Delhi, New Delhi 2017, India
- Tackling the Challenges of Air Pollution in India", Indian Institute of Public Administration, New Delhi, 2019, India

EXHIBIT B

Memorandum

November 14, 2024

**HOUSE
AGRICULTURAL
CONSULTANTS**

*Providing expertise
in agricultural science,
management, & appraisal
since 1977.*

1105 Kennedy Place
Suite 1
Davis, California 95616
telephone +1 530 753-3361

November 14, 2024

To:

Kelilah Federman & Alaura R. McGuire
Adams Broadwell Joseph & Cardozo

Re:

Expert review of the agricultural element of *DEIR 6959 — Dogwood Geothermal Project, Imperial County*—draft memorandum subject to attorney-client privilege

From:

Gregory A. House & Henry House
House Agricultural Consultants
(via electronic mail)

Dear Ms. Federman and Ms. McGuire:

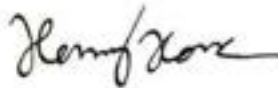
At your request, we have analyzed the document titled *Draft EIR — Dogwood Geothermal Energy Project: SCH No. 2024010510, Imperial County, California, August 2024* (hereinafter, *the DEIR*) and the proposed project described therein (hereinafter, *the project*) to comment on agricultural resources in our capacity as agriculture experts. We, House Agricultural Consultants (hereinafter, *HAC*), are an agricultural-consulting firm that has analyzed agricultural impacts of numerous similar projects as well as agricultural-reclamation plans over a period of many years.

In brief, we have found that

- 1) The DEIR's proposed mitigation options are inadequate, as detailed by section 2.
 - a) Of these, Option 1, to "Provide Agricultural Conservation Easement(s)", can be brought to adequacy with appropriate improvements; see page 3.
 - b) Option 2, "Agricultural In-Lieu Mitigation Fee", is seriously flawed while Option 3, "Public Benefit Agreement", is fatally flawed.
 - c) Option 4, "Avoid Prime Farmland", is feasible and has our full support.
- 2.) The DEIR's site-reclamation plan (AG-1b) is grossly inadequate, lacking an effective mechanism to ensure its success, as section 3 explains.
- 3.) Lastly, the DEIR's Impact 3.3-3 fails to correctly analyze changes in the existing environment; details in section 4.

Our analysis and preliminary findings are found on the following pages. A description of our qualifications as agricultural consultants is included in the appendices of this memorandum on page 12.

Sincerely,



Henry House



Gregory A. House

G B-1

G B-2

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1 Relevant background facts about the project

The Dogwood Geothermal Energy Project of the DEIR is composed of several proposed facilities, including the Dogwood Geothermal Energy Project (proper) and the Heber 2 Solar Energy Project, collectively hereinafter in this memorandum encompassed within *the project*.

1.1 Location. The project is proposed to be located on approximately 125 acres of privately-owned lands in southern Imperial County, California (hereinafter, the *subject property*), approximately one mile south of the City of Heber, approximately one-half mile northwest of the City of Calexico, and approximately one mile north of the international border with Mexico. The subject property is mapped and identified by Imperial County as portions of assessor's parcels 054-250-031, 059-020-001, and 054-250-017.

G B-3

1.2 General-plan designation and zoning. The current general plan of Imperial County (dated 2015) designates ninety-four percent of the subject property for "urban" land use, while the remaining six percent of land lies within the Heber Specific Use Plan area. Imperial County's zoning ordinance places the subject property within the "A-2—General Agriculture" zone. All types of agriculture are permitted in the A-2 zone.

1.3 CEQA protected-farmland status. In sum, approximately 110 acres, 22 acres of *prime farmland* and 88 acres of *farmland of statewide importance* are proposed to be converted by the Project. The DEIR correctly notes that the California Environmental Quality Act (CEQA) considers the conversion of *prime farmland* and *farmland of statewide importance* a significant impact which ordinarily requires mitigation. By legal precedence, this mitigation is satisfied by the establishment of an agricultural conservation easement on other land.

2 Findings on Impact 3.3-1: The DEIR's proposed mitigation options are inadequate

The DEIR correctly finds significant impact in Impact 3.3-1, the conversion of *prime farmland* and *farmland of statewide importance*. While the DEIR correctly concludes that there shall be mitigation for the affected 110 acres, the mitigation measures (two alternative overall options) that the DEIR proposes are inadequate for reasons we elucidate next.

G B-4

2.1 Two overall approaches to mitigation are proposed in the DEIR with four specific mitigation options. To mitigate Impact 3.3-1, the DEIR proposes two broad mitigating approaches:

AG-1a.—four specific options to mitigate the farmland to be converted. Discussion follows in this section.

AG-1b.—future site reclamation after the project's facility is decommissioned.

We discuss the four mitigation options next in this section 2. Our discussion of the site-reclamation approach is later in this memorandum; section 3.

#

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G B-4
cont'd

2.2 AG-1a—mitigation by conservation easements, payment of agricultural- and other-benefit fees, etc. This mitigation measure is subdivided into separate, parallel plans for *prime farmland* and *non-prime farmland* (in this case consisting of *farmland of statewide importance*), and each mitigation plan is given several options.

2.2.1 FOUR OPTIONS IN AG-1A FOR MITIGATING PRIME FARMLAND CONVERTED. The DEIR lays out four different options for mitigating the 22 acres of *prime farmland* that project will convert, with three for its conversion of 88 acres of *farmland of statewide importance*, which are,

- Option 1—entitled “Provide Agricultural Conservation Easement(s)”;
- Option 2—“Agricultural In-Lieu Mitigation Fee”;
- Option 3—“Public Benefit Agreement”; and
- Option 4—“Avoid Prime Farmland”.

The final Option 4 is not proffered by the DEIR for the proposed conversion by the project of 88 acres of *farmland of statewide importance*.

2.2.2 OPTION 1 FOR AG-1A, PROVIDING AGRICULTURAL-CONSERVATION EASEMENTS FOR CONVERTED FARMLAND. This first option to mitigate the conversion of both *prime farmland* and *farmland of statewide importance* proposes that, for *prime farmland*, the permittee procure agricultural-conservation easements “on a ‘2 on 1’ basis” (the quotation marks are in the original), and for *farmland of statewide importance* on a “1 on 1” basis; such easement will be placed on

- land of equal size,
- land of equal quality as farmland, and
- land outside the path of development.

Likewise, the conservation easements “shall meet DOC¹ regulations and shall be recorded prior to issuance of any grading or building permits”.

A permanent conservation easement. We assume that the phrase “2 on 1” (it is so written in quotation marks in DEIR) means that two acres of land will be conserved for every one acre of land converted via a permanent conservation easement and that “1 on 1” means that one acre of land will be conserved for every one acre of land converted via a permanent conservation easement.²

Although most conservation easements are permanent, some are not, and this is the first point in this measure that is not adequately defined. We note in passing that the DEIR at the top of page 120 states: “Implementation of Mitigation Measure AG-1a would reduce the impact associated with the temporary conversion of important farmlands to non-agricultural uses to a level less than significant.” The DEIR lacks support for its conclusion that this is a “temporary” conversion. We draw attention to this statement in Measure AG-1a as it bears on the permanency of the mitigation effected by the proposed conservation easement as well as the site reclamation plan.

Assuming the permanent status of the proposed conservation easement, we find the “1 on 1” requirement for conserving *farmland of statewide importance* does adequately ensure the preservation of farmland and farming, and, while it is less effective than 2:1 conservation, it does meet the minimum standard established by precedent throughout California.

¹ We note that “DOC” in this context refers to the California Department of Conservation.

² This meaning is typically stated as a 2:1 ratio or 1:1 of farmland conserved to farmland converted, for those respective cases.

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In order to place the conservation easement on land of "equal quality" and "outside the path of development", the DEIR needs further definition, and the proposed criterion "shall meet DOC regulations" also requires specific definition.

Defining equal-quality farmland. A typical method for evaluating the quality of farmland in a regulatory context and a method referenced by CEQA is use of the Land Assessment and Site Evaluation (LESA) model. The DOC has in fact created its own version of the LESA and this version is commonly used in regulatory contexts throughout California. The DOC's website describes its LESA model thusly:

The California Agricultural LESA Model evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score.

The DOC's California Agricultural LESA Model applied to the subject Project acres would provide the necessary information to adequately define "equal quality" farmland per the DEIR. This should be a requirement of the Project.

What would meet "DOC regulations". The DOC does not regulate conservation easements, but, as noted above, has developed and maintains a model agricultural-conservation easement, available at its web site³, as well as administering various funding programs for agricultural-conservation easements, each of which has varying standards, but all of which are oriented towards an easement similar model conservation easement, which is permanent.⁴

Need for comprehensive farmland-conversion-mitigation ordinance. The DEIR proposes that the project's mitigating conservation easement be placed on an agricultural property "outside the path of development". However, the DEIR does not define or identify areas of Imperial County within the "path of development".

As noted, the 125-acre subject property is located a half mile from the City of Calexico, which had a population of 38,633 in 2020; Calexico is the American sister city to the much larger Mexicali in Mexico, population 689,775, according to the 2010 census. The two cities adjoin each other, separated by the international border. The combined Calexico-Mexicali metropolitan area is home to approximately one million inhabitants considering both sides of the Mexico-United States border.

According to the DEIR, Imperial County's current general plan "recognizes the area as one of the finest agricultural areas in the world", noting that "the Agricultural Element in the County General Plan demonstrates the long-term commitment by the County to the full promotion, management, use, and development and protection of agricultural production".

Although it is not directly stated, the DEIR seems to imply that the subject property lies in the path of development, hence the suggestion of placing a conservation easement on land outside the path of development. While this needs to be defined, there is a larger issue at hand: Imperial County lacks a comprehensive ordinance on mitigation of farmland conversion. Such an ordinance would define not only the "path of development" but also standardize Imperial County's policies regarding the mitigation of farmland conversion to assure compliance of such mitigation with CEQA. Many counties in California, as well as many larger cities, already have such ordinances. Without binding standards governing the proposed conservation easements, Imperial County cannot ensure

³ (<https://www.conservation.ca.gov/dlrp/grant-programs/cfcg>).

⁴ The California Civil Code section 815 has a definition of a conservation easement, stating, among other criteria, that it is perpetual in duration.

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that a mitigation measure will adequately preserve or permanently protect existing agricultural land, as required by CEQA. The mitigation measure at hand must be revised to include specifically define the "path of development" and identify specific performance standards for conservation easements purchased for the project to ensure permanent protection of the easement lands.

In the long term, Imperial County should also consider that establishing a conversion-mitigation ordinance in the county is crucial to the preservation of agriculture in the county, and will go a very long way in allowing the County of Imperial to achieve its several goals of item III.B of its general plan's Agricultural Element, the "preservation of important farmland".

2.2.3 OPTION 2 FOR AG-1A, IN-LIEU MITIGATION FEE FOR CONVERTED FARMLAND. Under Option 2 to mitigate conversion of prime farmland, the DEIR proposes:

The Permittee shall pay an "Agricultural In-Lieu Mitigation Fee" in the amount of 30 percent of the fair market value per acre for the total acres of the proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis. The Agricultural In-Lieu Mitigation Fee, will be placed in a trust account administered by the Imperial County Agricultural Commissioner's office and will be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County.

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This option fails to provide adequate, if any, mitigation for the conversion of important farmland (which includes both prime farmland and farmland of statewide importance) that this project proposes. This option confounds the appraisal concept of fair market value², provides no mechanism or standards for the analysis of "five comparable sales", and inexplicably reduces the land value (which is the measure of the conversion's significant impact) to thirty percent of the "fair market value" (so-called, incorrectly as noted) in the case of prime farmland that is proposed to be converted, twenty percent in the case of the farmland of statewide importance.

Fair market value of what? The DEIR's appraisal/valuation methodology is unsupported and inconsistent with industry practice. Option 2 improperly attempts to define "fair market value" of the project's land by specifying a valuation "based on five comparable sales". This is a not a definition of value but rather a flawed and half-baked valuation methodology that seriously conflicts with professional appraisal standards as well as existing, established definitions of fair market value.

First, it is unclear whether the "five comparable sales" will be compared to the subject property, or some other imputed property. We suspect the latter because the subject property is located within one half mile of Calexico, which is not outside the path of development. The former option, to fabricate an imputed appraisal subject, will not lead to fair market value, as it is understood in law and the appraisal profession. If some other definition of value is to be pursued, then its terms must be defined. Option 2 does not even attempt to describe any parameters required for identifying the comparable sales. An acceptable in-lieu fee based on fair market value—a term defined by law as that which is opined by professional appraisers—is not a known price that can be read from market records by a unqualified arbitrary individuals; its determination must involve a qualified appraisal professional.

It is beyond the scope of this memorandum to guide this DEIR to a proper appraisal methodology; however, fair market value can only be established by a professional appraiser with the experience and expertise to carry it out to generally accepted valuation standards as promulgated by the *Uniform Standards of Professional Appraisal Practice*. If the Imperial County Board of Supervisors is to pursue an fee-based in-lieu approach, we strongly recommend that fee be based

² Fair market value is a term defined by law and is that kind of value which is opined by professional appraisers; thus, "fair market value" is incorrectly defined and incorrectly understood in the DEIR.

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on a real appraisal that follows the current guidelines of the California Department of General Services (which are followed by the California Department of Conservation), and be performed by a qualified, licensed professional. The California Department of General Services (and thus the California Department of Conservation) require that fair market value be determined by a professional appraiser holding a Certified General Appraiser license.

G B-8
cont'd

Valuation by percentage is improper. Once a “fair market value” has been established, Option 2 proposes that only thirty percent of that monetary value in the case of prime farmland, and twenty percent in the case of the farmland of statewide importance, will become the in-lieu fee. There is no evidentiary basis that a partial percentage of the “fair market value” can provide full and adequate mitigation for the conversion of important farmland. In fact, the DEIR offers no evidence to support a determination that fair market value would be anything less than one-hundred percent of the value.

The consultants of HAC are licensed appraisers (see our qualifications in the appendices of this memorandum). We have assisted numerous parties, including municipal corporations and other local governments, with farmland-conservation and open-space programs over several decades. As experienced appraisers, we can unequivocally state that any proposed partial percentage of fee value as in-lieu fees will not assure adequate funding to obtain comparable land, and will therefore result in inadequate mitigation. Moreover, valuation by percentage is not allowed by the Uniform Standards of Professional Appraisal Practice, nor is it approved by the California Department of Conservation.⁶

In-lieu fees have performed poorly as a mitigation mechanism in other jurisdictions. Second, in-lieu fees in other jurisdictions and settings have consistently failed to adequately mitigate agricultural land conversion because of the time lapse between collecting the fee and the actual acquisition of the conservation easement. Moreover, if the County establishes a predetermined, set in-lieu fee, it is surely likely to become stale: in all likelihood the fee will quickly become insufficient due to land value appreciation.

Land prices fluctuate over time and are subject to many unpredictable exterior forces which have nothing to do with the quality of the land, such as interest rates, government policies and regulations, and commodity prices, etc. For instance, between 2014 and 2015, irrigated agricultural land of good quality in Imperial County appreciated from approximately \$10,000 per acre to approximately \$14,000 per acre, peaked at approximately \$15,000 per acre during 2016 to 2019, and now stands at approximately \$14,500 per acre.⁷

Simply put, an in-lieu fee of any type—whether a predetermined set amount or established by formula or ratio—cannot guarantee equal acres conserved for equal acres converted because of the bureaucratic nature of the procedure, which, in our experience, has often taken many years from the time of fee collection (the time of the land conversion) to the actual placement of an agricultural conservation easement on acres to effect the mitigation, or in many cases has simply failed entirely to occur, in part because of severe loss of purchasing power by the agency holding the fees.

Similarly, the provision in Option 2 of the DEIR for in-lieu fee administrative costs also suffers a similar problem as that of land values in that administrative costs can be predicted to increase every year (though not necessarily at a predictable rate), and therefore any delays more than one

⁶ The percentages of easement value versus unencumbered-fee value often discussed are merely a statistic that emerges after the easement's acquisition. The percentage value will vary by local market conditions and timing.

⁷ Data from California Chapter of the American Society of Farm Managers and Rural Appraisers, 2024 *Trends in Agricultural Land and Lease Rates*, pages 108 to 115; see references.

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year in acquisition of the easement will inevitably reduce the utility of the sum of funding held for mitigation, again defeating the acre-for-acre intent of the mitigation plan.

Some counties have attempted to solve this problem of shrinking purchasing power and funding by the prepurchase of mitigation land and the establishment thereon of a so-called "land bank", but this also has a number of problems including the holding period which its financial opportunity costs, the problem of matching agricultural land quality of the converted with the conserved, and the overall logistical difficulty of administering such a program.

In any case, an in-lieu fee cannot achieve the timeliness or certainty of the previous Option 1, providing an agricultural-conservation easement, which is required under that option by the DEIR to "be recorded prior to issuance of any grading or building permits".

For all of these reasons, the DEIR's proposed in-lieu fee program is seriously flawed—and is furthermore unnecessary in light of the feasibility of other, more effective mitigation. There is no reason why a developer, with reasonable effort, cannot obtain at least a small-acreage conservation easement at the time of project approval, even if it is on a portion of a legal parcel. Providing a recorded agricultural-conservation easement is unequivocally the only proven method to efficiently and equivalently mitigate the conversion of important farmland. It is furthermore a well-established and widely practiced method throughout California.

As mitigation by conservation easement is feasible, this project should adhere to a similar standard. Payment of an in-lieu fee or dedication of an easement elsewhere in the county outside the path foreseeable development would fail to mitigate the project's significant agricultural impacts.

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2.2.4 OPTION 3 FOR AG-1A, A PUBLIC-BENEFIT AGREEMENT. In this option laid out by the DEIR, the permittee and the County of Imperial voluntarily enter into an enforceable public-benefit-agreement or development agreement that includes a payment of an agricultural-benefit fee. This option is fatally flawed in that it does not require an agricultural-conservation easement as mitigation.

The DEIR states that the funds collected must be held by the county in a restricted account to be used "only for such purposes as the stewardship, preservation and enhancement of agricultural lands within Imperial County and to implement the goals and objectives of the Agricultural Benefit program", and goes on to suggest the funds could be used for social and economic woes such as agricultural-job loss in the local economy and the "creation of jobs in the agricultural sector of the local economy for the purpose of offsetting jobs displaced by this Project".

This proposed activity is not mitigation for farmland loss in any reasonable sense, because it is not farmland mitigation as such at all but rather redefines a vague list of potential objectives from other field of public policy as "mitigation". Thus, notwithstanding the high-minded language of this option, it does not hit the mark in actually preserving agricultural land through the establishment of a permanent agricultural-conservation easement—and therefore completely fails in the purpose of mitigating agricultural-land conversion, as established by California court precedent.

G B-9

2.2.5 OPTION 4 FOR AG-1A, AVOIDING PRIME FARMLAND. This last option for the "mitigation" of Impact 3.1-1, while obviously not mitigation per se, and not intended for farmland of statewide importance, is surely an excellent option, as under this option no conversion of prime farmland would occur. We cannot find any objection to the permittee revising its *Conditional Use Permit Application/Site Plan* to avoid converting 22 acres of prime farmland, provided, of course, that it does not then seek to convert other important farmland as identified by the DOC's Farmland Mapping and Monitoring Program.

G B-10

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3 Findings on AG-1b—Site-reclamation plan

3.1 Restoration plan is grossly inadequate as presented. The entire description of the agricultural component of the site-restoration plan is stated in the following paragraph on page 3.3-11 of the DEIR:

Applicant shall submit to Imperial County, a Reclamation Plan prior to issuance of a grading permit. The Reclamation Plan shall document the procedures by which the project site will be returned to its current agricultural condition.

Additionally, on pages 3.3-13 and 3.3-16, there are brief discussions of the likely effect on soil health and its effects after the project is decommissioned and the site-reclamation plan is implemented, and: "This is considered a significant impact attributable to the project." However, no solution is offered, and the impact is dismissed as "Mitigation Measures AG-1b and AG-2 would reduce this impact to a level less than significant." Without definition of a detailed site reclamation plan, this statement is mere bravado.

The site-reclamation plan must provide a detailed explanation of how the plan would achieve its requirement of returning the land and soil to its current condition. It should be included in a second-draft DEIR so that it can be evaluated for its effectiveness; it should include a detailed documentation of the current condition and productivity of the land before the issuance of a grading permit for initiation of the project.

3.1.1 AGRONOMIC-BASELINE REPORT NEEDED. In order to restore the project site to its current agricultural condition, there must be a requirement to establish that baseline agronomic condition. There is no mention in the DEIR of whether and how any specific factors influencing the land's productivity are to be measured, evaluated, or documented for future reference. A start would be to assess the chemical and physical properties of each soil unit on the project site, using the chemical and physical categories listed in the "Soil Properties and Qualities" pages of the United States Department of Agriculture's Web Soil Survey. See figure 1 for details on what scientific features these pages describe for the actual soil on the project site.

3.1.2 DETAILS OF AGRONOMIC RESTORATION REQUIRED WITH TIMELINE. In order to restore the land to its former condition, following documentation in an agronomic baseline report by a qualified professional agronomist, a detailed schedule of agricultural will be required. There are no such specifics in the DEIR.⁸ At a minimum: (1) a land releveling survey should be provided with topsoil yardage needs; (2) a schedule of planned machinery operations, such as removal of rubble and buried pipes and cables, grading, ripping, and other operations to re-establish soil tilth; (3) a schedule of soil amendments provided; and (4) a schedule of revegetation and re-establishment of soil microbiology. Each schedule should clearly state the operations to be undertaken and the time required for their completion.

3.1.3 POSTED BOND FOR RECLAMATION. The DEIR requires that a bond be posted to cover the cost of the site-reclamation plan, which will be prepared prior to issuing the grading permit:

⁸ Page 2-25 of the DEIR states: "The general objective of the final reclamation phase is to return the site as close as possible to the conditions prior to geothermal development. A Preliminary Reclamation Plan and Cost Estimate was provided by the Applicant to the County to confirm feasibility of reclamation." However, this preliminary plan is not included within the DEIR and is thus outside the scope of our present comment; regardless, the DEIR indicates in numerous locations that the actual reclamation plan does not yet exist but is to be prepared.

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G B-12

G B-13

G B-14

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FIGURE 1 "Soil Properties and Qualities" pages of the United States Department of Agriculture's Web Soil Survey: (a) overview, (b) detail of chemical properties, (c) detail of physical properties.



G B-12
cont'd

Permittee shall also provide financial assurance/bonding in the amount equal to a cost estimate prepared by a California-licensed general contractor or civil engineer for implementation of the

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Reclamation Plan in the event Permittee fails to perform the Reclamation Plan.

However, we were unable to find a definite time period for either the permitted or “useful life” of the project as described in the DEIR. It appears to be unspecified and undetermined.

Without a definite time frame in which to estimate those future costs, the DEIR has failed to adequately assure that a bond will actually cover the costs. An estimate made in 2024 would likely not be the same estimate given in, for example, thirty to forty years. Costs will surely be higher due to both inflation and specific environmental factors and regulations that are likely to change as well. The bond estimate must be required to consider these future changes in cost (which could reasonably be foreseen to rise at a greater rate than general inflation) to adequately assure the costs will be covered.

Thus, to reiterate, mitigation measure AG-1b of the DEIR is unable as written to enforce its goal of restoration to preproject agricultural productivity: there are no measurable performance standards stated (“current agricultural condition” is a goal rather than a measurable standard); and, as noted, no agronomy expert who would be professionally qualified to draft such measurable performance standards is specified.⁸

Finally, we note that nowhere in the DEIR’s discussion of the proposed reclamation plan can we find a statement that a qualified professional agronomist will be engaged. Agricultural reclamation presents numerous technical issues that require the specific expertise of an agronomist (for example, soil microbial health—see citation from the *Journal of Soils and Sediments* for a case study in the references). Civil engineers are not qualified to manage agronomy-specific issues within reclamation.

G B-14
cont’d

4 Findings on Impact 3.3-3: Changes in existing environment are inadequately analyzed

4.1 Impacts on surrounding parcels. Impact 3.3-3 questions—

Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

In answering this question, the DEIR finds on page 3.3.13 that the development of the project would not contribute to a “leapfrogging” pattern of development, because the proposed facilities are located in proximity to existing industrial uses such as the Heber 2 Geothermal Energy Complex (HGECC). However, we have examined the DEIR’s description of the location and independently examined the nearby farming parcels and cannot concur.

The presence of active agriculture to the east (APNs 054-25-047 and 054-250-048, both zoned A-2) is neither described nor considered; these parcels are located between the project and the city of Calexico. Similarly, APNs 054-25-010 and 054-250-011, which adjoin the project on its north, are in active agriculture and are sandwiched between the project and the urban community of Heber. Other adjacent parcels, all in active agriculture, are APNs 054-160-023, 054-250-037, 054-250-037, 054-250-038, 054-250-039, and 054-25-042. The project’s impact on the probable new conversion pressure on any of these parcels has not been addressed.

G B-15

⁸ A proper restoration must set measurable performance standards in the reclamation program which have been formed with the expertise of a recognized agronomist. As an example of an adequate reclamation program which has measurable performance standards is that of the County of Yuba for its gravel-mined agricultural lands (reference: see item “Mining Projects and Permits” within <https://www.yubacounty.org/>). HAC was not involved in the preparation of any of Yuba County’s reclamation plans. We were hired in 2021 in our capacity as professional agronomists to assess the performance of the ongoing reclamation of several postmining sites to the standards of the plans.

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4.2 Likelihood of decommissioning. The DEIR claims repeated that the project will not permanently use the land, stating, for example on page 3.3-13:

Also, the use of the agricultural land is not considered permanent given that the project applicant will be conditioned to restore the project site back to agricultural use. In this context, the project would be consistent with applicable General Plan policies and is considered less than significant.

This assertion is unfounded and unproven, especially in the context that there does not appear to be any decommissioning date expressed in the DEIR. Moreover, the likelihood of decommissioning of the project such that its site will return to agricultural use is extremely remote, given the quantity and cost of infrastructure that will go into the development and operations of the project. We have researched this subject in the past, finding no solar farms and no battery storage sites that have been returned to agriculture. On the contrary, we have found one solar farm that ran out its time permit and subsequently was reused to construct a new solar-energy facility: this in City of Davis.

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4.2.1 CITY OF DAVIS CASE STUDY BELIES THE ASSERTION THAT DECOMMISSIONING WILL OCCUR. One of the oldest photovoltaic-generation facilities in the United States is located in Davis, California. This 86-acre project was originally installed in 1986 by Pacific Gas & Electric Company as a research facility, and subsequently commercially operated from 2003 to generate 650 kilowatts of electricity by the companies Clean Energy Assets and CleanPath Ventures. CleanPath received permission from the Davis City Council in 2010 to expand power production to as much as 15 megawatts. Thus, this project, upon reaching the end of its originally planned useful life—approximately twenty-five years in 2012—was not being decommissioned in 2012 but was instead being refurbished and expanded for continued use into the indefinite future.¹⁹

4.2.2 THE PROJECT IS DE FACTO PERMANENT. The DEIR thus fails to consider the likelihood that the project is in fact a permanent land use in every normal sense of the term.

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5 Conclusion—summary of HAC's comments

The following summarizes HAC's initial comments in this matter.

5.1 Mitigation options inadequate. The DEIR's proposed mitigation options are inadequate, as we explain in section 2.

- a) Of these, Option 1, to "Provide Agricultural Conservation Easement(s)", can be brought to adequacy with appropriate improvements which we discuss on page 3.
- b) Option 2, "Agricultural In-Lieu Mitigation Fee", is seriously flawed (page ??), while Option 3 "Public Benefit Agreement" is fatally flawed and must be forgone (page 7).
- c) Option 4, "Avoid Prime Farmland", is commendable, is feasible, and has our full support, provided that the footprint of the project is not expanded to make up the difference in built-out acreage.

GB-18

5.2 Site-reclamation plan (AG-1b) is grossly inadequate. The proposed site-reclamation plan to follow putative future decommissioning is grossly inadequate; recall section 3. The plan that is presented lacks an affective mechanism to ensure its success. Furthermore, this project is

GB-19

¹⁹ See (<https://davisindependent.org/2020/04/city-releases-faq-signs-leave-option-agreement-for-solar-farm/>).

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de facto permanent—available evidence demonstrates that decommissioning and reclamation are unlikely to occur in the future (discussion on page 11).

G B-19
cont'd

5.3 Changes in existing environment improperly analyzed (Impact 3.3-3). The DEIR's analysis of changes in existing environment (Impact 3.3-3) is deficient, as we explain in section 4. More specifically, it fails to consider adjoining and neighboring parcels in agricultural use and fails to consider the de facto permanent nature of the project.

G B-20

5.4 Closing. This concludes our initial review regarding this DEIR. A description of our qualifications as consultants follows as an appendix to this memorandum.

G B-21

Sincerely,


Henry House


Gregory A. House

6 Appendices

6.1 Sources referenced.

- California Chapter of the American Society of Farm Managers and Rural Appraisers. *2024 Trends: Agricultural Land and Lease Values*, 2021. Web site: calasmfra.com.
- Piotrowska-Dlugosz, A.; Charzyński, P. *The impact of the soil sealing degree on microbial biomass, enzymatic activity, and physicochemical properties in the Ekranic Technosols of Toruń (Poland)*. In: *Journal of Soils and Sediments*, 2015.

6.2 Qualifications of House Agricultural Consultants. 6.2.1 GREGORY A. HOUSE. Agricultural Consultant · Agronomist · Professional Farm Manager · Rural Appraiser · Farmer.

Experience:—

- Agricultural consultant, 1983–present—House Agricultural Consultants, providing agricultural science, economics, management, and appraisal services.
- Farmer, 1987–present.—Growing organic apples, peaches, cherries, apricots, field and seed crops.
- Corporation secretary and consulting agronomist, 1977–1983—Hannesson, Riddle & Associates, Inc.

Professional affiliations:—

- American Society of Farm Managers & Rural Appraisers
- American Society of Agronomy
- Crop Science Society of America
- Soil Science Society of America
- California Certified Organic Farmers
- California Farm Bureau.

Accreditations:—

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- Accredited Farm Manager (AFM), American Society of Farm Managers & Rural Appraisers, certificate no. 501
- Certified Professional Agronomist (CPAg), American Registry of Certified Professionals in Agronomy, Crops, & Soils, Ltd., certificate no. 2319
- Certified Crop Advisor (CCA), American Registry of Certified Professionals in Agronomy, Crops, & Soils, Ltd.
- Accredited Rural Appraiser (ARA), American Society of Farm Managers & Rural Appraisers, certificate no. 749
- Certified General Appraiser in the State of California, license no. AG-001999.

N.B.—These credentials have continuing-education requirements with which I am in compliance.

Education:—

- B.S., Crop Ecology, University of California, Davis, 1975, with Honors
- Numerous courses from the University of California Extension in agricultural economics, crop management, real estate, & hazardous waste management
- Cornell University Certificate Program, Implementing Good Agricultural Practices: A Key to Produce Safety
- Courses of the American Society of Farm Managers & Rural Appraisers: Principles of Rural Appraisal · Advanced Rural Appraisal · Eminent Domain · Report Writing School · Economics of Farm Management · Principles of Farm Management · Standards and Ethics · Permanent Plantings Seminar · Standards and Ethics for Farm Managers · ASFMRA Code of Ethics
- National Uniform Standards of Professional Appraisal Practice Courses of the Appraisal Institute: Basic Valuation Procedures · Real Estate Statistics and Valuation Modeling · Advanced Income Capitalization · Valuation of Conservation Easements Certificate Program · Condemnation Appraising: Principles and Applications · Appraising the Appraisal · How Tenants Create or Destroy Value: Leasehold Valuation and Its Impact on Value.

Expert-witness court testimony:—

- Superior Court Qualified Expert Witness in the following California counties: Alameda, Colusa, Kern, Fresno, Madera, Merced, Monterey, Orange, Riverside, San Joaquin, San Luis Obispo, Santa Barbara, Santa Cruz, Solano, Sonoma, Sutter, Ventura, Yolo
- United States Tax Court qualified expert witness
- United States Bankruptcy Court qualified expert witness.

A comprehensive listing of Mr. House's depositions and trial appearances is available upon request. The list currently numbers seventy-two matters in which Mr. House gave sworn testimony (either deposition, trial or hearing appearance, or both), including thirty-two trial appearances.

Awards:—

- CCOF Presidential Award, California Certified Organic Farmers, February, 2001
- Meritorious Service in Communications, American Society of Farm Managers & Rural Appraisers, November 2004
- H.E. Buck Stalcup Excellence in Education Award, American Society of Farm Managers & Rural Appraisers, October, 2011.

Appointments & activities:—

- Adjunct Lecturer, University of California, Davis, Department of Agricultural & Resource Economics, current; Courses ARE 140 Farm Management; ARE 145 Appraisal of Farms & Rural Resources, 2015-2021.

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- Instructor, "Principles of Farm Management", an Internet course of the American Society of Farm Managers & Rural Appraisers, 1996-2007.
- President, California Chapter American Society of Farm Managers & Rural Appraisers 1994-1996; Secretary-Treasurer, 1984-1990.
- Board of Directors, Yolo Land Trust, 1993-2001.
- Board of Directors, American Red Cross, Yolo County Chapter 1987-1989.
- Member, Yolo County Right to Farm Grievance Committee 1992-1995.
- Vice Chairman, Management Education Committee, American Society of Farm Managers & Rural Appraisers, 1998-2000 (committee member since 1986).
- Yolo County LAFCo Agricultural Forum LESA subcommittee, 1999.
- California Certified Organic Farmers: Treasurer of the Board of Directors, 1998-2003; Executive Director, 1999-2000; Member of the Finance Committee, 1998-current.
- CCOF Foundation Going Organic Program, Management Team member, 2006-2012.
- USDA Organic Grant Panel member, Washington, DC, 2002.
- City of Davis Open Space and Habitat Commission, 2006-2016, Chairman, 2007-2009.
- Member, Fruit Orchard Technical Advisory Group, Filoli Gardens, Woodside, California.
- Member, Organic and Sustainable Agriculture Program Steering Committee, University of California Cooperative Extension, Yolo and Solano Counties, California, 2008-2013.
- Member, Solano County Right to Farm Grievance Committee 2022-present.

Speaking engagements:—

- Guest lecturer, University of Florida at Gainesville-Vegetable Crops Department. Seminar on transition to organic agriculture, November 1994.
- Featured program speaker, 1995 annual *Eco-Farm Conference*. Lecture on economics of organic-apple production, Asilomar, California, 1995.
- Guest speaker, multiple events of Community Alliance with Family Farmers. Presentations on farm management and agricultural economics, 1996 and 1997.
- Instructor, American Society of Farm Managers & Rural Appraisers. Course "M-12", *Standards and Ethics for Professional Farm Managers*, March 1997.
- Guest speaker, American Horticultural Society. Lecture entitled *Challenges of Organic Stone Fruit Production*, Sacramento, California, July 2001.
- Organizer and presenter, *Going Organic Kickoff Meetings*. A program of California Certified Organic Farmers, November 2005 and December 2006.
- Master of ceremonies, annual meeting of California Certified Organic Farmers. Sacramento, California, February 2006.
- Featured program speaker, 2012 annual *Eco-Farm Conference*. Lecture entitled *Imitating Natural Systems: Towards an Indigenous Agro-forestry*, Asilomar, California, 2012.
- Seminar presentation, American Society of Farm Managers & Rural Appraisers. *Rapid Fire Seminar: What Makes for Comparable Sales in Condemnation Appraisal*—Reno, Nevada, October 2013.
- Featured program speaker, 2014 annual *Eco-Farm Conference*. Lecture entitled *Food Safety Regulatory Compliance in Fruit Orchards*, Asilomar, California, 2014.

Publications:—

- *Principles of Farm Management*, course "M-10", a forty-hour professional-credit online educational offering of the American Society of Farm Managers & Rural Appraisers.
- *Conservation Issues in Agriculture*, a unit of course "M-25", a fifteen-hour professional-credit online educational offering of the American Society of Farm Managers & Rural Appraisers.

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– *A Primer on Organic Agriculture*, an article in 2006 *Trends in Agricultural Land and Lease Values*, a publication of the California Chapter of the American Society of Farm Managers & Rural Appraisers.

– *Case Study: Using Indigenous Agroforestry Management Techniques to Support Sustainability in Production Agriculture*, a paper-poster presented at *Harlan II, An International Symposium on Biodiversity in Agriculture: Domestication, Evolution and Sustainability*, September 14–18, 2008, University of California–Davis.

6.2.2 HENRY HOUSE. Agricultural Economist • Agricultural Consultant • Licensed Appraiser • Farmer.

Keywords:—agricultural economist; agricultural appraiser; forensic appraiser; business valuation; crop loss; farming standard of care; agricultural dust; livestock standard of care; fencing; California Food & Agriculture Code section 17121; right to farm; eminent domain; lost profits.

Summary of professional expertise:—

- Agricultural economics and lost profits.
- Value of lost crops.
- Farm management: good farming practices in orchards, such as almonds and walnuts, row crops.
- Livestock management: carrying capacity of land, range management, standard of care for grazing animals, fencing.
- Right-to-farm issues, e.g., vehicle-agriculture, vehicle-livestock conflicts in agricultural districts, feasibility of agriculture on urban-proximate lands.
- Appraisal: valuation in disputes concerning real property, valuation of agricultural and rural land, valuation of livestock, valuation of agricultural personal property, valuation of agricultural-commercial facilities (e.g., aquaculture), valuation of development rights, assessed-value analysis for assessment appeal. California appraiser's license number AG-3010876 (Certified General Appraiser).
- Condemnation: valuation services for this appraisal specialty, including severance damages, in support of eminent-domain litigation.
- Management evaluation of commercial equestrian facilities.
- Management of rural-residential property.
- Statistical analysis, geographic-information-system (GIS) analysis, and software engineering (analytics).
- Expert services to litigation on the foregoing with deposition and trial-testimony experience; partial list of matters below.

Representative recent matters in which Mr. Henry House was retained by counsel as a forensic expert:—

Federal venue, August 2024.—Topic: farm management, real-property rights. A federal-court matter, involving appraisal and farm-management expertise, which is confidential per our agreement with the client. This matter was venued in a federal district of California.

County of Solano, June 2024–current.—Topic: agricultural economics. *Freese Farms, LLC v. Asiductor, LLC*. Mr. House was retained to analyze and opine on issues of agricultural economics and farm management of almonds in Solano County in a controversy over an irrigation-design company's services to an almond-orchard developer.

County of Los Angeles, March 2024.—Topic: real-estate appraisal. *JP's Nevada Trust v. 2Bulls Conservation Ventures et al.* Mr. House opined on valuation methodology and opined the fair market value of three ranch properties at the times of three controverted transactions in service of

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the plaintiff in a dispute in which the buyer (plaintiff) alleged conspiracy to defraud and a pattern of racketeering activity in violation of 19 U.S.C. § 1962(c), the Racketeer Influenced and Corrupt Organizations Act (RICO). Additional details on this matter are found in Mr. House's testimony list.

County of Tulare, September–October 2023.—Topic: farming standard of care. *Vasquez et al. v. Hundal Farms, Inc., et al.* An auto-accident case wherein dust allegedly originating from the defendants' almond orchard obscured visibility on a public road, contributing to an accident with multiple vehicles involved. Mr. House was retained to opine on the defendant's standard of care in managing its orchard, best practices during nut harvest, and the right-to-farm policies in rural Tulare County.

County of Franklin, State of Washington, September 2023–June 2024.—Topic: real-estate appraisal. *Ice Harbor Properties, LLC and Certain Underwriters Subscribing to Certificate No. XLS0342717 v. Agri Control Technologies, Inc. d.b.a. BTU Ventilation and Parrish Stokkeland* (case no. 20-2-50118-11, Superior Court of the State of Washington, County of Franklin). A dispute over the compensation due by the defendants for the fire loss of the plaintiff's real property, a warehouse specialized for climate-controlled bulk storage of potatoes and onions. The plaintiffs retained and designated Mr. House as a rebuttal witness to opine on the fair market value of the lost building, the market for similar buildings, and other experts' opinions.

County of Tulare, July 2023.—Topic: livestock economics, real-estate appraisal. *Jones, et al. v. Pleasant Valley Canal Company, et al.* (Tulare County Superior Court case no. VCU274417). A dispute over a cattle-ranching and hay-growing operation which the plaintiffs alleged had been damaged by the operation of a canal crossing the plaintiffs' property. The scope for which Mr. House was retained and designated included analyzing the plaintiffs' alleged diminution of value of real estate, analyzing the plaintiffs' alleged economic loss from death of cattle, and opining on the water company's standard of care in maintenance of its canal. Additionally, I assisted retaining counsel to engage an expert in veterinary pathology.

County of Yolo, March 2023–current.—Topic: real-estate appraisal in condemnation. *The People of the State of California, acting by and through the Sacramento and San Joaquin Drainage District v. Conaway Preservation Group, LLC, et al.* A matter of eminent domain (Code Civ. Proc., § 1250.310) regarding farmland in Yolo County. Mr. House has provided appraisal and valuation services to assist Conaway Preservation Group, LLC, in the defense of its interests in this taking.

County of Minidoka, State of Idaho, March–August 2023.—Topic: standard of care for livestock fencing. *Michael O. Otley v. Hanssen et al.* (case no. CV34-21-00168, District Court of the Fifth Judicial District of the State of Idaho, in and for the County of Minidoka). An auto-accident case wherein the defendants' cattle had escaped onto a public road and been struck by the plaintiff in rural Minidoka County, Idaho. The defendants retained and designated Mr. House to analyze the defendants' standard of care in managing the cattle, to opine on the quality of the defendants' fencing in comparison to locally accepted standards of adequacy, and for rebuttal of the plaintiff's fencing expert.

County of Imperial, November 2022–February 2024.—Topic: agricultural economics. *Freddi Abatti et al. v. James Davis, et al.* (Imperial County Superior Court case no. ECU002597). The defendants retained and designated Mr. House to evaluate the lost profits in hay crops in Imperial County resulting from a fire.

County of Merced, September 2022–January 2024.—Topic: agricultural economics. *Athwal Investments et al. v. San Luis Pump Co. et al.* (case no. 20CV03787). A matter of almond trees in Merced County allegedly damaged consequent to lack of irrigation water. Scope included analysis of the economic lost profits from orchard trees lost and replanted as well as from lost yield in service of two defendants.

See also.—Mr. House's separately provided list of testimonies lists additional matters.

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Partial list of management-consulting assignments:—

- Numerous consulting assignments for Leland Stanford Junior University on the management of its agricultural lands, which feature cattle, horses, and vegetable crops. Topics addressed have included livestock standard of care, carrying capacity of lands, safety of animals, safety of structures, and management of drainage and water quality.
- Consulting farm management for John and Marie Cronin Trust B, a landowner near Rio Vista, California. Lands were utilized for cattle grazing.
- Numerous appraisal assignments of farmland and rangeland properties utilized for crops and livestock (cattle, sheep, and aquaculture).
- A list of additional management-consulting clients served available on request.

Experience:—

Agricultural consultant, appraiser, consulting agricultural economist.— House Agricultural Consultants, providing agricultural science, economics, management, and appraisal services. 2000–present.

Farmer.— Coco Ranch, a family farm growing organic apples, peaches, cherries, and field crops and raising sheep, poultry, and goats. 2000–present.

Education:—

- B.S., “Natural History”, University of California, Davis, 1999, with Honors. Coursework in agronomy, botany, ecology, entomology, geology, hydrology, nematology, plant pathology, soil biology, sustainable agriculture, statistics, and wildlife biology.
- Numerous courses of the American Society of Farm Managers & Rural Appraisers (ASFMRA) regarding farm management, agricultural consulting, and appraisal. Recently completed: *Livestock Ranch Seminar* (February 15, 2024) and *Appraisal of Water Rights Seminar* (March 8, 2024), both in ASFMRA’s appraisal-education series.
- Numerous courses of the Appraisal Institute regarding real-estate appraisal.
- Courses from Savory Institute regarding livestock management.

Appointments & activities:—

- Member, Solano County Farm Bureau.
- Member, American Society of Farm Managers & Rural Appraisers.
- Board of Directors, Davis Media Access, Davis, California, 2014–2017.
- Board of Directors, Davis Farmers Market Association, 2001–2003.
- Assistant instructor, “Principles of Farm Management”, course M-10, an Internet course of the American Society of Farm Managers & Rural Appraisers, 1999–2003.
- Course proctor, “M-25: Enhanced Client Services”, an Internet course of the American Society of Farm Managers & Rural Appraisers, 1999–2003.

Publications & speaking engagements:—

- Lecturer/instructor, “Farm Management”, course ARE 140, and “Appraisal of Farms & Rural Resources”, course ARE 145, University of California–Davis, 2015–2021.
- *Principles of Farm Management*, Course M-10, a 40-hour professional credit Internet educational offering of the American Society of Farm Managers & Rural Appraisers
- Educational speaker at the annual meeting of the California Chapter of the American Society of Farm Managers & Rural Appraisers, November 19, 2021, Coalinga, California. Topic: valuation of conservation easements.

Gregory A. House

**Agricultural Consultant
Agronomist
Professional Farm Manager
Rural Appraiser
Farmer**

Experience

Agricultural Consultant, House Agricultural Consultants, providing agricultural science, economics, management, and appraisal services, 1983–present

Farmer, 1987–present. Organic apples, peaches, cherries, apricots, field and seed crops

Corporation Secretary & Consulting Agronomist, Hannesson, Riddle & Associates, Inc., 1977–1983.

Professional Affiliations

- American Society of Farm Managers & Rural Appraisers
- American Society of Agronomy
- Crop Science Society of America
- Soil Science Society of America
- California Certified Organic Farmers
- California Farm Bureau

Accreditations

- Accredited Farm Manager (AFM), American Society of Farm Managers & Rural Appraisers, Certificate #501
- Certified Professional Agronomist (CPAg), American Registry of Certified Professionals in Agronomy, Crops, & Soils, Ltd. Certificate # 2319
- Certified Crop Advisor (CCA), American Registry of Certified Professionals in Agronomy, Crops, & Soils, Ltd.
- Accredited Rural Appraiser (ARA), American Society of Farm Managers & Rural Appraisers, Certificate #749
- Certified General Appraiser, State of California License # AG 001999

These credentials have continuing education requirements with which I am in compliance.

Qualifications of Gregory A. House, continued

Education

- B.S., Crop Ecology, University of California, Davis, 1975, with Honors
- Numerous courses from the University of California Extension in agricultural economics, crop management, real estate, & hazardous waste management
- Courses of the American Society of Farm Managers and Rural Appraisers:
 - Principles of Rural Appraisal
 - Advanced Rural Appraisal
 - Eminent Domain
 - Report Writing School
 - Economics of Farm Management
 - Principles of Farm Management
 - Standards and Ethics
 - Permanent Plantings Seminar
 - Standards and Ethics for Farm Managers
 - ASFMRA Code of Ethics
 - National Uniform Standards of Professional Appraisal Practice
- Courses of the Appraisal Institute:
 - Basic Valuation Procedures
 - Real Estate Statistics and Valuation Modeling
 - Advanced Income Capitalization
 - Valuation of Conservation Easements Certificate Program
 - Condemnation Appraising: Principles and Applications
 - Appraising the Appraisal

Expert Witness Court Testimony

- Superior Court Qualified Expert Witness in the following California counties: Alameda, Colusa, Kern, Fresno, Madera, Merced, Monterey, Orange, Riverside, San Joaquin, San Luis Obispo, Santa Barbara, Santa Cruz, Solano, Sonoma, Sutter, Yolo
- United States Tax Court Qualified Expert Witness
- United States Bankruptcy Court Qualified Expert Witness

A list of depositions and trial appearances is available upon request.

G B

Qualifications of Gregory A. House, continued

Awards

- CCOF Presidential Award, California Certified Organic Farmers, February, 2001
- Meritorious Service in Communications, American Society of Farm Managers and Rural Appraisers, November 2004
- H.E. Buck Stalcup Excellence in Education Award, American Society of Farm Managers and Rural Appraisers, October, 2011

Appointments & Activities

- Adjunct Lecturer, Farm Management Courses ARE 140 & ARE 198, University of California, Davis, Department of Agricultural & Resource Economics, current
- Instructor, "Principles of Farm Management", an Internet course of the American Society of Farm Managers and Rural Appraisers, 1996 to 2007
- President, California Chapter American Society of Farm Managers & Rural Appraisers 1994–1995; Secretary-Treasurer, 1984 to 1990
- Board of Directors, Yolo Land Trust, 1993–2001
- Board of Directors, American Red Cross, Yolo County Chapter 1987–1989
- Member, Yolo County Right to Farm Grievance Committee 1992–1995
- Vice Chairman, Management Education Committee, American Society of Farm Managers and Rural Appraisers, 1998–2000 (committee member since 1986)
- Yolo County LAFCo Agricultural Forum LESA subcommittee, 1999
- California Certified Organic Farmers: Treasurer of the Board of Directors, 1998–2003; Executive Director, 1999–2000; Chairman of Certification Committee, Yolo Chapter, 1993–2005; Member of the Finance Committee, 1998–current
- CCOF Foundation Going Organic Program, Management Team member and Chapter Leader, 2006–current
- USDA Organic Grant Panel member, 2002
- City of Davis Open Space and Habitat Commission, 2006–current, Chairman, 2007–2009
- Member, Fruit Orchard Technical Advisory Group, Filoli Gardens, Woodside, California
- Member, Organic and Sustainable Agriculture Program Steering Committee, University of California Cooperative Extension, Yolo and Solano Counties, California, 2008–2013

Qualifications of Gregory A. House, continued

Speaking Engagements

- Guest Lecturer, University of California at Davis, Agricultural Economics 145, Farm and Rural Resources Appraisal, on professional farm appraisal (1985–1997)
- Guest Lecturer, University of California at Davis, Agricultural Economics Department, Course 140, “Farm Management”, on adoption of new technologies, farm budgeting, cash flow management, cost accounting, etc. (1985–present)
- Guest Lecturer, University of Florida at Gainesville, Vegetable Crops Department, seminar on transition to organic agriculture, (November, 1994)
- Featured Program Speaker, 1995 Eco-Farm Conference, Asilomar, California, on economics of organic apple production
- Guest Speaker, Community Alliance with Family Farmers, on farm management and agricultural economics, 1996 and 1997
- Instructor, American Society of Farm Managers and Rural Appraisers, Course M-12, “Standards and Ethics for Professional Farm Managers”, March, 1997
- Guest Speaker, American Horticultural Society, “Challenges of Organic Stone Fruit Production”, Sacramento, California, July 2001
- Organizer and Presenter, Going Organic Kickoff Meetings, November 2005 and December 2006
- Master of Ceremonies, California Certified Organic Farmers, Annual Meeting, February, 2006, Sacramento, California
- Featured Program Speaker, 2012 Eco-Farm Conference, Asilomar, California, “Imitating Natural Systems: Towards an Indigenous Agro-forestry”
- Seminar presentation: “What Makes for Comparable Sales in Condemnation Appraisal”, Rapid Fire Seminar, American Society of Farm Managers and Rural Appraisers, Reno, NV, October 2013.

Publications

- “Principles of Farm Management”, Course M-10, a 40-hour professional credit Internet educational offering of the American Society of Farm Managers & Rural Appraisers
- “Conservation Issues in Agriculture”, a unit of Course M-25, a 15-hour professional credit Internet educational offering of the American Society of Farm Managers & Rural Appraisers
- “A Primer on Organic Agriculture,” an article in *2006 Trends in Agricultural Land and Lease Values*, a publication of the California Chapter of the American Society of Farm Managers & Rural Appraisers
- “Case Study: Using Indigenous Agroforestry Management Techniques to Support Sustainability in Production Agriculture”, a paper-poster presented at Harlan II, An International Symposium on Biodiversity in Agriculture: Domestication, Evolution and Sustainability, September 14-18, 2008, University of California, Davis

House Agricultural Consultants Partial Listing of Clients Served

Allied Insurance Group	Morrison & Foerster
American Farmland Trust	San Francisco, California
Balverne Winery & Vineyards	Oakdale Irrigation District
Sonoma County, California	Pajaro Valley Water Management Agency
Bank of America	Watsonville, California
Best, Best & Kreiger, LLP	Phillips 66 Company
Riverside, California	Republic Indemnity Company of America
California Giant Berry Farms	San Francisco, California
California Department of Fish & Game	Royal & Sun Alliance
Wildlife Conservation Board	Sacramento Valley Conservancy
California Department of Justice	Sacramento Valley Farm Credit Banks
City of Davis	San Andreas Farms
City of Fairfield	Fresno County, California
City of Morgan Hill	San Joaquin Council of Governments
City of Sacramento, City Attorney	San Luis Delta Mendota Water Authority
Continental Casualty Company	Sanwa Bank, N.A.
Chicago, Illinois	Sacramento, California
County of Solano	Solano Land Trust
County of Yolo	Stanford Management Company
Downey, Brand, Seymour & Rohwer	Stanford University
Sacramento, California	The Nature Conservancy
Glenn-Colusa Irrigation District	The Prudential Agricultural Group
Hamel Ranch Partnership	Sacramento, California
Davis, California	The Travelers Insurance Company
Harris Farms, Inc.	The Trust for Public Land
Farmers' Home Administration (U.S.D.A.)	U. S. Fish & Wildlife Service
Sacramento, California	U. S. Departments of Justice & Treasury
Internal Revenue Service, District Counsel	University of California, Davis
San Francisco, California	Yolo Land Trust
McMahon-Graf Partners	Wells Fargo Bank, N.A.
Winters, California	

GC-

EXHIBIT C

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

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

14 November 2024

RE: Dogwood Geothermal

Dear Mr. Minnick,

I write to comment on the analysis of potential project impacts to wildlife that is presented in the Draft Environmental Impact Report (DEIR) that was prepared for the proposed Dogwood Geothermal Project, which I understand would consist of a 25 MW geothermal facility with two-turbine combined cycle binary unit, two double-walled 20,000-gallon above-ground isopentane storage tanks, a cooling tower array, a substation with 128.6 m of eight-foot-tall chain link fence, 22 MW solar PV, an injection well, three geothermal production wells (244 m of fence per well pad), 1.368 km of geothermal fluid production pipeline, and 1.964 km of medium-voltage distribution lines on 106.88 acres. I am concerned that the characterization of the existing environmental setting is grossly deficient and the impacts analysis is incomplete and inaccurate.

G C-1

My qualifications for preparing expert comments are the following. I hold a Ph.D. degree in Ecology from University of California at Davis, where I also worked as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, wildlife interactions with the anthrosphere, and conservation of rare and endangered species. I authored many papers on these and other topics. I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and Raptor Research Foundation, and I've lectured part-time at California State University, Sacramento. I was Associate Editor of wildlife biology's premier scientific journal, The Journal of Wildlife Management, as well as of Biological Conservation, and I was on the Editorial Board of Environmental Management. I have performed wildlife surveys in California for thirty-seven years. My CV is attached.

G C-2

SITE VISIT

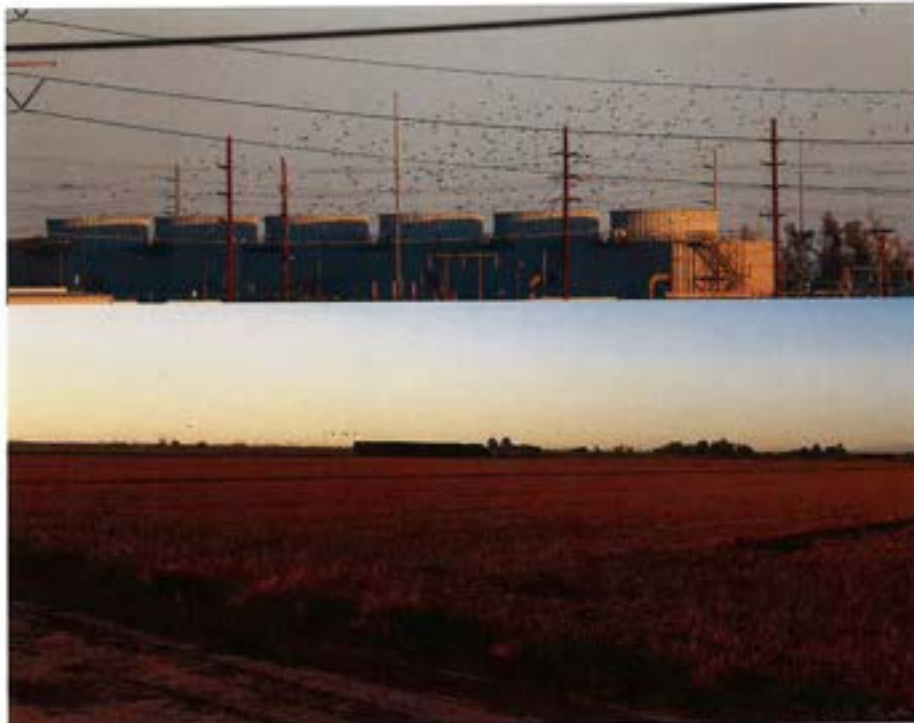
Noriko Smallwood, who is a wildlife biologist with a Master's Degree from California State University Los Angeles, accompanied me during a visual-scan survey visit to the east side of the project site on 4 and 5 September 2024. We visited the site for 2.17 hours starting at 17:20 hours on the 4th, and for 3 hours starting at 05:59 hours on the 5th. We visually scanned the site with the aid of binoculars for 5.17 hours total. Starting at 19:28 hours on the 4th, we also performed a 1.5-hour bat survey using Sonobat software connected to a Petterson D500 bat detector mounted 28 feet above ground.

G C-3

We recorded all species of vertebrate wildlife we detected, including those whose members flew over the site or were seen nearby, off the site. Animals of uncertain species identity were either omitted or, if possible, recorded to the Genus or higher taxonomic level.

G C-3
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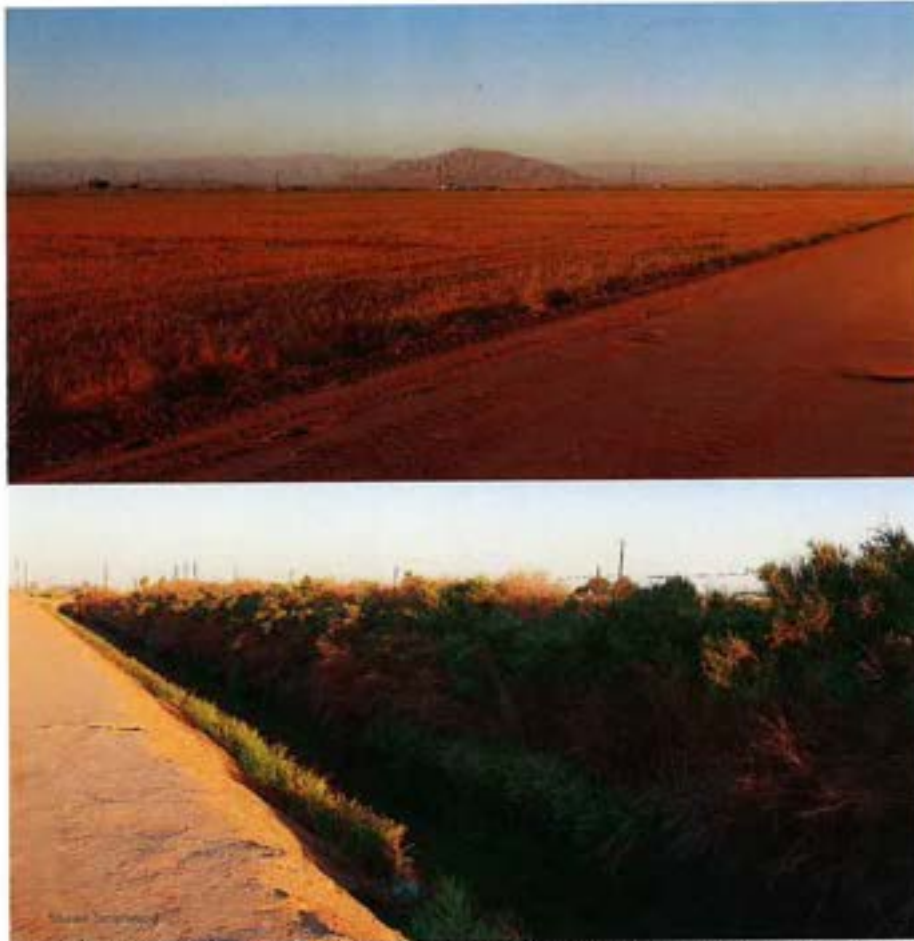
Conditions were clear both days, and 112° to 103° F as the day cooled into evening with no wind on the 4th, and 84° to 98° F as the day warmed with no wind on the 5th. The site proposed for the project includes a portion of the Heber 2 project site (Photo 1) as well as fields currently in alfalfa, which was mowed and cleared of hay and in between irrigation (Photos 2–3). Abutting the alfalfa were Dogwood Canal north of Willoughby Road and Beech Drain, the latter of which is lined with arrow weed and other wetland-adapted plants (Photo 4). Arrow weed thicket is a sensitive natural community ranked by CDFW as S3.



Photos 1 and 2. A view toward the Heber 2 project site, where the Dogwood Geothermal facility would be built just north of the structures seen here (top), and alfalfa where utility-scale solar PV arrays are proposed (bottom), 5 September 2024. Note the many birds flying over the site in both photos.

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G C-3
cont'd



Photos 3 and 4. Alfalfa where solar PV panels are proposed (top), just south of Beech Drain, which is lined with thick stands of arrow weed and other wetland-adapted plants (bottom), 5 September 2024. Note the round-tailed ground squirrel on the right side of the top photo. This and many other burrows were plenty large enough to accommodate burrowing owls.

We saw evidence of ecological keystone species, which are species whose presence disproportionately supports the likelihoods of occurrence of other species of wildlife. Photos of some of these and other species appear in the **Appendix** at the end of this letter. Examples of ecological keystone species included harvester ants (Photo 5), round-tailed ground squirrels (Photo 6), and Botta's pocket gophers. We saw many birds making dual use of the alfalfa fields and Beech Drain and Dogwood Canal (Photos 7–11), and many birds flying into the arrow weed-lined Beech Drain (Photo 12). We saw white-faced ibises and mallards (Photos 13 and 14), black-necked stilts (Photos 15 and 16), cattle egrets and snowy egrets (Photos 17 and 18), great egrets, double-crested cormorants and killdeer (Photos 19–21), muskrat and blue grosbeaks (Photos 22 and 23), great-tailed grackles and orange-crowned warblers (Photos 24 and 25), common yellowthroats, Brewer's sparrows and savannah sparrows (Photos 26 and 27), lazuli buntings and black phoebes (Photos 28 and 29), hundreds of red-winged blackbirds including hundreds of juveniles (Photos 30 and 31), and fledgling verdin (Photo 32). We also saw thousands of small fish in Beech Drain, and some very large fish in Dogwood Canal. People fished Dogwood Canal both day and night while we were there.

During our 90-minute bat survey, we recorded 33 calling passes, 20 of which were indefinite to species, nine were spotted bat (Figure 1), two were silver-haired bat (Figure 2), and two were Mexican free-tailed bat (Figure 3).

The channelized wetlands of Dogwood Canal and Beech Drain attract many wild birds and mammals, and provide cover for lizards as well. Many birds on these wetlands feed on fish or aquatic arthropods, and many travel back and forth to the upland portions of the project site. Over our morning, evening and nocturnal surveys, we detected 53 species of terrestrial vertebrate wildlife, including nine special-status species (Table 1). Including our survey results from two nearby project sites known as Heber 1 and Cal 98, only 0.5 and 1.6 miles away, respectively, we detected 90 species of terrestrial vertebrate wildlife, and including Monarch we detected 23 special-status species (Table 1).

G C-3
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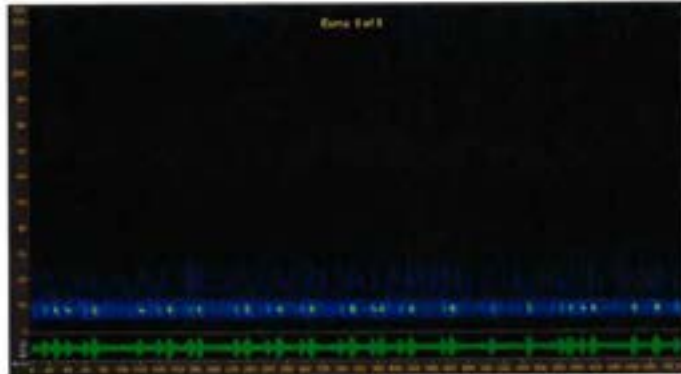


Figure 1. Spotted bat call recorded by Sonobat on the Dogwood Project site, 4 September 2024.

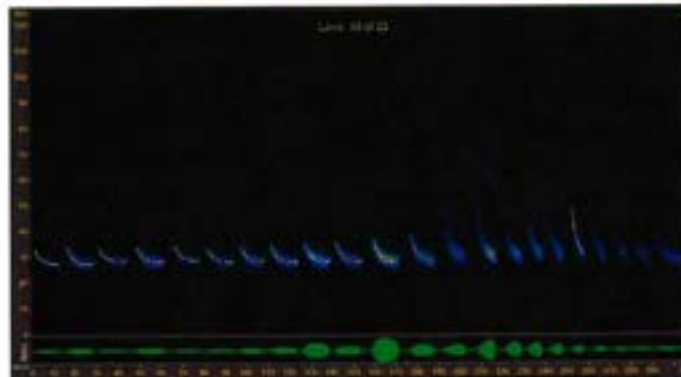


Figure 2. Silver-haired bat call recorded by Sonobat on the Dogwood Project site, 4 September 2024.

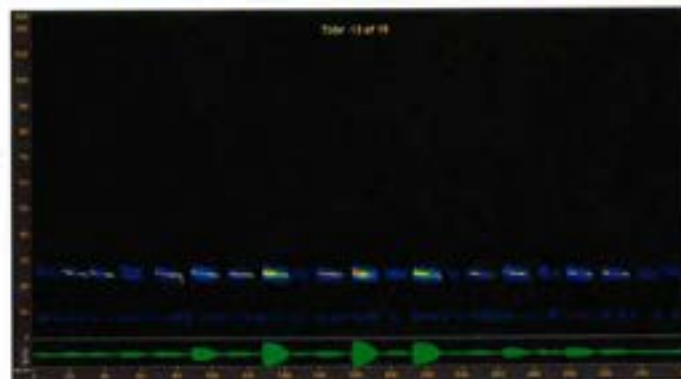


Figure 3. Mexican free-tailed bat call recorded by Sonobat on the Dogwood Project site, 4 September 2024.

G C-3
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Table 1. Species of wildlife Noriko and I observed during 3.67 hours on 4 September 2024 and 3 hours on 5 September 2024 on the project site, during 4.33 hours on 11-12 December 2021, 0.75 hours on 4 February 2022, and 2.25 hours on 1 November 2023 at the Heber 1 site, and during 2.8 hours on 28 April 2024 and 3.42 hours on 29 April 2024 at the Cal 98 site.

Common name	Species name	Status ¹	Heber 1	Cal 98	Dogwood	Notes
Harvester ant	<i>Pogonomyrmex</i>				X	Many colonies
Small checkered skipper	<i>Pyrgus scriptura</i>				X	
Monarch	<i>Danaus plexippus</i>	FC		X		
American bullfrog	<i>Lithobates catesbeianus</i>	Non-native			X	Called from canals
Western side-blotched lizard	<i>Uta stansburiana</i>				X	
Canada goose	<i>Branta canadensis</i>				x	Near Cal 98 site
Blue-winged teal	<i>Spatula discors</i>				X	Beech Drain
Mallard	<i>Anas platyrhynchos</i>			X	X	Beech Drain
Gambel's quail	<i>Callipepla gambelii</i>			X		
Rock pigeon	<i>Columba livia</i>	Non-native	X	X		
Eurasian collared-dove	<i>Streptopelia decaocto</i>	Non-native	X	X	X	
Common ground dove	<i>Columbina passerina</i>		X			
White-winged dove	<i>Zenaida asiatica</i>		X	X	X	Many
Mourning dove	<i>Zenaida macroura</i>		X	X	X	Many
Greater roadrunner	<i>Geococcyx californianus</i>				X	Tracks
Lesser nighthawk	<i>Chordeiles acutipennis</i>			X		
Anna's hummingbird	<i>Calypte anna</i>			X		
Costa's hummingbird	<i>Calypte costae</i>	BCC		X		
Common gallinule	<i>Gallinula galeata</i>				X	Beech Drain
American coot	<i>Fulica americana</i>		X			
Black-necked stilt	<i>Himantopus mexicanus</i>				X	Many
Killdeer	<i>Charadrius vociferus</i>		X	X	X	
Plover					X	
Whimbrel	<i>Numenius phaeopus</i>	BCC		X		
Long-billed curlew	<i>Numenius americanus</i>	TWL		X		
Ring-billed gull	<i>Larus delawarensis</i>		X			
California gull	<i>Larus californicus</i>	BCC, TWL	X			
Herring gull	<i>Larus argentatus</i>			X		

Common name	Species name	Status¹	Heber 1	Cal 98	Dogwood	Notes
Iceland gull (Thayer's)	<i>Larus glaucoideus thayeri</i>		X			
Caspian tern	<i>Hydroprogne caspia</i>			X		
Forster's tern	<i>Sterna forsteri</i>		X			
Double-crested cormorant	<i>Nannopterum auritum</i>	TWL		X	X	
Great blue heron	<i>Ardea herodias</i>			X		
Great egret	<i>Ardea alba</i>		X	X	X	Many
Snowy egret	<i>Egretta thula</i>		X		X	Many
Cattle egret	<i>Bubulcus ibis</i>		X	X	X	With juvenile, Beech Drain
Green heron	<i>Butorides virescens</i>				X	
Black-crowned night-heron	<i>Nycticorax nycticorax</i>				X	Beech Drain
White-faced ibis	<i>Plegadis chihli</i>	TWL	X		X	Many
Turkey vulture	<i>Cathartes aura</i>	BOP	X	X	X	
Northern harrier	<i>Circus cyaneus</i>	BCC, SSC3, BOP	X			
Cooper's hawk	<i>Accipiter cooperii</i>	TWL, BOP	X			
Swainson's hawk	<i>Buteo swainsoni</i>	CT, BOP	X			
Red-tailed hawk	<i>Buteo jamaicensis</i>	BOP	X			
Great horned owl	<i>Bubo virginianus</i>	BOP		X		
Burrowing owl	<i>Athene cunicularia</i>	BCC, SSC2, BOP			X	Three observed
American kestrel	<i>Falco sparverius</i>	BOP	X	X	X	Hunted over alfalfa
Peregrine falcon	<i>Falco peregrinus</i>	BOP	X			
Prairie falcon	<i>Falco mexicanus</i>	TWL, BOP	X			
Monk parakeet	<i>Myiopsitta monachus</i>	Non-native		X		
Cassin's kingbird	<i>Tyrannus vociferans</i>			X		
Western kingbird	<i>Tyrannus verticalis</i>			X		
Black phoebe	<i>Sayornis nigricans</i>		X		X	
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC2	X			
Common raven	<i>Corvus corax</i>		X	X	X	Juvenile at Beech Drain
Verdin	<i>Auriparus flaviceps</i>	BCC	X	X	X	
Tree swallow	<i>Tachycineta bicolor</i>			X		
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>				X	

Common name	Species name	Status ¹	Heber 1	Cal 98	Dogwood	Notes
Barn swallow	<i>Hirundo rustica</i>			X	X	
Cliff swallow	<i>Petrochelidon pyrrhonota</i>			X	X	
Northern mockingbird	<i>Mimus polyglottos</i>		X	X		
European starling	<i>Sturnus vulgaris</i>	Non-native	X	X	X	
House finch	<i>Haemorphous mexicanus</i>			X		
American goldfinch	<i>Spinus tristis</i>		X			
Brewer's sparrow	<i>Spizella breweri</i>				X	Beech Drain
White-crowned sparrow	<i>Zonotrichia leucophrys</i>		X			
Savannah sparrow	<i>Passerculus sandwichensis</i>		X		X	
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC3	X			
Western meadowlark	<i>Sturnella neglecta</i>		X	X	X	
Hooded oriole	<i>Icterus cucullatus</i>				X	Beech Drain
Red-winged blackbird	<i>Agelaius phoeniceus</i>		X	X	X	Large flocks low over site
Brown-headed cowbird	<i>Molothrus ater</i>		X			
Brewer's blackbird	<i>Euphagus cyanocephalus</i>		X		X	
Great-tailed grackle	<i>Quiscalus mexicanus</i>		X	X	X	Large flocks low over site
Orange-crowned warbler	<i>Oreothlypis celata</i>				X	Beech Drain
Common yellowthroat	<i>Geothlypis trichas</i>	Possible SSC2		X	X	Beech Drain
Yellow warbler or Wilson's warbler	<i>Setophaga petechia</i> or <i>Wilsonia pusilla</i>					
Yellow-rumped warbler	<i>Setophaga coronata</i>		X			
Western tanager	<i>Piranga ludoviciana</i>			X		
Blue grosbeak	<i>Passerina caerulea</i>				X	Beech Drain
Lazuli bunting	<i>Passerina amoena</i>	WBWG:M		X	X	
Silver-haired bat	<i>Lasiorycteris noctivagans</i>					
Spotted bat	<i>Euderma maculatum</i>	SSC, WBWG:H			X	

Common name	Species name	Status ¹	Heber 1	Cal 98	Dogwood	Notes
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>	WBWG:L		X	X	
Desert cottontail	<i>Sylvilagus audubonii</i>		X	X		
Round-tailed ground squirrel	<i>Xerospermophilus tereticaudus</i>				X	
American badger	<i>Taxidea taxus</i>	SSC			X	Claw marks in burrow
Virginia opossum	<i>Didelphis virginiana</i>	Non-native			X	Tracks
Coyote	<i>Canis latrans</i>		X	X	X	Tracks
Muskrat	<i>Ondatra zibethicus</i>				X	Beech Drain
Kangaroo rat	<i>Dipodomys sp.</i>				X	Burrows
California vole	<i>Microtus californicus</i>			X	X	Burrows
Botta's pocket gopher	<i>Thomomys bottae</i>		X	X	X	Burrows

¹ Listed as FT or FE = federal threatened or endangered, CT or CE = California threatened or endangered, CFP = California Fully Protected (CPG Code 3511), SSC = California Species of Special Concern, BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, TWL = Taxa to Watch List (Shuford and Gardali 2008), BOP = Birds of Prey (California Fish and Game Code 3503.5), and WBWG = Western Bat Working Group with priority rankings, of low (L), moderate (M), and high (H).

EXISTING ENVIRONMENTAL SETTING

The first step in analysis of potential project impacts to biological resources is to accurately characterize the existing environmental setting, including the biological species that use the site, their relative abundances, how they use the site, key ecological relationships, and known and ongoing threats to those species with special status. A reasonably accurate characterization of the environmental setting can provide the basis for determining whether the site holds habitat value to wildlife, as well as a baseline against which to analyze potential project impacts. For these reasons, characterization of the environmental setting, including the project site's regional setting, is one of CEQA's essential analytical steps. Methods to achieve this first step typically include (1) surveys of the site for biological resources, and (2) reviews of literature, databases and local experts for documented occurrences of special-status species. In the case of the proposed project, these needed steps were not completed.

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Environmental Setting informed by Field Surveys

To CEQA's primary objective to disclose potential environmental impacts of a proposed project, the analysis should be informed of which biological species are known to occur at the proposed project site, which special-status species are likely to occur, as well as the limitations of the survey effort directed to the site. Analysts need this information to characterize the environmental setting as a basis for opining on, or predicting, potential project impacts to biological resources.

G C-5

Catalyst's (2024) field survey of 21 February 2023 blended objectives of reconnaissance and a focus on burrowing owls – a blend that can never be achieved when one of the survey objectives includes a focus on one species. According to Catalyst (2024: 1-1), "The purpose of the field survey was to characterize existing biological communities and to determine if suitable habitat for special status plant and animal species is present, including a survey protocol specific to burrowing owl (*Athene cunicularia*).” Additional stated objectives were "to photograph and document the general habitat present on the site as well as to record wildlife and vegetation observed..." The surveys were pedestrian with use of binoculars and a search for sign such as pellets and whitewash of burrowing owls at burrows. Regardless of how the survey was performed, a focused survey for burrowing owls would not have left much surveyor bandwidth for reconnaissance, and likewise a reconnaissance survey would interfere with the focus needed for a burrowing owl survey.

G C-6

Making matters worse, Catalyst (2024) followed the wrong survey guidelines. According to Catalyst (2024: 2-2), "The California Department of Fish and Wildlife (CDFW) generally requires protocol surveys for burrowing owls that are consistent with the California Burrowing Owl Consortium (CBOC) Survey Protocol and Mitigation Guidelines (CBOC 1993)." This statement is in accurate. CDFW recommends use of the CDFW (2012) survey guidelines. Catalyst (2024) did not conduct its burrowing owl survey in accordance with the CDFW (2012) guidelines, nor did it even meet the minimum standards of the CBOC guidelines.

G C-7

G C-7
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Catalyst's biologists searched for sign of burrowing owl presence at ground squirrel burrows. However, this approach was unreliable in February, before male members of breeding pairs stand guard at or near nest sites. Also, burrowing owls do not concentrate their pellets and whitewash at particular burrows during the non-breeding season, making it very difficult to determine which burrows are in use. Furthermore, Catalyst's approach of determining burrow occupancy based on the diameter of the tunnel entrance is of dubious reliability, especially before burrowing owls have committed to nest sites. Burrowing owls are perfectly capable of reaming burrows that are initially too narrow, and I have often seen burrowing owls digging out burrows to expand them for their use.

Moreover, Noriko and I saw many burrows that were large enough for burrowing owls to use. We also saw three burrowing owls on site, two at one location, and the third at a second location. Burrowing owls are present. Protocol-level breeding-season surveys consistent with the CDFW (2012) guidelines are needed to determine the number of burrowing owls and burrowing owl nest sites on the project site.

Catalyst (2024) assumed burrowing owl habitat is present, so its biologists combined Phases I and II of the outdated survey protocol into the same 21 February 2023 survey. Catalyst (2024: 2-2) then concluded "As no burrowing owl or sign was observed during the Phase II survey, Phase III nesting-season surveys were not conducted." This conclusion was inconsistent with the standards of the CDFW (2012) survey and mitigation guidelines, as explained below.

There are three types of surveys recommended and described in the CDFW's (2012) survey and mitigation guidelines: (1) Habitat assessment, (2) Detection surveys, and (3) Preconstruction survey. The habitat assessment is intended to evaluate the likelihood that the site supports burrowing owls, and to decide whether detection surveys should be performed. The detection surveys, otherwise described as either or both breeding-season or non-breeding-season surveys, are intended to detect whether the site actually does support burrowing owls, and if so where and how many. The preconstruction survey, otherwise known as a take-avoidance survey, is intended to determine whether burrowing owls immigrated to the site since completion of the detection survey, or returned to the site since passive or active relocations were performed as mitigation. The three types of survey carry distinct but inter-related purposes, and they are to be completed in chronological order.

The first two types of survey support impacts analysis, whereas the third type of survey is a mitigation measure. Burrowing owls can be determined absent based on evidence derived either from the habitat assessment or from the detection survey, but only if the surveys achieved the minimum standards of CDFW (2012). Whereas an absence determination naturally follows from the negative findings of properly performed detection surveys, the following three questions must be answered negatively to determine absence based on the habitat assessment:

- A) Are there occurrence records nearby the project site?
- B) Is the site's vegetation cover and height typical of where burrowing owls are found?

C) Are there fossorial mammals present which typically construct burrows useable by burrowing owls, or are there surrogate cavities that can serve as nest sites?

G C-7
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If the answers to these questions are compellingly negative, then detection surveys are not necessary, but they could be implemented to make certain the site is absent of burrowing owls. If the answers to these questions are affirmative or not compellingly negative, then it should be assumed that burrowing owl habitat exists on the site until detection surveys prove otherwise.

To question A, there are many burrowing owl occurrence records near the project site, five of which are within 1.74 miles of the site and one of which is only 1.2 miles from the site (see online occurrence databases eBird and iNaturalist). Noriko and I have seen burrowing owls nearby as well, and during our site visit we saw three burrowing owls directly on the project site.

To question B, the ground cover and irrigation infrastructure of the site is typical of the area, and is typical of ground cover and irrigation infrastructure often used by burrowing owls in the Imperial Valley. And as I noted earlier, Catalyst (2024) assumes the site is burrowing owl habitat.

To question C, both Catalyst and Noriko and I observed round-tailed ground squirrels on the project site. Noriko and I additionally found a badger-reamed squirrel burrow on site. Ground squirrels construct burrows used by burrowing owls, and ground squirrels and burrowing owls mutually alarm-call for predators and survive better together (K. S. Smallwood, unpublished data).

The answers to all three habitat assessment questions are affirmative. Detection surveys for burrowing owls are warranted. Adding to the need to perform detection surveys, burrowing owls have rapidly declined throughout California. The decline has been so rapid and so substantial that a lot of effort was directed toward the preparation of a listing petition, which was submitted to the California Fish and Game Commission (Miller 2024). CDFW (2024) staff endorsed the petition, which was considered at a Hearing scheduled for 10 October 2024. On October 15, 2024, CDFW issued a notice accepting the listing petition for consideration and designating western burrowing owl as a candidate species as defined by Section 2068 of the Fish and Game Code.¹ If the project goes forward without having properly implemented the CDFW (2012) burrowing owl survey and mitigation guidelines, it would likely cause unmitigated negative impacts to burrowing owls. Detection surveys need to be completed prior to the public circulation of the CEQA document so that the CEQA document includes the results of the surveys.

More generally to the reconnaissance survey, Catalyst (2024) fails to report its survey start time and its survey duration. Failure to report these essential survey attributes fails to meet the minimum reporting standards of CDFW (2012). It also fails to inform the reader of the most essential information needed to interpret the findings of the

G C-8

¹ <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=227089&inline>

reconnaissance survey. Catalyst's biologists detected 29 species of vertebrate wildlife during their reconnaissance survey, which are more species than I usually see reported from such surveys in Imperial County. However, without knowing the survey details, it is impossible for me to put their findings into context of survey effort.

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Catalyst's biologists detected 12 species of vertebrate wildlife that we did not, whereas we detected 26 species that they did not. Overall, we detected nearly twice the number of species of vertebrate wildlife as compared to Catalyst, but again it is impossible to know what this means without knowing what time of day and for how long the Catalyst biologists worked. Nonetheless, between our two surveys, 65 species of vertebrate wildlife were detected at the project site.

Lastly, I must point out that Catalyst performed no surveys for bats. The geographic ranges of many bat species overlap the project site, so acoustic detection surveys, mist-netting, or use of a thermal-imaging camera was warranted. But no survey was implemented.

Environmental Setting informed by Desktop Review

The purpose of literature and database review and of consulting with local experts is to inform the field survey, and to augment interpretation of its outcome. Analysts need this information to identify which species are known to have occurred at or near the project site, and to identify which other special-status species could conceivably occur at the site due to geographic range overlap and migration flight paths.

G C-9

By not reviewing eBird or iNaturalist for online records of species occurrences, Catalyst (2024) performed a relatively weak desktop review. Catalyst (2024) reviewed only iPAC and the California Natural Diversity Data Base (CNDDB), but it is unclear how far its queries extended from the project site. The Quadrangles that turn up in Catalyst's query results include Heber, El Centro, Calexico, Mount Signal; otherwise the scope of query is not reported). Regardless, by relying on the CNDDB query, Catalyst (2024) screened out many special-status species from further consideration in the characterization of the wildlife community as part of the existing environmental setting. CNDDB is not designed to support absence determinations or to screen out species from characterization of a site's wildlife community. As noted by the CNDDB, "*The CNDDB is a positive sighting database. It does not predict where something may be found. We map occurrences only where we have documentation that the species was found at the site. There are many areas of the state where no surveys have been conducted and therefore there is nothing on the map. That does not mean that there are no special status species present.*" Catalyst (2024) and the DEIR misused CNDDB.

The CNDDB relies entirely on volunteer reporting from biologists who were allowed access to whatever properties they report from. Many properties have never been surveyed by biologists. Many properties have been surveyed, but the survey outcomes never reported to the CNDDB. Many properties have been surveyed multiple times, but not all survey outcomes reported to the CNDDB. Furthermore, the CNDDB is interested only in the findings of special-status species, which means that species more recently

assigned special status will have been reported many fewer times to CNDDDB than were species assigned special status since the inception of the CNDDDB. The lack of many CNDDDB records for species recently assigned special status had nothing to do with whether the species' geographic ranges overlapped the project site, but rather more to do with the brief time for records to have accumulated since the species were assigned special status. And because negative findings are not reported to the CNDDDB, the CNDDDB cannot provide the basis for estimating occurrence likelihoods, either.

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In my assessment based on database reviews and site visits, 121 special-status species of wildlife are known to occur near enough to the site to warrant analysis of occurrence potential (Table 2). Of these species, 13 (11%) were recorded on the project site, and another 10 (8%) species have been documented within 1.5 miles of the site ('Very close'), another 20 (17%) within 1.5 and 4 miles ('Nearby'), and another 71 (59%) within 4 to 30 miles ('In region'). More than a third (36%) of the species in Table 2 have been reportedly seen within 4 miles of the project site. The site therefore supports multiple special-status species of wildlife and carries the potential for supporting many more special-status species of wildlife based on proximity of recorded occurrences. The site is far richer in special-status species than is characterized in Catalyst (2024) and the DEIR.

Catalyst (2024) fails to analyze occurrence likelihoods of special-status species, leaving the analysis to the author of the DEIR. The DEIR analyzes the occurrence likelihoods of only 13 (11%) of the species in Table 2, having omitted from the analysis 108 (89%) of the species in Table 2. Of the species omitted from the DEIR's analysis, five have been recorded on the project site, nine have been recorded within 1.5 miles of the site, 17 have been recorded within four miles of the site, and 63 have been recorded between 4 and 30 miles of the site. Of the 13 species analyzed for occurrence likelihood in the DEIR, only one is determined to have moderate potential to occur, and the rest are reported to have no potential to occur. The species assigned moderate potential is burrowing owl, and we confirmed that it does occur on the project site. (Catalyst (2024:4-1) determines burrowing owls have only a low likelihood of occurrence, but the DEIR upgrades the likelihood to moderate.) Of the 12 species in Table 2 that the DEIR gives no likelihood of occurrence, occurrence records place one within 1.5 miles, three between 1.5 and 4 miles of the site, and eight between 4 and 30 miles from the site. On the whole, the DEIR's analyses of occurrence likelihoods are too inaccurate to serve as a baseline for performing impacts analysis.

Particularly troubling is the DEIR's determination that bats have no potential to occur at the project site. Catalyst's CNDDDB query turned up occurrence records of big free-tailed bat, pocketed free-tailed bat, and western yellow bat, all three species of which the DEIR specifically determines to have no potential to occur. The DEIR determines that no bats have the potential to occur, which is readily refuted by Catalyst's reported occurrence records and by our survey of the project site. While it was still light and before we began our bat survey, a large bat flew right by us at eye-level. Not only did we detect three species of bats acoustically, but one of the species – Silver-haired bat – is rated as Moderate level of conservation concern by the Western Bat Working Group, and another – spotted bat – is a California Species of Special Concern and rated as High

G C-10

level of conservation concern by the Western Bat Working Group. It is very rare. As of 16 September 2024, iNaturalist includes only five records of spotted bats in California. We also detected 33 bat passes within 30 feet of our detector and within 90 minutes of survey, or one pass every 2 minutes and 43 seconds on average. The DEIR has no evidentiary basis for determining the absence of bats.

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Table 2. Occurrence likelihoods of special-status bird species at or near the proposed project site, according to eBird/iNaturalist records (<https://eBird.org>, <https://www.inaturalist.org>) and on-site survey findings, where 'Very close' indicates within 1.5 miles of the site, 'nearby' indicates within 1.5 and 4 miles, and 'in region' indicates within 4 and 30 miles, and 'in range' means the species' geographic range overlaps the site. Entries in bold font identify species we detected.

Common name	Species name	Status ¹	DEIR occurrence likelihood	Data base records, Site visits
Monarch	<i>Danaus plexippus</i>	FC	None	Nearby
Desert pupfish	<i>Cyprinodon macularius</i>	FE, CE		In region
Mojave desert tortoise	<i>Gopherus agassizii</i>	FT, CT		In region
Couch's spadefoot	<i>Scaphiopus couchii</i>	SSC		In region
Flat-tailed horned lizard	<i>Phrynosoma mcallii</i>	SSC	None	In region
Lowland leopard frog	<i>Lithobates yanapaisensis</i>	SSC		In range
Colorado Desert fringe-toed lizard	<i>Uma notata</i>	SSC		In region
Fulvous whistling-duck	<i>Dendrocygna bicolor</i>	SSC1		In region
Brant	<i>Branta bernicla</i>	SSC2		In region
Cackling goose (Aleutian)	<i>Branta hutchinsii leucopareia</i>	WL		In region
Redhead	<i>Aythya americana</i>	SSC2		In region
Barrow's goldeneye	<i>Bucephala islandica</i>	SSC		In region
Western grebe	<i>Aechmophorus occidentalis</i>	BCC	None	In region
Clark's grebe	<i>Aechmophorus clarkii</i>	BCC		In region
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FT, CE, BCC		In region
Black swift	<i>Cypseloides niger</i>	SSC3, BCC		In region
Vaux's swift	<i>Chaetura vauxi</i>	SSC2, BCC	Nearby	Nearby
Costa's hummingbird	<i>Calypte costae</i>	BCC	None	Nearby
Rufous hummingbird	<i>Selasphorus rufus</i>	BCC		Nearby
Allen's hummingbird	<i>Selasphorus sasin</i>	BCC		In region
Yuma Ridgway's rail	<i>Rallus obsoletus yumanensis</i>	FE, CT, CFP	None	In region
Lesser sandhill crane	<i>Antigone canadensis canadensis</i>	SSC3		In region
American avocet	<i>Recurvirostra americana</i>	BCC		In region
Mountain plover	<i>Charadrius montanus</i>	SSC2, BCC		In region
Snowy plover	<i>Charadrius nivosus</i>	BCC		In region

Common name	Species name	Status ^a	DEIR occurrence likelihood	Data base records, Site visits
Whimbrel	<i>Numenius phaeopus</i>	BCC		Nearby
Long-billed curlew	<i>Numenius americanus</i>	WL	Observed	On site, Nearby
Marbled godwit	<i>Limosa fedoa</i>	BCC		In region
Red knot (Pacific)	<i>Calidris canutus</i>	BCC		In region
Short-billed dowitcher	<i>Limnodromus griseus</i>	BCC		In region
Willet	<i>Tringa semipalmata</i>	BCC		In region
Laughing gull	<i>Leucophaea atricilla</i>	WL		In region
Heermann's gull	<i>Larus heermanni</i>	BCC		In region
Western gull	<i>Larus occidentalis</i>	BCC		In region
California gull	<i>Larus californicus</i>	BCC, WL		Very close
California least tern	<i>Sterna antillarum browni</i>	FE, CE, FP		In region
Gull-billed tern	<i>Gelochelidon nilotica</i>	BCC, SSC3		In region
Black tern	<i>Chlidonias niger</i>	SSC2, BCC		In region
Elegant tern	<i>Thalasseus elegans</i>	BCC, WL		In region
Black skimmer	<i>Rynchops niger</i>	BCC, SSC3		In region
Common loon	<i>Gavia immer</i>	SSC		In region
Wood stork	<i>Mycteria americana</i>	SSC1		In region
Double-crested cormorant	<i>Phalacrocorax auritus</i>	WL		On site
American white pelican	<i>Pelecanus erythrorhynchos</i>	SSC1, BCC		Nearby
California brown pelican	<i>Pelecanus occidentalis californicus</i>	CFP		In region
Least bittern	<i>Ixobrychus exilis</i>	SSC2		In region
White-faced ibis	<i>Plegadis chihi</i>	WL	Observed	On site
Turkey vulture	<i>Cathartes aura</i>	BOP	Observed	On site
Osprey	<i>Pandion haliaetus</i>	WL, BOP		Nearby
White-tailed kite	<i>Elanus leucurus</i>	CFP, BOP	Observed	On site
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA, CFP, BOP, WL		In region
Northern harrier	<i>Circus cyaneus</i>	BCC, SSC3, BOP	Observed	On site
Sharp-shinned hawk	<i>Accipiter striatus</i>	WL, BOP		Nearby
Cooper's hawk	<i>Accipiter cooperii</i>	WL, BOP		Very close

Common name	Species name	Status ¹	DEIR occurrence likelihood	Data base records, Site visits
Bald eagle	<i>Haliaeetus leucocephalus</i>	CE, BGEPA, CFP		In region
Red-shouldered hawk	<i>Buteo lineatus</i>	BOP		Nearby
Swainson's hawk	<i>Buteo swainsoni</i>	CT, BOP		Very close
Red-tailed hawk	<i>Buteo jamaicensis</i>	BOP	Observed	On site
Ferruginous hawk	<i>Buteo regalis</i>	WL, BOP		Nearby
Zone-tailed hawk	<i>Buteo albonotatus</i>	BOP		Nearby
Harris' hawk	<i>Parabuteo unicinctus</i>	WL, BOP		In region
Rough-legged hawk	<i>Buteo lagopus</i>	BOP		In region
Barn owl	<i>Tyto alba</i>	BOP		Very close
Western screech-owl	<i>Megascops kennicottii</i>	BOP		In region
Great horned owl	<i>Bubo virginianus</i>	BOP	Nearby	Nearby
Burrowing owl	<i>Athene cunicularia</i>	BCC, SSC2, BOP	Moderate	On site
Long-eared owl	<i>Asio otus</i>	BCC, SSC3, BOP		In region
Short-eared owl	<i>Asia flammeus</i>	BCC, SSC3, BOP		In region
Lewis's woodpecker	<i>Melanerpes lewis</i>	BCC		In region
American kestrel	<i>Falco sparverius</i>	BOP	Observed	On site
Merlin	<i>Falco columbarius</i>	WL, BOP		In region
Gila woodpecker	<i>Melanerpes uropygialis</i>	CE, BCC	None	Nearby
Peregrine falcon	<i>Falco peregrinus</i>	BOP		Very close
Prairie falcon	<i>Falco mexicanus</i>	WL, BOP		Very close
Olive-sided flycatcher	<i>Contopus cooperi</i>	BCC, SSC2		Nearby
Willow flycatcher	<i>Empidonax traillii</i>	CE		Nearby
Southwestern willow flycatcher				In range
Vermillion flycatcher	<i>Pyrocephalus rubinus</i>	SSC2		Very close
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE, CE		In region
Gray vireo	<i>Vireo vicinior</i>	SSC2, BCC		In region
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC2		Very close
Verdin	<i>Auriparus flaviceps</i>	BCC		On site
Bank swallow	<i>Riparia riparia</i>	CT		In region

Common name	Species name	Status ^a	DEIR occurrence likelihood	Data base records, Site visits
Purple martin	<i>Progne subis</i>	SSC2		In region
Black-tailed gnatcatcher	<i>Polioptila melanura</i>	WL		Nearby
Bendire's thrasher	<i>Toxostoma bendirei</i>	SSC3, BCC		In region
LeConte's thrasher	<i>Toxostoma lecontei</i>	SSC1, BCC		In region
Crissal thrasher	<i>Toxostoma crissale</i>	SSC3		In region
Cassin's finch	<i>Haemorhous cassinii</i>	BCC		In region
Lawrence's goldfinch	<i>Spinus lawrencei</i>	BCC		In region
Grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC2		In region
Black-chinned sparrow	<i>Spizella atrogularis</i>	BCC		In region
Gray-headed junco	<i>Junco hyemalis caniceps</i>	WL		In region
	<i>Passerculus sandwichensis</i>			In region
Large-billed savannah sparrow	<i>rostratus</i>	SSC2		
Yellow-breasted chat	<i>Icteria virens</i>	SSC3		In region
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC3		Very close
Bullock's oriole	<i>Icterus bullockii</i>	BCC		Nearby
Tricolored blackbird	<i>Agelaius tricolor</i>	CT, BCC, SSC1	None	In region
Lucy's warbler	<i>Leiothlypis luciae</i>	SSC3, BCC		Nearby
Virginia's warbler	<i>Leiothlypis virginiae</i>	WL, BCC		Nearby
Yellow warbler	<i>Setophaga petechia</i>	SSC2	None	Very close
Summer tanager	<i>Piranga rubra</i>	SSC1		Nearby
California leaf-nosed bat	<i>Macrotus californicus</i>	WBWG:H		In region
Pallid bat	<i>Antrozous pallidus</i>	SSC, WBWG:H		In region
Mexican long-tongued bat	<i>Choeronycteris mexicana</i>	SSC, WBWG:M		In range
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC, WBWG:H		In range
Silver-haired bat	<i>Lasionycteris noctivagans</i>	WBWG:M		On site
Spotted bat	<i>Eudernia maculatum</i>	SSC, WBWG:H		On site
Western red bat	<i>Lasiurus blossevillii</i>	SSC, WBWG:H		In region
Hairy bat	<i>Lasiurus cinereus</i>	WBWG:M		In region
Western yellow bat	<i>Lasiurus xanthinus</i>	SSC, WBWG:H	None	In region

Common name	Species name	Status ^a	DEIR occurrence likelihood	Data base records, Site visits
Western small-footed myotis	<i>Myotis ciliabrum</i>	WBWG:M		In range
Miller's myotis	<i>Myotis evotis</i>	WBWG:M		In range
Western mastiff bat	<i>Eumops perotis</i>	SSC, WBWG:H	None	In region
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	SSC, WBWG:M	None	In region
Big free-tailed bat	<i>Nyctinomops macrotis</i>	SSC, WBWG:MH	None	In region
Palm Springs pocket mouse	<i>Perognathus longimembris bangsi</i>	SSC		In region
Los Angeles pocket mouse	<i>Perognathus longimembris breviusculus</i>	SSC		In region
American badger	<i>Taxidea taxus</i>	SSC		On site
Desert bighorn sheep	<i>Ovis canadensis nelsoni</i>	CFP		In region
Yuma hispid cotton rat	<i>Sigmodon hispidus eremicus</i>	SSC		In range

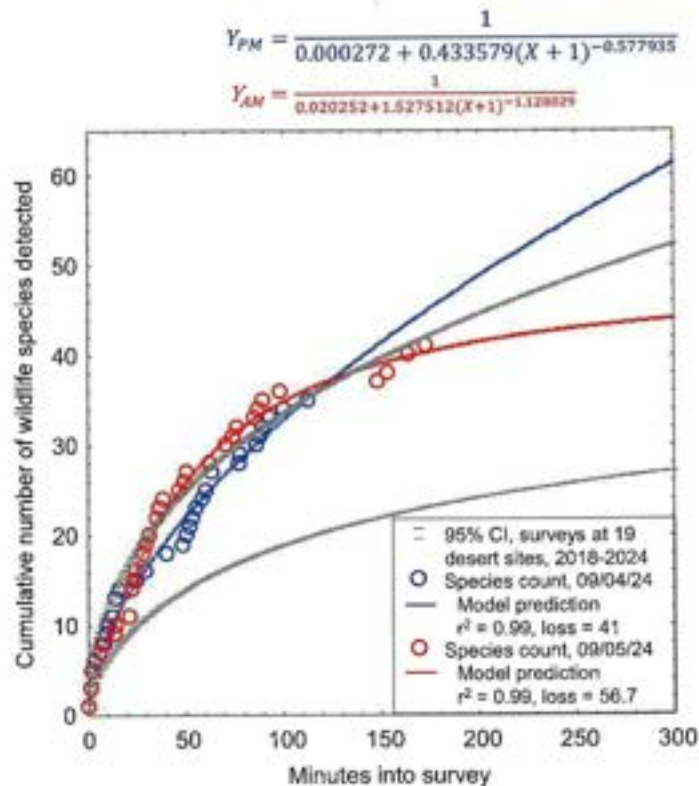
^a Listed as FT or FE = federal threatened or endangered, FC = federal candidate for listing, BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, CT or CE = California threatened or endangered, CCT or CCE = Candidate California threatened or endangered, CFP = California Fully Protected (California Fish and Game Code 3511), SSC = California Species of Special Concern (not threatened with extinction, but rare, very restricted in range, declining throughout range, peripheral portion of species' range, associated with habitat that is declining in extent), SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively (Shuford and Gardali 2008), WL = Taxa to Watch List (Shuford and Gardali 2008), and BOP = Birds of Prey (CFG Code 3503.5), and WBWG = Western Bat Working Group with priority rankings, of low (L), moderate (M), and high (H).

G C-10
cont'd

Modeling to Predict the Number of Species Available to be Detected

We saw evidence of a high abundance and diversity of wildlife at the project site. Considering that the site is located near the New River and that most of it is covered in alfalfa, which is known to support many species of wildlife (Smallwood and Geng 1993, Smallwood 1995, Smallwood et al. 1996), the many wild animals of many species we detected at the site should be of no surprise. However, I must point out that the species of wildlife we detected at the project site comprised only a sampling of the species that were present during our survey. I fit a nonlinear regression model to the cumulative numbers of vertebrate species detected with time into each of our surveys to predict the number of species that we would have detected with a longer survey or perhaps with additional biologists available to assist. The logistic growth model reaches an asymptote that corresponds with the theoretical maximum number of vertebrate wildlife species that could have been detected during the surveys. In this case, the model fit to our data predict that 49 species of vertebrate wildlife were available to be detected during the morning of the 5th, which numbered 7 more species than we actually detected (Figure 4).

Figure 4. Actual and predicted relationships between the number of vertebrate wildlife species detected and the elapsed survey time based on our visual-scan surveys on 4 (blue) and 5 (red) September 2024.



G C-11
conf'd

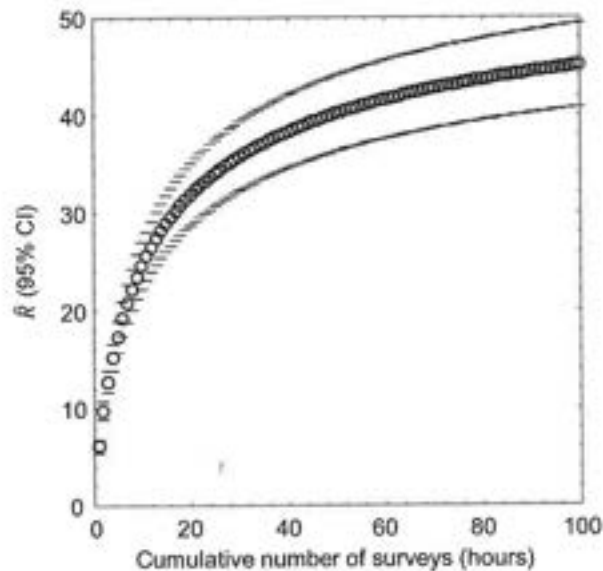
I do not know the identities of the undetected species, but the patterns in our data indicate relatively high use of the project site compared to 8 surveys at other sites we have completed in the Imperial Valley (Figure 4). Compared to models fit to data we collected from other sites in the Valley between 2019 and 2024, the data from our surveys on the project site follow along the upper bound of the 95% confidence interval of the rate of accumulated species detections with time into the survey (Figure 4). Importantly, however, the species that we did and did not detect on 4 and 5 September 2024 composed only a fraction of the species that would occur at the project site over the period of a year or longer. This is because many species are seasonal in their occurrence, and because most species that occur at a site are not always detectable, such as the seven species my model predicts we missed on the morning of the 5th.

At least a year's worth of surveys would be needed to more accurately report the number of vertebrate species that occur at the project site. However, by use of an analytical bridge, a modeling effort applied to a large, robust data set from a research site can predict the number of vertebrate wildlife species that likely make use of the site over the longer term using our survey. As part of my research, I completed a much larger survey effort across 167 km² of annual grasslands of the Altamont Pass Wind Resource Area, where from 2015 through 2019 I performed 721 1-hour visual-scan surveys, or 721 hours of surveys, at 46 stations. I used binoculars and otherwise the methods were the same as the methods I and other consulting biologists use for surveys at proposed project sites. At each of the 46 survey stations, I tallied new species detected with each sequential survey at that station, and then related the cumulative species detected to the hours (number of surveys, as each survey lasted 1 hour) used to accumulate my counts of species detected. I used combined quadratic and simplex methods of estimation in Statistica to estimate least-squares, best-fit nonlinear models of the number of cumulative species detected regressed on hours of survey (number of surveys) at the station: $\hat{R} = \frac{1}{\sqrt{a + b \times (\text{Hours})^2}}$, where \hat{R} represented cumulative species richness detected. The coefficients of determination, r^2 , of the models ranged 0.88 to 1.00, with a mean of 0.97 (95% CI: 0.96, 0.98); or in other words, the models were excellent fits to the data.

I projected the predictions of each model to thousands of hours to find predicted asymptotes of wildlife species richness. At my research site, the mean model-predicted asymptote of species richness was 57 after 11,857 hours of visual-scan surveys among the 46 stations of my research site. I also averaged model predictions of species richness at each incremental increase of number of surveys, i.e., number of hours (Figure 5). On average I would have detected 19.5 species over my first 6.22 hours of surveys at my research site in the Altamont Pass (6.22 hours to match the 6.22 hours we surveyed at the project site on 28-29 April 2024), which composed 34.2% of the predicted total number of species we would detect with a much larger survey effort at the research site. Given the example illustrated in Figure 2, the 45 species we detected after 6.22 hours of survey at the project site on 28-29 April 2024 likely represented 34.2% of the species to be detected after many more visual-scan surveys over another year or longer. With many more repeat surveys through the year, we would likely detect $43 / 0.342 = 126$ species of vertebrate wildlife at the site. Assuming our ratio of special-status to non-special-status species was to hold through the detections of all 126 predicted species,

then continued surveys would eventually detect 29 special-status species of vertebrate wildlife.

Figure 5. Mean (95% CI) predicted wildlife species richness, \hat{R} , as a nonlinear function of hour-long survey increments across 46 visual-scan survey stations across the Altamont Pass Wind Resource Area, Alameda and Contra Costa Counties, 2015–2019. Note that the location of the study is largely irrelevant to the utility of the graph to the interpretation of survey outcomes at the project site. It is the pattern in the data that is relevant, because the pattern is typical of the pattern seen elsewhere.



G C-11
cont'd

Because my prediction of 126 species of vertebrate wildlife, including 29 special-status species of vertebrate wildlife, is derived from daytime visual-scan surveys, and would detect few nocturnal mammals such as bats, the true number of species composing the wildlife community of the site must be larger. In fact, our brief nocturnal survey for bats adds three more species to our total number of vertebrate species predicted to 129 species. Our reconnaissance survey should serve only as a starting point toward characterization of the site's wildlife community, but it certainly cannot alone inform of the inventory of species that use the site. More surveys are needed than hers to inventory use of the project site by wildlife.

POTENTIAL BIOLOGICAL IMPACTS

An impacts analysis should consider whether and how a proposed project would affect members of a species, larger demographic units of the species, the whole of a species, and ecological communities. The accuracy of this analysis depends on an accurate characterization of the existing environmental setting. In the case of the proposed project, the existing environmental setting has not been accurately characterized, and several important types of potential project impacts have been inadequately analyzed or not analyzed at all. These types of impacts include wetlands degradation from potential spills and loss of pollinator reservoir, habitat loss, interference with wildlife movement,

G C-12

and wildlife collision mortality with PV solar panels, electric distribution lines, and security fencing.

G C-12
cont'd

WETLANDS

Catalyst (2024) and the DEIR regard the only potential impacts to wetlands to be the crossing of Dogwood Canal and Beech Drain by the medium-voltage electric distribution lines. According to the DEIR (p. 3.5-18), "...none of the arrow weed thickets that occur within the BSA would be removed or disturbed by project activities. Therefore, the proposed project would not have substantial adverse effects on sensitive natural communities, and this is considered a less than significant impact." Arrow weed, which is a wetland-adapted plant species and a wetland indicator, is pollinated by *Schinia intrabilis*, everlasting bud moth (*Eublemma minima*), southern emerald (*Synchlora frondaria*) (Calscapes), and many species of butterflies and bees and likely also hummingbirds. Many pollinators visit alfalfa, stands of which located near arrow weed thickets can serve as pollinator reservoirs for arrow weed. The replacement of alfalfa with PV solar panels would eliminate the pollinator reservoir (i.e., capacity), as well as much of the food supply to wildlife that inhabit Beech Drain and Dogwood Canal.

G C-13

For example, 40,000 to 60,000 leafcutter bees are placed per acre to pollinate alfalfa in seed production, which blooms over the same period as arrow weed (<https://www.ars.usda.gov/pacific-west-area/logan-ut/pollinating-insect-biology-management-systematics-research/docs/alfalfa-leafcutting-bee-alch/#:-:text=Large%20numbers%20of%20leafcutting%20bees,bee%20management%20and%20alfalfa%20management.>) Alfalfa generally produces 416 to 1,933 pounds of nectar per acre (https://www.apiservices.biz/html/pollination_handbook/chap_10000000002822327.html), which is a huge draw to many types of pollinators right next to and over the same time period as arrow weed is blooming on Beech Drain and next to Dogwood Canal. And all of these pollinators are food to birds. Alfalfa is a reservoir of pollinators and food to the channelized wetlands of Dogwood Canal and Beech Drain. The function of these wetlands depends on the availability of the pollinator and food reservoirs on the uplands of the project site.

Another potential impact to wetlands is in the project's two double-walled 20,000-gallon above-ground isopentane storage tanks. Isopentane is a volatile flammable liquid that on contact can irritate and burn skin, eyes and lungs. Storing up to 40,000 gallons of isopentane near wetlands would potentially jeopardize the fauna of the wetlands. A release of isopentane could result in significantly decreased water quality and contamination of surface waters. Isopentane is acutely toxic to fish, invertebrates, with long term toxicity to fish, and aquatic vertebrates.² Isopentane could infiltrate soils, resulting in toxicity impairing root systems and vegetative health. Contamination from a release of isopentane could have lasting effects and result in long-term degradation of the wetland habitat. The DEIR should be revised to analyze this potential impact.

G C-14

² https://baichem.com/performance-gases/wp-content/uploads/sites/5/2021/02/10289gb_CLP_II_124_ATP4_0000_isopentane_baichem.pdf

CUMULATIVE HABITAT LOSS

G C-15

Vast areas of the Imperial Valley have recently been converted to utility-scale solar projects, and additional industrialization has also been developed. Geothermal projects have also been expanding, including the Heber 1 project only 0.5 miles east of the project site. Therefore, the habitat value of the site is especially high to species of wildlife that find breeding, refuge, and foraging opportunities there, as well as opportunities for stop-over during migration or dispersal. The loss of the habitat on the project site would result in substantial reductions in species richness and the number of wild animals in the area (Smallwood and Smallwood 2023).

To measure the impacts of habitat loss to wildlife caused by development projects, Noriko Smallwood and I revisited 80 sites of proposed projects that we had originally surveyed in support of comments on CEQA review documents (Smallwood and Smallwood 2023). We revisited the sites to repeat the survey methods at the same time of year, the same start time in the day, and the same methods and survey duration in order to measure the effects of mitigated development on wildlife. We structured the experiment in a before-after, control-impact experimental design, as some of the sites had been developed since our initial survey and some had remained undeveloped. All of the developed sites had included mitigation measures to avoid, minimize or compensate for impacts to wildlife. Nevertheless, we found that mitigated development resulted in a 66% loss of species on site, and 48% loss of species in the project area. Counts of vertebrate animals declined 90%. "Development impacts measured by the mean number of species detected per survey were greatest for amphibians (-100%), followed by mammals (-86%), grassland birds (-75%), raptors (-53%), special-status species (-49%), all birds as a group (-48%), non-native birds (-44%), and synanthropic birds (-28%). Our results indicated that urban development substantially reduced vertebrate species richness and numerical abundance, even after richness and abundance had likely already been depleted by the cumulative effects of loss, fragmentation, and degradation of habitat in the urbanizing environment," and despite all of the mitigation measures and existing policies and regulations.

Habitat loss not only results in the immediate numerical decline of wildlife, but it also results in permanent loss of productive capacity. Habitat fragmentation multiplies the negative effects of habitat loss on the productive capacities of biological species (Smallwood 2015). In the case of birds, two methods exist for estimating the loss of productive capacity that would be caused by the project. One method would involve surveys to count the number of bird nests and chicks produced. The alternative method would be to infer productive capacity from estimates of total nest density elsewhere.

Several studies have estimated total avian nest density at locations that had likewise been highly fragmented. Two study sites in grassland/wetland/woodland complexes within agricultural matrices had total bird nesting densities of 32.8 and 35.8 nests per acre (Young 1948, Yahner 1982) for an average 34.3 nests per acre. These densities, however, are probably too high for the project site, although the arrow weed thickets of Beech Drain provide nesting opportunities for many birds. To acquire a total nest density closer to conditions in southern California, Noriko surveyed various patches of

vegetation cover in southern California throughout the breeding seasons of 2023 and 2024. The most relevant study sites to the vegetation covers on the project site consisted of a 4.83-acre patch of grassland in Murrieta, CA, where Noriko estimated 0.62 nests/acre in 2024, and a 3.13-acre patch of grassland in Murrieta, CA, where she estimated 3.8 nests/acre. Assuming the mean of these estimates is applicable to the alfalfa stands of the project site, I estimate the 106.88 acres of alfalfa and disturbed ground surface the project site would support 236 nest sites on the project site. I assume only 1 brood per nest site on these cover types because nesting would mostly end by the time the alfalfa is first-cut.

The DEIR (Figure 3.5-1) depicts arrow weed thickets in smaller patches than we observed. Neither Catalyst (2024) nor the DEIR report the acreage of arrow weed, but I saw about 1.16 acres of it. The total nest densities of Young (1948) and Yahner (1982) would more closely represent the total nest density in arrow weed thickets, as would my total nest density estimate from a riparian environment I surveyed through the 2023 breeding season in northern California, where I estimated 28.79 nest sites. The mean from these three studies is 32.5, and applied to 1.16 acres, I estimate the arrow weed thickets support at least 38 nest sites. Assuming 1.39 broods per nest site in the arrow weed thickets, which is the average among 322 North American bird species I asked Noriko to review, then I predict the arrow weed thickets would support 53 nest attempts/year. These nest attempts would rely on sufficient food to feed both adults and chicks, and much of the reservoir for this food supply is in the adjacent uplands. Assuming that the PV solar arrays would eliminate the upland reservoir of food to breeding birds, then it is reasonable to assume the project would cost California 274 nest sites and 289 nest attempts per year.

The loss of 274 nest sites and 289 nest attempts per year would qualify as significant impacts that have not been analyzed by the County. But the impacts would not end with the immediate loss of nest sites. The reproductive capacity of the site would be lost. The average number of fledglings per nest in Young's (1948) study was 2.9. Assuming Young's (1948) study site typifies bird productivity, the project would prevent the production of 838 fledglings per year. Assuming an average bird generation time of 5 years, the lost capacity of both breeders and annual fledgling production can be estimated from an equation in Smallwood (2022): $\{(nests/year \times chicks/nest \times number\ of\ years) + (2\ adults/nest \times nests/year) \times (number\ of\ years \div years/generation)\} \div (number\ of\ years) = 945\ birds\ per\ year\ denied\ to\ California.$

Most if not all of the predicted 945 birds per year lost to the project are protected by the federal Migratory Bird Treaty Act and by California's Migratory Bird Protection Act, both of which most strongly protect breeding migratory birds. The DEIR should be revised and recirculated so that it more accurately discloses the potential loss of avian productivity that would result from the project.

G C-15
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INTERFERENCE WITH WILDLIFE MOVEMENT

G C-16

One of CEQA's principal concerns regarding potential project impacts is whether a proposed project would interfere with wildlife movement in the region. Unfortunately, the DEIR's analysis of whether the project would interfere with wildlife movement in the region is flawed and misleading. In fact, there is no real analysis. Based on an unrealistically narrow definition of a migratory corridor, and based on no field observations directed to wildlife movement, the DEIR (p. 3-5-11) concludes "The project site does not contain nor is near any wildlife movement corridors, linkages, or Significant Ecological Areas / FWS Critical Habitat." This conclusion does not comport with what Noriko and I saw of wildlife movement to and from and across the project site. We observed near constant flight activity of birds crossing the alfalfa stands on their ways to Beech Drain, Dogwood Canal and other destinations, and we observed originating from these same destinations and flying back across the alfalfa.

Moreover, whether the site functions as a wildlife movement corridor or is located within a corridor is not the only consideration when it comes to the standard CEQA Checklist question of whether the project would interfere with wildlife movement in the region. The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. Birds are obviously using the site, so they are able to travel to and from the site. Most of the birds recorded at the site are migratory birds, and because such expansive utility-scale solar projects have been developed in the region, the site is located within one of the last remaining patches of open space available to any of these and other birds that need to move through the region. The project site is important to wildlife movement in the region, all the more important due to substantial recent habitat fragmentation.

INTERFERENCE FROM CONSTRUCTION LIGHTING

G C-17

According to the DEIR (p. 3.2-21), "Minimal lighting would be required for project operation and would be limited to safety and security functions." And, "If additional lighting should be required for nighttime maintenance, portable lighting equipment would be used." However, the DEIR provides no further explanation of what levels of lighting would qualify as minimal lighting, nor of maximum thresholds on the numbers of portable lights or their outputs in lumens. Elsewhere in the County, I have seen this type of mobile lighting, which I found not to be bright and highly intrusive (Photo 33).

The light from these lights would penetrate the arrow weed thickets along Dogwood Canal and Beech Drain, illuminating surface areas normally traversed by nocturnal wildlife that rely on darkness for stealth. Penetrating light would also generate stark light/shadow contrasts that can be confusing to wildlife. Artificial lighting causes a variety of substantial impacts on a variety of wildlife species (Rich and Longcore 2006), including interference with circadian rhythm, disruption of foraging activity, disruption of movement patterns, navigational interference and lethal attraction of flying birds, and altered development of eggs and juveniles/larvae. artificial light levels can interfere with dispersal movements of mammalian carnivores (Beier 1995), the mating-related singing behaviors of birds (Derrickson 1998, Bergen and Abs 1997), the behavior of

nocturnal frogs (Buchanan 1993), the activities and predation risk of moths (Frank, 1988, Rydell and Baagoe 1996), the congregatory behavior and distribution of certain species such as the American crow (Gorenzel and Salmon 1995), and the orientation and mobility of nocturnal, nonvolant animals such as ants (Klotz and Reid 1993). The project will increase light levels, and will therefore have these kinds of impacts on wildlife in the area. Added lighting could cause displacement or altered activity patterns of at least some species, resulting in habitat degradation and additional habitat loss. However, the DEIR did not analyze these potential impacts, nor did it propose mitigation to address them. The DEIR needs to be revised to address this suite of potential project impacts.

G C-17
cont'd



Photo 33. Portable lights were set up to illuminate the northwest portion of the Elmore North Geothermal Project site, right next to the Salton Sea's Morton Bay.

COLLISION MORTALITY

Bird and bat collision mortality on PV panels

Birds and bats are known to collide with PV panels in utility-scale solar projects. A leading hypothesis for these collisions is known as the Lake Effect, which consists of birds misperceiving arrays of solar panels as bodies of water (Photos 34–37). However, other causal factors must also account for many of the collisions, because many of the birds that collide with PV panels are songbirds and raptors and other species in addition

G C-18

to water birds. I found collision mortality with solar panels to be highest for mourning doves, horned larks, western meadowlarks, American coots, soras, burrowing owls, American kestrels, and many small bird species including yellow warblers (Smallwood 2022). At the project site, we observed mourning doves, western meadowlarks, burrowing owls and American kestrel.

Based on fatality searches in utility-scale solar projects in California, Smallwood (2022) estimated a weighted mean 11.61 (95% CI = 8.37-17.56) birds and 0.06 (95% CI = 0.01-0.10) bats per MW per year. Applying this rate to the proposed 22 MW of solar panels would predict 255 (95% CI = 184-386) bird collision fatalities per year and 1.3 (0.2-2) bat collision fatalities per year.



Photos 34 and 35. Smudge marks on solar panel (left) where western grebe collided with the panel and fell to the ground where it was photographed (right) at the Desert Sunlight Solar Project.



G C-18
cont'd

Photos 36 and 37. The location (left) where an endangered Yuma clapper rail was found dead (right) in the Desert Sunlight Solar Project.

Bird and bat collision mortality with medium-voltage distribution lines

G C-19

In my review of the impact to wildlife from utility-scale solar projects, I found that many species of volant wildlife had been discovered as fatalities under the generation tie-ins (gen-ties) of the solar projects. Many of these species were special-status species including burrowing owl (Photos 38 and 39). I found collision mortality with gen-ties (transmission lines) to be highest for Wilson's warblers, Brewer's sparrows, common yellowthroats, yellow warblers, loggerhead shrikes, American kestrels, and red-tailed hawks (Smallwood 2022). At the project site, we observed Brewer's sparrows, common yellowthroats and American kestrel.

Based on fatality searches along gen-ties of utility-scale solar projects in California, Smallwood (2022) estimated a weighted mean 113.16 (95% CI = 71.78-198.42) birds and 0 bats per km. Applying this rate to the 1.964 km of planned medium-voltage distribution lines would predict 222 (95% CI = 140-390) bird collision fatalities per year.

Photo 38. Photo of burrowing owl fatality at the Imperial Solar Energy Facility West (photo source: 18 June 2015 memo from Michael Robinson to Carrie Simmons (BLM), Magdalena Rodriguez (CDFW), Jody Fraser (USFWS) and David Black (Imperial County)).



G C-19
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Photo 1: BUOW carcass, ventral view (as found) 6-18-15

Photo 39. Photo of burrowing owl carcass under generation tie-in lines at the Imperial Solar Energy Facility West (photo source: 18 June 2015 memo from Michael Robinson to Carrie Simmons (BLM), Magdalena Rodriguez (CDFW), Jody Fraser (USFWS) and David Black (Imperial County)).



Bird and bat collision mortality with perimeter security fences

The 3.855 km of fencing of the project would kill birds (Photos 40 and 41) and bats. Recent fatality monitoring along fences of utility-scale solar projects in California provides the basis for predicting avian mortality that would be caused by the project's fence. Greater road-runners experienced particularly high mortality along security fences. I also found collision mortality with fencing at solar projects to be highest for canyon bats, western meadowlarks, northern flickers, burrowing owls, yellow-headed blackbirds and northern harriers (Smallwood 2022). At the project site, we detected greater roadrunner, western meadowlarks, and burrowing owls.

Based on a weighted mean 14.435 (95% CI: 10.880–20.339) birds and 2.56 (95% CI: 0.17–6.54) bats per km per year along fences of California's solar projects, the project's 3.855 km of fencing would likely kill 56 (95% CI: 42–78) birds per year, and 10 (95% CI: 0.7–25) bats per year. This predicted level of mortality would easily qualify as an unmitigated significant impact



Photo 40. A great-horned owl died after becoming entangled on the razor wire placed on top of this cyclone fence surrounding a substation in Alameda County. Photo by Joanne Mount.

G C-20

Photo 41. Fledgling house finch that fatally collided with a security fence, 26 June 2022. Photo by Noriko Smallwood.



G C-20
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Traffic-caused wildlife mortality

Project-generated traffic would endanger wildlife that must, for various reasons, cross roads used by the project's traffic to get to and from the project site (Photos 42–44), including along roads far from the project footprint. Vehicle collisions have accounted for the deaths of many thousands of amphibian, reptile, mammal, bird, and arthropod fauna, and the impacts have often been found to be significant at the population level (Forman et al. 2003). Across North America traffic impacts have taken devastating tolls on wildlife (Forman et al. 2003). In Canada, 3,562 birds were estimated killed per 100 km of road per year (Bishop and Brogan 2013), and the US estimate of avian mortality on roads is 2,200 to 8,405 deaths per 100 km per year, or 89 million to 340 million total per year (Loss et al. 2014). Local impacts can be more intense than nationally.

The nearest study of traffic-caused wildlife mortality was performed along a 2.5-mile stretch of Vasco Road in Contra Costa County, California. Fatality searches in this study found 1,275 carcasses of 49 species of mammals, birds, amphibians and reptiles over 15 months of searches (Mendelsohn et al. 2009). This fatality number needs to be adjusted for the proportion of fatalities that were not found due to scavenger removal and searcher error. This adjustment is typically made by placing carcasses for searchers to find (or not find) during their routine periodic fatality searches. This step was not taken at Vasco Road (Mendelsohn et al. 2009), but it was taken as part of another study next to Vasco Road (Brown et al. 2016). Brown et al.'s (2016) adjustment factors for carcass persistence resembled those of Santos et al. (2011). Also applying searcher detection rates from Brown et al. (2016), the adjusted total number of fatalities was estimated at 12,187 animals killed by traffic on the road. This fatality number over 1.25 years and 2.5 miles of road translates to 3,900 wild animals per mile per year. In terms comparable to

G C-21

the national estimates, the estimates from the Mendelsohn et al. (2009) study would translate to 243,740 animals killed per 100 km of road per year, or 29 times that of Loss et al.'s (2014) upper bound estimate and 68 times the Canadian estimate. An analysis is needed of whether increased traffic generated by the project site would similarly result in local impacts on wildlife.

G C-21
cont'd

Photo 42. A Gambel's quail dashes across a road on 3 April 2021. Such road crossings are usually successful, but too often prove fatal to the animal. Photo by Noriko Smallwood.



Photo 43. Mourning dove killed by vehicle on a California road. Photo by Noriko Smallwood, 21 June 2020.



Photo 44. Raccoon killed on Road 31 just east of Highway 505 in Solano County. Photo taken on 10 November 2018.

For wildlife vulnerable to front-end collisions and crushing under tires, road mortality can be predicted from the study of Mendelsohn et al. (2009) as a basis, although it would be helpful to have the availability of more studies like that of Mendelsohn et al. (2009) at additional locations. My analysis of the Mendelsohn et al. (2009) data resulted in an estimated 3,900 animals killed per mile along a county road in Contra Costa County. Two percent of the estimated number of fatalities were birds, and the balance was composed of 34% mammals (many mice and pocket mice, but also ground squirrels, desert cottontails, striped skunks, American badgers, raccoons, and others), 52.3% amphibians (large numbers of California tiger salamanders and California red-

legged frogs, but also Sierran treefrogs, western toads, arboreal salamanders, slender salamanders and others), and 11.7% reptiles (many western fence lizards, but also skinks, alligator lizards, and snakes of various species). VMT is useful for predicting wildlife mortality because I was able to quantify miles traveled along the studied reach of Vasco Road during the time period of the Mendelsohn et al. (2009), hence enabling a rate of fatalities per VMT that can be projected to other sites, assuming similar collision fatality rates.

G C-21
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The DEIR predicts 9,509 construction VMT and 85 daily operational VMT, the latter of which translates to 31,025 annual VMT. During the Mendelsohn et al. (2009) study, 19,500 cars traveled Vasco Road daily, so the vehicle miles that contributed to my estimate of non-volant fatalities was $19,500 \text{ cars and trucks} \times 2.5 \text{ miles} \times 365 \text{ days/year} \times 1.25 \text{ years} = 22,242,187.5 \text{ vehicle miles}$ per 12,187 wildlife fatalities, or 1,825 vehicle miles per fatality. This rate divided into the predicted construction VMT would predict 5 vertebrate wildlife fatalities, and divided into the predicted annual VMT would predict 17 vertebrate wildlife fatalities per year.

Based on my analysis, the project-generated traffic would cause substantial, significant impacts to wildlife. Although the DEIR includes a Best Management Practice to require a speed limit of 5 mph "to minimize dust, avoid collision, and incidental mortality of local wildlife," this speed limit would apply to on-site access roads and not to the predicted annual VMT to and from the project site. The DEIR does not analyze the potential impact from annual VMT, nor does it propose to mitigate it. Mitigation measures to improve wildlife safety along roads are available and are feasible, and they need exploration for their suitability with the proposed project. Given the predicted level of project-generated, traffic-caused mortality, and the lack of any proposed binding mitigation, it is my opinion that the proposed project would result in potentially significant adverse biological impacts. The DEIR needs to be revised.

INTERFERENCE WITH EXISTING HCP/NCCP

The DEIR's analysis of potential impacts to the Desert Renewable Energy Conservation Plan and to the Imperial Irrigation District NCCP/HCP is too narrow. According to the DEIR (p. 3.5-11), "The project site is located within the designated boundaries of the Desert Renewable Energy Conservation Plan and the Imperial Irrigation District Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). However, the project site is not located within or adjacent to an Area of Critical Environmental Concern." Where this analysis falls short is in its failure to consider that (1) the project site could serve as a candidate mitigation site to achieve the objectives of the HCPs/NCCPs, and (2) the impacts caused by the project could impede the conservation objectives of the HCPs/NCCPs. For example, if the project takes burrowing owls without properly mitigating for the takings, then it will be that much more difficult for the HCPs/NCCPs to achieve the conservation objectives they have established for burrowing owls. Moreover, burrowing owl is a Covered Species within the HCP, so the DEIR's failure to "Provide for the conservation and management of Covered Species [burrowing owl]" results in an interference with the HCP.

G C-22

CUMULATIVE IMPACTS

The DEIR's cumulative impacts analysis is grossly inadequate and misleading. Whereas it remains unknown how many wild animals would be lost to California due to the project's interference with wildlife movement in the region, habitat lost to the project would cost California a predicted 945 birds per year. Predicted annual collision mortality averages 255 birds and 1.3 bats with the project's PV solar panels, 222 birds with the medium-voltage distribution lines, 56 birds and 10 bats with the security fence, and 17 vertebrate animals with project-generated traffic for a combined annual mortality of 561 vertebrate animals. The total quantifiable deficit of vertebrate wildlife would be at least 1,506, and that is before attempting to quantify the numbers of small mammals and bats that would be lost. The project's contribution to cumulative impacts would be substantial and highly significant.

Table 5-1 of the DEIR lists renewable energy projects that are built, under construction, approved or pending entitlements in the project's area. These projects total 44,902 acres. Assuming the productive loss of birds I estimated under HABITAT LOSS applies to the cumulative 44,902 acres in the DEIR's Table 5-1 (the denial of 8.84 birds produced/acre), then I estimate 396,934 birds are being denied to California due to cumulative habitat loss to PV solar, geothermal and battery storage projects in the DEIR's cumulative impacts analysis area.

When I commented on the Desert Renewable Energy Conservation Plan (DRECP), I reviewed reports of burrowing surveys in the Imperial Valley (Table 3). The average density was 8.47 pairs per km², which is 0.0343 pairs per acre. This density applied to the acreage of the projects listed in the DEIR's Table 5-1 estimates that 1,540 burrowing owl pairs, or 3,080 breeding-age burrowing owls, have lost their habitat and no longer exist within the portion of Imperial County that is covered by the projects in the Table.

Table 3. Nesting densities of burrowing owls at proposed project sites within Imperial County.

Source	Site	Ha	Pairs	Nest density, pairs/km ²
Cornett 2012	Imperial Valley Solar Company 2	64	4	6.25
Ecology and Environment 2012	Hudson Ranch Power II Geothermal Project	99	13	13.13
Ecology and Environment 2012	McDonald Road portion of Hudson Ranch	78	13	16.67
HDR 2011	Mt. Signal	1,711	72	4.21
BLM 2012	Ocotillo Sol	46	5	8.58
Imperial County 2012	Solar Gen II	813	56	5.61
Heritage Environmental Consultants, LLC. 2012	Campo Verde	1,338	65	4.86
Average				8.47

G C-23

G C-23
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The solar PV projects in the DEIR's Table 5-1 total 7,236 MW of rated capacity, which can be used to predict collision mortality. Based on my review of utility-scale solar projects and their collision mortality estimates, I found an average 0.011698 km of gen-tie and 0.022837 km of fencing per ha of solar project (Smallwood 2022). Multiplied against the cumulative number of hectares, I estimate the cumulative length of generation tie-ins (gen-ties) to be 212.58 km, and the cumulative length of security fencing to be 415 km. Mean collision fatality rates in Smallwood (2022) were 11.61 bird fatalities/MW and 0.06 bat fatalities/MW of PV solar panels, 113.16 bird fatalities/km of gen-tie, and 14.435 bird fatalities/km and 2.56 bat fatalities/km of securing fencing. Cumulative annual mortality estimates are then 84,010 birds and 434 bats at solar PV panels, 24,055 birds at gen-ties, and 5,990 birds and 1,062 bats at securing fencing. Cumulative annual bird collision fatalities are estimated to be 114,056 birds and 1,497 bats at solar projects among the list of projects in Table 5-1 of the DEIR. Smallwood (2022) reports a mean 0.182 burrowing owl collision fatalities/MW of PV solar panels, so cumulative annual burrowing owl collision fatalities based on the list of projects in Table 5-1 of the DEIR is estimated to be 1,317 – an excessive mortality that is likely helping to extirpate burrowing owls from Imperial County.

Despite the predictably large impacts to burrowing owls and other special-status species in the cumulative impacts analysis area, the DEIR (p. 5-11) claims, "In general terms, in instances where a potential impact could occur, CDFW and USFWS have promulgated a regulatory scheme that limits impacts on these species. The effects of the project would be rendered less than significant through mitigation requiring compliance with all applicable regulations that protect plant, fish, and animal species, as well as waters of the U.S. and state." However, as Smallwood and Smallwood (2023) discovered through experiment, significant impacts result despite the regulatory scheme established by CDFW and USFWS. According to CEQA Guidelines §15064(h)(3), "When relying on a plan, regulation or program, the lead agency should explain how implementing the particular requirements in the plan, regulation or program ensure that the project's incremental contribution to the cumulative effect is not cumulatively considerable." The DEIR does not do this.

The DEIR (p. 5-11) continues, "Burrowing Owls are protected by the CDFW mitigation guidelines for burrowing owl (CDFW 2012) and Consortium guidance (1993), which require a suite of mitigation measures to ensure direct effects to burrowing owls during construction activities are avoided and indirect effects through burrow destruction and loss of foraging habitat are mitigated at prescribed ratios. Mitigation measures identified in Section 3.5, Biological Resources, contain these requirements thereby minimizing potential impacts on these species to a less than significant level." Burrowing owls are not protected by CDFW (2012) and the Consortium Guidance of 1993 is no longer relevant because it has been replaced by CDFW (2012). CDFW (2012) does not *require* anything, as it is a guidance document. Moreover, the DEIR fails to implement survey or mitigation measures that are consistent with CDFW's (2012) guidelines, as no breeding-season detection surveys have been completed.

According to the DEIR (p. 5-11), "special-status bird species have a potential to be present. As a result of project-related construction activities, one or more of these

species could be impacted. However, with the implementation of mitigation as identified in Section 3.5, Biological Resources, these impacts would be reduced to a level of less than significant, primarily through avoidance of direct and indirect impacts to these species via pre-construction surveys and monitoring requirements during construction." In fact, special-status species of birds are present, and they would be adversely affected by the project. The DEIR's mitigation measures, however, do nothing to mitigate the loss of productive capacity of these species. Other than possibly avoiding direct take during construction, none of the measures avoid or minimize impacts to special-status species of wildlife during the operational phase of the project.

G C-23
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The DEIR (p. 5-11 to 5-12) reuses the same argument that existing regulations will prevent impacts: "Similarly, the cumulative projects within the geographic scope of the project would be required to comply with the legal framework as described above, and similar avoidance and minimization measures. ... As with the proposed project, each of the cumulative projects would be required to provide mitigation for impacts on biological resources." The DEIR goes on to cite the Migratory Bird Treaty Act, and "The CWA and California's Porter-Cologne Water Quality Control Act," which are said to provide protection for water-related biological resources by controlling pollution, setting water quality standards, and preventing jurisdictional streams, lakes, and rivers from being filled without a federal permit. Then the DEIR states "The proposed project would comply with these and other laws, regulations and guidelines and therefore would not contribute substantially to a cumulative biological resources impact. ... Therefore, the project would not contribute to a cumulatively considerable impact to biological resources, and cumulative impacts would be less than significant." This entire argument, however, is easily refuted by my review of habitat and collision mortality impacts measured at utility-scale solar projects (Smallwood 2022). The 14 projects in my review had all needed to comply with the same laws, regulations and guidelines, but nonetheless caused the measured impacts I reported in Smallwood (2022).

And again, CEQA Guidelines §15064(h)(3) state, "When relying on a plan, regulation or program, the lead agency should explain how implementing the particular requirements in the plan, regulation or program ensure that the project's incremental contribution to the cumulative effect is not cumulatively considerable." The DEIR does not explain how the project's implementation in the context of the existing regulatory framework would achieve a different result than what is reported in Smallwood (2022).

INADEQUATE MITIGATION

BIO-1 Worker Environmental Awareness Program.

I concur that a worker environmental awareness program can be helpful, but it must be understood that such a program would not prevent the long-term losses of productive capacities of wildlife caused by habitat loss, nor would it prevent collision mortality reported in Smallwood (2022).

G C-24

BIO-2 Preconstruction Nesting Bird Survey: *If construction or other project activities are scheduled to occur during the bird breeding season ..., a preconstruction*

G C-25

nesting-bird survey shall be conducted by a qualified avian biologist to ensure that active bird nests, including those for the northern harrier, long-billed curlew, and burrowing owl, will not be disturbed or destroyed. ... The survey shall be completed no more than 3 days prior to initial ground disturbance. ... shall include the project area and adjacent areas where project activities have the potential to affect active nests, either directly or indirectly, due to construction activity or noise. If an active nest is identified, the biologist shall establish an appropriately sized disturbance limit buffer around the nest using flagging or staking. ...

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It is unrealistic to expect fewer than an army of biologists to complete a nest survey over such a large area within 3 days of construction, and to be capable of discovering all of the active nests. Preconstruction, take-avoidance surveys consist of two steps, both of which are very difficult because birds are highly adept at concealing their nests. First, the biologist(s) performing the survey must identify birds that are breeding. Second, the biologist(s) must locate the breeding birds' nests. The first step is typically completed by observing bird behaviors such as food deliveries and nest territory defense. These types of observations typically require many surveys on many dates spread throughout the breeding season, even to locate the nest sites of individually targeted species such as burrowing owl (Smallwood et al. 2013) or loggerhead shrike (Smallwood and Smallwood 2021). To identify the birds of all species nesting on a site requires a much greater survey effort than a single survey only days prior to the start of construction. The biologists conducting the preconstruction survey would be very lucky to find any of the bird nests that are available to be found at the time of the survey.

Even if nests are found in a preconstruction survey, the nests might be salvaged, but the nest sites cannot be protected. Many birds, including burrowing owls, demonstrate considerable fidelity to nest sites by returning to use them year after year. Whereas a nest might be salvaged, the nest site would not survive project construction. The impacts to nesting birds do not end with salvage.

Finally, the mitigation language allows a single individual to make a subjective decision, outside the public's view, to determine the buffer area for any given species. This measure lacks objective criteria, and is unenforceable.

BIO-3 Biological Monitoring: *If preconstruction surveys determine either the presence of special-status species or sensitive biological resources on the project site, a construction monitor may be needed during construction. ...*

G C-26

Biological monitoring should not be contingent on the outcome of a preconstruction survey. Preconstruction survey does not carry anywhere near the detection probabilities of protocol-level detection surveys, and anyway it is already known that the site supports special-status species of wildlife.

Should the project go forward, qualified biologists should be required to monitor construction impacts to wildlife. However, it should also be required that the monitor completes a report of the findings of construction monitoring. All cases of potential construction harm to wildlife should be reported to US Fish and Wildlife/California

Department of Fish and Wildlife, and to the City, along with what was done to prevent or minimize or rectify injuries. All injuries and fatalities should be reported to the same parties, along with the disposition of any remains. The report be made available to the public.

G C-26
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BIO-4 Burrowing Owl Avoidance and Minimization. *Take avoidance (pre-construction) surveys for burrowing owl shall be completed prior to project construction. Surveys shall be conducted as detailed within Appendix D of the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game [CDFG] 2012). ... If burrowing owl is identified during the breeding season ..., then an appropriate buffer will be established by the biological monitor in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012).*

G C-27

As applied to burrowing owls, the preconstruction survey would not be consistent with the CDFW (2012) survey and mitigation guidelines. The language of the mitigation measure falsely implies that a preconstruction survey conducted without having first completed detection surveys could be consistent with the CDFW (2012) survey and mitigation guidelines. As I commented earlier, CDFW's (2012) recommended surveys are intended to be completed in a specific chronological sequence, each type of survey contributing to the efficacy of the next type of survey. These three types of survey are intended for different purposes and they carry different detection probabilities. Breeding-season detection surveys per CDFW (2012) are the most rigorous type of survey, and are intended to not only support an impacts analysis, but also to support the preconstruction survey. The breeding-season surveys carry the highest probability of detection of burrowing owls, and therefore are most suited to informing biologists where best to find burrowing owls during the preconstruction survey. Performing a preconstruction survey without the aid of a breeding-season survey leaves the biologists blind to where burrowing owls are located, and would not be consistent with CDFW (2012).

RECOMMENDED MEASURES

Bird collisions with medium-voltage distribution lines: Two methods are available to avoid or minimize collision mortality with power lines. The most effective method would be to underground the lines, thereby avoiding the potential impact altogether. The second method is to mark the lines. Commonly used markers include the FireFly HW Bird Diverter (<https://pr-tech.com/product/firefly-hw-bird-diverter/>) and the BirdMark Bird Diverter (<https://pr-tech.com/product/birdmark-bird-diverter/>), the latter of which I know from personal experience can reduce mortality (Yee 2007).³ However, these markers often break, entangle and their colors fade within only a few years of installation (Photos 45 and 46). Markers less apt to tangle or break include dampers and swinging plates, both of which have been documented to reduce mortality (Brown and Drewien 1995). If markers were to be used, there would need to be commitments to their long-term maintenance and to their measurement of efficacy. If

G C-28

³ I served on Yee's M.S. Thesis committee and assisted with study design.

measured efficacy is below a pre-defined threshold, then additional measures should be required.

Figure 45. Line marker deployed in experimental design to test whether line collisions could be reduced for sandhill crane and other birds (Yee 2007). Photo by Shawn Smallwood.



Figure 46. Several years after deployment the line markers used to experimentally test whether line collisions could be reduced for sandhill crane and other birds (Yee 2007) were broken, twisted and missing due to exposure to sun, rain and wind. Durability is an issue. Photo by Shawn Smallwood.



G C-28
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Road Mortality: Compensatory mitigation is needed for the increased wildlife mortality that would be caused by project-generated road traffic in the region. I suggest that this mitigation be directed toward funding research to identify fatality patterns and effective impact reduction measures such as reduced speed limits and wildlife under-crossings or overcrossings of particularly dangerous road segments. Compensatory mitigation can also be provided in the form of donations to wildlife rehabilitation facilities (see below).

G C-29

Fund Wildlife Rehabilitation Facilities: Compensatory mitigation ought also to include funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care. Many animals would likely be injured by collisions with automobiles and project infrastructure.

G C-30

Post-construction Measurement of Impacts: The DEIR presents no measures to measure impacts caused by construction and operation of the project. This is a major shortfall because measurement of impacts can help to formulate appropriate mitigation measures, and it could contribute to our understanding of the impacts, how the impacts are caused, and how they can be minimized or reduced at this and other renewable energy projects. Wildlife surveys should be required pre- and post-construction to measure the impacts of habitat loss.

G C-31

To accurately estimate collision mortality and the effects of habitat loss, I suggest the following steps to first characterize the existing wildlife community as a baseline to be compared to the wildlife community post-construction:

1. Establish two or more reference sites in similar vegetation and terrain settings but located sufficiently far from the project footprint to minimize the effects of displaced wildlife from the project;
2. Duplicate all survey methods between the project site and the reference sites;
3. Select indicator species for survey focus, but enough of the species to robustly represent the wildlife community – representative species of lizards, snakes, kangaroo rats, ground squirrels, lagomorphs, mammalian carnivora, bats, and birds of different types;
4. Implement sampling and counting methods that are appropriate to the species and using personnel who are qualified on the species, e.g., use thermal-imaging and acoustic detectors to survey for bats, and live-trapping to survey for small mammals;
5. Sample to sufficiently represent the wildlife community in each season of the year;
6. Implement periodic early-morning reconnaissance surveys or at least 1-hour duration to record detections of vertebrate wildlife species, whereby each new species detection is recorded along with the time into the survey;
7. Deliver data to an analyst on a weekly basis to ensure that the data are understood and any questions about the data are quickly resolved;
8. Share data and reports publicly and require peer-review by independent party.

To accurately estimate collision mortality, I offer the following suggestions for fatality searches (also see Smallwood 2022), including best practices:

1. Keep it simple;
2. Have a plan and a budget for responding to the discoveries of injured wildlife;
3. Ask solar company employees to leave carcasses alone;
4. Search all of the solar arrays in the project, or a substantial randomized sample or a systematic sample with random starting points;

5. Delineate unsearchable areas due to hazards, dense vegetation or other factors;
6. Use scent-detection dogs with skilled handlers (Smallwood et al. 2020), either off-leash to achieve detection rates of available carcasses (i.e., those not removed by scavengers yet) of 50% to 60%, or on-leash to achieve detection rates >90%;
7. Implement no more than one search interval, i.e., number of days between searches, but the search interval should be a targeted average rather than a strict time to provide flexibility to the scent-detection dog team;
8. Minimum monitoring duration should be 3 years;
9. Refrain from performing 'clearing searches' because they're ineffective and unnecessary;
10. Upon discovery of feathers, stop and search increasingly larger circles to determine whether more feathers can lead to the carcass;
11. Integrate carcass detection trials into routine fatality monitoring by randomly placing just-thawed, fresh-frozen carcasses of appropriate bird and bat species onto the search areas at a rate of about 2.3 g/ha/year, where appropriate species means those likely to be killed by features of the project and include the full range of body sizes (Smallwood et al. 2018);
12. In carcass detection trials, place many more of the smallest birds and bats because detections of those trial carcasses are necessary but more rarely achieved;
13. Mark trial carcasses discreetly and safely with regard to scavengers – snipping toes and the ends of flight feathers works well, or one foot of each bat;
14. Weigh trial carcasses just prior to placement;
15. Keep searchers blind to the trial placements by using a disciplined trial administrator who places carcasses while searchers are not onsite and who leaves no obvious evidence of each visit other than the carcass itself;
16. Upon placement, drop each trial carcass from waist height, and then photograph and map the location with high-end GPS and take notes of the location, e.g., 10 cm east of white pebble and 2 m north of 1-m long north-south oriented stick, or 2 m west of PV panel number X;
17. Leave all fatality and trial carcasses in the field, thereafter monitoring subsequent detections of the same carcasses;
18. All carcasses in integrated trials are either found or not found, so do not attempt to separate trials for searcher detection and carcass persistence;
19. Count fatalities discovered incidentally to routine fatality monitoring, including those found beyond the maximum search radius of a sampled unit, but omit those found at units not selected for sampling (if sampling was used instead of census);
20. Map and photograph all fatalities and trial carcasses every time they are detected;
21. Enter data into electronic spreadsheet daily and share data with supervisor no less often than weekly to identify and resolve problems in a timely manner;
22. Identify all remains to species, so include sufficient budget for visiting museums or experts to achieve this objective (every species misidentification adds error to two species – to the species misidentified and to the species not identified);
23. See Smallwood et al. (2018) for details on how to use the data in a simple estimator;
24. Repeat the monitoring effort 10 years after the first monitoring effort;

G C-31
cont'd

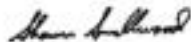
25. Share data and reports publicly and require peer-review by independent party.

G C-31
cont'd

Finally, establish a policy of improving estimation accuracy whenever opportunities to do so arise. This policy would require that methods be adjusted or changed to accommodate greater accuracy, and it would disallow a pervasive approach of clinging to less accurate methods because they are industry-standard methods or said to be more comparable. Inaccurate estimates are not more comparable.

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Thank you for your consideration,



Shawn Smallwood, Ph.D.

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Photo 47. *A white-faced ibis flying late in the evening, 5 September 2024.*

APPENDIX: ONSITE WILDLIFE PHOTOS



Photo 5. One of many harvester ant mounds on the project site, 5 September 2024.



Photo 6. A round-tailed ground squirrel prepared to escape into its burrow on the project site, 5 September 2024.



Photo 7. One of many flocks of red-winged blackbirds that flew across the alfalfa fields to and from the water channels, 5 September 2024.



Photo 8. One of many flocks of great-tailed grackles that flew low across the alfalfa on their way to the water channels, 5 September 2024.



Photos 9 and 10. Many mourning doves flew low back and forth across the alfalfa fields to the water channels and roost sites on and around the project site, 5 September 2024.



Photo 11. A flock of mallards walked from Beech Drain to the alfalfa south of the Drain, 5 September 2024.



Photo 12. In one view of Beech Drain are snowy egrets, black-necked stilts, and red-winged blackbirds, 5 September 2024.



Photos 13 and 14. White-faced ibises flew back and forth across the project site (top), and so did mallards (bottom), 4-5 September 2024. These mallards were flying out of Beech Drain.



**Photos 15
and 16.**
*Black-
necked
stilts
repeatedly
flew to and
from
Dogwood
Canal and
Beech
Drain, 5
September
2024.*





Photos 17 and 18. Cattle egrets (top) and a snowy egret (bottom), 5 September 2024.



Photos 19–21. Great egret (top), double-crested cormorant (lower left) and killdeer (lower right) flying across the project site, 5 September 2024.



Photos 22 and 23. Muskrat and blue grosbeak in Beech Drain, 5 September 2024.

Photos 24 and 25.
*Great-tailed grackle and
orange-crowned
warbler at Dogwood
Canal and Beech Drain,
respectively, 5
September 2024.*



Photos 26–27.
Common yellowthroat in upper photo, and Brewer's sparrow and savannah sparrow at left and right sides of bottom photo, taken from Beech Drain, 5 September 2024.



Photos 28 and 29.
*Lazulu bunting (top) and
black phoebe with a prey
item (bottom) along
Beech Drain, 4-5
September 2024.*





Photos 30 and 31. Red-winged blackbird juveniles crowding into Beech Drain, 5 September 2024.



Photo 32. Juvenile verdin in Beech Drain, 5 September 2024.

Kenneth Shawn Smallwood
Curriculum Vitae

3108 Finch Street
Davis, CA 95616
Phone (530) 756-4598
Cell (530) 601-6857
puma@dcn.org

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

- 480 professional publications, including:
 - 83 peer reviewed publications
 - 24 in non-reviewed proceedings
 - 371 reports, declarations, posters and book reviews
 - 8 in mass media outlets
 - 87 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

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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

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conservation and restoration opportunities based on 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

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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 founts 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.

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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 interspersed 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

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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 M. L. Morrison. 2018. Nest-site selection in a high-density colony of burrowing owls. *Journal of Raptor Research* 52:454-470.

Smallwood, K. S., D. A. Bell, E. L. Walther, E. Leyvas, S. Standish, J. Mount, B. Karas. 2018. Estimating wind turbine fatalities using integrated detection trials. *Journal of Wildlife Management* 82:1169-1184.

Smallwood, K. S. 2017. Long search intervals under-estimate bird and bat fatalities caused by

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wind turbines. *Wildlife Society Bulletin* 41:224-230.

Smallwood, K. S. 2017. The challenges of addressing wildlife impacts when repowering wind energy projects. Pages 175-187 in Köppel, J., Editor, *Wind Energy and Wildlife Impacts: Proceedings from the CWW2015 Conference*. Springer. Cham, Switzerland.

May, R., Gill, A. B., Köppel, J., Langston, R. H.W., Reichenbach, M., Scheidat, M., Smallwood, S., Voigt, C. C., Hülppop, O., and Portman, M. 2017. Future research directions to reconcile wind turbine-wildlife interactions. Pages 255-276 in Köppel, J., Editor, *Wind Energy and Wildlife Impacts: Proceedings from the CWW2015 Conference*. Springer. Cham, Switzerland.

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Smallwood, K. S., L. Neher, and D. A. Bell. 2017. Siting to Minimize Raptor Collisions: an example from the Repowering Altamont Pass Wind Resource Area. M. Perrow, Ed., *Wildlife and Wind Farms - Conflicts and Solutions*, Volume 2. Pelagic Publishing, Exeter, United Kingdom. www.bit.ly/2v3cR9Q

Johnson, D. H., S. R. Loss, K. S. Smallwood, W. P. Erickson. 2016. Avian fatalities at wind energy facilities in North America: A comparison of recent approaches. *Human-Wildlife Interactions* 10(1):7-18.

Sadar, M. J., D. S.-M. Guzman, A. Mete, J. Foley, N. Stephenson, K. H. Rogers, C. Grosset, K. S. Smallwood, J. Shipman, A. Wells, S. D. White, D. A. Bell, and M. G. Hawkins. 2015. Mange Caused by a novel *Micnemidocoptes* mite in a Golden Eagle (*Aquila chrysaetos*). *Journal of Avian Medicine and Surgery* 29(3):231-237.

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Mete, A., N. Stephenson, K. Rogers, M. G. Hawkins, M. Sadar, D. Guzman, D. A. Bell, J. Shipman, A. Wells, K. S. Smallwood, and J. Foley. 2014. Emergence of *Knemidocoptic* mange in wild Golden Eagles (*Aquila chrysaetos*) in California. *Emerging Infectious Diseases* 20(10):1716-1718.

Smallwood, K. S. 2013. Introduction: Wind-energy development and wildlife conservation. *Wildlife Society Bulletin* 37: 3-4.

Smallwood, K. S. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. *Wildlife Society Bulletin* 37:19-33. + Online Supplemental Material.

Smallwood, K. S., L. Neher, J. Mount, and R. C. E. Culver. 2013. Nesting Burrowing Owl Abundance in the Altamont Pass Wind Resource Area, California. *Wildlife Society Bulletin*: 37:787-795.

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- Smallwood, K. S., D. A. Bell, B. Karas, and S. A. Snyder. 2013. Response to Huso and Erickson Comments on Novel Scavenger Removal Trials. *Journal of Wildlife Management* 77: 216-225.
- Bell, D. A., and K. S. Smallwood. 2010. Birds of prey remain at risk. *Science* 330:913.
- Smallwood, K. S., D. A. Bell, S. A. Snyder, and J. E. DiDonato. 2010. Novel scavenger removal trials increase estimates of wind turbine-caused avian fatality rates. *Journal of Wildlife Management* 74: 1089-1097 + Online Supplemental Material.
- Smallwood, K. S., L. Neher, and D. A. Bell. 2009. Map-based repowering and reorganization of a wind resource area to minimize burrowing owl and other bird fatalities. *Energies* 2009(2):915-943. <http://www.mdpi.com/1996-1073/2/4/915>
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Fitzhugh, E.L. and K.S. Smallwood. 1987. Methods Manual – A statewide mountain lion population index technique. California Department of Fish and Game, Sacramento.

Salmon, T.P. and K.S. Smallwood. 1989. Final Report – Evaluating exotic vertebrates as pests to California agriculture. California Department of Food and Agriculture, Sacramento.

Smallwood, K.S. and W. A. Erickson (written under supervision of W.E. Howard, R.E. Marsh, and R.J. Laake). 1990. Environmental exposure and fate of multi-kill strychnine gopher baits. Final Report to USDA Forest Service –NAPIAP, Cooperative Agreement PSW-89-0010CA.

Fitzhugh, E.L., K.S. Smallwood, and R. Gross. 1985. Mountain lion track count, Marin County, 1985. Report on file at Wildlife Extension, University of California, Davis.

Comments on Environmental Documents

I was retained or commissioned to comment on environmental planning and review documents, including:

- The Villages of Lakeview EIR (2017; 28 pp);
- Notes on Proposed Study Options for Trail Impacts on Northern Spotted Owl (2017; 4 pp);
- San Geronio Crossings EIR (2017; 22 pp);
- Replies to responses on Jupiter Project IS and MND (2017; 12 pp);
- MacArthur Transit Village Project Modified 2016 CEQA Analysis (2017; 12 pp);
- Central SoMa Plan DEIR (2017; 14 pp);
- Colony Commerce Center Specific Plan DEIR (2016; 16 pp);
- Fairway Trails Improvements MND (2016; 13 pp);
- Review of Avian-Solar Science Plan (2016; 28 pp);
- Replies to responses on Initial Study for Pyramid Asphalt (2016; 5 pp);
- Initial Study for Pyramid Asphalt (2016; 4 pp);
- Agua Mansa Distribution Warehouse Project Initial Study (2016; 14 pp);
- Santa Anita Warehouse IS and MND (2016; 12 pp);
- CapRock Distribution Center III DEIR (2016; 12 pp);
- Orange Show Logistics Center Initial Study and MND (2016; 9 pp);
- City of Palmdale Oasis Medical Village Project IS and MND (2016; 7 pp);
- Comments on proposed rule for incidental eagle take (2016, 49 pp);
- Grapevine Specific and Community Plan FEIR (2016; 25 pp);
- Grapevine Specific and Community Plan DEIR (2016; 15 pp);
- Clinton County Zoning Ordinance for Wind Turbine siting (2016);
- Hallmark at Shenandoah Warehouse Project Initial Study (2016; 6 pp);
- Tri-City Industrial Complex Initial Study (2016; 5 pp);
- Hidden Canyon Industrial Park Plot Plan 16-PP-02 (2016; 12 pp);
- Kimball Business Park DEIR (2016; 10 pp);
- Jupiter Project IS and MND (2016; 9 pp);
- Revised Draft Giant Garter Snake Recovery Plan of 2015 (2016, 18 pp);
- Palo Verde Mesa Solar Project Draft Environmental Impact Report (2016; 27 pp);

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- Reply Witness Statement on Fairview Wind Project, Ontario, Canada (2016; 14 pp);
- Fairview Wind Project, Ontario, Canada (2016; 41 pp);
- Supplementary Reply Witness Statement Amherst Island Wind Farm, Ontario (2015, 38 pp);
- Witness Statement on Amherst Island Wind Farm, Ontario (2015, 31 pp);
- Second Reply Witness Statement on White Pines Wind Farm, Ontario (2015, 6 pp);
- Reply Witness Statement on White Pines Wind Farm, Ontario (2015, 10 pp);
- Witness Statement on White Pines Wind Farm, Ontario (2015, 9 pp);
- Proposed Section 24 Specific Plan Agua Caliente Band of Cahuilla Indians DEIS (2015, 9 pp);
- Replies to comments 24 Specific Plan Agua Caliente Band of Cahuilla Indians FEIS (2015, 6 pp);
- Willow Springs Solar Photovoltaic Project DEIR (2015; 28 pp);
- Sierra Lakes Commerce Center Project DEIR (2015, 9 pp);
- Columbia Business Center MND (2015; 8 pp);
- West Valley Logistics Center Specific Plan DEIR (2015, 10 pp);
- World Logistic Center Specific Plan FEIR (2015, 12 pp);
- Bay Delta Conservation Plan EIR/EIS (2014, 21 pp);
- Addison Wind Energy Project DEIR (2014, 32 pp);
- Response to Comments on the Addison Wind Energy Project DEIR (2014, 15 pp);
- Addison and Rising Tree Wind Energy Project FEIR (2014, 12 pp);
- Alta East Wind Energy Project FEIS (2013, 23 pp);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16 pp);
- Clearwater and Yakima Solar Projects DEIR (2013, 9 pp);
- Cuyama Solar Project DEIR (2014, 19 pp);
- Draft Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49 pp);
- Kingbird Solar Photovoltaic Project EIR (2013, 19 pp);
- Lucerne Valley Solar Project Initial Study & Mitigated Negative Declaration (2013, 12 pp);
- Palen Solar Electric Generating System Final Staff Assessment of California Energy Commission, (2014, 20 pp);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9 pp);
- Rising Tree Wind Energy Project DEIR (2014, 32 pp);
- Response to Comments on the Rising Tree Wind Energy Project DEIR (2014, 15 pp);
- Soitec Solar Development Project Draft PEIR (2014, 18 pp);
- Comment on the Biological Opinion (08ESMF-00-2012-F-0387) of Oakland Zoo expansion on Alameda whipsnake and California red-legged frog (2014; 3 pp);
- West Antelope Solar Energy Project Initial Study and Negative Declaration (2013, 18 pp);
- Willow Springs Solar Photovoltaic Project DEIR (2015, 28 pp);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10 pp);
- Declaration on Tule Wind project FEIR/FEIS (2013; 24 pp);
- Sunlight Partners LANDPRO Solar Project Mitigated Negative Declaration (2013; 11 pp);
- Declaration in opposition to BLM fracking (2013; 5 pp);
- Rosamond Solar Project Addendum EIR (2013; 13 pp);
- Pioneer Green Solar Project EIR (2013; 13 pp);
- Reply to Staff Responses to Comments on Soccer Center Solar Project Mitigated Negative

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- Declaration (2013; 6 pp);
- Soccer Center Solar Project Mitigated Negative Declaration (2013; 10 pp);
- Plainview Solar Works Mitigated Negative Declaration (2013; 10 pp);
- Reply to the County Staff's Responses on comments to Imperial Valley Solar Company 2 Project (2013; 10 pp);
- Imperial Valley Solar Company 2 Project (2013; 13 pp);
- FRV Orion Solar Project DEIR (PP12232) (2013; 9 pp);
- Casa Diablo IV Geothermal Development Project (2013; 6 pp);
- Reply to Staff Responses to Comments on Casa Diablo IV Geothermal Development Project (2013; 8 pp);
- FEIS prepared for Alta East Wind Project (2013; 23 pp);
- Metropolitan Air Park DEIR, City of San Diego (2013;);
- Davidson Homes Tentative Subdivision Map and Rezoning Project DEIR (2013; 9 pp);
- Analysis of Biological Assessment of Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10 pp);
- Declaration on Campo Verde Solar project FEIR (2013; 11 pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8 pp);
- Declaration on North Steens Transmission Line FEIS (2012; 62 pp);
- City of Lancaster Revised Initial Study for Conditional Use Permits 12-08 and 12-09, Summer Solar and Springtime Solar Projects (2012; 8 pp);
- J&J Ranch, 24 Adobe Lane Environmental Review (2012; 14 pp);
- Reply to the County Staff's Responses on comments to Hudson Ranch Power II Geothermal Project and the Simbol Calipatria Plant II (2012; 8 pp);
- Hudson Ranch Power II Geothermal Project and the Simbol Calipatria Plant II (2012; 9 pp);
- Desert Harvest Solar Project EIS (2012; 15 pp);
- Solar Gen 2 Array Project DEIR (2012; 16 pp);
- Ocotillo Sol Project EIS (2012; 4 pp);
- Beacon Photovoltaic Project DEIR (2012; 5 pp);
- Declaration on Initial Study and Proposed Negative Declaration for the Butte Water District 2012 Water Transfer Program (2012; 11 pp);
- Mount Signal and Calexico Solar Farm Projects DEIR (2011; 16 pp);
- City of Elk Grove Sphere of Influence EIR (2011; 28 pp);
- Comment on Sutter Landing Park Solar Photovoltaic Project MND (2011; 9 pp);
- Statement of Shawn Smallwood, Ph.D. Regarding Proposed Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4 pp);
- Declaration of K. Shawn Smallwood on Biological Impacts of the Ivanpah Solar Electric Generating System (ISEGS) (2011; 9 pp);
- Comments on Draft Eagle Conservation Plan Guidance (2011; 13 pp);
- Comments on Draft EIR/EA for Niles Canyon Safety Improvement Project (2011; 16 pp);
- Declaration of K. Shawn Smallwood, Ph.D., on Biological Impacts of the Route 84 Safety Improvement Project (2011; 7 pp);
- Rebuttal Testimony of Witness #22, K. Shawn Smallwood, Ph.D, on Behalf of Intervenor Friends of The Columbia Gorge & Save Our Scenic Area (2010; 6 pp);
- Prefiled Direct Testimony of Witness #22, K. Shawn Smallwood, Ph.D, on Behalf of

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- Intervenors Friends of the Columbia Gorge & Save Our Scenic Area. Comments on Whistling Ridge Wind Energy Power Project DEIS, Skamania County, Washington (2010; 41 pp);
- Evaluation of Klickitat County's Decisions on the Windy Flats West Wind Energy Project (2010; 17 pp);
- St. John's Church Project Draft Environmental Impact Report (2010; 14 pp.);
- Initial Study/Mitigated Negative Declaration for Results Radio Zone File #2009-001 (2010; 20 pp);
- Rio del Oro Specific Plan Project Final Environmental Impact Report (2010; 12 pp);
- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009; 9 pp);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington. Second Declaration to Friends of the Columbia Gorge, Inc. and Save Our Scenic Area (Dec 2008; 17 pp);
- Comments on Draft 1A Summary Report to CAISO (2008; 10 pp);
- County of Placer's Categorical Exemption of Hilton Manor Project (2009; 9 pp);
- 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 pp);
- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142 pp);
- Delta Shores Project EIR, south Sacramento (2009; 11 pp + addendum 2 pp);
- Declaration of Shawn Smallwood in Support of Care's Petition to Modify D.07-09-040 (2008; 3 pp);
- 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 pp);
- 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 pp);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7 pp.);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington. Declaration to Friends of the Columbia Gorge, Inc. and Save Our Scenic Area (Sep 2008; 16 pp);
- California Energy Commission's Preliminary Staff Assessment of the Colusa Generating Station (2007; 24 pp);
- Rio del Oro Specific Plan Project Recirculated Draft Environmental Impact Report (2008; 66 pp);
- Replies to Response to Comments Re: Regional University Specific Plan Environmental Impact Report (2008; 20 pp);
- Regional University Specific Plan Environmental Impact Report (2008; 33 pp.);
- Clark Precast, LLC's "Sugarland" project, Negative Declaration (2008; 15 pp.);
- Cape Wind Project Draft Environmental Impact Statement (2008; 157 pp.);
- Yuba Highlands Specific Plan (or Area Plan) Environmental Impact Report (2006; 37 pp.);
- Replies to responses to comments on Mitigated Negative Declaration of the proposed

- Mining Permit (MIN 04-01) and Modification of Use Permit 96-02 at North Table Mountain (2006; 5 pp);
- Mitigated Negative Declaration of the proposed Mining Permit (MIN 04-01) and Modification of Use Permit 96-02 at North Table Mountain (2006; 15 pp);
- Windy Point Wind Farm Environmental Review and EIS (2006; 14 pp and 36 Powerpoint slides in reply to responses to comments);
- Shiloh 1 Wind Power Project EIR (2005; 18 pp);
- Buena Vista Wind Energy Project Notice of Preparation of EIR (2004; 15 pp);
- Negative Declaration of the proposed Callahan Estates Subdivision (2004; 11 pp);
- Negative Declaration of the proposed Winters Highlands Subdivision (2004; 9 pp);
- Negative Declaration of the proposed Winters Highlands Subdivision (2004; 13 pp);
- Negative Declaration of the proposed Creekside Highlands Project, Tract 7270 (2004; 21 pp);
- On the petition California Fish and Game Commission to list the Burrowing Owl as threatened or endangered (2003; 10 pp);
- Conditional Use Permit renewals from Alameda County for wind turbine operations in the Altamont Pass Wind Resource Area (2003; 41 pp);
- UC Davis Long Range Development Plan of 2003, particularly with regard to the Neighborhood Master Plan (2003; 23 pp);
- Anderson Marketplace Draft Environmental Impact Report (2003: 18 pp + 3 plates of photos);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003; 6 pp);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002: 23 pp);
- Response to testimony of experts at the East Altamont Energy Center evidentiary hearing on biological resources (2002: 9 pp);
- Revised Draft Environmental Impact Report, The Promenade (2002: 7 pp);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002: 3 pp);
- UC Merced -- Declaration of Dr. Shawn Smallwood in support of petitioner's application for temporary restraining order and preliminary injunction (2002: 5 pp);
- Replies to response to comments in Final Environmental Impact Report, Atwood Ranch Unit III Subdivision (2003: 22 pp);
- Draft Environmental Impact Report, Atwood Ranch Unit III Subdivision (2002: 19 pp + 8 photos on 4 plates);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002: 17 pp + 3 photos; follow-up report of 3 pp);
- Initial Study and Negative Declaration, Silver Bend Apartments, Placer County (2002: 13 pp);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001: 26 pp);
- Initial Study, Colusa County Power Plant (2001: 6 pp);
- Comments on Proposed Dog Park at Catlin Park, Folsom, California (2001: 5 pp + 4 photos);
- Pacific Lumber Co. (Headwaters) Habitat Conservation Plan and Environmental Impact Report (1998: 28 pp);
- Final Environmental Impact Report/Statement for Issuance of Take authorization for listed

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- species within the MSCP planning area in San Diego County, California (Fed. Reg. 62 (60): 14938, San Diego Multi-Species Conservation Program) (1997: 10 pp);
- Permit (PRT-823773) Amendment for the Natomas Basin Habitat Conservation Plan, Sacramento, CA (Fed. Reg. 63 (101): 29020-29021) (1998);
- Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). (Fed. Reg. 64(176): 49497-49498) (1999: 8 pp);
- Review of the Draft Recovery Plan for the Arroyo Southwestern Toad (*Bufo microscaphus californicus*) (1998);
- Ballona West Bluffs Project Environmental Impact Report (1999: oral presentation);
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Negative Declaration for the Sunset Sky Ranch Airport Use Permit (1999);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring Program (BRMIMP) for the Metcalf Energy Center (2000: 10 pp);
- California Energy Commission's Final Staff Assessment of the proposed Metcalf Energy Center (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000: 4 pp);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11 pp);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7 pp);
- 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 pp).

Comments on other Environmental Review Documents:

- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12 pp);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015: 8 pp);
- Draft Program Level EIR for Covell Village (2005: 19 pp);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping document (2003: 7 pp.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7 pp);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8 pp.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001: 2 letters totaling 35 pp.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2 pp.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7 pp.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis canadensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*), on behalf of The Wildlife Society—Western Section (2000: 10 pp.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7 pp.);

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- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10 pp);
- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOAA 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 pp + 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

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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

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

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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

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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,

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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.

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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 (*Geomys*) 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, Asilomar, 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.

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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.

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- 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.

Entriakan, 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;

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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

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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	EDF Renewables
Blum Collins, LLP	National Renewable Energy Lab
Eric K. Gillespie Professional Corporation	Altamont Winds LLC
Law Offices of Berger & Montague	Salka Energy
Lozeau Drury LLP	Comstocks Business (magazine)
Law Offices of Roy Haber	BioResource Consultants
Law Offices of Edward MacDonald	Tierra Data
Law Office of John Gabrielli	Black and Veatch
Law Office of Bill Kopper	Terry Preston, Wildlife Ecology Research Center
Law Office of Donald B. Mooney	EcoStat, Inc.
Law Office of Veneruso & Moncharsh	US Navy
Law Office of Steven Thompson	US Department of Agriculture
Law Office of Brian Gaffney	US Forest Service
California Wildlife Federation	US Fish & Wildlife Service
Defenders of Wildlife	US Department of Justice
Sierra Club	California Energy Commission
National Endangered Species Network	California Office of the Attorney General
Spirit of the Sage Council	California Department of Fish & Wildlife
The Humane Society	California Department of Transportation
Hagens Berman LLP	California Department of Forestry
Environmental Protection Information Center	California Department of Food & Agriculture
Goldberg, Kamin & Garvin, Attorneys at Law	Ventura County Counsel
Californians for Renewable Energy (CARE)	County of Yolo
Seastuck Environmental Association	Tahoe Regional Planning Agency
Friends of the Columbia Gorge, Inc.	Sustainable Agriculture Research & Education Program
Save Our Scenic Area	Sacramento-Yolo Mosquito and Vector Control District
Alliance to Protect Nantucket Sound	East Bay Regional Park District
Friends of the Swainson's Hawk	County of Alameda
Alameda Creek Alliance	Don & LaNelle Silverstien
Center for Biological Diversity	Seventh Day Adventist Church
California Native Plant Society	Escuela de la Raza Unida
Endangered Wildlife Trust	Susan Pelican and Howard Beeman
and BirdLife South Africa	Residents Against Inconsistent Development, Inc.
AquaAlliance	Bob Sarvey
Oregon Natural Desert Association	Mike Boyd
Save Our Sound	Hillcroft Neighborhood Fund
G3 Energy and Pattern Energy	Joint Labor Management Committee, Retail Food Industry
Emerald Farms	Lisa Rocca
Pacific Gas & Electric Co.	Kevin Jackson
Southern California Edison Co.	Dawn Stover and Jay Letto
Georgia-Pacific Timber Co.	Nancy Havassy
Northern Territories Inc.	Catherine Portman (for Brenda Cedarblade)
David Magney Environmental Consulting	Ventus Environmental Solutions, Inc.
Wildlife History Foundation	Panorama Environmental, Inc.
NextEra Energy Resources, LLC	Adams Broadwell Professional Corporation
Ogin, Inc.	

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Representative special-status species experience		
Common name	Species name	Description
Field experience		
California red-legged frog	<i>Rana aurora draytonii</i>	Protocol searches; Many detections
Foothill yellow-legged frog	<i>Rana boylei</i>	Presence surveys; Many detections
Western spadefoot	<i>Spea hammondi</i>	Presence surveys; Few detections
California tiger salamander	<i>Ambystoma californiense</i>	Protocol searches; Many detections
Coast range newt	<i>Taricha torosa torosa</i>	Searches and multiple detections
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	Detected in San Luis Obispo County
California horned lizard	<i>Phrynosoma coronatum frontale</i>	Searches; Many detections
Western pond turtle	<i>Clemmys marmorata</i>	Searches; Many detections
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Protocol searches; detections
Sumatran tiger	<i>Panthera tigris</i>	Track surveys in Sumatra
Mountain lion	<i>Puma concolor californicus</i>	Research and publications
Point Arena mountain beaver	<i>Aplodontia rufa nigra</i>	Remote camera operation
Giant kangaroo rat	<i>Dipodomys ingens</i>	Detected in Cholame Valley
San Joaquin kangaroo rat	<i>Dipodomys nitratoideus</i>	Monitoring & habitat restoration
Monterey dusky-footed woodrat	<i>Neotoma fuscipes luciana</i>	Non-target captures and mapping of dens
Salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	Habitat assessment, monitoring
Salinas harvest mouse	<i>Reithrodontomys megalotus distichlus</i>	Captures; habitat assessment
Bats		
California clapper rail	<i>Rallus longirostris</i>	Thermal imaging surveys
Golden eagle	<i>Aquila chrysaetos</i>	Surveys and detections
Swainson's hawk	<i>Buteo swainsoni</i>	Numerical & behavioral surveys
Northern harrier	<i>Circus cyaneus</i>	Numerical & behavioral surveys
White-tailed kite	<i>Elanus leucurus</i>	Numerical & behavioral surveys
Loggerhead shrike	<i>Lanius ludovicianus</i>	Numerical & behavioral surveys
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Large area surveys
Willow flycatcher	<i>Empidonax traillii eximius</i>	Detected in Monterey County
Burrowing owl	<i>Athene cunicularia hypugla</i>	Research at Sierra Nevada breeding sites
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Numerical & behavioral surveys
Analytical		
Arroyo southwestern toad	<i>Bufo microscaphus californicus</i>	Monitored success of relocation and habitat restoration
Giant garter snake	<i>Thamnophis gigas</i>	Research and report
Northern goshawk	<i>Accipiter gentilis</i>	Research and publication
Northern spotted owl	<i>Strix occidentalis</i>	Research and publication
Alameda whipsnake	<i>Masticophis lateralis ewryxanthus</i>	Research and reports
		Expert testimony

EXHIBIT D



WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #24-001.45

October 9th, 2024

Ms. Kelilah D. Federman
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, California 94080

**SUBJECT: Dogwood Geothermal Project DEIR
Imperial County, California
Comments on Noise Analysis**

Dear Ms. Federman,

As requested, we have reviewed the information and noise impact analysis for the Draft Environmental Impact Report (DEIR) for the Dogwood Geothermal Project in Imperial County, CA. The proposed project is located on approximately 125 acres. The project includes a geothermal plant with associated ancillary and auxiliary facilities, a new substation, a 7 megawatt (MW) solar facility, and a medium voltage distribution cable from the proposed solar facility to the geothermal plant.

G D-1

Currently, the project site is undeveloped. Existing land uses in the vicinity of the site include single-family houses to the east, south, and southeast of the project. The closest sensitive receiver is located at 104 Jasper Rd, at 540 feet from the project. This letter is based on Appendix K, the Noise Technical Report, prepared by Catalyst Environmental Solutions and dated March 15, 2024.

Wilson Ihrig is an acoustical consulting firm that has practiced exclusively in the field of acoustics since 1966. During our 58 years of operation, we have prepared hundreds of noise studies for Environmental Impact Reports and Statements. We have one of the largest technical laboratories in the acoustical consulting industry. We also utilize industry-standard acoustical programs such as Roadway Construction Noise Model (RCNM), SoundPLAN, and CadnaA. In short, we are well qualified to prepare environmental noise studies and review studies prepared by others.

Baseline Levels are Improperly Established

The manner in which the DEIR has determined the existing noise environment is poorly supported. The DEIR obtains the noise threshold level by referencing Community Noise Equivalent Level (CNEL) reference levels from Table 3 of the Imperial County's Noise Element¹ (Noise Element). However, the DEIR does not consider any measurements that reflect current conditions near the sensitive receivers.

G D-2

CEQA requires evaluation of whether a project would cause a "substantial temporary or permanent increase in ambient noise levels." Without knowing how loud the environment is, it is impossible to

¹ <https://www.lcpds.com/assets/planning/noise-element-2015.pdf>

determine if the new project will increase noise in the surrounding community. Baseline noise measurements are the preferred way to determine background noise sources. These measurements serve as a crucial reference point for evaluating the potential noise impacts of proposed projects or activities. Without establishing the baseline noise conditions before any new development occurs, decision-makers cannot effectively determine whether the project complies with noise regulations nor identify any potential adverse effects on the surrounding environment and communities.

G D-2
cont'd

The cited levels only consider traffic noise. However, that is not the only ambient noise source near sensitive receivers. There is noise from freight train horns/operations, noise from agricultural use, and noise from nearby power plants and industrial uses. Noise levels should be physically measured to be accurately determined. Additionally, the Noise Element specifically mentions "the report shall describe the **existing noise environment**, the proposed project, the projected noise impact and, if required, the proposed mitigation to ensure conformance with applicable standards" (page 22).

Since the County of Imperial Codified Ordinances² (Codified Ordinance, Title 9, Division 7) establishes a 50 dB daytime and 45 dB nighttime noise limit, full 24-hour measurements are recommended to determine ambient noise for residential receivers of interest. At the very least, the Federal Transit Administration's 2018 Transit Noise and Vibration Impact Assessment Manual³ (FTA Manual) Appendix E recommends a minimum of three one-hour Equivalent Sound Level (Leq) noise measurements (peak-hour roadway traffic, typical midday conditions, and typical nighttime conditions) to estimate the Day-Night Sound Level (Ldn) at site, which can be used to establish baseline noise conditions for the project, including the CNEL. **The Project should conduct properly documented ambient measurements near sensitive receptors, that capture the worst case (quietest) baseline conditions, to determine impact.**

DEIR Omits Potentially Significant Construction Noise Impacts

The DEIR ignores potentially significant impacts for sensitive receivers based on Imperial County drilling standards. Section 91702.01(B) in the Codified Ordinance states that each "operator shall limit drilling noise to a sound level equivalent to CNEL sixty (60) dB(A)" and that "the level shown may be exceeded by ten percent (10%) if the noise is intermittent and during daylight hours." Table 3 of Appendix K in the DEIR states that a drill rig will be used for 15 daytime hours and 9 nighttime hours for 180 days. This represents 24-hour operation for roughly half a year.

G D-3

"Intermittent" is not clearly defined. However, the idea that pieces of construction equipment are used only partially within a set period of time is integral to the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM)⁴. RCNM uses something called 'Usage Factors' to approximate this. For example, if a drill was used 20% of the time within an hour, a usage factor of 20% would be used in the calculation to convert the Lmax level to an Leq. 20% was used in this analysis, since that is the default RCNM usage factor for a drill rig truck.

We have interpreted the code to have two criteria. One is a daytime criterion of 66 dBA. The other is a CNEL of 60 dBA. For the CNEL, it was assumed that the noise from the drill was constant, and the

² https://library.municode.com/ca/imperial_county/codes/code_of_ordinances

³ https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

⁴ https://www.fhwa.dot.gov/ENVIRONMENT/noise/construction_noise/rcnm/rcnm.cfm

WILSON IHRIG
Dogwood Geothermal Project DEIR
Comments on Noise Analysis

appropriate nighttime penalties were applied, as required by the definition of the metric⁵. Results of this analysis are shown in Table 1.

Table 1: Modeled Construction Noise for two Common Pieces of Equipment with Default Usage Factors

Equipment	Typical L _{max} at 50 ft	Usage Factor	Distance to Sensitive Receiver	Predicted Sound Level (dBA)	Noise Criteria (dBA)	Exceeds Criteria?
Drill	84 dBA	20%	540 ft	56 (1-hr Leq)	66 (1-hr Leq)	No
Drill	84 dBA	20%	540 ft	63 CNEL	60 CNEL	Yes

24-hour CNEL levels are over the Imperial County Codified Ordinance drilling standard threshold. This represents an unreported impact, and thus should be studied in an updated EIR, with mitigation considered, such as a temporary sound wall.

DEIR Omits Potentially Significant Operational Noise Impacts

On page 4-2 of Appendix K, The DEIR mentions that "existing geothermal facilities and geothermal wells" have a sound power level "in the range of 113 dBA" and that "operational noise levels of an existing geothermal facility in Imperial County were recorded at 70 dBA Leq at approximately 100 feet." If those levels are consistent with the new facility, Table 2 calculates the predicted levels at the distance from the receiver. The criteria was set by the Imperial County Noise Ordinance which states that noise "received at the property line of a residence is limited to 50 dBA Leq in the daytime and 45 dBA Leq at night" (Appendix K, DEIR Page 3-4).

Table 2: Modeled Operational Noise using Source Levels and Distances Cited on DEIR

Noise Source	Cited Sound Level (dBA)	Predicted Level at 540 ft [dBA]	Exceeds criteria? 50/45 (Day/night)
Geothermal Facility	70 Sound Pressure at 100 feet	55	Yes/Yes
Geothermal Facility	113 Sound Power	61	Yes/Yes

However, this calculation does not represent the ambient level. Elevated ambient levels may be above the noise thresholds, and thus these levels may not increase noise levels. The reverse may be true, and the impact could be even greater compared to ambient levels. This is why establishing baseline noise is important for the project applicant to disclose. As it stands, the DEIR should be updated to include potential mitigation for operational noise, such as a sound wall.

Conclusion

The DEIR's analysis includes several omissions and errors, such as an incomplete survey of the existing noise environment, improper thresholds of construction noise, and a potential undisclosed significant impact. As such, the DEIR should be updated, with discussions of potential mitigation

⁵ https://www.iawa.org/-/media/iawa-web/noise-management/files/aircraft_noise_lax.ashx

G D-3
cont'd

G D-4

G D-5

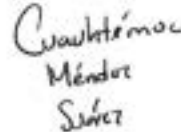
WILSON IHRIG
Dogwood Geothermal Project DEIR
Comments on Noise Analysis

measures and their effectiveness. Please feel free to contact us with any questions on this information.
Very truly yours,
WILSON IHRIG

G D-5
cont'd



Jack Meighan
Associate



Cuauhtémoc Méndez Suárez
Associate



JACK MEIGHAN

Associate

Jack joined Wilson Ihrig in 2021 and is an experienced acoustics engineer with expertise in projects involving rail transit systems, highways, CEQA analysis, environmental noise reduction, mechanical drawing reviews, and construction noise and vibration mitigation. He has hands-on experience with project management, including client coordination and presentations, as well as in designing, developing, and testing MATLAB code used in acoustics applications. Additionally, his expertise includes taking field measurements, developing test plans and specifying, purchasing, setting up and repairing acoustic measurement equipment. He has experience in using Traffic Noise Model (TNM), CadnaA, EASE, Visual Basic, LabView, and CAD software.

Education

- B.S. in Mechanical Engineering, University of Southern California, Los Angeles, CA

Project Experience

Metro Regional Connector, Los Angeles CA

Planned, took, and processed measurements as part of a team to determine the effectiveness of floating slab trackwork for a new subway in downtown Los Angeles that travels below the Walt Disney Concert Hall and the Colburn School of Music.

Rodeo Credit Enterprise CEQA Analysis for New Construction, Palmdale, CA

Wrote an accepted proposal and executed it for a noise study project to determine noise mitigation requirements on a new housing development. Led all aspects of the project and managed the budget during all phases of project completion. Completed 5 separate projects of this type for this developer.

Blackhall Studios, Santa Clarita, CA

Led the vibration measurement effort for a new soundstage directly adjacent to an existing freight and commuter rail line. Tested equipment, processed data, and analyzed results to determine the vibration propagation through the soil to the proposed soundstage locations, and was part of the team that developed mitigation techniques for the office spaces directly next to the rail line.

Octavia Residential Condos CEQA Study, San Francisco, CA

Calculated the STC ratings for the proposed windows to meet Title 24 requirements, modeled the acoustic performance of floor and ceiling structures, researched noise codes, helped with a mechanical design review, and wrote a report summarizing the results for a new Condominium project being developed in San Francisco.

San Diego International Airport Terminal I Replacement, CA

Conducted interior noise and vibration measurements, analyzed measurement data to help determine project criteria, modeled the existing and future terminals in CadnaA, and was part of a team that did a complete HVAC analysis of the entire terminal, as part of a CEQA analysis where a new terminal for the airport is being designed.

Five Points Apartments Noise Study, Whittier, CA

Took measurements, researched sound data and solutions, and recommended mitigation for a new apartment complex that was located next to an existing car wash, as part of a CEQA review.

USC Ellison Vibration Survey, Los Angeles, CA

Conducted vibration measurements as part of a survey to determine the effectiveness of vibration isolation platforms that are used to insulate cell growth in a cancer research facility. Determined the effectiveness and presented this information to the client. Researched and recommended a permanent monitoring system so the client could view data in real time.

TEN50 Condos 'Popping' Noise Investigation, Los Angeles, CA

Was part of a team that investigated the noise source of an unwanted popping noise in luxury condos in Downtown Los Angeles. Helped isolate the noise source location with accelerometers to determine where vibrations were occurring first and used an acoustic camera to determine where in the condo the noise was coming from.

2000 University Project, Berkely, CA

Wrote a construction noise monitoring plan based on environmental noise calculations, wrote a report summarizing the results, and attending a meeting with the client to discuss options.

Bay Area Rapid Transit (BART) On-Track, CA, San Francisco Bay Area, CA*

Day to day project manager, responsible for meetings, presentations, and coordination with the client for an ongoing noise study on the BART system. Developed MATLAB code to process measurements and determine areas where high corrugation was present, contributing to excessively high in-car noise levels. Performed noise measurements inside both the right of way and the vehicle cabin, in addition to rail corrugation measurements.

California I-605/SR-60 Interchange Improvement, Los Angeles, CA*

Developed a noise model of the area that predicted sound levels for abatement design, in addition to conducting noise measurements and analysis. Led the Team in use of the FHWA Traffic Noise Model Software for the project, involving three major highways and two busy interchanges extending over 17 miles in southern California.

Sound Transit On-Track, Seattle, WA*

Took measurements, fixed equipment, and developed software in MATLAB to process Corrugation Analysis Trolley measurements as part of an ongoing noise study on the Sound Transit Link system. Tested vibration data to determine the best measurement and processing techniques to store the data in an online database for in-car measurements.

LA Metro CRRC Railcar Testing, Los Angeles, CA*

Led the effort to plan the measurements, determine measurement locations and finalize the test plan. Formulated a method to capture speed data directly from legacy train vehicles. Executed noise and vibration specification measurements for new rail cars delivered by CRRC.

City of Los Angeles, Pershing Square Station Rehabilitation Noise Monitoring, CA*

Built noise models, wrote a construction noise plan, and assisted in on-site construction noise issues as they arose for a renovation of the Pershing Square metro station in downtown Los

* Work done prior to working for Wilson Ihrig

WILSON IHRIG
Jack Meighan - Page 3

Angeles. Trained construction personnel in techniques for noise reduction and how to conduct noise monitoring measurements to meet project specifications.

City of Orange Metrolink Parking Garage Construction Monitoring, CA*

Wrote an adaptive management vibration monitoring plan, set up equipment to monitor live vibration levels, and generated weekly reports as part of an effort to build a new parking garage. Designed, planned, and completed measurements to predict and mitigate pile driving construction impacts at three historic building locations adjacent to the construction site. Coordinated with the client whenever an on-site problem arose.

LA Metro Westside Subway Construction, Los Angeles, CA*

Planned, organized, and processed noise measurements for the Purple Line extension construction. Implemented both long term microphones to measure noise levels and accelerometers to measure vibration levels in existing subway tunnels. Oversaw noise monitoring at sensitive construction sites for the project and worked with the contractor to find ways to reduce construction noise levels by approximately 10dB.

Montreal Réseau Express Métropolitain, Canada*

Conducted vibration propagation measurements used to create models to predict operational vibration levels for an under-construction transit line. Managed equipment, solved problems in the field, and wrote parts of the report summarizing the findings of the acoustic study.

NHCRP Barrier*

Took on-highway measurements and wrote, designed, developed, and tested MATLAB code to identify specific spectrograms to use for analyses for a project evaluating barrier reflected highway traffic noise differences in the presence of a single absorptive or reflective noise barrier.

Siemens Railcar Testing for Sound Transit, Seattle, WA*

Measured in-car noise and vibration for new rail cars delivered by Siemens. Developed new internal techniques for measurements based on the written specifications. Contributed to the team that helped identify issues that new cars had in meeting the Sound Transit specifications for noise and vibration. Participated in developing the test plan and specified then acquired new equipment for the measurement.

Toronto/Ontario Eglinton Crosstown Light Rail, Final Design, Canada*

Assisted in vibration propagation measurements, analysis, and recommendations for mitigation for a 12-mile light-rail line both on and under Eglinton Avenue. Set up and ran equipment for at-grade measurements with an impact hammer for underground measurements with an impact load cell that was used during pre-construction borehole drilling.

* Work done prior to working for Wilson Ihrig

Adams Broadwell Joseph & Cardozo

November 14, 2024

- G-1** This is an introductory comment and provides a general summary of the project and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- G-2** Comment acknowledged.
- G-3** Please refer to responses to comments G A-3, G A-4, G A-10, G A-12, G A-13, G A-18, G A-27 and G A-33 below.
- G-4** The Draft EIR includes a detailed assessment of existing agricultural resources in the Project area and potential impacts to these resources in Section 3.3. Please refer to Responses G-41, G-48, and G-49 below.
- G-5** Please refer to responses to comments A-4, A-5, A-6, A-7, and A-8. Section 3.5.1 has been clarified with discussions of species with a low probability of occurrence in addition to those with a medium or high likelihood of occurrence that were included in the Draft EIR. No new impacts would occur from this clarification on species with low potential to occur in the greater vicinity of the Project, and potential impacts to biological resources would remain less than significant. See response to comment 7H for discussion of bats, response to comment 1E for discussion on burrowing owls, and Section 3.5.1 for discussions on special status species occurring in the project vicinity.
- G-6** Please refer to responses to comments G D-2, G D-3, and G D-4 below.
- G-7** This comment states the mission and interest of the commenter and California Unions for Reliable Energy (CURE). This comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- G-8** Draft EIR Chapter 2 Project Description meets the provisions of the CEQA Guideline 15124 regarding information that should be provided in an EIR project description and provides an adequate level of detail for the supporting analysis and conclusions provided in the Draft EIR.

15124(a). EIR Figures 2-1, 2-2, and 2-3 provide the precise location and boundaries of the proposed project, including the project site's location in a regional context.

15124 (b). The project objectives are provided in EIR Section 2.2 Project Objectives (see EIR page 2-6).

15124 (c). See EIR Section 2.3 Project Facilities, pages 2-7 through 2-29, which provides details regarding the project components, including supporting figures and tables.

15124 (d). See EIR Section 2.8 Required Project Approvals (EIR pages 2-29 through 2-30), which provides the required project approvals by the County of Imperial and other agencies.

The comment states that the Draft EIR omitted design details that have implications on determining the scope of the project's impacts. CEQA requires a general description of the "main features" of the project and does not require "all of the details or particulars." *Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal.App.4th 20, 26. A project description is adequate if it provides information sufficient to inform the public and the decision-makers of

the full scope of the project. Chapter 2.0, Project Description, of the Draft EIR provides an adequate description of the project and main features of the project. There is sufficient information in Chapter 2.0, Project Description, of the Draft EIR to inform the public and decision-makers concerning the scope of the project and is therefore adequate since it describes the main features of the project.

Please refer to responses to comments G-9 and G-10.

G-9 Please refer to responses to comments G A-3 and G A-4 below.

G-10 The Draft EIR fully addresses all reasonably foreseeable and related developments. As provided in the Draft EIR, the Project proposes to develop an on-site substation to serve as the point of interconnection with the IID grid. Extensive transmission towers/poles/facilities are present on Dogwood Road from the existing Heber 2 Geothermal Energy Facility and the Dogwood project would utilize this infrastructure to send power to the IID grid. Therefore, no new off-site transmission poles or facilities are foreseeably needed for the Project to operate, and no off-site impacts would occur. The Project proposes to develop a dedicated substation to step-up the power and send it to the grid.

G-11 Comment acknowledged. This comment describes the requirement of providing the existing environmental setting for the purposes of CEQA and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required.

Please refer to responses to comments G-12 through G-18.

G-12 Please refer to responses to comments A-4, A-5, A-6, A-7, and A-8 above. Please also refer to response to comment G C-9.

Section 3.5.1 has been clarified with discussions of species with a low likelihood of occurrence in addition to those with a medium or high likelihood of occurrence that were included in the Draft EIR. No new impacts would occur from this clarification on species with low potential to occur in the greater vicinity of the Project, and impacts to biological resources would remain less than significant. Please refer to response to comment G-13 for discussion of bats, response to comment A-8 for discussion on burrowing owls, and Section 3.5.1 for discussions on special status species occurring in the project vicinity.

G-13 Section 3.5.1 has been clarified with discussions of species with a low likelihood of occurrence, including special-status bats, in addition to those with a medium or high likelihood of occurrence that were included in the Draft EIR. The Project site does not provide roosting habitat for any species of bat as it lacks permanent buildings, trees, caves, or cliffs. A discussion of potential impacts to bats that could be incidentally present is provided. Minimization and mitigation measures applicable to bats are discussed in Section 3.5.3. Furthermore, additional measures have been added to Mitigation Measure BIO-11 to protect wildlife, including collision deterrents such as fence markers. These measures will further reduce the potential impacts any species of bats incidentally present in the vicinity of the project site. Impacts to special-status species would remain less than significant.

G-14 Please refer to response to comment A-8 above.

G-15 No in-water work or modifications to aquatic habitat for desert pupfish or any other aquatic species are proposed as a part of this project. Further, the closest pupfish population is approximately 5 miles to the north of the Project site at the Imperial Irrigation District ponds (CDFW Staff Summary for February 16-17, 2022). The nearby IID canals to the Project site are not directly hydrologically connected to these ponds. Further, as explained in response to

comment B-5, reductions in irrigation flows to IID canals resulting from conversion of agricultural lands to solar energy use will be negligible.

- G-16** Please refer to response to comment A-6 above. Catalyst biologists mapped 1.17 acres of arrow weed in the BSA, representing 0.2 percent of the BSA. This acreage is accurately described in the Draft EIR, the Biological Resources and Burrowing Owl Survey Report, and the PJD based on their respective survey area sizes. The EIR has been revised to include the acreage in Section 3.5.1.

Appendix F (Preliminary Jurisdictional Determination) accurately describes the riparian vegetation present in the IID canals, including arrow weed as well as the lack of riparian vegetation present in agricultural v-ditches. The shallow v-ditches on the Project Site do not support arrow weed and no other riparian vegetation communities are present within these v-ditches. Representative photos of v-ditches are included in Appendix F (see photos 9, 10, and 11).

- G-17** The Draft EIR acknowledges the presence of 0.11 acres of jurisdictional waters in the form of the canals/drains (Appendix F) and addresses potential hazardous materials spills through a hazardous material management program (HMMP) (Draft EIR at 3.10-7 to 3.10-8). Mitigation Measure HAZ-1 provides extensive protections to prevent and address potential isopentane storage leakage, which will also prevent harm to the canals. (Draft EIR at 3.10-11).

Impacts to jurisdictional non-wetland waters of the United States (WoUS) and Waters of the State (WoS) were delineated based on the limits of the Ordinary High Water Mark (OHWM) are described in the USACE Field Guide to the Identification of the Ordinary High Water Mark in the Arid West. These are standardized methods to identify the limits of jurisdiction. Impacts to WoUS and WoS are therefore calculated for potentially jurisdictional areas. Both the WoUS and WoS consist of IID drains and canals and fall below the OHWM. No wetlands were identified above the OHWM in the survey area. Riparian vegetation is likewise restricted to below the OHWM.

No temporary or permanent modifications would be made to WoUS or WoS for this project. Impacts to waters from activities near but not in the waters are not within jurisdictional areas. Avoidance and mitigation for such impacts are accounted for as part of the Clean Water Act Section 401 and NPDES permitting processes. Further, Section 2.7 includes Applicant Proposed Measures and Best Management Practices for surface and Ground Water Resources including:

- A Water Quality Management Plan (WQMP) was prepared for both the construction and operations phases of the Project (Appendix A). The WQMP includes numerous “good housekeeping” and preventative maintenance, employee training, safe handling/storage, and spill response measures to prevent and minimize any unintended releases.
- The site will be designed and prepared to provide adequate stormwater conveyance and/or infiltration.
- Any spills or unintended releases of chemicals used during Project construction and/or operation will be cleaned up with the appropriate materials (i.e., absorbent pads, foams/gels) and the affected area remediated to prevent contact with groundwater resources.
- No vehicle fueling or maintenance will take place on exposed soil.

- G-18** Please refer to responses to comments G A-7, G A-9, and G C-11 below.
- G-19** Please refer to responses to comments G A-19, G A-20, and G A-21 below.
- G-20** Please refer to responses to comments G A-18 and G A-19 below.
- G-21** Please refer to responses to comments G A-6, G A-18, and G A-24 below.
- G-22** Please refer to responses to comments G A-6, G A-15, G A-26, and G A-31 below.
- G-23** Please refer to responses to comments G A-5, G A-6, and G A-5 below.
- G-24** Please refer to responses to comments G A-18 and G A-31 below.
- G-25** Please refer to responses to comments G A-8 and G A-16 below.
- G-26** Please refer to responses to comments G A-8, G A-16, and G A-30 below. The Heber Elementary School is over a mile away from the Project site and H₂S emissions will attenuate over this distance; therefore, no long-term exposure or health hazards to the Heber Elementary School would occur.
- G-27** Please refer to responses to comments G A-10, G A-11, G A-12, and G A-13 below.
- G-28** Please refer to responses to comments G A-10, G A-11, G A-12, and G A-13 below.
- G-29** Comment acknowledged. This comment is a general statement regarding the evaluation of greenhouse gas emissions and identification of impacts; however, the comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required.
- Please also refer to comments G-30.
- G-30** Please refer to responses to comments G A-16, G A-23, G A-31, and G A-36 below.
- G-31** Comment acknowledged. This comment is a general statement regarding the evaluation of biological resources; however, the comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required.
- Please refer to responses G-31 through G-38.
- G-32** The Final EIR has been revised to clarify that the project is located within a landscape crossed by paved roads and bordered by existing utility infrastructure, commercial enterprises, and residences. All wildlife moving between the project site and adjacent similar habitats must already cross paved roads and navigate vehicle traffic and existing facilities and operations. Additionally, the project area agricultural fields are routinely harvested, disked, and replanted.
- The project area is identified as having “limited connectivity opportunity” and is not located in a documented “essential connectivity area”, within a “natural landscape block”, or within a linkage for the California Desert Linkage Network mapped in the Interstate Connections – California Essential Habitat Connectivity (CEHC) Viewer in BIOS. Accordingly, the Project will have a less than significant impact on habitat connectivity and wildlife movement.
- G-33** Please refer to response comment A-8 above.
- G-34** The Draft EIR acknowledges that impacts to special status wildlife, including birds, could occur, including injury, mortality, nest failures, and loss of young. Section 3.5 Biological Resources

of the EIR has been updated to include a discussion of the state of scientific knowledge regarding the “lake effect” hypothesis. At present, there are no state or federal guidelines for addressing hypothetical effects from the lake effect. Nevertheless, the Applicant would implement Mitigation Measure BIO-6 to reduce glint and glare from PV solar panels to minimize the likelihood that birds may mistake panels for surface water.

Additional protection measures have been added including Mitigation Measure BIO-6, Mitigation Measure BIO-9, Mitigation Measure BIO-10, and Mitigation Measure BIO-11 to further minimize potential impacts to wildlife.

MM BIO-6 – Non-reflective Coatings on Solar Panels – The Applicant will use non-reflective materials and finishes to the solar panels to reduce potential glare as described in the Glint and Glare Analysis (Appendix C of the EIR). These coatings will create a matte surface that is less likely to resemble the reflective properties of water to birds flying overhead.

MM BIO-9 Avian/Power Line Collision Avoidance and Minimization – Install bird flight diverters in accordance with the Avian Power Line Interaction Committee (APLIC) guidelines for reducing avian collisions with power lines (Reducing Avian Collisions with Power Lines; APLIC 2012). Details of design components shall be indicated on all construction plans. Ormat shall monitor for new versions of the APLIC collision guidelines and update designs or implement new measures as needed during Project construction, provided these actions do not require the purchase of previously ordered transmission line structures. All bird flight diverters shall be maintained for the duration of construction and operation.

MM BIO-10 Avian Electrocution Avoidance and Minimization - Implement Project-specific design measures in accordance with the APLIC guidelines for minimizing avian electrocutions. Ormat shall construct and maintain all transmission facilities, towers, poles, and lines in accordance with applicable policies set forth in the most recent APLIC guidelines for minimizing avian electrocutions (Avian Protection Plan Guidelines; APLIC and USFWS 2005). Specific APLIC guidelines to be incorporated into the design of the transmission lines to minimize avian electrocutions shall include the following:

- a) Design the tops of structures to be safe for perching raptors.
- b) Provide 60 inches separation between energized conductors and:
 - i. energized conductors,
 - ii. grounded or neutral conductors,
 - iii. pole line hardware that could provide a perch or nesting place, and
 - iv. overhead shield wires, including optical ground wire shield wire.
- c) Ensure that all exposed jumper cables are completely covered with a cover of a qualified insulation rating.
- d) Ensure insulation of all energized arresters with covers and insulated cables.
- e) Details of design components shall be indicated on all construction plans. Ormat shall monitor for new versions of the APLIC guidelines and update designs or implement new measures as needed during Project construction, provided these

actions do not require the purchase of previously ordered transmission line structures.

MM BIO-11 Biological Protection Measures

- Fence markers shall be installed to deter or prevent birds and bats from colliding with perimeter/security fencing, and maintenance or replacement of these markers will be completed per the manufacturer instruction.
- If encountered, wildlife within the Project Site shall be allowed to escape unimpeded, relocated by a qualified biologist and placed in a designated safe area away from construction activities, or left in place when required by regulations, policies, permits, and/or conditions of approval. If wildlife relocation of common species is required, the qualified biologist approved by CDFW prior to the start of construction shall [approve the method of relocation OR oversee the relocation]. Any relocation of special status species would require additional coverage under an Incidental Take Permit or Biological Opinion.
- Construction personnel trained by the qualified biologist during the WEAP, shall inspect under vehicles and equipment every time the vehicles or equipment are moved to a make sure no special status or common wildlife species are present, which could be injured. If an animal is present, site workers shall wait for the individual to move to a safe location. If a special-status species is discovered under equipment or vehicles and does not move on its own, the Applicant shall contact Imperial County, CDFW, and/or USFWS to determine the appropriate action.
- All excavations (e.g., steep-walled holes, or trenches) more than 6 inches deep shall be covered with plywood or similar materials when not in use or fitted with at least one escape ramp constructed of earth dirt fill, wooden planks, or another material that wildlife could ascend to prevent entrapment. All excavations more than 6 inches deep shall be inspected daily for entrapped wildlife before construction activities begin and once immediately before being covered with plywood. Before excavations are filled, they shall be thoroughly inspected for entrapped wildlife. Any wildlife discovered shall be allowed to escape unimpeded before field activities resume or shall be removed from excavated areas by a qualified biologist and released at a safe nearby location.
- Where habitat will be temporarily disturbed, restore the disturbed area to pre-project condition, including decompacting soil and revegetating.
- All open ends of pipes, culverts, and conduits temporarily installed in open trenches or stored in staging/laydown areas shall be covered/capped at the end of each workday. Any such materials that have not been capped shall be inspected by construction personnel for wildlife before being moved, buried, or handled. Should wildlife become trapped, a qualified biologist shall be notified by construction personnel to remove and relocate the individual(s). If a listed species is discovered inside a pipe, that section of pipe shall not be moved. The Project shall contact CDFW and/or USFWS to determine the appropriate action.

- All food-related trash items (wrappers, cans, bottles, food scraps, cigarettes, etc.), general trash, micro trash (nails, bits of metal and plastic, small construction debris, etc.), and other human-generated debris scheduled to be removed shall be stored in animal-proof containers and removed from the site on a regular basis (weekly during construction, and at least monthly during operations). No deliberate feeding of wildlife or domestic animals shall be allowed.
- New light sources shall be minimized, and lighting shall be designed (e.g., using shielding and/or downcast lights) to limit the lighted area to the minimum necessary.
- Use of chemicals, fuels, lubricants, or biocides shall be in compliance with all local, state, and federal regulations. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation.
- To prevent harassment and mortality of listed, special status, and common wildlife species and destruction of their habitats, no domesticated animals shall be permitted on the site.
- No firearms shall be allowed on the Project Site, unless otherwise approved for security personnel.
- Use only native, insecticide-free plants for habitat restoration and enhancement actions. If plants are grown via contract, use grow specifications that limit harmful pesticide residues.
- Protect pollinators and their habitats from pesticides, including insecticides, fungicides, and herbicides. If pesticides are used in areas with flowering plants, lessen their potential harm by adhering to the following guidance:
 - Avoid the use of neonicotinoids or other systemic insecticides, including coated seeds due to their ecosystem persistence, systemic nature, and toxicity to pollinators (Xerces Systemic Insecticides List [Xerces Society 2025]).
 - Avoid the use of insecticides that target lepidopterans (e.g., moths and butterflies), including biological pesticides (IRAC 2011).
 - Use targeted application methods, avoid large-scale broadcast applications, and take precautions to limit off-site movement (e.g., wind drift, discharge from surface water flows).
 - If pesticides are used for vector control treatments (e.g., mosquitoes), avoid treatment unless monitoring indicates that the species and numbers exceed a public health threshold. For any mosquito treatments, first employ prevention steps such as reducing standing water. Where possible, draw mosquitoes away from sensitive sites (e.g., using dry ice traps) to limit treatment effects in sensitive habitat areas.

G-35 Please refer to response to comment G-34 (MM BIO-9 and MM BIO-10). As discussed in response to comment G-34, MM BIO-9 and MM BIO-10 state that installation of flight diverters and project-specific design features will be done in accordance with applicable policies of the

APLIC guidelines related to bird collision and electrocution. Therefore, impacts to birds and bats from potential collision with distribution lines will be less than significant.

- G-36** Please refer to response to comment G-34 regarding implementation of MM BIO-9, MM BIO-10 and MM BIO-11 which provide mitigation measures to minimize potential impacts from avian strikes with Project facilities, which would reduce impacts to avian and bat species to less than significant levels.
- G-37** Please refer to response to comment G-34 (including text of MM BIO-11 (Biological Protection Measures) and Section 2.7 in the Draft EIR for a list of Applicant Proposed Measures. A speed limit of 5 mph would be observed on the site in order to minimize dust, avoid collision, and incidental mortality of local wildlife. The measures in Section 2.7 are volunteered by the Applicant as a demonstration of good-faith to develop an environmentally-friendly Project. These measures are proposed as part of the overall Project, would be accepted as conditions of Project approval in its Conditional Use Permit, and, therefore, would be binding to the proposed action.
- G-38** Please refer to response to comment G-34. The Final EIR incorporates additional recommendations to clarify and amplify the Project's commitments to avoid significant impacts. These measures would not change any impact/significance determinations. The updated mitigation measures in the Final EIR do not constitute significant new information and therefore does not trigger an obligation to recirculate.

With the measures discussed above, impacts to wildlife from collisions will be reduced to less than significant levels, making additional mitigation unnecessary. Undergrounding of distribution lines is technically and economically infeasible for the Project and not required under the circumstances. Likewise, compensatory mitigation for vehicle traffic is infeasible to implement given the unpredictable nature of vehicle strikes and unnecessary given the measures included in MM BIO-6, MM BIO-9, MM BIO-10 and MM BIO-11 to reduce vehicle speeds on the Project site. (Please refer to response to comment G-37.)

Additional wildlife surveys will be conducted per recommendations by CDFW. (Please refer to responses to comments A-4, A-5, and A-8.)

- G-39** Please refer to response to comments G-41 through G-49.
- G-40** Please refer to responses to comments G-41 and G-42.
- G-41** As provided in Section 1.1.1 and Section 4.2, pursuant to the terms of the CUP, the Project is proposed to operate for a 15-year period with a possible 15-year extension. This is the standard length of a CUP issued by Imperial County for developing/operating a geothermal power plant. As provided in Section 2.6 and Section 4.2, reclamation would occur with the expiration of the CUP, either in 15 years or 30 years.

As provided in Mitigation Measure AG-1b, the Project would submit a final Reclamation Plan to the County for approval prior to the issuance of a grading permit. This is also captured as a discretionary approval under Imperial County in Section 2.8 (Required Project Approvals). A bond for the amount equal to the reclamation cost estimate (prepared by a professional engineer or contractor) would be held for the duration of the Project and would be released upon the County's satisfaction with the returned state of the temporarily converted lands. This mechanism will ensure that the agricultural lands temporarily converted by the Project are returned to the agriculturally productive/farmable condition prior to the development of the Project before the bond is released. This will become an enforceable Condition of Approval

(COA) in the Conditional Use Permit (CUP) and Mitigation Monitoring and Reporting Plan (MMRP), which will be added to the Final EIR.

As provided in Section 2.6, a Draft Reclamation Plan Application and Revegetation Plan (Attachment M in Final EIR) was submitted with each CUP Application and relies on the standardized form provided by Imperial County to identify existing conditions, proposed reclamation activities, and a preliminary cost estimate. These Applications serve as the basis for future site reclamation and will be refined and finalized in consultation with the County prior to the issuance of a grading permit. While the County's Reclamation Plan Application is a standardized form, the Draft Applications provide details on the proposed reclamation activities and their potential costs to: 1) establish the standard/conditions that the site must be returned to; 2) the amount to put in bond/trust to ensure that the reclamation activities are performed to the established standards; and 3) identify potential environmental impacts from the reclamation process, as captured in the Draft EIR. To provide clarification in the Final EIR, the Draft Reclamation Plan Applications and Revegetation Plans (Attachment M in Final EIR) for each CUP Application have been included as Attachment M and the following clarification was included in Section 2.6 (Site Restoration):

The general objective of the final reclamation phase is to return the site as close as possible to the conditions prior to geothermal and solar development. A Preliminary Reclamation Plan Application and Cost Estimate was provided by the Applicant with each CUP Application to the County to 1) confirm feasibility of reclamation; 2) document existing site conditions; 3) provide a cost estimate of reclamation activities; and 4) provide a framework to assess potential impacts of reclamation activities. Attachment M includes the Preliminary Reclamation Plan Applications for each CUP Application. Reclamation activities would be planned and conducted in accordance with County requirements to measure baseline soil conditions and ensure the land will be returned to its current agricultural quality. An agronomic-baseline report (prepared by a professional agronomist) will document baseline conditions of the agricultural portions of the Project site. A schedule of current agricultural operations will also be submitted and include: (1) a land releveled survey with topsoil yardage needs; (2) planned machinery operations, such as removal of rubble and buried pipes and cables, grading, ripping, and other operations to re-establish soil tilth; (3) soil amendments; and (4) revegetation and re-establishment of soil microbiology. In addition, the Applicant will monitor for pests, including insects, vertebrates, weeds, and pathogens, notify the Agricultural Commissioner's office regarding any suspected pest species, maintain records of pests found and treatments used, and obey all pesticide use laws, regulations, and permit conditions.

The commenter has not established that the project in Davis is comparable to this Project, which has as a condition of approval preparation of a reclamation plan to ensure the project site is returned to farmable condition. With the reclamation plan as a condition of approval, the EIR properly concluded that the Project would not cause permanent conversion of Important Farmland.

- G-42** The Project is consistent with the Imperial County General Plan Agricultural and Land Use Elements where "No agricultural land designated except as provided in Exhibit C [of the Agricultural Element] shall be removed from the Agriculture category except where needed for use by a public agency, for geothermal purposes, where a mapping error may have occurred, or where a clear long-term economic benefit to the County can be demonstrated through the planning and environmental review process." Whereas the Project is located within the County Geothermal Overlay Area (see Draft EIR Section 3.3.3 and Section 3.12.3), the County has

accounted for the potential conversion of these agricultural lands in its long-range planning (i.e., General Plan), including potential land use impacts, such as leap-frogging patterns.

The Draft EIR considers potential cumulative impacts from the conversion of agricultural lands to non-agricultural lands (i.e., solar energy) in Imperial County in Section 5.3.2. This section assesses the Project's potential additive effects on agricultural resources when considered with the other past, present, and reasonably foreseeable projects in the vicinity of the Project. As observed in Figure 5-1 in the Draft EIR, potentially cumulative projects are located over a mile to the west of the Project site and the conversion of the proposed agricultural lands would not isolate or limit access to surrounding/adjacent agricultural lands. Therefore, the Project would not cause or lead to a "leap-frogging" land use agricultural pattern in the vicinity of the Project.

- G-43** The project would not result in a permanent conversion of agricultural land. As indicated on EIR page 3.3-9, "Implementation of the project would result in the temporary conversion of approximately 106.88 acres of land currently under or available for agricultural production to non-agricultural uses, ...".

Further, as provided in Draft EIR Section 3.12.1 and Figure 3.12-2 (Zoning Designations), the entire project site is located within the Geothermal Overlay Zone, which represent areas determined by Imperial County to be the most suitable for the geothermal energy development while minimizing the impact to other established uses. Therefore, as discussed in Section 3.12.3, the Project is consistent with the County General Plan. This is further established in Table 3.12-3 (Project Consistency with Applicable General Plan Policies) by the breakdown of applicable General Plan land use policies and Project consistency/analysis. It should also be recognized that the project would result in a temporary conversion of agricultural land, and therefore, the impact to agricultural land is considered temporary, and mitigation measures required as part of the Final EIR would reduce the temporary conversion of agricultural land to a level less than significant.

- G-44** Please refer to responses to comments G-41, G-43, and G-60.

- G-45** As discussed in Draft EIR Section 3.12.3, the Project is consistent with the County General Plan. While the Project would temporarily convert agricultural lands to non-agricultural use, the proposed behind-the-meter parasitic solar facilities are located in close proximity to the Heber 2 and Dogwood geothermal power units (OECs) and would utilize existing infrastructure (geothermal pipeline alignments; see Figure 2-4) to the greatest extent possible to send the parasitic load to the OECs. Further, the County's adoption of the Renewable Energy and Geothermal Energy Overlay Zone (in 2016) is a de facto acknowledgment that the proposed Project site represents a suitable area for the conversion of agricultural lands to the proposed energy facilities. Therefore, an alternative site study is not required.

- G-46** Please refer to responses to comments G-42 and G-43 above.

- G-47** Please refer to responses to comments G-41, G-46, G-48 and G-51.

- G-48** As provided in Mitigation Measure AG-1a, an agricultural conservation easement (ACE) would comply with DOC regulations. While already enforceable as state regulations, if Mitigation Measure AG-1a Option 1 is selected for mitigation, the ACE requirements would become Conditions of Approval (COAs) in the Conditional Use Permit (CUP) for the Project. Further, as stated in Mitigation Measure AG-1a Option 1, the Project would not be issued a grading or building permit by the County until the ACE meets the regulatory conditions. To highlight these

provisions, Mitigation Measure AG-1a Option 1 for Non-Prime and Prime Farmland has been revised in the Final EIR as follows:

Mitigation for Non-Prime Farmland

“Option 1: Provide Agricultural Conservation Easement(s). The Permittee shall procure Agricultural Conservation Easements on a “1 on 1” basis on land of equal size, of equal quality farmland, outside the path of development. The conservation easement shall meet DOC regulations (as defined in California Civil Code §§815-816) and shall be recorded prior to issuance of any grading or building permits . . .”

Mitigation for Prime Farmland

“Option 1: Provide Agricultural Conservation Easements. Provide Agricultural Conservation Easement(s). The permittee shall procure Agricultural Conservation Easements on a “2 on 1” basis on land of equal size, of equal quality farmland, outside the path of development. The conservation easement shall meet DOC regulations (as defined in California Civil Code §§815-816) and shall be recorded prior to issuance of any grading or building permits . . .”

Pursuant to California Civil Code §§815-816 (Conservation Easements), a conservation easement, including an ACE, shall be perpetual in duration (§815.2). This definition provides a permanent mitigation framework to offset the project’s impacts to agricultural resources for the term of the CUP. As discussed in Draft EIR Sections 2.6 and 3.3 and response to comment G-41 above, any temporarily converted agricultural lands would be reclaimed to similar/same conditions as present currently. Therefore, the Project will undergo abandonment and reclamation while the ACE exists in perpetuity. The perpetual nature of the conservation easements ensures they provide the substitute resources required for adequate mitigation pursuant to CEQA Guidelines Section 15370(e) and *V Lions Farming, LLC v. County of Kern*.

The Project would abide by the standard DOC process for establishing a conservation easement. If this mitigation option is selected, the Applicant and Imperial County would work together to identify potentially suitable agricultural lands for an ACE. It is recognized that LESA is an available DOC tool to help identify potentially suitable and similar agricultural lands and may be employed for this project. However, pursuant to DOC’s response to frequently asked questions, an applicant does not have to submit an ACE application with a formal appraisal “if agricultural conservation easement values in the project area have been well established by other, similar easement purchases” (<https://www.conservation.ca.gov/dlrp/grant-programs/Pages/FAQ/aboutACE.aspx>). The Applicant and County will review any recent ACEs and determine if they offer a representative comparison to the subject project site. If not, a formal appraisal will be prepared. Regardless, the County and Applicant will closely coordinate with DOC throughout this process.

The EIR concludes that the project would result in a temporary conversion of agricultural use, and with implementation of proposed mitigation measures, the temporary conversion of agricultural use would be less than significant. Because the conversion of the agricultural use is only temporary, the conservation easement is not the sole basis for determining that the impact will be less than significant.

- G-49** Imperial County administers a robust Agricultural Benefit Program that’s objective is to “mitigate losses to agricultural production, jobs, and our local economy resulting from renewable energy development on farmland in Imperial County.” Approved uses of Agricultural Benefit funds include “stewardship, protection, and enhancement of agricultural lands within

Imperial County.” (<https://agcom.imperialcounty.org/agricultural-benefits-program/>). This program would receive the in-lieu fees and is representative of how mitigation would occur on a program-level to protect sensitive agricultural lands/resources in Imperial County. The fees collected will be reasonably related to this mitigation program to ensure that impacts of temporarily converted agricultural land will be offset through stewardship, protection, and enhancement of other agricultural lands within the County. The County originally adopted the program on January 24, 2012 and subsequently amended it on May 9, 2023 to adjust fees as considered appropriate and adequate by the Board of Supervisors to mitigate the temporary loss of agricultural farmland. The requirement that applicants adhere to this program is considered appropriate by the County, and reduces potential impacts to temporary agricultural conversion to a level less than significant.

To clarify the requirements of Mitigation Measure AG-1a, the following revisions have been made in the Final EIR:

Mitigation for Non-Prime Farmland

“Option 2: Pay Agricultural In-Lieu Mitigation Fee. The Permittee shall pay an “Agricultural In-Lieu Mitigation Fee” in the amount of 20 percent of the fair market value per acre for the total acres of the proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis. This appraisal will be performed in accordance with California Department of General Services guidelines and by a qualified, licensed professional. The Agricultural In-Lieu Mitigation Fee, will be placed in a trust account administered by the Imperial County Agricultural Commissioner’s office and will be used for such purposes as the acquisition, stewardship, preservation, and enhancement of agricultural lands within Imperial County; or,”

Mitigation for Prime Farmland

“Option 2: Agricultural In-Lieu Mitigation Fee. The Permittee shall pay an “Agricultural In-Lieu Mitigation Fee” in the amount of 30 percent of the fair market value per acre for the total acres of the proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis. This appraisal will be performed in accordance with California Department of General Services guidelines and by a qualified, licensed professional. The Agricultural In-Lieu Mitigation Fee, will be placed in a trust account administered by the Imperial County Agricultural Commissioner’s office and will be used for such purposes as the acquisition, stewardship, preservation, and enhancement of agricultural lands within Imperial County; or,”

Lastly, if Mitigation Measure AG-1a Option 2 is selected, the requirement for in-lieu mitigation fees would become a Condition of Approval (COA) in the Conditional Use Permit (CUP) for the Project, and is also included in the Mitigation Monitoring and Reporting Program (MMRP) for the project.

- G-50** Please refer to response to comment G-49 above.
- G-51** Comment noted. Mitigation Measure AG-1a ensures less than significant impacts to farmland that would be temporarily converted from agricultural use.
- G-52** Please refer to response to comment G-41 above.

G-53 Comment acknowledged. This comment is a general statement regarding the evaluation of potential noise impacts; however, the comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required.

Please refer to response to comment G-54.

G-54 Please refer to response to comment G D-2 below.

G-55 Please refer to responses to comments G-54, G-56 and G-57.

G-56 Please refer to response to comment G D-3 below.

G-57 Please refer to response to comment G D-4 below.

G-58 Comment acknowledged. This comment is a general statement regarding the evaluation of cumulative impacts; however, the comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required.

Please refer to response to comment G-59.

G-59 Appendix G of the CEQA Guidelines specifies that the evaluation of the significance of biological resource impacts requires consideration of any substantial adverse effect to special status species, sensitive habitat, protected areas, wildlife migration, or conflict with plans or policies for protecting biological resources. Therefore, CEQA focuses on identifiable harms to particular special-status species, not generalized impacts to all wildlife. The Final EIR is not improper for doing the same.

Furthermore, the estimates of mortality provided by Dr. Smallwood are not species-specific and are speculative and lacking in any sense of proportion or perspective within the context of the current land uses of the area, which consist of non-native habitats and regularly disturbed and cultivated agricultural croplands, developed areas including roadways, utilities and other development. Given the prevalence of developed land including land that has been converted from its original natural condition to developed, active agricultural lands that are regularly disturbed, as well as the presence of paved roads and energy infrastructure in the area, the habitat quality of the site is overstated and Dr. Smallwood's estimates of impacts resulting from habitat loss associated with development of the project site are unsubstantiated as there is very limited native habitats within or surrounding the project area, and the majority of the project site consists of lands that have been converted from their natural condition.

Finally, the Draft EIR does address habitat and wildlife impacts more generally in Sections 3.5.1, 3.5.3, and 5.3.4. Section 3.5.1 describes the environmental conditions as having extensive developed lands with lack of suitable habitat for several species. Section 3.5.3 explains the lack of significant impacts to habitat and wildlife. Section 5.3.4 explains how compliance with applicable laws and regulations will ensure less than significant cumulative impacts on biological resources.

As required under CEQA, Draft EIR Section 5.3.4 includes a thorough discussion on potential cumulative impacts to sensitive/special status avian species and burrowing owl. Additionally, please refer to response to comment A-8 for additional information on how burrowing owl will be addressed via the CEQA process in the context of its recent status change to a Candidate for listing under the California Endangered Species Act.

The EIR appropriately concludes that cumulative biological resource impacts will be less than significant as mitigated.

- G-60** Draft EIR Section 3.12.3 includes an assessment of the Project's consistency with all applicable land use plans, including the Imperial County General Plan. As noted correctly in the comment, the Project is entirely within the renewable energy/geothermal overlay zone and would require the issuance of a CUP by Imperial County (see Draft EIR Section 2.8).
- G-61** As provided in Draft EIR Section 2.3.3.1, Section 2.4, and Figure 2-9 (Typical Well Pad Layout to Drill a Geothermal Production Well), the Project proposes to develop three geothermal production wells and one injection well. The construction area for a well pad for a production well would be approximately 40,000 square feet (.9 acres). As the Project proposes to develop three well pads, a total of 2.7 acres for the geothermal wells would occur, which is under the five-acre guideline. The injection well would be developed within the Heber 2 Geothermal Complex and adjacent to the to-be Dogwood OEC; therefore, the injection well would not convert any farmland.
- G-62** Draft EIR Section 2.7 includes a detailed list of Applicant Proposed Measures (APMs) and Best Management Practices (BMPs) which were volunteered by the Applicant to develop a low-impact project. Section 2.7.1 included APMs/BMPs for surface and ground water quality; Section 2.7.2 includes measures for wildlife; and Section 2.7.8 include measures for noise. These measures seek to preempt potential impacts to the surrounding environment and serve as the basis for "good neighbor" operations.

Additionally, the mitigation measures included in the EIR provide safeguards to impacts to any sensitive resources in surrounding ecological systems, as follows.

- BIO-1 Worker Environmental Awareness Program
 - BIO-2 Pre-Construction Plant Surveys
 - BIO-3 Avoidance of Sensitive Natural Communities
 - BIO-4 Preconstruction Nesting Bird Survey
 - BIO-5 Biological Monitoring
 - BIO-6 Non-reflective Coatings on Solar Panels
 - BIO-7 Burrowing Owl Avoidance, Minimization, and Mitigation
 - BIO-8 American Badger Avoidance and Minimization
 - BIO-9 Avian/Power Line Collision Avoidance and Minimization
 - BIO-10 Avian Electrocution Avoidance and Minimization
 - BIO-11 Biological Protection Measures
- G-63** As provided in Draft EIR Figure 2-9 (Typical Well Pad Layout to Drill a Geothermal Production Well), the proposed well pads are less than 40,000 square feet (.9 acres), which are relatively small for full-size production well pads which can span up to 5 acres. As discussed in Draft EIR Section 3.11.3, the Project would not significantly alter the irrigation or drainage patterns of the site(s) and would comply with all applicable IID requirements/regulations.
- G-64** The County Code extends to "geothermal drilling sites", as stated. The 446.61 acres referenced by the commenter refers to the full project footprint, not the well drilling component. As discussed in Draft EIR Section 2.4, Figure 2-9, and response to comment G-61 above, the proposed well pads would convert a maximum of 2.7 acres of farmland. Therefore, an exception for the well pads is not required.
- G-65** Please refer to preceding responses to comments G-1 through G-64 and responses to attachments provided in the comment letter. Based on the information provided in the Draft EIR, and as responded to in these responses to comments as part of this Final EIR, the project

has been adequately described in the Draft EIR, existing environmental setting has been adequately characterized, and potential impacts are adequately and corresponding mitigation are adequately assessed and prescribed, respectively.

G-66 Comment acknowledged. This comment letter will be included in the record of proceedings for the Project.

G A-1 This comment is an introductory comment and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.

G A-2 This comment provides a general summary of the project and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.

G A-3 All Project operational stationary equipment with a potential to emit are identified on page 3.4-17 of the Draft EIR as follows: *“Specifically, isopentane emissions will occur due to maintenance, purging, and fugitive leaks. Operation of auxiliary engines including the emergency diesel generator and emergency diesel fire pump will also result in emissions of criteria pollutants.”* In addition, Draft EIR Table 3.4-12 provided on page 3.4-18 provides a summary of area, stationary (including isopentane), mobile source emissions associated with Project operations. Note that all Project components are clearly identified on page 1-1 through 1-3 of the Draft EIR. The Dogwood Project would operate in isolation from existing facilities at the Heber Geothermal Energy Complex, thus existing components at the site are not included as part of the Project.

Calculation of isopentane emissions were conducted consistent with the maintenance, purging, and fugitive emissions calculations included in the existing ICAPCD ATC/PTO Permit 2217 for OEC units at the Heber 2 facility. The OEC units at the Heber 2 facility are substantially similar to those proposed for the Dogwood Project. As such, isopentane emissions calculations provided in the Draft EIR are consistent with ICAPCD-approved methods and have been verified for accuracy by the ICAPCD as part of their review and permit process. Note also that the ICAPCD has reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emissions estimates were verified for accuracy by the ICAPCD as part of their review and the findings of their review indicate that they are satisfied that the proposed mitigation will ensure emissions are less than significant according to their statement *“given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation...”*

G A-4 As stated on Draft EIR page 3.4-24, the geothermal fluid would be contained within a closed-loop heat exchanger system and reinjected back into the geothermal reservoir. In closed-loop systems, gases removed from the well are not exposed to the atmosphere and are injected back into the ground after giving up their heat, so air emissions of pollutants within are negligible. Fugitive isopentane emissions have been estimated in accordance with ICAPCD-approved calculation methods and have been verified for accuracy by the ICAPCD as part of their review and permit process. Note also that the ICAPCD has reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emissions estimates were verified for accuracy by the ICAPCD as part of their review and the

findings of their review indicate that they are satisfied that the proposed mitigation will ensure emissions are less than significant.

G A-5 Table 2-3 provided on page 2-22 of the Draft EIR details the construction equipment and usage associated with well drilling and testing, including the diesel drill rig and rig generator, specifying 24-hour operations over the 12-month construction phase. Construction-related emissions were estimated using CalEEMod as required by the ICAPCD. CalEEMod results for Well Drilling and Pipeline are provided in Sections 3.7 through 3.10 of the CalEEMod report provided in Appendix D of the Draft EIR with Testing and Operational Emissions provided in Sections 3.13 and 3.14 of the CalEEMod report. As detailed on page 61/80 of the CalEEMod report (included in Appendix D of the Draft EIR), use of the 500 hp drill rig was accurately accounted for in the emissions estimates with NOX emissions inclusive of drill rig operation.

G A-6 As stated on Draft EIR page 3.4-24, the geothermal fluid would be contained within a closed-loop heat exchanger system and reinjected back into the geothermal reservoir. In closed-loop systems, gases removed from the well are not exposed to the atmosphere and are injected back into the ground after giving up their heat, so air emissions of pollutants (including ammonia) within are contained by the closed loop system. Fugitive isopentane emissions have been estimated in accordance with ICAPCD-approved calculation methods and have been verified for accuracy by the ICAPCD as part of their review and permit process. Note also that the ICAPCD has reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emissions estimates were verified for accuracy by the ICAPCD as part of their review and the findings of their review indicate that they are satisfied that the proposed mitigation will ensure emissions are less than significant.

The Project would not emit ozone as ozone is a secondary pollutant. However, the analysis discloses emissions of ozone precursors (i.e., VOCs and NOX) as a result of construction and operation activities as provided in Tables 3.4-9, 3.4-10, and 3.4-12 of the Draft EIR. As noted in the analysis on Draft EIR page 3.4-16, mitigated construction emissions of ROG and NOX are below the ICAPCD thresholds. According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening thresholds for construction and operations is compliant with the most current ozone and PM₁₀ attainment plans.

G A-7 As noted on Draft EIR page 3.4-3, the USEPA and CARB designate air basins or portions of air basins in counties as being in “attainment” or “nonattainment” for each of the criteria pollutants which accounts for local air quality data. Draft EIR Table 3.4-2 identifies the attainment status of the Project area for both federal and state standards. Compliance with ICAPCD Rule 207 (New and Modified Stationary Source Review) and Rule 208 (Permit to Operate) would be verified by the ICAPCD in accordance with the modification to the existing permit ICAPCD Authority to Construct and Permit to Operate 2217 as detailed on page 3.4-14 of the Draft EIR. Note also that the ICAPCD has reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emissions estimates were verified for accuracy by the ICAPCD as part of their review, and the findings of their review indicate that they are satisfied that the proposed mitigation will ensure emissions are less than significant according to their statement: *“given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation”*.

Note that emissions estimates were calculated using CalEEMod which generates default inputs for the windspeed and precipitation frequency based on the project location. CalEEMod includes average annual windspeeds based on hourly data from 1996 to 2006 for various monitoring stations throughout California from the Western Regional Climate Center (2021). CalEEMod selects the nearest applicable monitoring station to the project location and reports the associated windspeed as the default for the model run. Similarly, precipitation frequency represents the average annual days with precipitation greater than 0.1 inch based on data from 2015 to 2019 for various monitoring stations throughout California (NOAA 2021). CalEEMod selects the nearest monitoring station to the project location and reports the associated number of “wet days” as the default for the model run. (as described in the CalEEMod User Guide available here: https://www.caleemod.com/documents/user-guide/01_User%20Guide.pdf). The analysis of air quality impacts does not rely on air quality monitoring data but rather relies on comparison of the Project emissions to the screening thresholds established by the ICAPCD. According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening thresholds for construction and operations is compliant with the most current attainment plans and would not result in significant air quality impacts.

The assessment of hazards related to the isopentane storage tanks provided in Appendix I to the Draft EIR utilizes a wind speed of 1.5 meters per second and F atmospheric stability class, consistent with 40 CFR §68.22(b) for the purpose of “worst-case” release analysis. Similarly, the ambient temperature of 77 degrees Fahrenheit (i.e., 25 degrees Celsius) and humidity of 50% was selected per 40 CFR §68.22(c). As such, these meteorological parameters used for the hazards assessment do not rely on local meteorological conditions but are specified for a “worst-case” release analysis. In addition, as noted on page 10 of Appendix I to the Draft EIR, the wind direction from the west is based on the Wind Rose Plot for Imperial, California which is the closest city with a wind rose plot available. The closer stations at El Centro or Calexico do not provide wind rose plots.

- G A-8** The analysis provided in the Draft EIR beginning on page 3.4-24 addresses emissions of H₂S from a health risk and odor standpoint. As detailed in the analysis, the nearest receptor is a residence located off Jasper Road, approximately 540 feet from the proposed solar facility and 1,000 feet from the nearest producing well site. As stated on page 3.11-17 of the Draft EIR, drilling of geothermal wells would comply with California Department of Conservation – Geologic Energy Management Division (CalGEM) Regulations. Further, geothermal fluids at the Project site have relatively low concentrations of H₂S that would not have the potential to result in acute or intermediate health risks to humans or animals. As such, any release of H₂S during well drilling activities would be limited to odor nuisance impacts.
- G A-9** CEQA does not require consideration of potential implications to environmental justice or socioeconomics as a specific resource area. Regardless, potential air quality impacts associated with the project are less than significant and/or mitigated to a level less than significant, such that there would be no impact to disadvantaged communities. The analysis of air quality impacts relies on comparison of the Project emissions to the screening thresholds established by the ICAPCD. Impacts related to hazards and hazardous materials on nearby sensitive receptors are addressed in Draft EIR Section 3.10, impacts related to hydrology and water quality are addressed in Draft EIR Section 3.11, and impacts related to air quality with respect to nearby sensitive receptors are addressed in Draft EIR Section 3.4. According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening

thresholds for construction and operations is compliant with the most current attainment plans and would not result in significant air quality impacts.

G A-10 With respect to Valley Fever in the Project area, according to the California Department of Public Health (<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2022.pdf>), for the years 2016 to 2022, the average rate of incidence *Coccidioidomycosis* is reported at roughly 7 cases of per 100,000 jurisdiction population per year. The relatively low number of cases in the County indicate that Valley Fever would not pose a significant health risk during Project earth moving operations. In addition, implementation of Draft EIR Mitigation Measure AQ-1 (Fugitive Dust Control), Mitigation Measure AQ-3 (Dust Suppression), Mitigation Measure AQ-4 (Dust Suppression Management Plan), Mitigation Measure AQ-5 (Operational Dust Control Plan), and Mitigation Measure AQ-6 (Speed Limit) as required during all construction activities by the ICAPCD would effectively control fugitive dust and thereby minimize any potential risk associated with Valley Fever. In addition, BMPs proposed by the Applicant include providing Valley Fever awareness training for workers; providing respirators to workers when requested, including the provision of 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.

G A-11 According to the California Department of Public Health (<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2022.pdf>), for the years 2016 to 2022, the average rate of incidence *Coccidioidomycosis* is reported at roughly 7 cases of per 100,000 jurisdiction population per year. The relatively low number of cases in the County indicate that Valley Fever would not pose a significant health risk during Project earth moving operations, including potential impacts to sensitive receptors that may be located in proximity to the project site. In addition, mitigation measures are proposed that would reduce this potential impact, including to sensitive receptors in proximity to the site to a level less than significant. Specifically, implementation of Draft EIR Mitigation Measure AQ-1 (Fugitive Dust Control), Mitigation Measure AQ-3 (Dust Suppression), Mitigation Measure AQ-4 (Dust Suppression Management Plan), Mitigation Measure AQ-5 (Operational Dust Control Plan), and Mitigation Measure AQ-6 (Speed Limit) as required during all construction activities by the ICAPCD would effectively control fugitive dust and thereby minimize any potential risk associated with Valley Fever to sensitive receptors. In addition, BMPs proposed by the Applicant include providing Valley Fever awareness training for workers; providing respirators to workers when requested, including the provision of 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. The EIR provides an analysis of potential impacts to sensitive receptors. As stated, “As summarized in Table 3.4-3, there are numerous sensitive receptors in proximity to the project components. The nearest sensitive land use to the project site is a single-family residence located approximately 540 feet from the proposed Heber 2 solar facility.” The EIR concludes that, “Project construction would not result in a significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be less than significant.” (EIR page 3.4-22).

G A-12 Note that PM₁₀ emissions associated with Project construction activities are primarily attributed fugitive PM emission estimates for worker, vendor, and haul trips as presented in the CalEEMod report provided in Appendix D to the Draft EIR. Consistent with the requirements identified in the ICAPCD CEQA Air Quality Handbook (2017) and emission calculation equations provided in ICAPCD Rule 214.2 (Paving Unpaved Public Roads Emission Reduction Credits [PERCs]), CalEEMod calculates fugitive dust from travel of construction vehicles on paved and unpaved roads using the methodology of Section 13.2.1 of USEPA's AP-42 (2011). Per ICAPCD Rule 214.2, the annual quantity of fugitive dust emissions emitted from roadway segments are calculated relative to the annual vehicle miles traveled. As noted on page 4-2 of Appendix D to the Draft EIR, an input value of 85% paved roads is utilized in the CalEEMod emissions model in accordance with guidance provided by the ICAPCD to account for additional fugitive dust generated on paved surfaces throughout Imperial County. However, for the Project, 99% of worker, vendor, and hauling trips would occur on paved public roadways (i.e., not within the project construction boundary). As such, Project VMT would be 99% on paved roads. Thus, the fugitive dust values presented in the Draft EIR are highly conservative. Actual fugitive PM emissions are expected to be much lower than are presented in the Draft EIR.

G A-13 As stated on Draft EIR page 2-25, applicant proposed measures and best management practices include the following measures:

- providing Valley Fever awareness training for workers;
- providing respirators to workers when requested, including the provision of 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.

In addition, implementation of Mitigation Measure AQ-1 (Fugitive Dust Control), Mitigation Measure AQ-3 (Dust Suppression), Mitigation Measure AQ-4 (Dust Suppression Management Plan), Mitigation Measure AQ-5 (Operational Dust Control Plan), and Mitigation Measure AQ-6 (Speed Limit) as required during all construction activities by the ICAPCD would effectively control fugitive dust and thereby minimize any potential risk associated with Valley Fever.

According to the California Department of Public Health (<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2022.pdf>), for the years 2016 to 2022, the average rate of incidence Coccidioidomycosis is reported at roughly 7 cases of per 100,000 jurisdiction population per year. The relatively low number of cases in the County indicate that Valley Fever would not pose a significant health risk during Project earth moving operations and the proposed measures in addition to the specified mitigation measures addressing fugitive dust are expected to minimize exposure to Valley Fever to less than significant levels.

G A-14 Please refer to response to comment G A-13 above.

G A-15 Note that Rule 409A referenced by the commenter is applicable to incinerators and burning combustible refuse which is not applicable to the Project. Tables 3.4-9, 3.4-10, and 3.4-12 included in the Draft EIR (pages 3.4-16 and 3.4-18) provide estimates of total VOCs, ROG, and NOX (ozone precursors) for Project construction and operation activities (including isopentane emissions) in accordance with ICAPCD Air Quality Handbook (Guidelines for the

Implementation of the California Environmental Quality Act of 1970, as amended) (2017). Note also that the Draft EIR specifically addresses the reaction of NOX emissions with ROG (e.g., VOCs) on page 3.4-4 stating “Ozone is a secondary pollutant, nitrogen oxides (NOX) and volatile organic compounds (VOC) are of particular interest as they are precursors to ozone formation.” According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening thresholds for construction and operations is compliant with the most current attainment plans. Because modeling of ozone precursor emissions are below thresholds with mitigation in place, the EIR’s conclusion that ozone impacts will be less than significant is supported by substantial evidence.

Note also that the ICAPCD has reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emission estimates were verified for accuracy by the ICAPCD as part of their review, and the findings of their review indicate that they are satisfied that the proposed mitigation will ensure emissions are less than significant according to their statement: “given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation”.

G A-16 As stated on Draft EIR page 3.4-23, well drilling and testing activities may result in local H₂S emissions that could exceed the ICAPCD sulfur compound emission standard (Rule 405) of 0.2 percent by volume (calculated as SO₂ and measured at a point of discharge). However, H₂S is regulated as a nuisance based on its odor detection level. The H₂S standard of 0.03 ppm (or 42 µg/m³) for a one-hour average was adopted in 1969 for the purpose of odor control. However, additional health effects of H₂S have only been reported with exposures greater than 50 ppm (eye irritation), considerably higher than the odor threshold-based standard. If the standard were based on adverse health effects, it would be set at a much higher level (CARB 2024: <https://ww2.arb.ca.gov/resources/hydrogen-sulfide-and-health>). For example, the Occupational Safety and Health Administration (OSHA) set an acceptable ceiling limit of 20 ppm (or 28,000 µg/m³) for H₂S in workplace air. The ceiling limit is a 15-minute timeweighted average that cannot be exceeded at any time during the working day. The National Institute for Occupational Safety and Health (NIOSH) recommends a 10-minute ceiling limit of 10 ppm (or 14,000 µg/m³). NIOSH also determined that 100 ppm (or 140,000 µg/m³) is immediately dangerous to life or health of workers (ATSDR 2024: <https://www.atsdr.cdc.gov/toxfaqs/tfacts114.pdf>). From a geothermal resource standpoint, the fluid contains low concentrations of H₂S due to the nature of the reservoir rock. Measured H₂S values for this resource (as measured at the Heber Geothermal Complex) is <10 ppm in the total fluid. Based on this, emissions would be temporary in nature and emissions would not exceed thresholds. Further, the project would be required to comply with the requirements of the CalGEM geothermal well drilling permit. As part of compliance with this permit, H₂S is monitored continuously with sensors placed at the cellar, rig floor, and mud pits so that project emission levels can be monitored for compliance with the permit requirements to ensure that emissions would be less than significant.

G A-17 PM_{2.5} emissions for construction and operation are provided in Tables 3.4-9, 3.4-10, and 3.4-12 in the Draft EIR. As noted in the analysis on page 3.4-17, mitigated construction emissions are below the ICAPCD thresholds as are operational emissions. According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening thresholds for

construction and operations is compliant with the most current attainment plans. Note also that the ICAPCD has reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emission estimates were verified for accuracy by the ICAPCD as part of their review, and the findings of their review indicate that they are satisfied that the proposed mitigation will ensure emissions are less than significant according to their statement: *“given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation”*.

The Draft EIR discloses unmitigated and mitigated maximum daily PM_{2.5} emission rates associated with construction activities in Tables 3.4-9 and 3.4-10, respectively. As shown, maximum daily mitigated PM_{2.5} during construction activities 238.04 lbs/day – although the ICAPCD does not have a threshold for PM_{2.5} during construction, these emissions would be below the operational threshold of 550 lb/day, indicating that temporary construction-related PM_{2.5} would not result in significant air quality impacts, even temporarily.

With respect to PM_{2.5} emitted during operations, these emissions would be minimal and primarily attributed to minimal usage of onroad vehicles, landscaping equipment, and emergency engines – no earthmoving activities would be conducted during Project operations (refer to Table 3.4-12 which details operational emissions by sector). Operational emissions are below the ICAPCD screening thresholds (the commenter’s statement that there is no PM_{2.5} threshold is incorrect – the ICAPCD operational threshold for PM_{2.5} threshold is 550 lbs/day) and thus the determination of less than significant impacts does not rely on offset requirements per Rule 207 – further note that the analysis on page 3.4-18 specifically states that impacts are less than significant and compliance with applicable regulations would further reduce emissions.

Note that as stated on page 3.11-14 of the Draft EIR, the Project site is completely devoid of any existing facilities that would require relocation or demolition, thus there would be no fugitive dust generated as a result of demolition activities or debris clearance. In addition, the project site is at or near final grade and the Project grading plan is designed to balance any minor earthwork on site, which would avoid truck trips that would have been required to haul-in fill materials to the site and haul-off of materials to be exported off-site. Further, most construction equipment needed for the Project is already onsite (see page 3.7-7 of the Draft EIR). Fugitive dust emissions associated with vehicle movement onsite is accounted for in worker, vendor, and hauling mobile sources based on an input value of 85% paved roads in the CalEEMod emissions model (refer to page 4-2 of Appendix D to the Draft EIR). However, for the Project, 99% of worker, vendor, and hauling trips would actually occur on paved public roadways (i.e., not within the project construction boundary).

G A-18 Particulate matter emissions estimates were modeled using conservative parameters. Accordingly, actual emissions will likely be lower than presented in the Draft EIR. As provided in Section 3.4.3 of the Draft EIR, emissions estimates are below the regulatory thresholds and, therefore, the Project would not be subject to BACT under ICAPCD rules.

Consistent with the requirements identified in the ICAPCD CEQA Air Quality Handbook (2017) and emission calculation equations provided in ICAPCD Rule 214.2 (Paving Unpaved Public Roads Emission Reduction Credits [PERCs]), CalEEMod calculates fugitive dust from travel

of construction vehicles on paved and unpaved roads using the methodology of Section 13.2.1 of USEPA's AP-42 (2011). Per ICAPCD Rule 214.2, the annual quantity of fugitive dust emissions emitted from roadway segments are calculated relative to the annual vehicle miles traveled. As noted on page 4-2 of Appendix D to the Draft EIR, an input value of 85% paved roads is utilized in the CalEEMod emissions model in accordance with guidance provided by the ICAPCD to account for additional fugitive dust generated on paved surfaces throughout Imperial County. However, for the Project, 99% of worker, vendor, and hauling trips would occur on paved public roadways (i.e., not within the project construction boundary). As such, Project VMT would be 99% on paved roads. Thus, the fugitive dust values presented in the Draft EIR are highly conservative. Actual fugitive PM emissions are expected to be much lower than are presented in the Draft EIR. The ICAPCD reviews all Air Quality Analyses to ensure enforceability and consistency of air analysis methodology to the ICAPCD CEQA Air Quality Handbook, Air District Rules & Regulations, and Air District Guidelines. Accordingly, ICAPCD reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emission estimates were verified for accuracy by the ICAPCD as part of their review, and the findings of their review indicate that they are satisfied that the proposed mitigation will ensure emissions are less than significant according to their statement: *"given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation..."*

As noted by the commenter, the data provided in Section 3.1 of Appendix D, Attachment A shows 0 emissions for onsite truck activity – this is because there would be no onsite haul trucks associated with site preparation as the Project grading plan is designed to balance all earthwork onsite (i.e., no import/export of cut/fill material is required). Any fugitive emissions associated with trucks entering/leaving the site are accounted for in the conservative onroad fugitive dust emission estimates using the default value of 85% unpaved roads as described above.

CalEEMod estimates of diesel particulate matter (i.e., PM_{2.5e}) are based on construction equipment, daily use, and duration of each construction phase provided in Table 2-3 on page 2-22 of the Draft EIR. As discussed in the Draft EIR starting on page 3.4-15, Project PM emissions are below the ICAPCD thresholds and thus would not result in significant air quality impacts.

PM_{2.5} emissions from the emergency generator and fire pump are based on CalEEMod emission factors for the rated horsepower of each respective engine and estimated use. The commenter is incorrect in the statement "both of which are claimed to be mitigated 100%" – the analysis does not in fact claim that these emissions are mitigated 100% but rather discloses the unmitigated emissions as calculated using CalEEMod. Emissions estimates are based on the expected usage to comply with maintenance regulations (see assumptions provided on 3.4-18 of the Draft EIR).

Note that as stated on page 3.11-14 of the Draft EIR, the Project site is completely devoid of any existing facilities that would require relocation or demolition, thus there would be no fugitive dust generated as a result of demolition activities or debris clearance. In addition, the project site is at or near final grade and the Project grading plan is designed to balance any minor earthwork on site, which would avoid truck trips that would have been required to haul-in fill materials to the site and haul-off of materials to be exported off-site. Fugitive dust emissions

associated with vehicle movement onsite is accounted for in worker, vendor, and hauling mobile sources based on an input value of 85% paved roads in the CalEEMod emissions model (refer to page 4-2 of Appendix D to the Draft EIR). However, for the Project, 99% of worker, vendor, and hauling trips would actually occur on paved public roadways (i.e., not within the project construction boundary). Note that the ICAPCD does not have thresholds for PM_{2.5} for construction activities but as discussed in the ICAPCD's Air Quality Handbook, the approach to evaluating construction emissions should be qualitative rather than quantitative. In any case, regardless of the size of the project, the standard mitigation measures for construction equipment and fugitive PM must be implemented at all construction sites. The implementation of discretionary mitigation measures, as listed in Section 7.1 of the ICAPCD's Air Quality Handbook, apply to those construction sites that are 5 acres or more for non-residential developments or 10 acres or more in size for residential developments. The mitigation measures found in Section 7.1 of the ICAPCD's handbook are intended as a guide of feasible mitigation measures and are not intended to be an all-inclusive comprehensive list of all mitigation measures. Note also that only drilling would occur during nighttime hours, all other construction activities would occur during daytime hours only with expected daily hours of operation for each piece of equipment identified in Table 2-3 of the Draft EIR, consistent with similar projects completed by ORMAT. Therefore, it would be inaccurate to apply a 20-hour duration for all equipment for the entire construction period as suggested by the commenter.

Note that the total PM emissions estimates provided in the Morton Bay Geothermal Project Preliminary Staff Assessment cited by the commenter (as included in Table 5.1-6 of that report) are 23.1 lbs/day for PM₁₀ and 17.2 lbs/day for PM_{2.5} which are orders of magnitude below the estimates of 2,356.6 lb/day for PM₁₀ and 242.47 lbs/day for PM_{2.5} for the Dogwood Project (refer to Table 3.4-9 of the Draft EIR). As such, substantial evidence demonstrates the estimates of PM provided in the Draft EIR are highly conservative overall.

G A-19 Isopentane storage and associated equipment will comply with all Imperial County APCD permit requirements to ensure that leakage is minimized and ROG emissions levels are less than significant.

The vapor recovery unit (VRU) is required to achieve a minimum isopentane vapor recovery efficiency during the purging process of an OEC per the existing ICAPCD Authority to Construct and Permit to Operate 2217. Actual efficiency of the VRU units to be installed onsite has been demonstrated and verified to be at least 99.9% efficient as indicated by annual performance source testing of the VRU units as required by the existing ICAPCD Authority to Construct and Permit to Operate 2217.

In addition, the commenter's understanding of the VRU unit operation and methodology for calculating Isopentane emissions based on the efficiency of the VRU unit is fundamentally incorrect and incorrectly uses the total Isopentane volume in the entire system and tanks as opposed to the volume of isopentane vapor captured by the VRU when clearing a zone which is only conducted during purging and maintenance events. Specifically, the VRMU to be installed would be used to remove hydrocarbons from the air/vapor mixture during evacuation of OEMs during maintenance events only. When an OEM is taken out of service for maintenance, the evacuation skid is used to de-gas the system. The vapors going to the carbon adsorption unit are passed through a knockout drum, and compressor/condenser, and then to the two carbon beds in series, where the hydrocarbon constituents are adsorbed on the carbon and the nonhydrocarbon fraction is vented to the atmosphere. When the carbon

adsorption vessels are spent, they are sent back to the supplier for regeneration. Thus, the captured vapor is much less than the total volume of isopentane in the system as the commenter states, and the VRU unit would not be in use 365 days/year as calculated by the commenter. Accordingly, site-specific emission factors based on actual historic worst-case emissions have been developed as provided in Table 3.4-8 on page 3.4-14 of the Draft EIR.

Per the existing ICAPCD Authority to Construct and Permit to Operate 2217, source testing of VRU units is required at least once on a yearly basis to verify the isopentane vapor recovery efficiency. Compliance with BACT requirements and emissions management would be determined and enforced by the ICAPCD in compliance with ICAPCD Rule 207 (New and Modified Stationary Source Review) and Rule 208 (Permit to Operate) in accordance with the modification to the existing permit ICAPCD Authority to Construct and Permit to Operate 2217 as detailed on page 3.4-14 of the Draft EIR. However, as provided in Section 3.4.3 of the Draft EIR, emissions estimates are below the regulatory thresholds and, therefore, the Project would not be subject to BACT under ICAPCD rules.

G A-20 Please refer to response to comment G A-21. The EIR evaluates the potential hazards associated with Isopentane (see EIR page 3.10-8). As discussed, A Hazard Assessment (HA) was prepared to assess the potential effects and risks of the additional isopentane storage/use by the proposed Dogwood geothermal plant (Appendix I of this EIR). The HA 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)”
- 19 CCR 2750.1 to 2750.9 – California Code of Regulation “California Accidental Release Prevention (CalARP) Program”

The HA analyzed the isopentane storage/use by identifying the worst-case scenario and endpoints of concern (as defined by EPA RMP and 40 CFR 68.22) including the following:

1. Explosion (an overpressure of 1 pound per square inch [psi])
2. Radiant heat/Exposure Time (a radiant heat of 5 kW/m² for 40 seconds)
3. Lower Flammability Limit (as provided by NFPA)

The HA assessed the worst-case scenario of a catastrophic failure of one of the two new 20,000-gallon isopentane tanks. The storage vessel is capable of storing a maximum of 18,000 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 92,520 pounds of isopentane held in the storage vessel. The worst-case scenario considers the catastrophic failure of the 20,000-gallon isopentane storage vessel, which would result in a release of the entire contents of the vessel, into the secondary containment area. As modeled in the HA, the worst-case scenario event would have an impact up to 0.068 miles, or 357 feet (EIR Table 3.10-1). There are zero residents and zero housing units within 357 feet. Further, MM HAZ-1 is required which requires Isopentane Management Measures including fire suppression measures, fire access, containment, water suppression systems, blast wall and diking.

G A-21 Isopentane storage and associated equipment will comply with all Imperial County APCD permit requirements to ensure that leakage is minimized and VOC/ROG emissions levels are less than significant.

As noted on page 3.4-13 of the Draft EIR, fugitive isopentane emissions occur from leaks in seals, flanges, pumps, valves, and other components. It is not feasible to measure fugitive emissions directly, but these emissions can be quantified based on the addition of isopentane to the system. ORMAT tracks fluid additions and additions that are not attributed to non-fugitive causes are counted as fugitive emissions. Estimated isopentane emissions based on historic loss rate data and site-specific emission factors (refer to Table 3.4-8 on page 3.4-14) are provided in Table 3.4-11 on page 3.4-17 of the Draft EIR. Similarly, engine emissions associated with routine maintenance were estimated using a combination of CalEEMod default and site-specific inputs as provided in the CalEEMod report attached to Appendix D of the Draft EIR (for operations, refer to Section 2.5 [Operations Emissions by Section, Unmitigated] of the CalEEMod report [page 16/80], notes on operational assumptions and changes made to CalEEMod default values are documented in Section 8 (User Changes to Default Data) of the CalEEMod report (starting on page 79/80). All operational inputs in the CalEEMod model are identified in Sections 5.9 through 5.18 of the CalEEMod report [pages 68/80 through 72/80]).

G A-22 Isopentane storage and associated equipment will comply with all Imperial County APCD permit requirements to ensure that leakage is minimized and VOC/ROG emissions levels are less than significant.

As noted on page 3.4-13 of the Draft EIR, fugitive isopentane emissions occur from leaks in seals, flanges, pumps, valves, and other components. It's not feasible to measure fugitive emissions directly, but these emissions can be quantified based on the addition of isopentane to the system. ORMAT tracks fluid additions and additions that are not attributed to non-fugitive causes are counted as fugitive emissions. Estimated isopentane emissions based on historic loss rate data and site-specific emission factors (refer to Table 3.4-8 on page 3.4-14) are provided in Table 3.4-11 on page 3.4-17 of the Draft EIR. Storage and transfer of isopentane is subject to ICAPCD Rule 414 as applicable which requires use of vapor recovery devices including during filling. With compliance with applicable regulations, VOCs associated with isopentane transfers regardless of number of deliveries would be negligible.

G A-23 As provided on page 4-16 of Appendix D of the Draft EIR (Air Quality and Greenhouse Gas Technical Report), calculation of CO₂e for SF₆ emissions were based on a GWP of 23,300 – this value is greater than the 100-year GWP from the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report (AR4) of 22,800, based on the intensity of the infrared adsorption by each GHG and how long emissions remain in the atmosphere. Therefore, the calculated emissions presented in the Draft EIR are conservative. Note that the GWP value of 23,900 presented by the commenter is an outdated value from the second assessment report (see values here: <https://ww2.arb.ca.gov/ghg-gwps>). Values from the fourth assessment report are used for the current California GHG emissions inventory (<https://ww2.arb.ca.gov/ghg-gwps>). As presented by the USEPA (<https://www.epa.gov/ghgemissions/understanding-global-warming-potentials#changingGWPs>), the USEPA and other organizations will update the GWP values they use occasionally. This change can be due to updated scientific estimates of the energy absorption or lifetime of the gases or to changing atmospheric concentrations of GHGs that result in a change in the energy absorption of 1 additional ton of a gas relative to another.

However, as stated on page 1-8 of Appendix D of the Draft EIR, CARB amended the Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear regulation in 2021 to further reduce GHG emissions from gas-insulated equipment. Key provisions of the amended regulation include a phase-out schedule for new sulfur hexafluoride gas-insulated equipment (January 1, 2025 for voltage less than 145 kV, January 1, 2029 for voltage between 145 and 245 kV, and January 1, 2031 for voltage greater than 245 kV). The Draft EIR assumes use of SF6 gas for conservative GHG estimates for the remote potential scenario that SF6 alternatives were not available at the time of construction. However, the Project proposes circuit breakers less than 145 kV, with installation not proposed until after January 1, 2025. There are currently numerous alternatives to SF6 gas available on the market. As such, no SF6 gas will be utilized in Project equipment with compliance with the applicable regulation. Thus, the estimates of GHG associated with SF6 gas are not applicable for actual Project operations.

Refer to Section 2.5 (Operations Emissions by Section, Unmitigated) of the CalEEMod report (page 16/80) included as an attachment to Appendix D of the Draft EIR. This table presents the calculated operational GHGs associated with mobile, area, energy use, water use, and stationary sources, with total annual emissions estimated at 96.7 MTCO2e (rounded up to 97 MTCO2e in Draft EIR analysis). Notes on operational assumptions and changes made to CalEEMod default values are documented in Section 8 (User Changes to Default Data) of the CalEEMod report (starting on page 79/80). All operational inputs in the CalEEMod model are identified in Sections 5.9 through 5.18 of the CalEEMod report (pages 68/80 through 72/80).

G A-24 As stated on Draft EIR page 3.4-24, the geothermal fluid would be contained within a closed-loop heat exchanger system and reinjected back into the geothermal reservoir. In closed-loop systems, gases removed from the well are not exposed to the atmosphere and are injected back into the ground after giving up their heat, so air emissions of pollutants (including ammonia,) within are negligible, and no emissions are emitted from the facility to the outside environment.

G A-25 Table 2-3 provided on page 2-22 of the Draft EIR details the construction equipment and usage associated with well drilling and testing, including the diesel drill rig and rig generator, specifying 24-hour operations over the 12-month construction phase. Construction-related emissions were estimated using CalEEMod as required by the ICAPCD. CalEEMod results for Well Drilling and Pipeline are provided in Sections 3.7 through 3.10 of the CalEEMod report provided in Appendix D of the Draft EIR with Testing and Operational Emissions provided in Sections 3.13 and 3.14 of the CalEEMod report. As detailed on page 61/80 of the CalEEMod report (included in Appendix D of the Draft EIR), use of the 500 hp drill rig was accurately accounted for in the emissions estimates with NOX emissions inclusive of drill rig operation.

G A-26 The Project would not emit ozone as ozone is a secondary pollutant. However, the analysis discloses emissions of ozone precursors (i.e., VOCs and NOX) as a result of construction and operation activities (including Isopentane emissions) as provided in Tables 3.4-9, 3.4-10, and 3.4-12 of the Draft EIR. As noted in the analysis on page 3.4-16, mitigated construction emissions of ROG and NOX are below the ICAPCD thresholds as are operational emissions (including isopentane emissions). According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening thresholds for construction and operations is compliant with the most current ozone and PM10 attainment plans.

G A-27 Note that emissions estimates were calculated using CalEEMod which generates default inputs for the windspeed and precipitation frequency based on the project location. Area sources of PM are estimated by the CalEEMod based on an input value of 85% paved roads in the CalEEMod emissions model (refer to page 4-2 of Appendix D to the Draft EIR). However, for the Project, 99% of worker, vendor, and hauling trips would occur on paved public roadways (i.e., not within the project construction boundary). The ICAPCD reviews all Air Quality Analyses to ensure enforceability and consistency of air analysis methodology to the ICAPCD CEQA Air Quality Handbook, Air District Rules & Regulations, and Air District Guidelines. Accordingly, ICAPCD reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The emissions estimates were verified for accuracy by the ICAPCD as part of their review, and the findings of their review indicate that they are satisfied that the proposed mitigation will ensure emission are less than significant according to their statement: *“given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation...”* Note that Tables 3.4-9, 3.4-10, and 3.4-12 included in the Draft EIR (pages 3.4-16 and 3.4-18) provide estimates of for all criteria pollutants for Project construction and operation activities (including isopentane emissions, and including the operation of other equipment such as sand separators) in accordance with ICAPCD Air Quality Handbook (Guidelines for the Implementation of the California Environmental Quality Act of 1970, as amended) (2017). According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening thresholds for construction and operations is compliant with the most current attainment plans and would not result in significant air quality impacts.

G A-28 Potential impacts to human health from the use/storage of isopentane are thoroughly discussed in Section 3.10.3 and the Hazard Assessment (Appendix I of the Draft EIR).

As provided in Draft EIR Section 3.4.3 and the Air Quality Technical Memorandum (Appendix D of the Draft EIR), the analysis of air quality impacts does not rely on air quality monitoring data but rather relies on comparison of the Project emissions to the screening thresholds established by the ICAPCD. According to the ICAPCD CEQA Air Quality Handbook (2017), a project that emits less than the screening thresholds for construction and operations is compliant with the most current attainment plans and would not result in significant air quality impacts.

Table 3.4-3 provided on page 3.4-4 of the Draft EIR specifically identifies the Heber Elementary School and all nearby residences (i.e., ranches with residential structures) as sensitive receptors. As noted on page 3.4-3 of the Draft EIR, the USEPA and CARB designate air basins or portions of air basins in counties as being in “attainment” or “nonattainment” for each of the criteria pollutants which accounts for local air quality data. Table 3.4-2 identifies the attainment status of the Project area for both federal and state standards. Compliance with ICAPCD Rule 207 (New and Modified Stationary Source Review) and Rule 208 (Permit to Operate) would be verified by the ICAPCD in accordance with the modification to the existing permit ICAPCD Authority to Construct and Permit to Operate 2217 as detailed on page 3.4-14 of the Draft EIR. Note also that the ICAPCD has reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The findings of their review of the analyses indicate that they are satisfied with the adequacy of the emissions estimates as noted in their statement: *“given the permitting requirements of the project in conjunction with the*

implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation”.

Please also refer to response to comment G A-7 regarding meteorological data.

G A-29 Cumulative impacts on air quality are evaluated in Section 5.3.3 of the Draft EIR. The Heber Geothermal complex (which also includes the Second Imperial unit) is specifically identified as a cumulative project in Table 5-1 and on page 5-9. As stated on page 5-2 of the Draft EIR, the geographic scope of each analysis is based on the topography surrounding the project sites and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects will often extend beyond the scope of the direct effects of a project, but not beyond the scope of the direct and indirect effects of that project. Furthermore, per CEQA Guidelines section 15064(h)(3), the “lead agency may determine that a project’s incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program,” such as ICAPCD’s CEQA Air Quality Handbook (2017). The Project’s emissions fall below ICAPCD’s significance thresholds, which ensures air quality impacts will be less than cumulatively considerable in Imperial County in accordance with ICAPCD’s plans for air quality control and development in the County.

In addition, CEQA Guidelines section 15130(b)(1) provides an agency the option of either listing out nearby past, present, and probable future projects or explaining compliance with an applicable “local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect.” The EIR opts for the latter in the context of cumulative air quality impacts, relying on ICAPCD’s significance thresholds as described above.

As noted on page 3.4-3 of the Draft EIR, the Imperial County portion of the SSAB is currently designated as nonattainment for O₃ and PM₁₀ under State standards. Under federal standards, the Imperial County portion of the SSAB is in nonattainment for O₃, PM₁₀, and PM_{2.5}. The Draft EIR specifically addresses cumulative impacts with respect to PM₁₀, PM_{2.5}, ROG, CO, SO₂, and NO_x and discloses that the Project and discloses that the impacts could be cumulatively considerable because the Imperial County portion of the SSAB is nonattainment already for O₃ and PM₁₀ under state standards and for O₃ and PM_{2.5} federal standards (see page 5-10 of the Draft EIR). Because the proposed Project will be required to implement measures consistent with ICAPCD regulations designed to alleviate the cumulative impact associated with fugitive dust and NO_x, the Project’s contribution would be rendered less than cumulatively considerable per ICAPCD CEQA Air Quality Handbook (2017) that states that a project that emits less than the screening thresholds for construction and operations is compliant with the most current ozone and PM₁₀ attainment plans.

G A-30 Cumulative impacts on air quality are evaluated in Section 5.3.3 of the Draft EIR. Note that the Heber Geothermal complex is specifically identified as a cumulative project in Table 5-1 and on page 5-9. As stated on page 5-2 of the Draft EIR, the geographic scope of each analysis is based on the topography surrounding the project sites and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects will often extend beyond the scope of the direct effects of a project, but not beyond the scope of the direct and indirect effects of that project. As noted on page 3.4-3 of the Draft EIR,

the Imperial County portion of the SSAB is currently designated as nonattainment for O₃ and PM₁₀ under State standards. Under federal standards, the Imperial County portion of the SSAB is in nonattainment for O₃, PM₁₀, and PM_{2.5}. The Draft EIR specifically addresses cumulative impacts with respect to PM₁₀, PM_{2.5}, ROG, CO, SO₂, and NO_x and discloses that the Project and discloses that the impacts could be cumulatively considerable because the Imperial County portion of the SSAB is nonattainment already for O₃ and PM₁₀ under state standards and for O₃ and PM_{2.5} federal standards (see page 5-10 of the Draft EIR). Because the proposed Project will be required to implement measures consistent with ICAPCD regulations designed to alleviate the cumulative impact associated with fugitive dust and NO_x, the Project's contribution would be rendered less than cumulatively considerable per ICAPCD CEQA Air Quality Handbook (2017) that states that a project that emits less than the screening thresholds for construction and operations is compliant with the most current ozone and PM₁₀ attainment plans. Health and odor impacts related to H₂S are more localized and would not result in emissions at concentrations that would pose a health hazard as noted on page 3.4-23 of the Draft EIR. Note that at this time, hydrogen sulfide is not measured at any monitoring stations in the SSAB because it is not considered to be a regional air quality problem (see air quality monitoring data availability table here: https://www.arb.ca.gov/aqmis2/display.php?param=H2S&units=007&year=2024&county_name=--COUNTY--&basin=SS-Salton+Sea&latitude=--PART+OF+STATE--&report=AQBYR&order=basin%2Ccounty_name%2Cs.name&submit=Retrieve+Data&ptype=aqd&std15=)).

G A-31 The ICAPCD reviews all Air Quality Analyses to ensure enforceability and consistency of air analysis methodology to the ICAPCD CEQA Air Quality Handbook, Air District Rules & Regulations, and Air District Guidelines. Accordingly, ICAPCD reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The findings of their review of the analyses indicate that they are satisfied with the adequacy of the emissions estimates according to their statement *“given the permitting requirements of the project in conjunction with the implementation of mitigation measures AQ-1 - AQ-6, it is likely the project will remain below significant impact, as the mitigation measures are consistent with mitigation measures used to maintain this type of project at less than significant impact levels given historical implementation...”* Note that Tables 3.4-9, 3.4-10, and 3.4-12 included in the Draft EIR (pages 3.4-16 and 3.4-18) provide estimates of total PM_{2.5} and ozone precursors (VOCs, ROG, and NO_x) for Project construction and operation activities (including isopentane emissions) in accordance with ICAPCD Air Quality Handbook (Guidelines for the Implementation of the California Environmental Quality Act of 1970, as amended) (2017). Note also, that the Draft EIR specifically addresses the reaction of NO_x emissions with ROGs (e.g., VOCs) on page 3.4-4 stating *“Ozone is a secondary pollutant, nitrogen oxides (NO_x) and volatile organic compounds (VOC) are of particular interest as they are precursors to ozone formation.”*

As stated on page 3.4-24, the geothermal fluid would be contained within a closed-loop heat exchanger system and reinjected back into the geothermal reservoir. In closed-loop systems, gases removed from the well are not exposed to the atmosphere and are injected back into the ground after giving up their heat. As such, the Project is not a source of ammonia emissions.

Compliance with BACT requirements and emissions management would be determined and enforced by the ICAPCD in compliance with ICAPCD Rule 207 (New and Modified Stationary

Source Review) and Rule 208 (Permit to Operate) in accordance with the modification to the existing permit ICAPCD Authority to Construct and Permit to Operate 2217 as detailed on page 3.4-14 of the Draft EIR.

G A-32 As provided in Draft EIR Section 2.7.6, the Project would abide by all applicable waste management regulations. Further, as discussed in Section 3.10.3, the Project would not generate any significant impacts from waste management and would not require any mitigation.

G A-33 As noted on pages ES-2, 1-2, 2-7, and 2-27 of the Draft EIR, gas detectors will be installed on the isopentane storage tanks to immediately detect any isopentane leak and notify the control room (manned 24/7). In addition, Mitigation Measure HAZ-1: Isopentane Management Measures would further ensure that isopentane leaks are immediately detected and an operator in the control room (manned 24/7) is immediately notified to mobilize to fix the leak. Compliance with BACT requirements and emissions management would be determined and enforced by the ICAPCD in compliance with ICAPCD Rule 207 (New and Modified Stationary Source Review) and Rule 208 (Permit to Operate) in accordance with the modification to the existing permit ICAPCD Authority to Construct and Permit to Operate 2217 as detailed on page 3.4-14 of the Draft EIR.

G A-34 The ICAPCD reviews all Air Quality Analyses to ensure enforceability and consistency of air analysis methodology to the ICAPCD CEQA Air Quality Handbook, Air District Rules & Regulations, and Air District Guidelines. Accordingly, ICAPCD reviewed and provided comments on the Draft EIR and associated air quality analysis on October 2, 2024. The findings of their review of the analyses indicate that they are satisfied with the adequacy of the Mitigation Measure AQ-3 and Mitigation Measure AQ-4 to adequately mitigate project impacts to below the applicable thresholds under the provision that Mitigation Measure AQ-4 be revised on page 3.4-20 of the Final EIR to specify “Enhanced Dust Control Plan” as follows:

Mitigation Measure AQ-4 Dust Suppression Management Plan. Prior to any earthmoving activity, the applicant shall submit a ~~construction~~ Enhanced Dust Control Plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

As noted on page 3.4-9 of the Draft EIR, the Project is subject to ICAPCD Regulation VIII – Rules 800-805 which outline the requirements for the dust control plan which includes identification Project contacts and responsibilities, Project dust generating activities, minimum requirements and enhanced requirements for limiting visible dust emissions, and other dust control methods and treatments, as well as monitoring and record keeping requirements. All actions required per ICAPCD Rule VIII are subject to enforcement per ICAPCD regulations and potential air quality impacts are addressed through enforcement of these regulation and proposed mitigation measures as discussed in preceding responses.

G A-35 As noted on page 3.4-8 of the Draft EIR, the Project is subject to ICAPCD Rule 207 (New and Modified Stationary Source Review) and Rule 208 (Permit to Operate). Rule 207 applies to all new stationary sources and all modifications to existing stationary sources that emit or have the potential to emit one or more “affected pollutants” and includes the requirement that BACT be applied to any new or modified emissions unit with a potential to emit equal or greater than specified rates. Further Rule 208 includes inspection and approval by the Air Pollution Control Officer for the purpose of ensuring that all emissions from the Project will be subject to the Permit to Operate and finding that such equipment or facility is in compliance with all required

provisions of the permit. In addition, as noted on page ES-1 of the Draft EIR, the Project is located within the existing Heber 2 Geothermal Energy Complex that is subject to ICAPCD Authority to Construct and Permit to Operate 2217 as detailed on page 3.4-14. The Project would constitute a modification of the existing permit which includes requirements for BACT, monitoring, testing, and analyses, recordkeeping, and reporting as enforced by the ICAPCD. The ICAPCD has reviewed and approved preliminary emissions calculations provided in the Draft EIR and will confirm the emissions estimates as part of the permit application process to ensure that emissions are below the applicable thresholds and all regulatory requirements are met.

G A-36 Note that Sulfur Hexafluoride is identified as SF₆, rather than SF₅ noted in this comment. As stated on page 1-8 of Appendix D of the Draft EIR, CARB amended the Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear regulation in 2021 to further reduce GHG emissions from gas-insulated equipment. Key provisions of the amended regulation include a phase-out schedule for new sulfur hexafluoride gas-insulated equipment (January 1, 2025 for voltage less than 145 kV, January 1, 2029 for voltage between 145 and 245 kV, and January 1, 2031 for voltage greater than 245 kV). The Draft EIR assumes use of SF₆ gas for conservative GHG estimates for the remote potential scenario that SF₆ alternatives were not available at the time of construction. However, the Project proposes circuit breakers less than 145 kV, with installation not proposed until after January 1, 2025. There are currently numerous alternatives to SF₆ gas available on the market. As such, no SF₆ gas will be utilized in Project equipment with compliance with the applicable regulation.

G A-37 Please refer to preceding responses to comments G A-1 through G A-37.

G B-1 This comment is an introductory comment and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.

G B-2 Please refer to responses to comments G-39 through G-52.

G B-3 This comment provides a general summary of the project and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.

G B-4 Please refer to response to comments G B-5 and G B-8.

G B-5 Please refer to responses to comments G-48 and G-41.

G B-6 Please refer to response to comment G-48.

G B-7 Greater policy development in Imperial County is outside the purview of this EIR.

G B-8 The entire project site falls within the Geothermal Overlay Zone, which allows for the conversion of agricultural land for geothermal energy production with an approved CUP. Despite this, the permanent conversion of agricultural land classified as Prime Farmland and Farmland of Statewide Importance is considered a significant impact under CEQA. However, with respect to the proposed project, the conversion is identified as temporary in nature. As such replacement of agricultural lands is not required in order to mitigate the temporary conversion of agricultural land. Implementation of Mitigation Measure AG-1a would reduce the impact associated with the temporary conversion of important farmlands to non-agricultural uses to a level less than significant.

Specifically, as identified in the EIR, the following program is provided in the Agricultural Element:

No agricultural land designated except as provided in Exhibit C [of the Agricultural Element] shall be removed from the Agriculture category except where needed for use by a public agency, for geothermal purposes, where a mapping error may have occurred, or where a clear long-term economic benefit to the County can be demonstrated through the planning and environmental review process. The Board (or Planning Commission) shall be required to prepare and make specific findings and circulate same for 60 days (30 days for parcels considered under Exhibit C of this [Agricultural] element) before granting final approval of any proposal, which removes land from the Agriculture category.

The project would temporarily convert land designated as Prime Farmland and Farmland of Statewide Importance to non-agricultural uses, however, the project will be required to provide a “clear long-term economic benefit to the County” as required, by contributing to the County’s established public benefit agreement.

On March 1, 2011, the County Board of Supervisors adopted the Public Benefit Program. On January 24, 2012, the County Board of Supervisors adopted “Establishing Guidelines for the Public Benefit Program for use with Solar Power Plants in Imperial County.” As identified in these guidelines, “the County should receive an agricultural benefit when the solar project is being located on farmland within the County, which will be used for offsetting temporary negative effects to the community, local economy and agriculture industry. Such uses may include, but are not limited to, stewardship, protection, and enhancement of agricultural lands within Imperial County; tools, technology, and techniques for protection of agriculture commodities or increase of crop yields, and support of programs or projects that increase agriculture industry employment opportunities.” As stated, these are guidelines for negotiating specific agreements with developers of utility-scale solar projects. Further, these guidelines are periodically reviewed and updated, including the monetary assessments associated with the conversion of agricultural acreage. The Public Benefit Program has been in operation for over 10 years, and it has been successful in providing the intended benefits to both agricultural and community projects.

In summary, although the proposed project is a geothermal project, and the photovoltaic solar component is a parasitic solar system (i.e., it serves the geothermal plant), it has never the less been required to mitigate impacts as were determined appropriate by the County for utility-scale solar uses.

Please also refer to response to comment G-49.

G B-9 Please refer to response to comment G-49.

G B-10 Please refer to response to comment G-51.

G B-11 Please refer to response to comment G-41.

G B-12 Please refer to response to comment G-41. Draft EIR Section 2.6, Section 3, the Draft Reclamation Plan Applications and Revegetation Plans (Attachment M in Final EIR) document the existing conditions of the site. The site is presently used for alfalfa cultivation and the objective of the reclamation will be to return the site to a state of same/similar arable condition.

G B-13 See Draft EIR Section 2.6 and response to comment G-41. The Project will comply with Imperial County's requirements and process for site reclamation, whereas County Code 91702.01.H (Geothermal Project Drilling Standards) specify that "Prior to abandonment, it shall be the responsibility of the operator to comply with all regulations of the county and the State Division of Oil and Gas regarding surface and subsurface activities. In agricultural or potential agricultural areas, any brine holding ponds shall be purged of brine, the salts shall be removed from the dikes and bottom, and the berms leveled to the satisfaction of the landowners and the planning director."

With respect to the time period, as indicated on EIR page 4-3, "Project approvals would include 15-year CUPs, each with a single 15-year renewal."

G B-14 See Draft EIR Section 2.6, Responses G-41 and G B-13.

G B-15 Please refer to Response G-42.

G B-16 See Draft EIR Section 2.6 and Response G-41.

G B-17 See Draft EIR Section 2.6 and Response G-41.

G B-18 Please refer to responses G-39 through G-52.

G B-19 Please refer to responses G-39 through G-52.

G B-20 Please refer to responses G-39 through G-52.

G B-21 Conclusion statement is acknowledged.

G C-1 This is an introductory comment and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is necessary.

G C-2 This comment summarizes the qualifications of the commenter. This comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is necessary.

G C-3 The site visit and conditions observed, as indicated in this comment are acknowledged. As they relate to the findings of the Draft EIR, please refer to responses G-7 through G-17.

G C-4 Please refer to response G-12.

G C-5 Please refer to response G-12.

G C-6 Please refer to response G-12.

G C-7 Please refer to response to comment A-8. The 2023 Biological Resources Report included a reconnaissance-level habitat survey for general wildlife and plants present on the Project Site as well as preliminary identification of burrows that could be suitable for burrowing owls. The information on burrowing owl habitat in the 2023 report is superseded by the 2025 non-breeding and breeding season surveys and reports which were conducted utilizing the methods presented in CDFG 2012 and in response to CDFW comments. Section 3.5.1 of the EIR has been revised to include the results of those surveys. Additionally, MM BIO-8 addresses the potential impacts to American badger on the Project Site.

G C-8 Please refer to response to comment A-5. Additionally, the biological reconnaissance survey was conducted February 21, 2023 beginning at 10:00 am after the survey team checked in at the Ormat Heber Geothermal Complex to access to the fenced-in area. Surveys were conducted throughout the day and concluded at 5:40 pm (dusk). The biological survey team

was also present on the project site on February 22, 2023 at 8:00 am to conduct jurisdictional waters delineations.

G C-9 As explained in Section 3.5.1 of the Draft EIR and Appendix E, Catalyst biologists reviewed data from multiple governmental sources, including the U.S. Fish & Wildlife (USFWS) Information for Planning and Consultation (IPaC 2023), California Department of Fish & Wildlife (CDFW) California Natural Diversity Database (CNDDDB 2023), USFWS National Wetlands Inventory (2023), and U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil profile (2023). In addition, Catalyst biologists conducted habitat surveys to evaluate presence of wildlife at the Project site. Species occurrence determinations were based on an assortment of factors evaluated by biologists, including occurrence data, site visits, type and quality of habitat, and environmental conditions. Therefore, the Draft EIR accurately represents the biological baseline for the site.

The comment expresses a preference for use of data from eBird and iNaturalist for species occurrences. The data from these sources are based on crowdsourced entries by hobby birders and naturalists as opposed to data reported to CNDDDB, which is obtained by biological consultants, CDFW and other agency biologists, academics, researchers, and conservation groups such as CNPS and others. While eBird and iNaturalist records can be useful to provide an overview of species in a general area, it is important for results to be interpreted by a qualified biologist familiar with the conditions on site and who is assessing whether significant life history events would take place at a particular site for a particular species. As such, the comment does not present significant new information regarding biological resources that are already disclosed and analyzed in the Draft EIR.

Section 3.5.1 has been clarified with discussions of species with a low probability of occurrence in addition to those with a medium or high likelihood of occurrence that were included in the Draft EIR. No new impacts would occur from this clarification on species with low potential to occur in the greater vicinity of the Project, and potential impacts to biological resources would remain less than significant. See Response 7H for discussion of bats, Response 1E for discussion on burrowing owls, and Section 3.5.1 for discussions on special status species occurring in the project vicinity.

G C-10 Please refer to Response G-13.

G C-11 Modeling to predict the number of wildlife species is outside of the purview of this EIR. A detailed biological survey, including focused species surveys were conducted for the project and those species that were observed or otherwise have the potential to be present on the site based on database information has been identified, and appropriate mitigation measures have been identified based on the potential presence of biological resources on the project site.

G C-12 Please refer to response to comment G-34.

G C-13 Please refer to responses to comments A-6, G-16, and G-17.

No special status pollinators were identified as potentially occurring on the project site and alfalfa is not a protected plant community. Nevertheless, MM BIO-11 includes measures to reduce impacts to pollinators.

G C-14 Please refer to response to comment G-17.

G C-15 Please refer to responses to comments G-16, G-32, and G-42. Cumulative biological impacts are addressed in EIR Section 5 Cumulative Impacts.

G C-16 Please refer to response to comment G-32.

G C-17 Please refer to response to comment G-34. As provided in Section 3.2.2 of the Draft EIR, the Project would abide by Imperial County Land Use Ordinance, Title 9 which provides the County's specific direction for lighting requirements. Specifically, Project lighting would be directed or shielded to confine direct rays to the project site and muted to the maximum extent consistent with safety and operational necessity (Division 17: Section 91702.00 (Renewable Energy Resources – Specific Standards for all Renewable Energy Projects). Further, pursuant to the County's Noise Element, construction activities may only occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturday. Therefore, nighttime construction activities would not occur and thus, nighttime construction lighting would not be required.

G C-18 Please refer to response to comment G-34.

G C-19 Please refer to responses to comments G-34 and G-35.

G C-20 Please refer to responses to comments G-34 and G-35.

G C-21 Please refer to responses to comments G-34, G-37, and G-38.

OPR's Technical Advisory on Evaluating Transportation Impacts on CEQA (December 2018) recommends the use of VMT metrics when analyzing land use projects and plans. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact including those related to "Other Impacts to Health and Environment" such as collisions with wildlife (refer to page 2 and page 10 of OPR's Technical Advisory available here: https://lci.ca.gov/docs/20180416-743_technical_advisory_4.16.18.pdf).

G C-22 Please refer to responses to comments A-8 and B-5.

G C-23 Please refer to response to comment A-8 regarding burrowing owl mitigation and response to comment G-42 regarding land use conversion in Imperial County. As indicated in these responses, burrowing owl mitigation has been revised based on review and comment by CDFW, which has been deemed adequate to reduce potential burrowing owl impacts to a level less than significant. Other mitigation measures proposed include requirements for pre-construction nesting bird surveys (MM BIO-4), use of non-reflective materials and finishes on the solar panels (MM BIO-6), avian/power line collision avoidance and minimization (MM BIO-9), avian electrocution avoidance and minimization (MM BIO-10), and numerous other operational biological protection measures (MM BIO-11). Operational impacts have been determined to be less than significant with implementation of proposed mitigation measures. Similarly, other cumulative projects would be required to implement mitigation measures appropriate to the site specific conditions and project type for each project.

G C-24 Comment acknowledged.

G C-25 The requirement that pre-construction surveys be conducted no more than 3 days prior to the start of construction is so that pre-construction surveys would not otherwise be conducted well in advance of construction, therefore, allowing areas cleared by surveys (negative results) to be reoccupied by any nesting birds. Further, there is very limited nesting bird habitat on the site, and 3 survey days is ample time for a biology monitoring team to survey the entire project site, but more

importantly the specific area proposed for construction at that particular phase of construction. Biology monitors routinely survey and monitor sites of similar size as part of preconstruction monitoring requirements for solar projects within the County. Please refer to response to comment A-5.

G C-26 Please refer to responses to comments A-5, A-8, and G-34. Proposed mitigation measures will reduce potentially significant impacts to a less than significant level and no additional mitigation is required.

G C-27 Please refer to response to comment A-8.

G C-28 Please refer to response to comment G-34. Proposed mitigation measures will reduce potentially significant impacts to a less than significant level and no additional mitigation is required.

G C-29 Please refer to response to comment G-37. Proposed mitigation measures will reduce potentially significant impacts to a less-than-significant level and no additional mitigation is required.

G C-30 Please refer to responses to comments G-34 and A-8. Proposed mitigation measures will reduce potentially significant impacts to a less-than-significant level and no additional mitigation is required.

G C-31 Please refer to response to comment G-34. Proposed mitigation measures will reduce potentially significant impacts to a less-than-significant level and no additional mitigation is required.

G C-32 This comment does not address the adequacy of the EIR; therefore, no further response is necessary.

G D-1 This comment provides a general summary of the project and qualifications of Wilson Ihrig. This comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.

G D-2 Maximum modeled construction- and operation-related noise levels are presented in 3.13-3 and 3.13-4 of the Draft EIR. As shown, estimated noise levels for all activities are below 30 dBA. As stated on page 3.13-3, operational noise levels of an existing geothermal facility in Imperial County were recorded at 70 dBA Leq at approximately 100 feet, representative of noise levels at the existing Heber Geothermal Complex. The presumed ambient noise level of 50 dBA during the day and 45 dBA during the night is likely lower than actual ambient noise levels. As stated on page 3.13-8 of the Draft EIR, modeled construction noise levels less than ambient would not be expected to increase noise levels at the modeled receptors. In addition, as summarized in Table 3.13-4, project-related operational noise would be below, and thus in compliance with the Imperial County noise standards which limits the increase in future noise levels to 5 dBA CNEL above ambient noise levels as a result of the action within Noise Impact Zones that are currently within normally acceptable noise level guidelines. Specifically, the project-related operation noise is estimated to be less than the assumed ambient daytime noise level of 50 dBA Leq and nighttime noise level of 45 dBA Leq. Thus, due to the logarithmic principals of sound (i.e., the noise levels increase by 3 dBA when the number of similar noise sources double), the project would not have the potential result in an increase of 5 dBA CNEL above existing ambient noise levels for any ambient noise levels above approximately 30 dBA (which is likely in the Project area - in the case that actual ambient noise levels are greater than the presumed ambient noise levels, the Project cumulative noise would not be perceptible above ambient noise levels due to the logarithmic principals of sound).

Note that Section 90702.00 (Sound Level Limits) of the Imperial County Code of Ordinances states: *“It is unlawful for any person to cause noise by any means to the extent that the applicable one-hour average sound level set out in the following table is exceeded, at any location in the county of Imperial on or beyond the boundaries of the property on which the noise is produced. at any location in the county of Imperial on or beyond the boundaries of the property on which the noise is produced.” And that: “The sound level limit between two zoning districts (different land uses) shall be measured at the property line between the properties.”* The one-hour Average Sound Level limit for General Industrial land use zones is 75 dBA – as demonstrated by the noise model developed for the Project, construction and operation noise would be far below 75 dBA and thus would not result in a cumulative increase in existing noise levels (under the conservative assumption that existing noise levels at the facility are already at the limit of 75 dBA at the property boundary).

G D-3 Note that Section 91702.0(B) states: *“Each operator shall limit drilling noise to a sound level equivalent to CNEL sixty (60) dB(A). The level shown may be exceeded by ten percent (10%) if the noise is intermittent and during daylight hours. The noise levels shall be measured at the nearest human receptor site outside the parcel boundary.”* As such, the ordinance is clear that the 60 dBA CNEL noise limit is applicable only at the nearest sensitive receptor, i.e., residential structures nearest the drilling site. Drilling noise levels were modeled with the drill rig operating 24-hours/day – as detailed in Table 3.13-3 of the Draft EIR and further documented in Appendix K of the Draft EIR (see Figures 1 through 3 of Appendix K), the nearest human receptors are far outside the 60 dBA Leq noise contour. With the appropriate nighttime penalties applied, construction and drilling noise levels are also modeled to be far below the 60 dBA CNEL noise level contour at the nearest human receptor. The analysis does not assume “intermittent” and assumes that all drilling equipment will be operating simultaneously and continuously for 24-hour days for the duration of the construction phase.

G D-4 The commenter has misinterpreted the statement made in Appendix K regarding the noise level limits applicable to the Project. Section 90702.00(B) specifically states that the noise level limit for the land use where the noise is generated is applicable, which is 75 dBA at the property line for General Industrial land uses at the Project site. As demonstrated by the noise model developed for the Project, construction and operation noise would be far below 75 dBA and thus would not result in a cumulative increase in existing noise levels (under the conservative assumption that existing noise levels at the facility are already at the limit of 75 dBA at the property boundary). Therefore, ambient noise levels are not relevant because the conservative assumption of 75 dBA at the property boundary was assumed for the analysis.

G D-5 Please refer to response GD-1 through GD-4 and G-53 through G-57.



California Program Office
P.O. Box 401, Folsom, California 95753
www.defenders.org

November 13, 2024

Luis Valenzuela
Imperial County Planning Department
801 Main Street
El Centro, CA 92243
Delivered via email: luisvalenzuela@co.imperial.ca.us

RE: Comments on Dogwood Geothermal Energy Project CUP 23-0020/IS23/0026
Draft Environmental Impact Report (SCH 2024010510)

Dear Mr. Valenzuela,

Defenders of Wildlife (Defenders) respectfully submits these comments on the draft environmental impact report (DEIR) for the Dogwood Geothermal Energy Project (Project). Defenders is dedicated to protecting all wild animals and plants in their natural communities and has 2.1 million members and supporters in the United States, 316,000 of whom reside in California. We employ science, public education and participation, media, legislative advocacy, litigation, and proactive on-the-ground solutions to prevent the extinction of species, associated loss of biological diversity, and habitat alteration and destruction.

H-1

We strongly support the development of renewable energy production. A low-carbon energy future is critical for California's economy, communities, and environment. Achieving this future—and *how* we achieve it—is critical for protecting California's internationally treasured wildlife, landscapes, and diverse habitats. We believe transitioning to a renewable energy future need not exacerbate the ongoing extinction crisis by thoughtfully planning projects while protecting habitat critical to species.

H-2

The proposed 125 acre project consists of three interrelated sub-projects:

1. Dogwood Geothermal Project – a 25 megawatt (MW) geothermal energy facility that includes two 20,000 gallon aboveground isopentane storage tanks, a cooling tower, 7 MW solar photovoltaic (PV) field, a substation, and a gen-tie line from

H-3

National Headquarters | 1130 17th Street NW | Washington, DC 20036 | 202-682-9400

the proposed solar facility to the proposed geothermal facility. Excepting the solar field and gen-tie line, this project would be located within the fence line of the existing Heber 2 geothermal plant.

2. Heber 2 Solar Energy Project – 15 MW solar PV field directly connected to the existing Heber 2 geothermal power plant. The solar field is proposed to be sited southeast of the Heber 2 geothermal power plant on an alfalfa field.
3. Heber Reid Geothermal Wells and Pipeline Project - three new geothermal production wells, a new injection well, and an interconnecting pipeline. Two geothermal wells would be on the existing Heber 2 geothermal power plant site. The remainder of the project would be collocated with the proposed Dogwood and Heber 2 Solar Energy Projects.

H-3
cont.

The proposed Project is on private lands in southern Imperial County, one mile south of the City of Heber and 0.5 miles from the City of Calexico. The area surrounding the proposed project site includes solar fields, geothermal facilities, a construction and aggregate supply yard, alfalfa fields, and row crops.

The proposed Project site and the surrounding area provide potential habitat for numerous special status species including mountain plover (*Charadrius montanus*), merlin (*Falco columbarius*), long-billed curlew (*Numenius americanus*), northern harrier (*Circus hudsonius*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Setophaga petechia*), burrowing owl (*Athene cunicularia*), vermilion flycatcher (*Pyrocephalus rubinus*), Colorado Valley woodrat (*Neotoma albigula venusta*), western mastiff bat (*Eumops perotis californicus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), western yellow bat (*Lasiurus xanthinus*), and American badger (*Taxidea taxus*).¹ Long-billed curlew and northern harrier were observed on the proposed Project site during the applicant's biological surveys.

H-4

Comments

California Department of Fish and Wildlife Recommendations

We have reviewed the California Department of Fish and Wildlife's (CDFW) September

H-5

¹ California Natural Diversity Database. Accessed 11/5/24. <https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data>

30, 2024 comment letter on DEIR for the proposed Project.² We agree with their comments and support their recommendations. We strongly recommend the County revise the DEIR to incorporate their recommendations.

H-5
cont.

Permanent Conversion – Permanent Mitigation

Due to the unrelenting demand for renewable energy and the significant transmission investment required, utility-scale solar development such as the proposed Project can be reasonably expected to remain in energy production or another industrial use far beyond the Project's initial 30 years. These projects are a permanent conversion of land use and, as such, require impact analysis and mitigation that addresses the permanent nature of the impacts. Furthermore, the ownership and/or management of the proposed Project can be reasonably expected to change over time. The proposed mitigation measures, particularly those associated with project operations and management, become meaningless if their durability is not ensured.

H-6

Burrowing Owl

Suitable potential burrows have been observed at the proposed Project site. Burrowing owls have been listed as a candidate species under the California Endangered Species Act. As a candidate for listing, the species is temporarily afforded the same protections as a state-listed endangered or threatened species. **BIO-4** needs to be revised to reflect the burrowing owl's candidate status and the need for an incidental take permit from CDFW.

H-7

Cumulative Impact Analysis

Although we encourage the development of renewable energy projects, it is causing significant and unavoidable adverse cumulative impacts on wildlife and their habitats. The DEIR dismisses the potential for significant impacts due to the mitigation measures proposed yet fails to consider the cumulative loss of habitat for the suite of special status species including burrowing owls that rely on this landscape. The DEIR should be revised to include a comprehensive cumulative impacts analysis for the loss of habitat for these species.

H-8

Conclusion

Thank you for consideration of our comments. We look forward to reviewing the Final EIR. Please contact Pamela Flick at (916) 442-5746 or pflick@defenders.org or Kate

H-9

² https://ceqanet.cpr.ca.gov/2024010510/4/Attachment/tm_FRZ

Kelly at (530) 902-1615 or kate@kgconsulting.net with any questions.

H-9
cont.

Sincerely,

Pamela Flick
California Program Director

Kate Kelly
Consultant

Defenders of Wildlife

November 13, 2024

- H-1** This comment is an introductory comment and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- H-2** Comment acknowledged.
- H-3** This comment provides a general summary of the project and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- H-4** This comment identifies the special-species with potential habitat on the project site and surrounding area, and the species observed during the Applicants' biological surveys. This comment does not raise a specific issue related to the adequacy of the Draft EIR; therefore no further response is required, and the comment is noted for the record.
- H-5** This comment states Defender of Wildlife has reviewed CDFW's September 30, 2024 comment letter on the Draft EIR for the proposed project and recommend that the County revise the Draft EIR to incorporate their recommendations. Please refer to responses to comments A-4, A-5, A-6, and A-8 regarding revisions to mitigation measures in the Final EIR per CDFW's recommendations in their September 30, 2024 comment letter on the Draft EIR.
- H-6** Please see Section 2.6 (Restoration of the Project Site) of the Draft EIR and Response G-41.
- H-7** Please refer to response to comment A-8.
- H-8** Please refer to response to comment G-59. Also, as provided in Chapter 5.0, Cumulative Impacts of the Draft EIR (Sections 5.1 and 5.3.4), the Draft EIR considers cumulative impacts from land use conversion to biological resources and habitat, including for burrowing owl specifically. Further, as provided in response to comment A-8, Mitigation Measure BIO-4 has been revised in the Final EIR such that, where there will be permanent impacts to occupied burrowing owl habitat, that habitat will be replaced with permanent conservation of similar vegetation communities. Such conservation measures would offset the Project's impacts on burrowing owl habitat loss should burrowing owls be discovered to be using the site as burrow habitat. Therefore, the Project would not significantly contribute to the cumulative loss of burrowing owl habitat.
- H-9** The contact information is received and acknowledged.

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2898



TELEPHONE: (442) 265-1880
FAX: (442) 265-1799

January 13, 2025

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

RECEIVED

By Imperial County Planning & Development Services at 1:04 pm, Jan 14, 2025

SUBJECT: Review of Draft Environmental Impact Report & Appendix D Air Quality and Greenhouse Gas Technical Report for Dogwood Geothermal Energy Project, Heber 2 Parasitic Solar Project, and Heber Field Company Geothermal Wells and Pipeline Project

Dear Mr. Minnick:

The Imperial County Air Pollution Control District (Air District) appreciates the opportunity to review and comment on Administrative Review (ADM) of Draft Environmental Impact Report (DEIR) and Appendix D Air Quality and Greenhouse Gas Technical Report for Dogwood Geothermal Energy Project, Heber 2 Parasitic Solar Project, and Heber Field Company Geothermal Wells and Pipeline Project (Project). The project proposes the development of an Integrated Two Level Unit (ITLU) Air Cooled Ormat Energy Converter (OEC), two 20,000-gallon isopentane tanks, a 7 MW parasitic solar facility, underground distribution line, and substation under CUP 23-0020. The development of a 15 MW solar energy facility that will provide a parasitic load to the existing Heber 2 plant under CUP 23-0021. Finally, the development of up to six geothermal production wells, one geothermal injection well, and approximately 4, 500 linear feet of new pipeline under CUP 23-0022. The project spans across portions of three parcels: Assessor Parcel Numbers (APN) 054-250-031, 059-020-001, and 054-250-017. APN 054-250-31 is within the existing Heber 2 Geothermal Energy Complex (HGEC) located at 855 Dogwood Road, Heber, CA, and APN 059-020-001 and APN 054-250-017 are immediately southeast and east, respectively, of the HGEC.

I-1

The Air District previously provided comments in a letter dated October 2, 2024 and the majority of its comments remain relative and will be reiterated here, with one distinct addition: at the time of its earlier comments the Air Quality Analysis and associated CalEEMod analysis for the project, found in Appendix D, had not been provided to the Air District for review. Since then, the Air District has reviewed the documents and was able to satisfactorily recreate the CalEEMod outputs and finds the analysis is consistent with Air District Guidelines.

I-2

The AQA for the project is identified as Appendix D – Air Quality and Greenhouse Gas Technical Report which identified six mitigation measures identified as MM AQ-1, MM AQ-2, MM AQ-3, MM AQ-4, MM AQ-5, and MM AQ-6 to be implemented for the project to maintain emissions below thresholds of significance. Air District staff reviews all AQAs to ensure enforceability and consistency of air analysis methodology to the Imperial County Air Pollution Control District CEQA Air Quality Handbook (Handbook), Air District Rules & Regulations, and Air District guidelines. Given the permitting requirements of the project in conjunction with the implementation of mitigation measures MM AQ-1 – MM AQ-6, and the satisfactory recreation of CalEEMod results the Air District can concur the mitigation measure are consistent with those used to maintain this type of project at less than significant impact levels given historical implementation with one update for AQ-4.

I-3

The AQA in Table 13 Mitigated Project Construction – Generated Emissions finds the construction PM10 emissions exceed emission thresholds, however, the document correctly states the guidance in the Handbook is to address construction emissions qualitatively. Given the CalEEMod information the Construction Dust Control Plan as discussed in AQ-4 must be an **Enhanced Dust Control Plan**, which must exceed the standard measures of the Dust Control Plan. The forms for the Construction Dust Control Plan can be found at <https://apcd.imperialcounty.org/planning/#construction>, the Air District also requests the applicant submit a Construction Notification Form 10 days prior to earthmoving beginning for the project.

I-4

The Air District considered the project in portions consisting of the construction and operation of each of the geothermal expansion/wells and the solar field project. Review of office records shows the existing facility identified as Heber 2, as currently constructed and operating, operates under Air District Permit to Operate #2217. Given the proposed developments of the project, the applicant will need to submit an amended application for engineering review of the facility and must be issued an Authority to Construct/Permit to Operate (ATC/PTO) prior to construction of the project beginning. The applicant must submit a permit application for engineering review of the project, pay the applicable review fees, and coordinate with the Air District Engineering and Permitting Division directly to determine the permitting requirements of the project. The solar portion of the project will not fall under engineering permitting.

I-5

MM AQ-1 – MM AQ-6 mitigation measures are identified in the AQA as:

MM AQ-1 Construction Equipment.

All off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-road Compression-Ignition Engines as specified in CCR, Title 13, Section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final Engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NOx and particulate matter emissions that are equivalent to Tier 4 engine. Drill Rig engines shall meet a minimum of Tier 4 Interim California Emission Standards. A list of the

I-6

Construction equipment, including all off-road equipment utilized at the project site by make, model, year, horsepower and expected/actual hours of use, and the associated EPA Tier shall be submitted to the County Planning and Development Services Department and ICAPCD prior to the issuance of a grading permit. The equipment list shall be submitted periodically to ICAPCD to perform NOx Analysis. ICAPCD shall utilize his list to calculate air emissions to verify that equipment use does not exceed the significance thresholds. The Planning and Development Services Department and ICAPCD shall verify implementation of this measure.

MM AQ-2 Fugitive Dust Control

Pursuant to ICAPCD, all construction sites, regardless of size, must comply with the requirements contained within Regulation VIII – Fugitive Dust Control Measures. ICAPCD will verify implementation and compliance with these measures as part of the grading permit review/approval process.

ICAPCD Standard Measures for Fugitive Dust (PM10) Control

- All disturbed areas, including bulk material storage, which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative ground cover.
- All on-site and offsite unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- All unpaved traffic areas 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material.
- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.
- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants, and/or watering.

Standard Mitigation Measures for Construction Combustion Equipment

- Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.

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cont.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- When commercially available, replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

MM AQ-3 Dust Suppression.

The project applicant shall employ a method of dust suppression (such as water or chemical stabilization) approved by ICAPCD. All unpaved roads associated with construction shall be effectively stabilized of dust emissions using stabilizers/suppressant before the commencement of all construction phases. This will be conducted monthly at a rate of 0.1 gallon/ square yard of chemical dust suppressant. The project applicant shall apply chemical stabilization as directed by the product manufacturer to control dust between the panels as approved by ICAPCD, and other non-used areas (exceptions will be the paved entrance and parking area, and Fire Department access/emergency entry/exit points as approved by Fire/Office of Emergency Services [OES] Department).

MM AQ-4 Dust Suppression Management Plan.

Prior to any earthmoving activity, the applicant shall submit a construction dust control plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

MM AQ-5 Speed Limit.

During construction and operation of the proposed project, the applicant shall limit the speed of all vehicles operating onsite on unpaved roads to 15 miles per hour or less.

MM AQ-6 Operational Dust Control Plan.

Prior to issuance of a Certificate of Occupancy, the applicant shall submit an operations dust control plan and obtain ICAPCD and ICPDS approval. ICAPCD Rule 301 Operational Fees apply to any project applying for a building permit. At the time that building permits are submitted for the proposed project, ICAPCD shall review the project to determine if Rule 310 fees are applicable to the project.

The construction emissions of both the geothermal expansion/wells and the solar field will be controlled via mitigation measures MM AQ-1 – MM AQ-6, the geothermal expansion/wells construction emissions will also be controlled via the ATC/PTO. Operational emissions of the geothermal expansion will be controlled via the ATC/PTO, which must be maintained active during operation, and relevant Rules and Regulations. Finally, operational emissions of the solar field will be controlled via the approved Operational Dust Control Plan, which is periodically reviewed for consistent implementation.

The Air District requests MM AQ-1 – MM AQ-6 be included as conditions of the CUP, with the following changes in language to MM AQ-4:

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cont.

AQ-4 Dust Suppression Management Plan.

Prior to any earthmoving activity, the applicant shall submit an **enhanced** construction dust control plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

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cont.

The Air District also requests a copy of each draft CUP prior to recording for review of relevant conditions of the CUP.

I-7

The Air District would like to remind the applicant that the equipment lists as described in MM AQ-1 will be used to calculate NOx emissions during construction to ensure emission threshold limits are not exceeded. If the Air District determines NOx thresholds were exceeded the project may be subject to Policy 5 fee requirements. Finally, the Air District would inform the applicant that as part of AQ-5, finalization of the Operational Dust Control Plan will require a site visit by Air District staff.

I-8

All Air District rules and regulations can be found for review on our website at <https://apcd.imperialcounty.org/rules-and-regulations/>. Please contact our office at (442) 265-1800 if you have any further questions or concerns.

I-9

Respectfully,


Ismael Garcia
Environmental Coordinator


Monica N. Soucier
APC Division Manager

Imperial County Air Pollution Control District

January 13, 2025

- I-1** This is an introductory comment and provides a general summary of the project and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- I-2** Please refer to response to comment C-3. This comment states that ICAPCD confirms that the emissions modeling is accurate and consistent with Air District guidelines.
- I-3** Please refer to response to comment C-3. This comment indicates that the mitigation measures are consistent with Air District guidelines and potential impacts would be less than significant.
- I-4** Please refer to response to comment C-4.
- I-5** Please refer to response to comment C-5.
- I-6** This comment summarizes the Project's air quality mitigation measures from the Draft EIR and does not raise a specific issue related to the adequacy of the Draft EIR; therefore, no further response is required, and the comment is noted for the record.
- I-7** Comment acknowledged. The Project Applicants will provide ICAPCD a copy of each draft CUP for the Project.
- I-8** Comment acknowledged.
- I-9** The ICAPCD rules and regulations and contact information is received and acknowledged.

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