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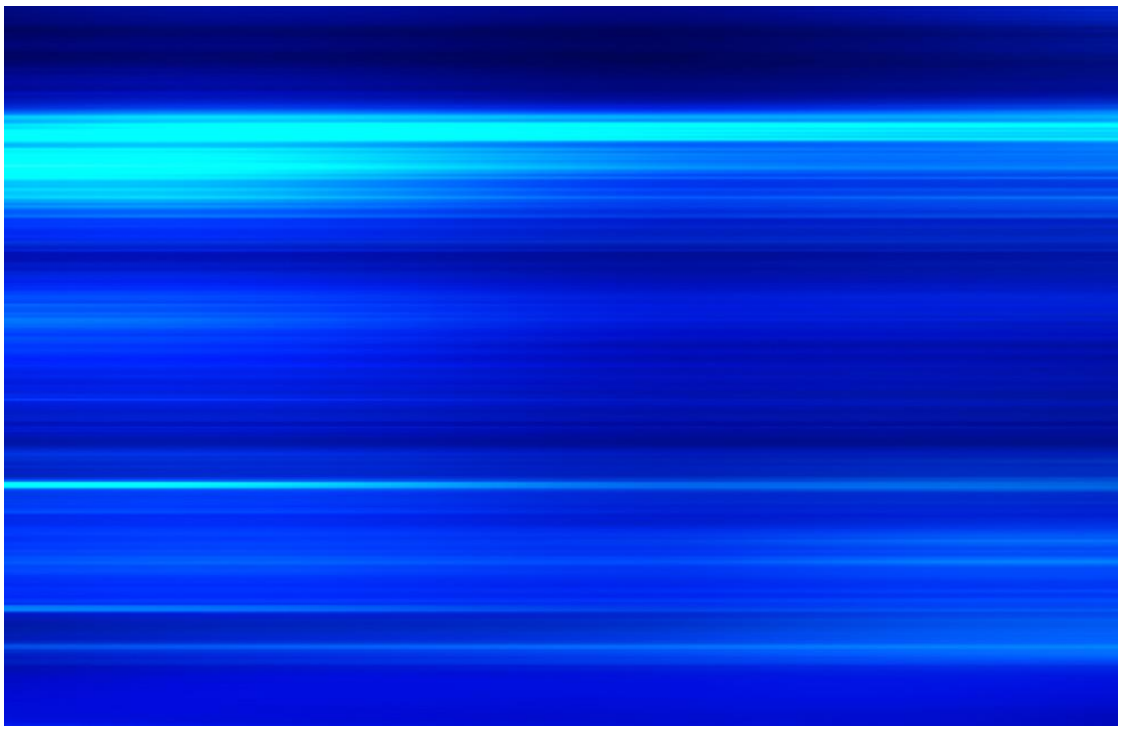
Morton Bay Geothermal Project (23-AFC-01) Preliminary Staff Assessment Comments

Submitted to
California Energy Commission

Prepared by
Morton Bay Geothermal LLC

With assistance from
Jacobs

September 4, 2024



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1. Introduction

Listed below, for California Energy Commission (CEC) staff's consideration, are initial comments from Morton Bay Geothermal LLC (the Applicant) on the Preliminary Staff Assessment (PSA) for the Morton Bay Geothermal Project (MBGP or Project) Application for Certification (AFC) (23-AFC-02). These comments address the MBGP PSA and respond to some of the comments made at the Preliminary Staff Assessment Technical and Mitigation Workshop held from July 31-August 1, 2024. The Applicant anticipates that additional comments will be submitted to further respond to comments and statements made at the Preliminary Staff Assessment Technical and Mitigation Workshop and the Public Workshop on Tribal Mitigation to be held on September 6, 2024.

2. Global Comments

While the Applicant has endeavored to identify each instance that requires correction, these are global changes that should be made prior to publication of the Final Staff Assessment:

- Morton Bay Geothermal LLC is the Applicant for only the Morton Bay Geothermal Project. The Elmore North Geothermal Project and Black Rock Geothermal Project are proposed by different applicants, Elmore North Geothermal LLC and Black Rock Geothermal LLC, respectively.
- The MBGP plant site is 51 acres within a 160-acre parcel.
- Demolition is not included as part of the project.
- The MBGP will have a total of 10 well pads and 20 wells:
  - Three (3) injection well pads with 11 injection wells
  - One (1) future injection well pad
  - Five (5) production well pads with nine (9) production wells
  - One (1) future production well pad
- A single 9-cell cooling tower
- For all engineering COCs, after "X days", please add the following, "(or project owner- and DCBO-approved alternative time frame)". For example:
  - "At least 15 days (or project owner- and DCBO-approved alternative time frame) prior to the start of ..."
- Change all references in COCs from "in accordance with the ~~2022 CBC~~" to "in accordance with **GEN-1**".
- The process water supply should be described as follows:
  - Backup delivery point (when the primary canal is out of service and IID has been notified) is via a new gate from P Lateral, in the vicinity of Gate P-31-001 on Hazard Road, which is located north of the site.
- Up to four emergency standby diesel fueled engines.
  - Three generators, output of 3.25 MW
  - One fire water pump, output of 160 volts
- Temporary offsite project components that could be used as needed during construction include a total of up to 16 sites:
  - Up to ten laydown and parking yards,
  - Two construction camps, and
  - Up to four temporary borrow pits.
- The laydown, parking yards, construction camps, and borrow pits are within the CEC's jurisdiction, and should not be permitted separately by the County of Imperial.
- The height of the tallest feature is the crystallizer at 98 feet. The tallest gen tie poles would be approximately 150 feet.
- In several sections, the scope of the CEC's jurisdiction is described to include "thermal resource conveyance pipelines from the first production and injection wells to the powerplant." The PSA should be revised to clarify that the CEC's jurisdiction does not include the thermal resource conveyance

pipelines, as Public Resources Code section 25120 specifically exempts "resource transmission lines" from the scope of the CEC's jurisdiction. The PSA should be revised to state that Imperial County has jurisdiction over the steam field, production and injection wells, and all associated pipelines, including the thermal resource conveyance pipelines.

- The length of the gen-tie lie from the Morton Bay power plant to the Imperial Irrigation District switching station is approximately 2.8 miles.
- Please revise text from "labor camp" to "construction camp".
- Proposed Condition of Certification COM-15 provides for closure planning of the facility. As part of this process, the Applicant will prepare a plan to ensure that permanent closure will comply with all applicable LORS, identifies and assesses all potential direct, indirect, and cumulative impacts of closure, and proposes mitigation measures to reduce significance adverse impacts to less-than-significant. Given the expected operational life of the MBGP and to provide clarity and ease of implementation, the Applicant proposes the deletion of references to "decommissioning" in all other conditions of certification.
- The page numbering of Section 5.16, Water Resources is duplicative of Section 5.15, Visual Resources.

3. Executive Summary, Introduction, Project Description

3.1 Executive Summary

Page 1-1, Introduction, 1st Paragraph, 1st Sentence – The correct legal entity for the Morton Bay Geothermal project is Morton Bay Geothermal LLC (no comma between Geothermal and LLC).

Page 1-1, Introduction, 1st Paragraph, 6th Sentence – The project would consist of **an approximately** 157-megawatt (MW) **gross** (140 MW net) electricity generating facility powered by steam sourced from ~~super-heated~~ geothermal brine.

Page 1-5, Land Use, Agriculture, and Forestry – This section should be revised to update, clarify and correct several statements.

First, the MBGP does not exceed any height requirements for military air use. Further, the Federal Aviation Administration provided a determination of no hazard to air navigation on June 17, 2024. As part of this process, the FAA consults with the Department of Defense. The Applicant also met with the U.S. Marine Corps (USMC) on July 23, 2024. On August 15, 2024, the USMC concluded that there were no negative impacts to USMC operations associated with the geothermal projects. These updates were shared with the OSD Renewable Energy Clearing House and the Informal Review and Discussion was closed out.

Second, the Applicant will be contracting with IID to obtain water for the Project and will not "encroach" on water use rights of IID.

> Land Use, Agriculture, and Forestry. Less Than Significant with Mitigation Incorporated. The project will result in loss of Farmland of Statewide Significance~~, potentially exceed height requirements for military air use, and potentially encroach on water use rights of IID~~. Despite the conversion of approximately 117 acres of "Important Farmland" (inclusive of the IID Sinclair switching station), with implementation of staff's recommended COCs, the project would have a less than significant impact related to land use, agriculture and forestry and would conform with applicable LORS. The county Land Use Element identifies farmland mitigation methods, and conditional use permits will be obtained for project elements under County regulation (see Section 3.1, Project Description). ~~Until staff receives project review comments from the Department of Defense, the project's conformance with Goal 6 of the Imperial County General Plan, "Support development of renewable energy while providing for the protection of military aviation and operations", is undetermined.~~

Page 1-9, Table 1-2 Master Cumulative Project List, Rows 1 and 2 – The correct legal entity for the Black Rock and Elmore North Geothermal projects are Black Rock Geothermal LLC and Elmore North Geothermal LLC (no comma between Geothermal and LLC). Please search the rest of the PSA to correct the legal entities owning the projects.

3.2 Introduction

The Applicant does not have any comments on this section of the PSA.

3.3 Project Description

General Comments

As described in Section 5.4, Cultural and Tribal Cultural Resources Comments, representatives for the Applicant are actively engaged in discussions with local California Native American tribes, primarily the Kwaaymii Laguna Band of Indians ("Kwaaymii"), with respect to the MBGP. Through the course of discussions, the Kwaaymii requested that the Applicant consider modifying the MBGP to improve line of sight between Red Hill and the Old Mud Pots. The Applicant believes that it has identified a site reconfiguration that will address tribal concerns by enhancing the line of sight between Red Hill and the Old Mud Pots. The site reconfiguration would include rotating the cooling tower to an east-west orientation and adjusting the MBGP's freshwater pond location. The Applicant anticipates that this proposed site reconfiguration will be discussed more at the Tribal Mitigation Public Workshop to be held on September 6, 2024.

Specific Comments

Page 3-1, Overview, 1st Paragraph, 4th Sentence – MBGP's maximum continuous rating would be approximately 157 megawatts (MW) gross output, an expected net output of approximately 140 MW, with a maximum annual electrical production of 1,226,400 **net** MW-hours.

Page 3-1, Overview, 1st Paragraph, 9th Bullet – MBGP will have a total of 20 wells (9 production and 11 injection) on 8 well pads with one spare production and injection well pad.

Page 3-1, Overview, 3rd Paragraph – the scope of CEC jurisdiction should be clarified in this paragraph, Public Resources Code section 25120 specifically provides that "Exploratory, development, and production wells, resource transmission lines, and other related facilities used in connection with a geothermal exploratory project or a geothermal field development project are not appurtenant facilities for the purposes of this division." Therefore, thermal resource conveyance pipelines are specifically excluded from the scope of the CEC's preemptive authority under the Warren Alquist Act. This paragraph should be clarified as follows:

> "For a geothermal project Public Resources Code sections 25120 and 25500, and California Code of Regulations, title 20, section 1201(q), set forth the scope of the CEC's certification to include the powerplant, site, and related facilities. In this case a certification by the CEC would authorize the applicant to develop the site and construct and operate the powerplant, along with linears connecting to the powerplant such as the transmission (gen-tie) line from the powerplant to the first point of interconnection, ~~thermal resource conveyance pipelines from the first production and injection wells to the powerplant~~, and any water pipelines to the project. These components will be fully analyzed and where appropriate, mitigation will be imposed on the project."

Page 3-2, Section 3.2, 2nd Paragraph, 3rd Sentence – Please add punctuation to this sentence as noted. The MBGP facility would utilize geothermal fluid from the production wells near the power generating facility**.**

Pages 3-2 through 3-3, Section 3.2, 2nd Paragraph, Last Sentence – Successive flashing ultimately produces low pressure steam **which along with high pressure and standard pressure steam will** ~~to~~ be used in the steam turbine to produce electricity.

Page 3-7, Section 3.2.2 Geothermal Resource (Electricity) Production Facility (RPF) – The first paragraph of this section details the RPF, where geothermal fluid is collected and processed, and second paragraph discusses the Resource Generation Facility (PGF), where electricity is generated. The second paragraph should be titled Resource Generation Facility to avoid confusion.

Page 3-7, Section 3.2.2 Geothermal Resource (Electricity) Production Facility (RPF), Last Paragraph, 2nd Sentence – States that there are "three emergency standby diesel fueled engines (two generators and one fire water pump)", which is incorrect. Section 3.2.5 Major Electrical Equipment and Support Systems, Facility Startup Power and Standby Emergency Power section correctly states that there are three standby diesel engine generators.

Page 3-8, AC Power Distribution System, 1st Paragraph – Suggested flexibility added: "The medium-voltage auxiliary load is supplied by ~~two separate~~ 4,160-volt switchgear~~s~~, each with an incoming main circuit breaker supplied by a 13,800-4,160-volt auxiliary transformer. ~~A 4,160-volt cable tie is connected to a 4,160-volt tie circuit breaker connected in each switchgear. One of the 4,160-volt tie circuit breakers is normally open, and~~ each 13,800-4,160-volt auxiliary transformer is sized for the installed 4,160-volt station auxiliary load. Paralleling standby generators are connected through circuit breakers to one 4,160-volt switchgear."

Page 3-9, Facility Startup Power and Standby Emergency Power, 2nd Paragraph – All three of the emergency diesel engines will be rated at 3.25 megawatts (see November 10, 2023 filing).

Page 3-10, Section 3.2.5. The following text should be removed. The MBGP is owned by Morton Bay Geothermal LLC.

> "Electricity generated by the MBGP will be delivered to a substation near the northeast corner of the MBGP site. This substation will deliver energy through a generation interconnection (gen-tie) line into the Imperial Irrigation District (IID) transmission system at a new as-yet-to-be built 230 kV switching station near the intersection of Garst Road and West Sinclair Road, approximately 2.3 miles from MBGP, adjacent to the proposed Elmore North geothermal project, ~~under the same ownership~~. "

Page 3-12, Section 3.2.7, Process Water, Reverse Osmosis Potable Water Supply, and Dilution Water, 1st Paragraph, 2nd Sentence – The secondary delivery point for the IID canal water will be a new gate from P Lateral, in the vicinity of Gate P-31-001 on Hazard Road, which is located north of the site.

Page 3-12, Section 3.2.7, Fluid Process Streams, 1st Paragraph, 2nd Sentence – **In overflow conditions, this spent geothermal fluid would be directed to the Class II surface impoundment.** The maximum daily peak flow of waste to the brine pond (ultimately to the injection wells) is **approximately** 81~~5~~**3** gallons per minute (gpm), and the annual average discharge is **approximately** 1,311 afy.

Page 3-14, Section 3.2.8, Non-Hazardous and Hazardous Waste Management, 2nd Paragraph – A discussion of hazardous wastes generated during construction implies, in the parenthetical phrase, that filter cake is generated as part of construction hazardous wastes. Filter cake is not generated during construction – only operation of the facility.

Page 3-15, Section 3.2.9, Solid Waste Management, Construction and Operations, 2nd Paragraph, 3rd Sentence – Following this clarification process, the solids slurry discharging from the bottom of the clarifiers will be directed to a **solids dewatering** ~~vacuum~~ filtration system.

Page 3-15, Section 3.2.9, Solid Waste Management, Construction and Operations, 2nd Paragraph, 4th Sentence – The slurry feed from the clarifiers to the filtration system **may** ~~will~~ be acidified to prevent heavy metal precipitation in the filtration system.

Page 3-16, 3.2.10 Eligible Renewable Resources and Control Philosophy – This section should be revised as follows:

> "The MBGP is an eligible renewable energy resource as defined by California Public Utilities Commission (CPUC) and fits the definition of a renewable electrical generation facility. MBGP plans to generate geothermal energy 24 hours per day, 365 days per year (except during major

maintenance years) and has a designed capacity factor of 95 percent or higher. MBGP will be designed with a high degree of automation to reduce the required actions performed by operating personnel. **An operation team will be on site for each shift to oversee operations processes and ensure safe and reliable operations**. ~~A small core team of personnel (3-5) can be expected to be on site on a regular basis~~."

Page 3-17, Section 3.3, 2nd Paragraph – The Applicant recommends the following changes to clarify the scope of CEC jurisdiction:

"MBGP and related facilities:

- Construction of power plant facilities and all on-site ancillary equipment
- Construction of gen-tie line to first point of interconnect
- Construction of water supply pipeline
- ~~Construction of conveyance pipeline to the first well~~

Other:

- **Geothermal resource conveyance lines**
- Drilling operations for production and injection wells
- Siting and erection of conveyance pipelines in the well complex
- switching station for the IID transmission system, including:
- Installing foundations,
- Assembling and erecting the structures,
- Clearing, pulling, and stringing lines,
- Installing ground wires and conductors,
- Installing counterpoise/ground rods,
- Cleanup and site reclamation **for non CEC-jurisdictional areas**."

Page 3-18, Section 3.3, subsection Construction, 2nd Paragraph, 2nd Sentence – The maximum number of laborers (536) and supervisors (24) is 560.

Page 3-18, Section 3.3, subsection Construction, 2nd Paragraph, 4th Sentence – Workers including construction craft employees, supervisory and support staff, and construction management personnel, can be expected to be onsite during typical construction working hours~~, between 7 am and 8 pm,~~ with ~~the possibility of~~ adjustment to night and early morning work hours for avoid daytime summer temperatures and possible adjustment for shortened winter daylight hours~~.~~, Further work hour adjustments are possible for specialize work such as concrete pours, or for noisy construction activities.

Page 3-18, Section 3.4 Ancillary Facilities, Last Three Sentences –Applicant is seeking flexibility on air compressor equipment. "An integral plant instrument air system provides compressed, dry air for use in instruments and control devices. A standby air compressor and standby ancillary equipment (regenerative air drier, receiver, and instrumentation) also ~~will~~ **may** be provided for added reliability."

Page 3-19, Well Fields, Well Pads, Wells, and Pipelines, 1st Paragraph, 1st Sentence – Production and injection well pads constitute approximately **2 to 4.5 acres per well pad** ~~53 acres~~.

Page 3-19, Well Fields, Well Pads, Wells, and Pipelines, 2nd and 3rd Sentences – The number of injection wells and well pads is incorrect. Update as follows: "The proposed project will have nine production wells (on five well pads), and 11 injection wells (on ~~six~~ **three** well pads). One additional **production and** injection well pad (backup) **are** ~~is~~ identified for resource support."

Page 3-22, Section 3.6 Plant Safety and Risk Reduction Systems, Fire Protection, Last Paragraph–Please correct from "There are power and distribution ~~controls~~ (PDCs)…", to state, "There are power distribution centers (PDCs)…".

Page 3-23, Public Health and Emergency Response, 3rd Paragraph, 3rd and 4th Sentences–"Ambulances will be dispatched from Imperial by the Calipatria emergency response team. The nearest hospital is in Imperial;" the nearest hospital is in Brawley and the ambulances will be dispatched from Brawley.

Page 3-24, Pipeline Safety, 1st Paragraph, Last Sentence –Text should be replaced as geothermal fluids are not recirculated to warm the production well piping during a well start up. "~~Steam and fluid are recirculated from the plant back to the production well, slowly warming and pressurizing the pipeline prior to placing the well in service.~~" Suggested revised sentence – "During a well start up, geothermal fluid is flowed through a warmup pipeline until reaching operational pressures and temperatures when geothermal fluid will then be flowed through the production pipeline to slowly warm the piping."

Page 3-25, Section 3.6 Grounding, Cathodic Protection and Lightning Protection, refers to NFPA 78. This should refer to NFPA 780.

As described in Section 5.4, Cultural and Tribal Cultural Resources Comments, representatives for the Applicant are actively engaged in discussions with local California Native American tribes, primarily the Kwaaymii Laguna Band of Indians ("Kwaaymii"), with respect to the MBGP. Through the course of discussions, the Kwaaymii requested that the Applicant consider modifying the MBGP to improve line of sight between Red Hill and the Old Mud Pots. The Applicant believes that it has identified a site reconfiguration that will address tribal concerns by enhancing the line of sight between Red Hill and the Old Mud Pots. The site reconfiguration would include rotating the cooling tower to an east-west orientation and adjusting the MBGP's freshwater pond location. The Applicant anticipates that this proposed site reconfiguration will be discussed more at the Tribal Mitigation Public Workshop to be held on September 6, 2024.

4. Engineering Evaluation

4.1 Facility Design

Page 4.1-2, Table 4.1-1 COMPLIANCE WITH APPLICABLE LORS – The Applicable LORS column, General section, of Table 4.1-1 includes "ASME TDP-1 Prevention of Water Damage to Steam Turbines". The ASME TDP-1-2023 standard's complete title is "Prevention of Water Damage to Steam Turbines Used for Electric Power Generation: Fossil-Fueled Plants". The scope of this standard is for steam turbines used in fossil-fuel-fired power plants, as described in the title and in section 1 Scope (excerpted below):

1 SCOPE

This Standard includes required and recommended practices concerned primarily with the prevention of water damage to steam turbines used for fossil-fuel-fired electric power generation. The practices address damage due to water, wet steam, and steam backflow into a steam turbine. The practices are applicable to conventional steam cycle, combined-cycle, and cogeneration plants. The practices cover design, operation, inspection, testing, and maintenance of those aspects of the following power plant systems and equipment concerned with preventing the induction of water into steam turbines:

The standard is not applicable to steam turbines using geothermally-sourced steam, and therefore may contain requirements that are not applicable or even detrimental to the design or operation of this project. The General section of Table 4.1-1 should be revised by the deletion of "ASME TDP-1 Prevention of Water Damage to Steam Turbines" as an applicable LORS. Also, COC MECH-1/MM MECH-1 (page 4.1-14) should be revised to delete the reference to ASME TDP-1.

Page 4.1-3, GEN-1, 1st Paragraph, Last Sentence – Please remove the word "demolition" as demolition is not part of the proposed project. Revisions are provided in Attachment A.

Page 4.1-4, GEN-1, Verification, 2nd paragraph – Please add "or non-routine" before the word "repair" so that the project owner doesn't burden the CPM with unnecessary notifications. Revisions are provided in Attachment A.

Page 4.1-4, GEN-2, 1st Paragraph, Last Sentence – To clarify the intent that the CPM may request a copy of certain submittal packages when those packages are submitted to the DCBO, or subsequent to submittal to the DCBO, COC GEN-2/MM GEN-2 should be revised as described in Attachment A.

Page 4.1-5, GEN-3, 1st Paragraph, Last Sentence and Verification – Please make minor changes to the language to remove the specific California Building Code edition and to allow the project owner to submit documentation confirming that payments are being made to the DCBO. Revisions are provided in Attachment A.

Page 4.1-6, GEN-4, 1st Paragraph – Please replace gendered language (or his delegate). Revisions are provided in Attachment A.

Page 4.1-10, GEN-8, Verification, Last Sentence – Please revise this sentence to allow for other electronic media formats for submittal of required documentation. Revisions are provided in Attachment A.

Page 4.1-10, CIVIL-1 – As identified in COC WATER-1/MM WATER-1, the approval of the SWPPP is with RWQCB. Per COC WATER-1/MM WATER-1: "At least thirty (30) days prior to site mobilization, the project owner shall submit to the Compliance Project Manager (CPM) proof that the construction permit has been granted and that a waste discharge identification number (WDID) was issued by the SWRCB." Revisions are provided in Attachment A.

Page 4.1-10, CIVIL-1, Item #3 – "A construction storm water pollution prevention plan (SWPPP)" does not fall under the review and approval by the DCBO. Revisions are provided in Attachment A.

Page 4.1-11, CIVIL-1, Item #5 – Please revise to indicate "applicable edition of the CBC" versus a specific year for the CBC. Revisions are provided in Attachment A.

Page 4.1-11, CIVIL-2, Verification – Please revise to allow CPM notification of earthwork or construction stoppage and the CPM submission of DCBO approval to resume work on the following business day to allow for events outside of the normal work week. Revisions are provided in Attachment A.

Page 4.1-11, CIVIL-3, 1st Sentence – Please update the reference from "in accordance with the 2022 CBC" to "in accordance with GEN-1". Revisions are provided in Attachment A.

Page 4.1-13, STRUC-2, Item #5 – Please revise to indicate "applicable edition of the CBC" versus a specific year for the CBC. Revisions are provided in Attachment A.

Page 4.1-13, STRUC-3, 1st Sentence – Please revise to indicate "applicable edition of the CBC" versus a specific year for the CBC. Revisions are provided in Attachment A.

Page 4.1-14, STRUC-4, 1st Sentence – Please revise to indicate "applicable edition of the CBC" versus a specific year for the CBC. Revisions are provided in Attachment A.

Page 4.1-14, MECH-1– Applicable LORS identified in this COC have been updated to reflect the MBGP project. All piping will be designed to ANSO B31.3. No long-distance gas lines are associated with the project therefore ANSI B31.8 isn't applicable. ASME TDP-1 is not applicable to saturated steam turbines in flash geothermal plants. NACE SP0169-2013 isn't applicable as there will be no underground metallic piping, and NFPA 56 isn't appliable as there are no flammable gas piping systems. Revisions are provided in Attachment A.

Pages 4.1-16 through 4.1-17, ELEC-1, Items A.1 and B.5 – Please revise "13.1 kV" to "13.8 kV". Revisions are provided in Attachment A.

4.2 Facility Reliability

Page 4.2-3, Fuel Availability, 3rd Paragraph, 1st Sentence – The MBGP will have three emergency diesel generators and one diesel firewater pump. Please correct this sentence as follows.

> Moreover, ultra-low sulfur diesel would be used for up to **three** ~~four~~ emergency standby diesel-fueled generators (gensets) to support the critical facility load in case of a power interruption (Jacobs 2023a, Section 5.1.7.1.2, and Jacobs 2023kk).

Page 4.2-3, Power Plant Reliability in Relation to Natural Hazards, Seismic Shaking, 1st paragraph - The Applicant's affiliates have operated and maintained a seismic monitoring network and monitoring program since 1977 in the southeast Salton Sea geothermal area. The seismic events recorded using the seismic network are evaluated by an independent seismologist annually and during larger seismic events. These evaluations are submitted as a report annually to Imperial County and California Geologic Energy Management Division. The network, monitoring and evaluation is a requirement of the existing geothermal facilities' Conditional Use Permits. The evaluations have not identified an elevated magnitude of seismic events above the regional norm for the Salton Sea. The proposed projects will utilize the existing seismic network and expanded the network to ensure coverage of the proposed projects. The network, monitoring and evaluation of seismic events are anticipated to be projects conditions set by Imperial County with regulatory oversight provided by California Geologic Energy Management Division and Imperial County.oInduced seismicity is typically observed in fracking operations, fracked wells, and with high-pressure injection. The geothermal wells will not be fracked, and injection pressures are regulated by California Geologic Energy Management Division.

Additionally, the nature of the process prohibits injecting more fluid into the reservoir than was produced. This fact combined with restrictions on injection pressures and seismic monitoring, would avoid a cumulative effect from multiple wells or geothermal facilities that would result in a different impact that current monitoring and regulatory standards for individual wells and projects.

Page 4.2-5, Comparison with Existing Facilities, 2nd Paragraph – The following identified sentence should be struck as it is not applicable to baseload, geothermal power plants. "~~Maintenance can be scheduled during those times of year when the full plant output is not required to meet market demand, typical of industry standard maintenance procedures~~; therefore, the Applicant's estimate of plant availability appears accurate. The stated procedures for assuring design, procurement and construction of a reliable power plant are consistent with standard industry practice; therefore, staff concludes they would meet current reliability standards."

4.3 Transmission System Engineering

Page 4.3-3, Section 4.3.2, Impacts, 5th Paragraph – The text should be clarified to state: "The MBGP electrical power would be generated using a triple pressure condensing turbine/generator set including a 185 megavolt-amperes (MVA) generator step-up (13.8/230 kV) transformer, a maximum continuous rating of 140 MW (net) steam turbine rated at **approximately** 174 MVA at a power factor of 0.85."

Page 4.3-3, Section 4.3.2, subsection Switchyards and Interconnection Facilities, 1st Paragraph – The text should be clarified to state: "The project generator-tie line would connect the Morton Bay Substation to the IID new switching station, Sinclair Switching Station, at the first point of interconnection into IID's network via a**n** **approximately** 3.2 mile-long overhead aluminum conductor steel-reinforced (ACSR) conductor."

Page 4.3-10, COC TSE-2 – Please delete TSE-2 as it is redundant with the requirements of COC GEN-5. Revisions are provided in Attachment A.

Page 4.3-11, COC TSE-3 – Please delete TSE-3 as it is redundant with COC GEN-7. Revisions are provided in Attachment A.

Page 4.3-12, COC TSE-5, Section F and Verification – Minor deletions to remove language that typically applies to projects that directly interconnect to the system operated by the California Independent System Operator. Revisions are provided in Attachment A.

4.4 Worker Safety and Fire Protection

Page 4.4-1, Section 4.4.1, Existing Conditions, 1st Paragraph, Last Sentence – The description of the analysis should be clarified to state: "In addition, the project **is expected to** include~~s~~ up to ~~nine~~ **ten** laydown and parking areas, two construction crew camps, and up to four borrow pits in the vicinity for use by MBGP, as well as Elmore North and Black Rock geothermal projects."

Page 4.4-2, Section 4.4.1, Regulatory, Local – The reference to the Uniform Fire Code should be struck: "The CFD and Imperial County use standards or guides such as National Fire Protection Association (NFPA) 850~~,~~ **and** the California Fire Code~~, and the Uniform Fire Code~~ to implement local fire protection and emergency services." The Uniform Fire Code, part of the Uniform Building Code, is no longer maintained. It was replaced by the International Building Code which is superseded by the California Building Code (CBC) and associated California Fire Code (CFC) in California. MBGP will be compliant with CFC, CBC, and NFPA (National Fire Protection Association).

Page 4.4-2, Section 4.4.1, Regulatory, Local, Uniform Fire Code – The reference to the Uniform Fire Code should be struck: "~~Uniform Fire Code. The Uniform Fire Code contains a set of regulations to safeguard life and property from fires and explosion hazards. The Uniform Fire Code is adopted and amended by different states and jurisdictions to suit their local needs and conditions~~." The Uniform Fire Code, part of the Uniform Building Code, is no longer maintained. It was replaced by the International Building Code which is superseded by the California Building Code (CBC) and associated California Fire Code (CFC) in California. MBGP will be compliant with CFC, CBC, and NFPA (National Fire Protection Association).

Page 4.4-2, National Fire Protection Association (NFPA), 2nd Sentence – Refers to "NFPS" but should read "NFPA".

Page 4.4-9, Emergency Action Plan, 8th Bullet – "provide emergency response procedures for ammonia release". Specific reference to an ammonia release should be removed as ammonia is not stored at site and the emergency generators use diesel exhaust fluid which is urea-based.

Page 4.4-13, Section 4.4.3, Table 4.4-1, Uniform Fire Code Row – The reference to the Uniform Fire Code should be struck: "~~Uniform Fire Code. | **Yes.** See discussion on the fire hazards~~." The Uniform Fire Code, part of the Uniform Building Code, is no longer maintained. It was replaced by the International Building Code which is superseded by the California Building Code (CBC) and associated California Fire Code (CFC) in California. MBGP will be compliant with CFC, CBC, and NFPA (National Fire Protection Association).

Page 4.4-14, COC WORKER SAFETY-1 – Should be revised as set forth in Attachment A to clarify that the construction and drilling of the wells are subject to Imperial County and CalGEM's jurisdiction.

Page 4.4-14 through 4.4-15, COC WORKER SAFETY-2 – Should be revised as set forth in Attachment A as operation of the wells are subject to Imperial County and CalGEM's jurisdiction.

Page 4.4-17, COC WORKER SAFETY-5, Verification – Should be revised as set forth in Attachment A to clarify the timing for when a portable AED should be available on-site during construction.

Page 4.4-17, COC WORKER SAFETY-6 – Should clarify that the Emergency Action Plan should incorporate the applicable version of the California Fire Code, as provided in GEN-1, rather than the latest version. Revisions are provided in Attachment A.

Page 4.4-17, COC WORKER SAFETY-7 – Should clarify that the fire protection system should be designed to meet the applicable version of NFPA 850 at the time the initial design plans are submitted to the DCBO, rather than the latest version. Revisions are provided in Attachment A.

5. Environmental Impact Assessment

5.1 Air Quality

Page 5.1-13, Methodology, 2nd Paragraph, 2nd Sentence – For added clarity, revise this sentence as follows: "Construction emissions were estimated based on emission factors from the California Emissions Estimator Model (CalEEMod) **User's Guide** and EMFAC2021."

Pages 5.1-16, 5.1.2.2 Direct and Indirect Impacts, Item b, subsection Construction, 1st Paragraph, Last Sentence – For consistency with the project description and added clarity, revise this sentence as follows: "Emissions from the 294-month construction period were estimated using **emission factors from** the California Emissions Estimator Model4 (CalEEMod) **User's Guide and EMFAC2021** ~~program~~."

Page 5.1-18, Operation, PGF Steam-related Processes – The methodology for estimating H2S emissions from steam-related processes should be clarified since H_2S emissions are reported in Tables 5.1-8 and 5.1-10. To do so, add the following sentence to the end of this paragraph: "H2S emissions from the NCG stream are assumed to split between the gas phase and the condensate/liquid phase prior to reaching the cooling tower at a ratio of 60 to 40 percent, respectively."

Page 5.1-19, Cooling Towers, 1st Paragraph, 1st Sentence – To clarify that there is only one cooling tower associated with the project, revise this sentence as follows: "Emissions were estimated based upon two input streams: the gaseous NCG vented into the cooling tower~~s~~ from the PGF steam and the NCG condensate/liquid within the cooling tower~~s~~."

Page 5.1-19, Cooling Towers, 1st Paragraph, 3rd Sentence – To clarify that there is only one cooling tower associated with the project, revise this sentence as follows: "Liquid-based emissions are the result of NCG condensate and make-up water input into the cooling tower~~s~~ for circulation."

Page 5.1-19, Cooling Towers, 1st Paragraph, Last Sentence – To clarify that there is only one cooling tower associated with the project, revise this sentence as follows: "100 percent of the VOC emissions in the hot well condensate are assumed to be emitted through the cooling tower~~s~~."

Page 5.1-19, Cooling Towers, 1st Paragraph – The methodology for estimating ammonia emissions from the cooling tower should be clarified since ammonia emissions are reported in Tables 5.1-8 and 5.1-10. To do so, add the following sentences to the end of this paragraph: "Similarly, ammonia emissions from the liquid portion of the cooling tower were developed by applying hot well and blowdown analytical data from other geothermal power plants in the area to the project's estimated hot well and blowdown flow rates, respectively, to determine the amount of ammonia remaining in the cooling tower after blowdown, assuming a mass balance between the ammonia entering the cooling tower (in the form of hot well condensate) and leaving the cooling tower (in the form of blowdown). Ammonia remaining in the cooling tower after blowdown is assumed to be emitted through the cooling tower shrouds."

Page 5.1-30, H_2S Impacts, Last Paragraph, Last Sentence – Although the Applicant did previously indicate that it would comply with the public notification requirements for the project's acute risks, the CEC's revised analysis indicates that the project's acute risks do not exceed the significance thresholds (see Table 5.10-5). Therefore, public notification should no longer be required and this sentence should be deleted.

Page 5.1-38, COC AQ-SC2/MM AQ-SC2, Verification, 1st Sentence - Please remove the word "any" from the sentence. Revisions are provided in Attachment A.

Page 5.1-39, COC AQ-SC3/MM AQ-SC3, Verification, Items #5 and #10 - Please revise to reflect that washing construction equipment free of dirt prior to entering the site is an unrealistic requirement and

that most roads in the project area are gravel roads where sweeping isn't appropriate, but measures would be incorporated to control and eliminate noxious and invasive weeds (COC BIO-10/MM BIO-10 Invasive Species Management Plan - TN #250679). Revisions are provided in Attachment A.

Page 5.1-43, COC AQ-SC5/MM AQ-SC5, Verification - Minor clarification requested and provided in Attachment A.

Page 5.1-43, AQ-SC6, 2nd and 3rd Sentences – Please add "for the facility" after the word "permit" at the end of the 2nd sentence and after the word "project" in the 3rd sentence.

Page 5.1-43, AQ-SC6, Verification – Please extend the CPM submittal timeframe from 5 working days to 10 working days. Revisions are provided in Attachment A.

AQ-20, AQ-21, AQ-27, AQ-28, AQ-60, AQ-61, AQ-66 (c), AQ-66 (d), and AQ-77 (f), are specifically for wells and are not under the jurisdiction of the CEC. Please rename these specific COCs as MM AQ-20, MM AQ-21, and so forth and identify these as specific to the ICAPCD jurisdiction only.

Page 5.1-48, AQ-20 – As this is related to wells that are not under the jurisdiction of the CEC please rename to "**MM AQ-20**". Well flow back has a duration of 24 hours per well. To avoid restricting the facility to one well flow back per day, the table has been revised and is provided in Attachment A.

Page 5.1-48, AQ-21 – As this is related to wells that are not under the jurisdiction of the CEC please rename to "**MM AQ-21**". Well testing occurs only once during commissioning and has a duration longer than 24 hours per well. To avoid restricting the facility to testing only one well at a time, the table has been revised and is provided in Attachment A.

Page 5.1-53, AQ-41 – To provide the Applicant with flexibility during procurement of the selected equipment, condition has been revised and is provided in Attachment A.

Page 5.1-60, COC AQ-72 – To correctly reference the CEC's Conditions of Certification, condition has been revised and is provided in Attachment A.

Page 5.1-61, COC AQ-73, Verification – This section has been revised to provide consistent references to the Quarterly Operation Reports. Revisions are provided in Attachment A.

5.2 Biological Resources

Page 5.2-14, Aquatic Resources Delineation – During PSA workshop on July 31, 2024, a comment was raised about project features along the west side of Garst Road potentially affecting aquatic resources. The Applicant is reviewing the gen-tie pole locations to verify the status of aquatic resources in this area. If avoidance of any potentially present aquatic resources isn't feasible, an alternative route may be identified that avoids aquatic resource impacts.

Page 5.2-39, Table 5.2-2, Known and Potential Occurrence of Special-Status Wildlife Within the Project Area– The project does not contain suitable cottonwood or dense tamarisk nesting habitat for southwestern willow flycatcher (see updated **Figure 5.2-1R** and revised **Table 5.2-5** for current vegetation and land cover types within the project area). Southwestern willow flycatcher were not listed on the IPaC generated March 28, 2023. Although the adjacent SBSSNWR has riparian and wetland habitats, Southwestern willow flycatcher is not included on SBSSNWR Wildlife List (USFWS 2018). This species is not expected to nest or forage in the project area. This species could be present rarely during migration.

Reference: U.S. Fish and Wildlife Service (USFWS). 2018. Sonny Bono Salton Sea National Wildlife SBSSNWR Wildlife List. April.

REVISED TABLE 5.2-2 Known & Potential Occurrence of Special-Status Wildlife Within Project Area

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Southwestern willow flycatcher *Empidonax traillii extimus*	Fed: FE State: SE	For nesting, requires dense riparian habitats with cottonwood/willow and tamarisk vegetation and microclimatic conditions that are dictated by the local surroundings. Saturated soils, standing water or nearby streams, pools, or cienegas are a component of nesting habitat that also influences the microclimate and density vegetation component. Habitat not suitable for nesting may be used for migration and foraging. Recurrent flooding and a natural hydrograph are important to withstand invading non-native species like tamarisk. The southwestern willow flycatcher is typically found below 8,500 feet of elevation.	**Not expected** ~~Moderate~~ (Nesting). The project area **does not** provide~~s marginal~~ nesting habitat. The project area lacks natural hydrograph and contains non-native species. One CNDDB record occurs approximately 6 miles away along the East Highline Canal. Habitat consists of a large canal with tamarisk and common reed. **Not Expected** ~~Moderate~~ (Foraging). ~~Habitat not suitable for nesting may be used for migration and foraging.~~ There are no iNaturalist records of this species within 10 miles. eBird records are only for the parent species.

Page 5.2-83, Section 5.2.2.2 Direct and Indirect Impacts, Plants, 3rd Paragraph – The following paragraph should be deleted as botanical surveys for rush, including Southwestern spiny rush and Cooper's rush, were conducted during an appropriate blooming season. On March 19, 2022, botanists visited a reference population at the Dos Palmas Preserve and observed blooming Cooper's rush species (latitude

33.502500°, longitude -115.831667°). Although Cooper's rush "Typically blooms. April through May." (page 5.2-26), it was observed blooming in mid-March 2022. Therefore, the botanist's determined that March 2022 was an appropriate time to survey for rush species. During March 2022 botanical surveys, no individuals of any rush species (*Juncus* sp.) were observed in the project area. If botanists had observed any rush species that were not identifiable, they would have returned at a later time to confirm species identification. Therefore, the project will have no impacts to special-status plant species and the text deleted.

> "~~The March botanical survey conducted by the applicant was outside the typical blooming period of Southwestern spiny rush (May-June), though this species can bloom as early as March (CNPS 2024); and outside the blooming period of Cooper's rush (April-May). It is possible these species may have been overlooked. However, the most likely locations for these species to occur, if present, would be along the edge of the riparian and marshland habitats.~~"

Pages 5.2-83 and 5.2-84, Section 5.2.2.2 Direct and Indirect Impacts, Plants, 3rd and 4th Paragraphs – In 2022, protocol-level floristic surveys were conducted in suitable habitats in the project area and no special-status plants, specifically no Southwestern spiny rush, Salton milk-vetch, Cooper's rush, or dwarf germander were observed. Transact based pedestrian surveys were conducted in suitable habitat within the project area, specifically undisturbed iodine bush scrub, cattail marsh, and tamarisk thickets. Intuitively controlled transects were conducted in the gen-tie line locations of iodine bush scrub due to high disturbance associated with IID dust control furrows (page 5.2-15). The furrowed areas had very little iodine bush and 100% coverage transects were not necessary to observe sparse vegetation in suitable habitats.

No CRPR List 4 species were observed during the floristic surveys. Further, based on the reference population observations it was determined March 2022 was an appropriate time to survey for rush species. The impacts to CRPR List 4 species would be less than significant as none were observed. No significant impacts to the special-status plants were identified. Please revise the text as shown below:

> "Except for dwarf germander, which has a CRPR of 2B.2 and would be considered rare if detected, the other plants have a CRPR of 4. CRPR List 4 plants are characterized by limited distribution or are infrequently distributed throughout a broader area; therefore, there is a low vulnerability or susceptibility to threat within the state (CNPS 2020). Plants included on CRPR List 4 do not clearly meet CEQA standards and thresholds for impact considerations as they generally do not meet the CEQA Section 15380 guidance criteria for listing as rare, threatened, or endangered. However, CNPS and CDFW recommend that CRPR List 4 plants be evaluated in a CEQA analysis for several reasons, including if the taxa may be more common in some regions but rare in others (CNPS 2020).
>
> ~~Because~~ CRPR List 4 plants are not considered rare in the region**. CRPR List 4 plants were evaluated** and were not detected during the surveys**~~, t.~~ The** removal of a small number of plants (i.e., a few individuals or less than 10 percent of the total occurrence), if present, would not jeopardize the overall occurrence of the plant region-wide and/or would not result in a trend towards further listing or increased protection status. Therefore, impacts to Southwestern spiny rush, Salton milk-vetch, and Cooper's rush, if present, would be considered less than significant. Impacts to dwarf germander, **which was not detected during surveys, ~~if present~~** would be considered **less than** significant. **No special-status plants were observed and the potential impacts to rare plants would be less than significant.** Most of the project area consists of agricultural or highly disturbed lands. If present, dwarf germander could occur in native scrub habitats such as the iodine bush scrub community. To reduce impacts to less than significant, staff proposes Condition of Certification/Mitigation Measure (COC/MM) BIO-1 (Protocol Botanical Surveys), which would require botanical surveys in native habitats prior to any ground disturbance.

BIO- 1 applies as a COC to project components that falls under CEC's license and as an MM for project components requiring permits by local or other jurisdictions."

Page 5.2-88, Fish, 1st Paragraph, 3rd Sentence – Lindsey Road runs east-west and is located 0.5 miles south and outside of the project area. Please revise text as shown below:

"Desert pupfish occupied drains in the project area include east-west irrigation canals along Hazard Road, McDonald Road, and Sinclair Road; parallel to east- west Cox Road/Gentry Road between Garst Road and Rock Hill; and north-south irrigation canals along Cox Road~~/Lindsey Road~~, Boyle Road, Severe Road, Crummer Road, and Lack Road (TN #250679 Figure DA 5.2-1c). "

Page 5.2-88, Fish, 3rd Paragraph, 1st Sentence – The Applicant will not dewater IID drains for construction or O&M. The water supply and production well pipelines cross an occupied desert pupfish water feature along McDonald Road which is north of the plant site. The gen-tie line only crosses one potentially occupied desert pupfish water feature west of Garst Road. However, there would be no substantial effects on IID's ability to service their customers due to the crossings.

In addition, razorback sucker was extirpated from the Salton Sea in the late 1920s (USFWS 2002) (page 5.2-56). There are historic CNDDB records for this species in the Alamo River draining to the Salton Sea and East Highline Canal; however, the project area is outside the current range of this species (page 5.2--88).

Please revise text as shown below:

"Based on GIS data provided by the applicant, ~~there would be temporary/permanent impacts to~~ approximately ~~18.95/1.03~~ **25.03/1.58** acres of canals or drains **are within the project area.** However, **the applicant will not impact canals or drains. Desert pupfish are only located in some irrigation drains and no dewatering of drains will be required during construction or O&M. The water supply pipeline and production well pipeline only crosses one presumed occupied desert pupfish drain along McDonald Road. The gen-tie line crosses an occupied desert pupfish water feature west of Garst Road. The applicant will not impact either of these water features.** ~~No other impacts are expected to occur in drains,. there is conflicting information if these features would be avoided. The applicant stated that the project would not directly impact any IID canals or drains that could support pupfish, and therefore~~ **Therefore, construction activities** are not expected to result in direct mortality**,** ~~**or**~~ injury, or impediments to movement **of the pupfish**. The applicant indicated these features would be crossed with above ground pipes. Project features were specifically located to ~~avoid~~ **minimize** impacts to aquatic resources, such as irrigation supply and drain canals~~, the Alamo River, and the Salton Sea, where desert pupfish and razorback sucker that could occur. The irrigation and drain canals represent a major part of the IID's operational infrastructure and impacts to these features could affect their ability to service their customers (TN254014~~)."

References:

*USFWS 2002 – U.S. Fish and Wildlife Service (USFWS). August 2002. Razorback Sucker (Xyrauchen texanus) Recovery Goals. Amendment and Supplement to the Razorback Sucker Recovery Plan. USFWS Mountain-Prairie Region (6), Denver, Colorado.*Page 5.2-89, Fish, 2nd Paragraph – The potential for accidental spills of hazardous materials is described in Section 3.2.10 *Hazardous Materials Management, Construction and Operation* of the PSA (Page 3-15). Potential direct and indirect impacts related to the transport, use, disposal, or release of hazardous materials into the environment are described in Section 5.7.2 *Environmental Impacts* of the PSA (beginning on Page 5.7-15) and were determined to be Less Than Significant with Mitigation Incorporated.

Indirect impacts to drains through proliferation of weeds is outside of the purview of the Applicant as they will have no impacts to drains or canals. IID manages the vegetation in drains, which are often invasive species such as tamarisk and giant reed.

The staff statement that above ground pipelines will alter hydrology through proliferation of noxious weeds in the drains is beyond purview of the Applicant. IID manages and maintains drains. However, mitigation measures to avoid and minimize noxious and invasive weeds are proposed. Noxious and invasive weeds are described in Page 5.2-10 of the PSA and potential impacts are described throughout Section 5.2.2 *Environmental Impacts* of the PSA. COC BIO-4/ MM BIO-4 General Conservation Measures incorporates the Applicant's measure (TN #249723, AFC Section 5.2.3.6) that would require access, parking, staging, and refueling outside of aquatic habitat. In addition, to reduce the spread of invasive weeds, the Applicant would implement Staff proposed COC BIO-10/ MM BIO-10 Invasive Species Management Plan.

The project gen-tie line, production well pipeline, and water supply pipeline are the permanent features that cross presumed occupied desert pupfish IID drains or water features. Mitigation measures are in place to reduce impacts to the IID drain and water feature during construction, such as using a crane to install pipe over drain, placing footings as far back from edge of drain as feasible, and SWPPP BMPs such as refueling away from occupied features. With these avoidance measures in place, impacts from construction over the occupied water features will be reduced to less than significant levels. Revise text as follows:

> "If dewatering of desert pupfish aquatic habitat is needed due to a high rainfall year, it would be considered a significant impact. **The applicant will not dewater due to natural rain events.** Direct impacts could occur if fish were exposed to pipeline and well infrastructure during a flood event that results in entrapment and mortality. Pipelines and gen-tie lines that **will be** ~~are~~ constructed over ~~canals and~~ drain~~s~~ **or water features** that provide**s** habitat for fish species could result in reduction in water quality from accidental spills of hazardous materials and wastes and exposure to fugitive dust, and vibration from pipe and pole infrastructure installation. **Mitigation measures are in place to reduce pipeline construction impacts to the presumed occupied water features to less than significant levels.** ~~Indirect impacts could include long-term alterations to hydrology and degradation of habitat from the introduction and proliferation of noxious and invasive weeds. Long-term modifications that reduce natural flows to downstream habitats could result in the displacement of riparian vegetation and degradation of various habitat types that are used throughout different life stages. Alterations to agricultural fields that return flow to canals and drains could have an indirect impact on vegetation and hydrology.~~ .

Page 5.2-90, Fish, 2nd Paragraph – Zebra mussels are not located at the project site and have been found only at two locations in California, near Hollister (approximately 500 miles from Calipatria) (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=190514). BIO-10 Invasive Species Management Plan includes measures to minimize or avoid invasive species being transported onsite including Zebra mussel. Additionally, no work is planned in aquatic habitats. Please revise text as follows:

> "Impacts to fish can also occur through the introduction or spread of invasive wildlife or pathogens. This typically occurs when equipment or vehicles are used in infested areas and not cleaned prior to moving to new locations. New Zealand mudsnails (*Potamopyrgus antipodarum*)~~,~~ **or** Quagga Mussel (*Dreissena rostriformis bugensis*)~~), or Zebra Mussel (*Dreissena polymorpha*)~~ were not found during the surveys. Quagga mussels, an invasive mussel that can colonize freshwater surfaces, was found in the Colorado River at Imperial Dam in Imperial County in 2008 (CDFW 2021; CDFW 2024g). Quagga mussels can spawn multiple times a year and consume large quantities of plankton that form the base of the food web, outcompeting native species."

Page 5.2-99, Marshland Species, 1st Paragraph – Suitable rail habitat is present within and immediately adjacent to the project area. Yuma Ridgway rails were detected within 500-feet of two production wells and the injection well pipeline. No California black rail were detected during protocol-level marsh bird surveys (Silwa and Conway 2022). Southwestern willow flycatcher was not listed on the IPaC generated March 28, 2023. The project does not have suitable nesting habitat for this species.

Reference: Silwa, K.M. and C.J. Conway. 2022. Distribution and Occupancy of Yuma Ridgway's Rail within Proposed Geothermal Development Areas in Imperial Valley, California. University of Idaho, Department of Fish and Wildlife Sciences. August 29.

Please revise text as follows:

> "The project area could provide **suitable** ~~potential~~ nesting habitat for **Yuma Ridgway's rail, a federally endangered, state threatened, and CDFW fully protected species that requires freshwater marshes** ~~listed marshland species~~ **(Silwa and Conway, 2022)**. ~~These include southwestern willow flycatcher, a federal and state listed as endangered species that requires dense riparian habitat and standing water; California black rail, a state threatened and fully protected species that requires emergent marshland habitat; and Yuma Ridgway's rail, a federally endangered, state threatened, and CDFW fully protected species that requires freshwater marshes.~~"

Page 5.2-99 to100, Marshland Species, 2nd Paragraph - California black rail was not detected during protocol marsh surveys (Silwa and Conway 2022) and therefore impacts are considered less than significant. Southwestern willow flycatchers are not expected to nest in the project area due to lack of suitable habitat. No impacts to southwestern willow flycatcher are anticipated.

Please revise text as follows:

> "Yuma Ridgway's rail was detected at multiple locations along the edge of Morton Bay and in the CDFW Imperial Wildlife Area, Hazard Unit. ~~**Though no other listed species were detected, these areas could also support southwestern willow flycatcher and California black rail. Because these species are state or federally listed species, the loss of habitat would be considered a significant impact."**~~

Page 5.2-100, Marshland Species, 2nd Paragraph – The westernmost production well pad would have permanent direct impacts to documented occupied rail habitat (Silwa and Conway 2022). Currently, the project does not plan to construct the pipeline to connect this well pad with plant site. This well pad is being permitted for the potential for future use. Other project features, production well pads, gen-tie line, and injection well pipeline are within 500-feet of occupied Yuma Ridgway's rail locations. Temporary impacts would be noise from heavy equipment and pile driving, as well as human disturbance. Construction activities will consist of site grading, construction of injection and production wells, brine pond, and the gen-tie line. Construction activities would not cause changes in water levels in suitable habitat. Construction will occur over a 29-month period, only a portion of which will involve construction of production and injection wells in closest proximity to rail habitat.

Noxious and invasive weeds are described in Page 5.2-10 of the PSA and potential impacts are described throughout Section 5.2.2 *Environmental Impacts* of the PSA. **COC BIO-4/ MM BIO-4 General Conservation Measures and COC BIO-10/MM BIO-10 Invasive Species Management Plan - TN** #250679**)** incorporates invasive species control measures, such as requiring access, parking, staging, and refueling outside of aquatic habitat, erosion control measures using certified weed free products. Please revise text as follows:

> "If present, the loss of listed bird species or a disruption to their behavior and or breeding would be considered a significant impact. As described above under MBTA and FGC Protected Birds, direct impacts to bird species could occur as a result of direct mortality by vehicle strikes; if nests or eggs

were destroyed during construction activities; degradation of nesting or foraging habitat; and if nests or breeding territories were abandoned due to increased levels of human presence, noise, vibration, and fugitive dust. **Mitigation measures are in place to reduce impacts, such as speed limits would not exceed 10 mph on any unpaved roads or work areas within the project site with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. COC BIO-14/MM BIO-14 Yuma Ridgway Rail Species Noise Assessment and Abatement Plan would be implemented to reduce or eliminate direct effects associated with abandonment of nests or breeding territories adjacent to the project area due to increased levels of human presence, noise, vibration, and fugitive dust.** Direct impacts to marshland bird species would also occur if construction activities resulted in changes to water levels that affect habitat suitability. Indirect impacts could include the loss of habitat due to the colonization of invasive or noxious weeds and long-term alterations to supporting habitat, **but measures would be incorporated to control and eliminate noxious and invasive weeds (COC BIO-10/MM BIO-10 Invasive Species Management Plan - TN** #250679**)**."

Page 5.2-100, Marshland Species, 3rd and 4th Paragraphs – Southwestern willow flycatcher were not listed on the IPaC generated March 28, 2023, and are not expected to occur in the project area. No suitable nesting habitat for southwestern willow flycatcher is present in the project area.

Measures in BIO-14 (Yuma Ridgway Rail Species Noise and Assessment Plan) would be implemented in any areas where suitable habitat is within 500-feet of construction activities. Not all marshland habitat is occupied by Yuma Ridgway's rail. The Silwa and Conway report recommends noise avoidance measures in "marshes occupied by rails" (page 9, Silwa and Conway 2022).

The project area does not have suitable nesting habitat for Gila woodpecker. Gila woodpeckers nest in large cottonwood trees, date palms, and houses and towns. A stand of date palm trees were mapped in 2022 near the Alamo River north of Sinclair road. This stand is adjacent to a project borrow pit but is located approximately 1.1 miles south of the plant site. No suitable foraging habitat is present in the project area. Potential noise and nesting impacts would be reduced to less than significant levels by nesting bird surveys and noise monitoring. Please revise text as follows:

"The Yuma Ridgway Report states the effect of noise on rail behavior and occupancy has not been studied and so reasonable impact thresholds regarding noise in areas adjacent to habitat are not known. The Report does provide recommended guidance based on known periods of communication for rails. Rails (including Yuma Ridgway's Rail and California black rail) primarily communicate during the first three hours of daylight (0.5 hours before civil sunrise through 2.5 hours after civil sunrise) and during the final three hours of daylight. The report further recommends that loud noises in areas adjacent to occupied rail habitat should be avoided during those time windows each day, especially during the courtship, pair-bonding, egg-laying, and incubation periods (1 March – 30 June).

Staff used a similar approach for ~~**Southwestern willow flycatcher, which typically communicates shortly after dawn, picks-up again in early afternoon, and increase again before dusk**~~ Gila woodpeckers **who** tend to be most vocal and active early the early morning and late afternoon, with communication diminishing in the evening. Courtship, pair- bonding, egg-laying, and incubation periods **are** ~~**correspond to June through July for southwestern willow flycatcher, and**~~ April through July for Gila woodpecker. Construction related noise activities that disrupt marshland bird communication **in occupied habitat**, particularly during the breeding season, would be considered a significant impact. **Measures provided in BIO-14 (Yuma Ridgway Rail Species Noise and Assessment Plan) would be implemented in any areas where suitable habitat is within 500-feet of construction activities to reduce impacts to marsh species, including Yuma Ridgway's rail."**

Page 5.2-101, Marshland Species, 7th Paragraph – See BIO-14 discussion for increased decibel justification and revise text as follows:

> **"BIO-14** (Yuma Ridgway Rail Species Noise Assessment and Abatement Plan) would require the preparation of a noise assessment and abatement plan that ensures noise levels at marshes occupied by **special-status** marshland species never exceed **80**~~60~~ decimals during the breeding season or **100**~~80~~ decimals during the non-breeding season. These COC/MM would be applicable in areas adjacent to habitat for Yuma Ridgway**'s** rail and other **special-status** marshland species, **such as** along W Schrimpf Road and Morton Bay, which includes the location of the generating facility, production wells and well pads, and gen-tie lines and poles."

Pages 5.2-126 through 5.2-127, Table 5.2-5 Temporary and Permanent Impacts to Vegetation Communities and Other Land Cover Types Within the Project Biological Study Area Based on Applicant GIS and Associated Buffer Areas. Revised Table 5.2-5 reflects current vegetation and land cover impacts of the project while removing overlapping features.

REVISED TABLE 5.2-5 Temporary & Permanent Impacts to Vegetation Communities & Other Land Cover Types within the Project BSA Based on Applicant GIS & Associated Buffer Areas.

Vegetation Communities and Other Land Cover Types within the project area	Impact Type (acres)										Total Impacts (acres)	
	Borrow Pit	Constr. Laydown & Parking	Construction Camp	Gen-Tie Pole	Pipeline	Generating Facility Location	Pulling Site	Switching Station	Water Supply Pipeline	Well Pad	TEMPORARY	PERMANENT
Agriculture	44.71	496.81~~499.0~~	192.912	0.090.20	--	--	--	5.67	--	0.787	740.97 ~~3.28~~	--
	--	--	--	~~0.03~~	--	--	--	6.15	--	--	--	6.158
Barren Lands	--	--	--	--	1.38	--	--	--	0.4614	--	1.8453	--
	--	--	--	--	1.24	--	--	--	--	--	--	1.24
Canals and Drains*	2.733.60	0.78	6.01	0.4974	2.1763	--	--~~0.07~~	0.50	1.186	3.545	17.41 ~~8.95~~	--
	--	--	--	0.06	1.060.76	--	--	--	--	0.22	--	1.3403
Developed	--	4.4398	--	0.3144	0.46~~1.45~~	1.01	--~~0.03~~	--	0.2843	3.3744	9.86~~11.78~~	--
	--	--	--	0.06	0.1430	4.49	--	--	--	0.648	--	5.353
Disturbed with Vegetation	115.697.26	34.1145.55	7.467	1.512.47	3.808.94	16.0435	--~~0.31~~	2.33	6.1837	22.1992	209.31 ~~29.95~~	--
	--	--	--	0.207	5.4911.77	50.04	--	--	--	16.927.32	--	72.65 ~~9.40~~
Disturbed with No Vegetation	67.6671.61	--	--	--	2.974.54	--	--	--	9.981	12.993.19	93.649.16	--
	--	--	--	--	2.513.85	--	--	--	--	10.0146	--	12.524.32
Tamarisk Thickets/Invasive Southwest Riparian Woodland and Shrubland	--	0.93	--	0.8590	--	--	--~~0.03~~	--	0.13--	~~7.123.32~~	9.035.18	--
	--	--	--	0.114	--	--	--	--	--	5.4329	--	5.5443
	0.113	--	--	0.37	1.19~~2.85~~	--	--	--	0.3022	16.861	18.83~~20.38~~	--

Vegetation Communities and Other Land Cover Types within the project area	Impact Type (acres)										Total Impacts (acres)	
	Borrow Pit	Constr. Laydown & Parking	Construction Camp	Gen-Tie Pole	Pipeline	Generating Facility Location	Pulling Site	Switching Station	Water Supply Pipeline	Well Pad	TEMPORARY	PERMANENT
Typha Herbaceous Alliance (Cattail Marsh)/N. American Arid West Emergent Marsh	--	--	--	<0.01	**1.13**~~3.64~~	--	--	--	--	13.7**9**~~8~~	--	**14.92**~~17.42~~
Iodine Bush Scrub/North American Warm Desert Playa	--	**1.27**~~3.66~~	--	1.9**6**~~8~~	**2.52**~~4.26~~	2.**64**~~49~~	--	--	--	**6.71**~~7.63~~	**15.10**~~20.02~~	--
	--	--	--	0.17	**1.45**~~4.15~~	3.53	--	--	--	**9.31**~~10.05~~	--	**14.46**~~17.91~~
Total (Temporary)	23**1.01**~~7.32~~	5**38.33**~~44.91~~	206.**38**~~40~~	**5.58**~~7.09~~	**14.49**~~26.06~~	19.**69**~~85~~	~~--0.45~~	8.50	18.**44**~~13~~	7**3.57**~~1.53~~	1,1**15.99**~~50.23~~	--
Total (Permanent)	--	--	--	0.**60**~~72~~	**13.02**~~25.71~~	58.06	--	6.15	--	5**6.32**~~7.81~~	--	1**34.15**~~48.45~~

*This analysis concludes that canals and drains would not be impacted. Temporary and permanent impacts to canals and drains are shown for informational purposes.

Page 5.2-131, Construction, 1st Paragraph - Preliminary results of the aquatic resource delineation are included in Appendix 5.2C.

Please revise text as follows:

> "The aquatic resources delineation survey **was conducted in March 2022 and included a review of the USFWS National Wetlands Inventory (NWI) and USGS National Hydrography Dataset (NHD) maps to determine locations of mapped aquatic resources within the project site (AFC TN #249723 Figure 5.2-3).** ~~Was based off NWI and NHD mapped waters~~. The aquatic resource delineation identified a total of approximately 18.14 acres of wetlands (two palustrine emergent and three palustrine scrub-shrub), 39.23 acres of other waters (two salt flats, an excavated salt flat, an excavated pond, an excavated lake, and Morton Bay) and 1.41 acres (1,598 linear feet) of watercourses (one perennial and one intermittent) in the study area."

Page 5.2-132, 3rd Paragraph – Existing topography at the project site and in the surrounding area is virtually flat, resulting from extensive agricultural manipulation in the region. As stated in Section 5.16 Water Resources (page 5.16-2), the Project is located in the Imperial Valley Planning Area of the Colorado River Water Basin (CRBRWQCB 2019a), which covers approximately 2,500 square miles in the southern portion of the basin. Relative to the overall basin, the impacts to aquatic land cover types are less than significant and unlikely to have a measurable impact on the Salton Sea.

Please revise text as follows:

"An analysis of permanent and temporary impacts to vegetation communities and land cover types using applicant GIS data (see Criterion b). The applicant's GIS data includes the proposed project site plus a 500 feet buffer to account for unforeseen design changes (per. comm. Jacobs). This analysis determined that there could be temporary/permanent impacts to **9.03/5.54** ~~5.18/5.43~~ acres of impacts to tamarisk thickets (riparian habitat) **and temporary/permanent impacts to 18.83/14.92** ~~20.38/17.42~~ acres of impacts to Typha herbaceous alliance (cattail marsh). Tamarisk thickets (riparian) areas would be subject to temporary impacts from the construction laydown and parking, gen-tie poles, water supply pipeline, and well pads. Permanent impacts to Tamarisk thickets would include gen-tie poles and well pads. Cattail marsh would be subject to temporary impacts from the b**o**~~u~~rrow pit, gen-tie poles, pipeline, water supply pipeline, and well pads. Permanent impacts to cattail marsh would include gen-tie poles, pipelines, and well pads. As mentioned under criterion b, this analysis concludes canals and drains would not be impacted because they are managed by IID. The applicant has stated in response to data requests that the project would have no impact on IID canals and drains other than crossing with above ground pipes and gen-tie lines (TN #250679; TN #254015)."

Page 5.2-147, COC BIO-1/MM-BIO-1, Protocol Botanical Surveys – On March 19, 2022, botanists visited a reference population at the Dos Palmas Preserve and observed blooming Cooper's rush species (latitude 33.502500°, longitude -115.831667°). Although Cooper's rush "Typically blooms. April through May..." (page 5.2-26), it was observed blooming in mid-March 2022. Therefore, it was determined that March 2022 was within appropriate timing to survey for rush species.

During the March 2022 botanical surveys, no individuals of any rush species (Juncus sp.) were observed in the project area. As no rush species were unidentifiable during the March 2022 surveys no additional surveys were conducted to confirm species identification. Therefore, the project will have no impacts to special-status plant species.

Botanists conducted protocol-level floristic surveys in suitable habitats in the project area and observed no special-status plants, specifically no Southwestern spiny rush, Salton milk-vetch, Cooper's rush, or dwarf germander. Transect based pedestrian surveys were conducted in suitable habitat within the project area, specifically undisturbed iodine bush scrub, cattail marsh, and tamarisk thickets. Intuitively controlled

transects were conducted in the northern well pad locations of iodine bush scrub because of high disturbance associated with IID dust control furrows (page 5.2-15). The furrowed areas had very little iodine bush and 100% coverage transects were not necessary to observe sparse vegetation in suitable habitats.

Botanists evaluated and surveyed for the CRPR List 4 species with no observations during the March 2022 surveys. As discussed, a reference population was visited to determine if March 2022 was an appropriate time to survey for rush species and it was determined to be the correct timeframe. The impacts to CRPR List 4 species would be less than significant as none were observed.

No significant impacts to the special-status plants were identified. Revisions are provided in Attachment A.

Page 5.2-149, COC BIO-2/ MM-BIO-2 Pesticide Application Requirements – Text has been revised to clarify project owner authority, better reflect rain conditions for the project area, and reduce herbicide buffers within seasonal wetlands. Revisions are provided in Attachment A.

Page 5.2-151, COC BIO-3/MM BIO-3 Crotch's Bumble Bee Avoidance Measures – Crotch's bumble bee is found in a variety of vegetation communities, including grassland, scrub, chaparral, woodlands, and desert margins. General habitat for the Crotch's bumble bee throughout the project area is of poor quality as mapped during vegetation surveys already conducted. Habitat primarily consists of agricultural fields, developed lands and areas that were, until recently under water, likely leaving areas of high salinity soils. Foraging habitat is very limited within and surrounding the project area. The vegetation surveys identified very little cover of native flowering plants within and near the vicinity of the project area. Nesting areas, outside the areas previously under water mentioned above, would be very limited due to active agriculture. In addition, it is likely the large amount of pesticides and herbicides applied within and surrounding the project area would greatly reduce the quality of the habitat that is present. The nearest native foraging habitat (native desert scrub) is more than 5 miles to the east of the project area.

One historical 1948 CNDDB occurrence is over 10 miles south of the project area. There are no iNaturalist or Bumble Bee Watch records within 10 miles. There are no credible observations of the bee near the project area.

Crotch's bumble bee(s) are known to nest within burrowing owl burrows, which are present within the project area. However, if there was little to no foraging habitat in the vicinity of the burrows, it is unlikely the bees would use the burrows for nesting. Therefore, it is recommended that a habitat assessment be completed prior to protocol surveys to assess potentially suitable habitat and determine whether any nesting and foraging surveys are necessary within the project area. Revisions are provided in Attachment A.

Reference: California Department of Fish and Wildlife Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. June 6, 2023.

Pages 5.2-152 through 5.2-158, COC BIO-4/ MM BIO-4, General Conservation Measures – Removing decommissioning references from this COC as they will be covered in the COC Closure, Revegetation, and Rehabilitation Plan. Minor clarifications to requested throughout and provided in Attachment A.

Page 5.2-154, COC BIO-4/ MM BIO-4, Avoid IID Canals and Drains, Salton Sea, and Alamo River – The project area does not include the Salton Sea. The current Salton Sea boundary is located approximately 2,700 feet from the closest project feature, the southernmost Construction Laydown and Parking Area.

The project will not impact any IID drains, but it will impact privately owned farm supply canals that are not associated with IID water conveyance. IID drain and canal crossings will be designed in consultation with IID to avoid impacts.

Noise impacts from pile installation are generally only of concern when the piles are being driven within the waterbody where fish reside. Vibratory pile driving (in water) is considered to have only behavioral effects as sound pressure levels during vibratory pile installation rarely exceed thresholds for mortality or injury of fish (Fisheries Hydroacoustics Working Group 2008; Caltrans 2020). None of the piles would be installed within existing waterbodies (e.g. drains occupied by pupfish); rather the piles would be installed on dry land. Although sound vibrations may be transmitted through the ground to reach nearby waterbodies, the noise levels would not be injurious to pupfish and would have a less than significant impact on pupfish. Revisions are provided in Attachment A.

Page 5.2-155, COC BIO-4/ MM BIO-4, Control of Invasive Species – This bullet was removed because invasive species management is described in COC BIO-10/MM BIO-10 Invasive Species Management Plan. There is no reason to include zebra mussels (Pages 5.2-123), as they have been found only at two locations in California, near Hollister https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=190514). Additionally, no work is planned in aquatic habitat. Revisions are provided in Attachment A.

Page 5.2-156, COC BIO-4/ MM BIO-4, Vehicle Speeds – Updated to be consistent with the Section 5.1, Air Quality conditions, in accordance with ICAPCD standards. Revisions are provided in Attachment A.

Page 5.2-157, COC BIO-4/ MM BIO-4, Monitoring Report – The Monitoring Report contradicts the Construction Termination Report due date. Revised to state Annual Construction Monitoring Reports due annually and Construction Termination Report due at end of construction. Revisions are provided in Attachment A.

Page 5.2-157, COC BIO-4/ MM BIO-4, Notification to CNDDB – Extend the CPM submittal timeframe from 5 working days to 20 working days. Revisions are provided in Attachment A.

References:

Fisheries Hydroacoustic Working Group. 2008. Memorandum. Agreement in Principle for Interim Criteria for Injury to Fish from Pile Driving. NOAA Fisheries, U.S. Fish and Wildlife Service, Caltrans, Oregon Department of Transportation, Washington Department of Transportation, U.S. Federal Highway Administration

California Department of Transportation (Caltrans). 2020. Technical Guidance for the Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish

Pages 5.2-158 through 5.2-160, COC BIO-5/ MM BIO-5 Worker Environmental Awareness Program – WEAP requirements have been moved to the Verification portion of the COC. Text has been modified to clarify requirements for CPM approved WEAP trainer. Revisions are provided in Attachment A.

Page 5.2-160 through 5.2-164, COC BIO-6/MM BIO-6 Designated Biologist(s) and Biological Monitor(s) – Designated Biologists will be retained during project construction. Biologists will be present during operations as required by project-specific plans. Provided clarification on DB qualifications, responsibilities, and monitoring requirements. Updated verification to delegate resume submittals to the project owner, allow authorized individuals to handle special-status species, as authorized by CDFW, and clarify notice to the CPM the following business day to allow discoveries outside of the normal work week.

Revisions are provided in Attachment A.

Page 5.2-164, COC BIO-7/ MM BIO-7 Conduct Pre-Activity Surveys for Special-Status Wildlife – Removing decommissioning references from this COC as they will be covered in the COC Closure, Revegetation, and Rehabilitation Plan. Potential impacts to desert pupfish will be minimized by implementation of COC BIO-9/MM BIO-9. Text has been modified to clarify special-status species requirements.

Submitting observations of special-status species to CNDDB is already required by BIO-4 and has been removed from BIO-7. Revisions are provided in Attachment A.

Page 5.2-164, COC BIO-8/ MM BIO-8 Biological Construction Monitoring – BIO-8 is duplicative of BIO-6. The paragraph from BIO-8 regarding presence of biological monitor during vegetation removal was added into a bullet in BIO-6. With addition of BIO-8 requirement of monitoring during vegetation removal into BIO-6, BIO-6 includes all pertinent biological monitoring and qualifications and therefore BIO-8 has been deleted in its entirety. Revisions are provided in Attachment A.

Page 5.2-165, COC BIO-9/ MM BIO-9 Desert Pupfish Protection and Relocation Plan – As described in response to comment on page 5.2-88, no dewatering of IID drains potentially occupied by desert pupfish is required for project construction or operations. As documented on page 5.2-7, CDFW and USFWS do not require desert pupfish surveys because presence is presumed:

> "CDFW and USFWS confirmed that desert pupfish surveys are not required because presence of desert pupfish in the area is presumed. Felicia Sirchia, USFWS, also provided a .kmz of 2020 desert pupfish occupied canals and drains. Maria Davydova- Flores, CDFW, provided additional 2022 desert pupfish occurrence data, 2023 confirmed desert pupfish at Red Hill Bay Drains (in the vicinity of Elmore North well pads). Sharon Keeney, CDFW, stated that a survey in the end of May 2023 yielded over 400 desert pupfish, mostly juveniles, in the main connector channel of the Red Hill Bay Drains. May/June 2023."

Submitting observations of special-status species to CNDDB is already required by BIO-4 and has been removed from BIO-9. Revisions are provided in Attachment A.

Page 5.2-167, COC BIO-10/ MM BIO-10 Invasive Species Management Plan – Best Management Practices have been moved to the Verification portion of the COC. Revisions are provided in Attachment A.

Page 5.2-168, COC BIO-11/MM BIO-11 Closure, Revegetation, and Rehabilitation Plan – Text has been revised to better reflect project area conditions. IID manages the dust control furrows along the gen-tie line. Revegetation of these areas is not feasible because temporary disturbance in these areas will continue to be managed by IID for dust control. Revisions are provided in Attachment A.

Page 5.2-169, COC BIO-12/ MM BIO-12 Conduct Pre-Activity Surveys for Nesting Birds – Nesting bird surveys should be able to be conducted within a prior 7-day window to allow for flexibility in construction schedule.

The Migratory Bird Treaty Act protects active nests not "suspected nests". A biologist will survey area until confirmation on nesting status is made. Buffers will only be established for active nests.

The project site has potential for many nesting bird species, not just passerines and raptors. In the Data Adequacy, the Applicant provided a nest exclusion buffer table that defines buffer distances by species (Table DA 5.2-4, TN# 250679). Verification has been updated to require the DB submit more specific buffer distances by species to CPM for approval prior to construction.

Submitting observations of special-status species to CNDDB is required by BIO-4 and has been removed from BIO-12. Removing decommissioning references from this COC as they will be covered in the COC Closure, Revegetation, and Rehabilitation Plan. Revisions are provided in Attachment A.

Page 5.2-171, COC BIO-13/ MM BIO-13 Yuma Ridgway's Rail Survey, Management, and Monitoring – Two production wells are within suitable Yuma Ridgway's rail habitat (rails have been detected in close proximity to one of these locations) and several areas of the overall project area are within a 500-foot buffer from suitable habitat and will need pre-activity surveys and construction monitoring for Yuma Ridgway's rails.

No California black rail (state threatened and fully protected) were observed during 2022 surveys (Silwa and Conway 2022); however, this species would be afforded protection and avoidance similar to Yuma Ridgway's rail if detected during monitoring. Other sensitive marsh bird species, just as least bittern (CDFW Species of Special Concern), would be protected during nesting as outlined in COC BIO-12.

The nearest MBGP feature to Obsidian Butte, a construction laydown yard, is located approximately 800 feet from edge of butte and has been removed from the 300-foot buffer.

Submitting observations of special-status species to CNDDB are already required by BIO-4 so has been removed from BIO-13. Revisions are provided in Attachment A.

Page 5.2-172, COC BIO-14/ MM BIO-14 Yuma Ridgway Rail Species Noise Assessment and Abatement Plan – It has been noted that, for the Yuma Ridgway's rail, "threshold for noise disturbance that results in behavioral disturbance or abandonment of the area is unknown and some areas with significant noise sources maintain healthy rail populations" (USFWS 2009). Based on Huntington Beach Energy Project testimony by bird hearing expert Robert Dooling, Ph.D., USFWS's commonly used 60 A-weighted decibels (dBA) is an overly conservative noise threshold for birds. The A-weighting scale was developed based on human hearing. Audiograms show that birds are as much as 15 to 20 decibels less sensitive to low frequency noises, such as that from construction equipment (CEC 2014). In addition, Dr. Conway recommended using the 80 decibel noise threshold in the marsh bird protocol report:

> "That said, activities that create loud noises would likely affect rails least if the following avoidance measures are used:
>
> the noise levels at marshes occupied by rails (e.g., those at Morton Bay) never exceed 80 decibels" (Silwa and Conway 2022)"

The plant site is approximately 900 feet southeast from the nearest rail observation. Several well pads and pipelines are within 500 feet of documented rail occurrences (Silwa and Conway 2022). Typical construction activities are predicted to generate average noise levels between 84 and 87 dBA at 50 feet from the edge of the construction activity; noise levels would attenuate to below 80 dBA at a distance between 100 and 200 feet from the source (AFC Section 5.7, Noise). Sound levels during startup and typical operation and maintenance activities may vary. The highest sound levels are associated with temporary steam venting through a rock muffler during upset or startup/ shutdown conditions. These were observed to vary between approximately 68 dBA at 300 feet to 71 dBA at 4,000 feet (AFC Section 5.7, Noise). As these events are infrequent, temporary, and finite, they are not expected to pose a significant impact. The loudest construction activity would be pile driving at 104 dBA at 50 feet (AFC Section 5.7, Noise). Noise from the well and plant construction would not likely impact rail because it will attenuate lower than 80 dBA (AFC Section 5.7, Noise).

References:

California Energy Commission (CEC). 2014. AE Southland Development, LLC's Opening Testimony Preliminary Identification of Contested Issues, and Witness and Exhibits Lists: FSA Comments. Huntington Beach Energy Project. Docket No. 12-AFC-02. June 30.

U.S. Fish and Wildlife Service (USFWS). 2009. Yuma Clapper Rail (Rallus longirostris yumanensis) Recovery Plan. Draft First Revision. U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico

Page 5.2-173, COC BIO-15/ MM BIO-15 Burrowing Owl Surveys, Monitoring, Prevention, and Relocation – COC text will supersede CDFG 2012 guidance where measures conflict. Text has been added to the COC that has been previously defined in CDFG 2012 guidance for clarity. Replaced "pre-activity" surveys with take avoidance surveys to be consistent with CDFG 2012 language.

Breeding and non-breeding season surveys were completed in 2023. Applicant will conduct take avoidance surveys as defined by CDFG 2012.

Avoidance buffers are defined in CDFG 2012 guidance and will be used as baseline for a qualified biologist to determine buffer distances based on low/medium/high construction disturbance.

Biologists will submit CNDDB observations of special-status species in accordance with BIO-4, however this will exclude observations of burrowing owls as they are abundant in this area. Revisions are provided in Attachment A.

Page 5.2-175, COC BIO-16/ MM BIO-16 Burrowing Owl Habitat Preservation and Enhancement – Minor edits have been made to provide clarification. Revisions are provided in Attachment A.

Page 5.2-176, COC BIO-17/ MM BIO-17 Habitat Conservation or Restoration Plan – Minor edits have been made to provide clarification. The project has no impacts to desert holly scrub. Revisions are provided in Attachment A.

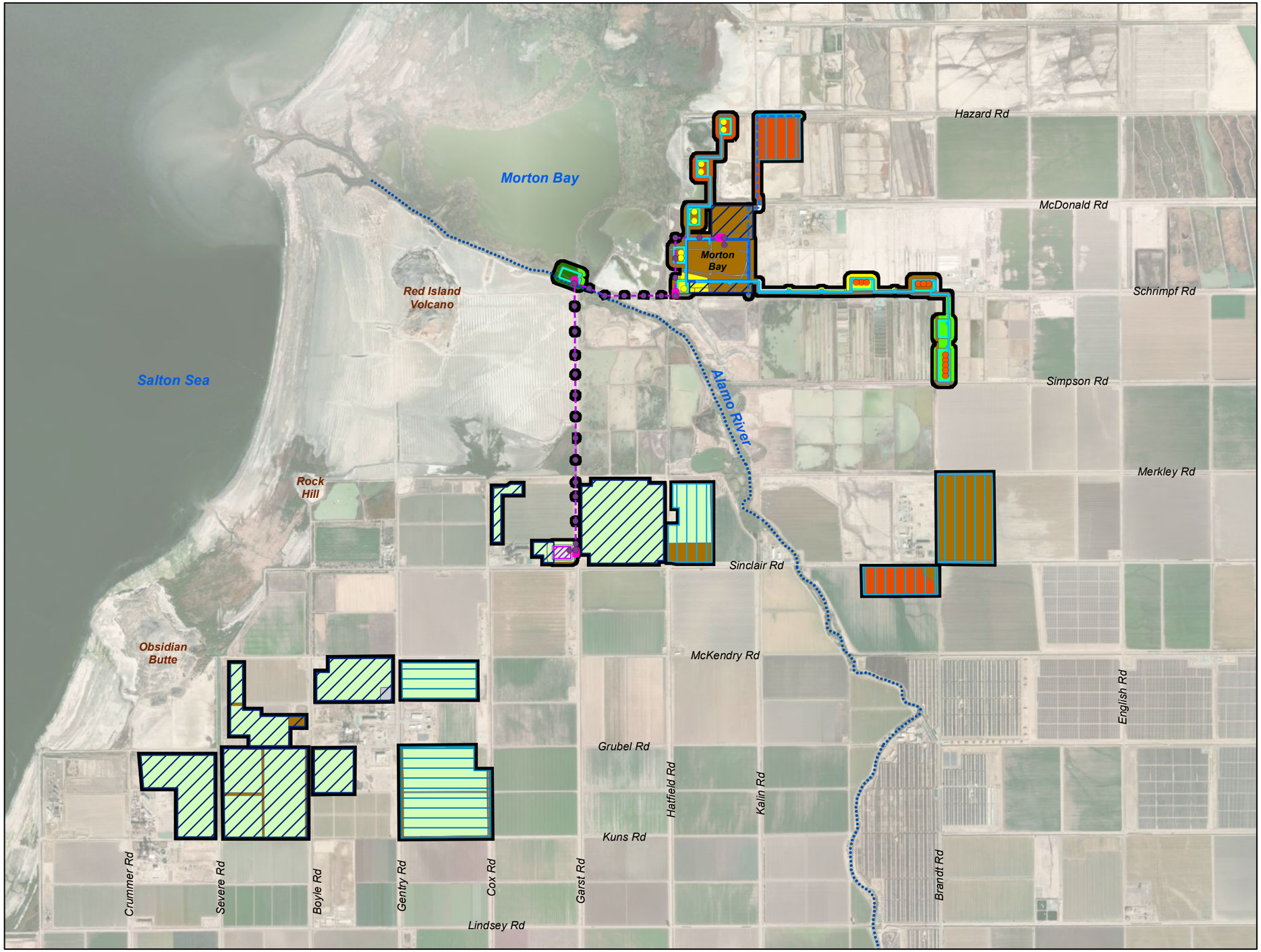
Page 5.2-177, COC BIO-18/ MM BIO-18 American Badger, Desert Kit Fox, and Yuma Hispid Cotton Rat Avoidance and Minimization Measures – Removing decommissioning references from this COC as they will be covered in the COC Closure, Revegetation, and Rehabilitation Plan. Minor edits have been made to provide clarification. Submitting observations of special-status species to CNDDB is already required by BIO-4 so has been removed from this condition. Revisions are provided in Attachment A.

Page 5.2-178, COC BIO-19 Facility Pond Wildlife Escape and Monitoring Plan – Text has been moved to the Verification portion of the COC. Revisions are provided in Attachment A.

Page 5.2-180, COC BIO-20/ MM BIO-20 Avian Collision Deterrent Proposal and Monitoring Plan – Text has been moved to the Verification portion of the COC. Markers will be placed on the entire length of the gen-tie line. Revisions are provided in Attachment A.

Page 5.2-181, COC BIO-21/ MM BIO-21 Biological Resources Mitigation Implementation and Monitoring Plan – Removing decommissioning references from this COC as they will be covered in the COC Closure, Revegetation, and Rehabilitation Plan. Revisions are provided in Attachment A.

Page 5.2-183, COC BIO-22/ MM BIO-22 Provide Evidence of Applicable Jurisdictional Waters Permits – Minor adjustments to area and parcel text to allow for mitigation area to match impact area. Revisions are provided in Attachment A.



Legend

- Biological Study Area
- Plant
- Well Pad
- Injection Well
- Production Well
- Pipeline
- Water Supply Pipeline
- Gen-Tie Line Pole
- Gen-Tie Line
- Pull Site
- Switching Station
- Borrow Pit
- Construction Camp
- Construction Laydown and Parking Areas

Land Cover and Vegetation Types

- Agriculture
- Barren Lands
- Canals and Drains
- Developed
- Disturbed with Vegetation
- Disturbed with No Vegetation
- Invasive Southwest Riparian Woodland and Shrubland/Tamarisk Thickets
- North American Arid West Emergent Marsh/Cattail Marsh
- North American Warm Desert Playa/Iodine Bush Scrub

Note:
Impacts to canals and drains are included for completeness; no IID infrastructure will be impacted by this Project.

0 0.25 0.5 1
Miles

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Figure 5.2-1R
Land Cover and Vegetation Types
Morton Bay Geothermal Project
Imperial County, California

Jacobs

\\dc1vs01\gisproj\B\BHE_Renewables\Imperial_Valley\MapFiles\Bio\Morton_Bay\MB_Figure_5_240709.mxd

5.3 Climate Change and Greenhouse Gas Emissions

Page 5.3-3, Regulatory, Federal, U.S. EPA GHG Mandatory Reporting Program (40 CFR Part 98), 1st Paragraph, Last Sentence – Federal reporting of GHG emissions resulting from the leakage of SF6 and PFC-containing equipment is only required if the total nameplate capacity of SF6 and PFC-containing equipment is greater than 17,820 pounds. Because the project equipment is expected to contain only 300 pounds of SF6, the project is not expected to be subject to reporting under 40 CFR Part 98, Subpart DD. To clarify this requirement, revise this sentence as follows: "**Although circuit** ~~Circuit~~ breakers and gas insulated switches related to **the project's** electric power transmission and distribution may be sources of GHG**, they are not expected to be** subject to reporting due to the**ir total nameplate capacity being less than the applicability threshold of 17,820 pounds** ~~leakage of SF6~~."

Page 5.3-10, Operation, 1st Paragraph, 1st Sentence – To clarify that there is only one cooling tower associated with the project, revise this sentence as follows: "GHG emissions from project operation would be primarily from the cooling tower and sparger system, which are based on two input streams: the ~~non-condensable gas (NCG)~~ condensate/liquid within the cooling tower~~s~~ and the gaseous NCG vented into the cooling tower~~s~~ from the Power Generation Facility (PGF) steam."

Page 5.3-13, Table 5.3-2 CONFORMANCE WITH APPLICABLE LORS – The Conformance and Basis for Determination provided for Federal Mandatory Reporting (40 CFR Part 98) indicates that the project would be required to report GHG emissions consistent with 40 CFR Part 98. The Applicant does not agree with this conclusion based on the applicability criteria contained within 40 CFR 98.2. Specifically, the project does not belong to the source categories listed in Table A-4 or the supplier categories listed in Table A-5. In addition, although the project does include electricity generation units and electrical transmission and distribution equipment, it does not meet the source category definitions listed in Table A-3 because its electricity generation units are not subject to year-round reporting of CO2 mass emissions under the Acid Rain Program (40 CFR Part 75) and its electrical transmission and distribution equipment has a total nameplate capacity less than 17,820 pounds. For these reasons, the only emissions which should be compared to the reporting threshold of 25,000 MTCO2e per year are those from non-exempt stationary fuel combustion sources and emissions from these project sources alone are not expected to exceed the federal reporting threshold. Therefore, the Conformance and Basis for Determination should be revised to clarify that 40 CFR Part 98 is not applicable to the project.

5.4 Cultural and Tribal Cultural Resources

General Comments

The Applicant acknowledges the traditional homelands of the California Native American tribes that inhabit Imperial Valley and the region of the Project site (AFC, pp. 5.3-7 through 5.3-35; 8/31/24 RT 30:21-25). Representatives for the Applicant are actively engaged in discussions with local California Native American tribes, primarily the Kwaaymii Laguna Band of Indians ("Kwaaymii"), to listen, learn and develop proposals to address tribal concerns. Through discussions with the tribes, the Applicant understands and acknowledges the importance to the tribes of specific features in the Project area, including Obsidian Butte, the mud pots, Red Island (also known as Red Hill), and Rock Hill, and has discussed tribal concerns regarding potential impacts to these features.

To address tribal concerns, the Applicant is committed to exploring the establishment of a conservation easement over Obsidian Butte and realignment of the cooling tower. The Applicant strongly believes a conservation easement is the approach that will create the most balanced outcomes for all interested parties. Unlike a nomination to the National or California Registers, which can be lengthy and complicated processes that do not actually provide for proactive management and may not ultimately result in the listing of the tribal cultural resource (TCR), the conservation easement proposal can be specifically tailored to accomplish preservation, protection and management priorities and maintain the ability for responsible development in the future. As part of the conservation easement, the Applicant proposes developing a management plan that will provide for preservation, tribal access to and management of Obsidian Butte. The Applicant also proposes providing a long-term endowment to manage conservation activities at Obsidian Butte in perpetuity.

Furthermore, during discussions with the Applicant, the tribes voiced concerns over geothermal operations potentially impacting the mud pots. At the request of Kwaaymii and to provide a foundation for discussion on the mud pots, the Applicant commissioned an independent study of the potential impacts to the mud pots from geothermal operations, *Potential for Impact of New Geothermal Developments on Southeast Salton Sea Mud Pots*, by Dr. Michael A. McKibben ("Mud Pots Study"). In sum, the Mud Pots Study demonstrates that surficial activity of the mud pots is influenced more by shallow hydrological changes related to climate change and rainfall variations, rather than changes in deep geothermal reservoir properties. The Mud Pots Study was provided to the Kwaaymii on July 2, 2024, and to the Agua Caliente Band of Cahuilla Indians and the Fort Yuma Quechan Indian Tribe on July 30, 2024. The Mud Pots Study is provided as Attachment C to these comments.

As noted above, the Applicant respects and acknowledges identification by the tribes of important tribal areas near the project site and is seeking to reach an agreement with the tribes on measures to minimize impacts to those areas. As the Applicant works with the tribes to reach a balanced outcome for all parties, the Applicant must also raise its concerns with legal and technical conclusions reached in the PSA. In particular, the Applicant has significant concerns with the PSA's delineation of the Southeast Lake Cahuilla Volcanic Cultural District ("SELCAVCD") boundary, the discussion of integrity, and the evaluation of potential impacts to these resources, particularly the conclusion that there are "significant and unavoidable" impacts to the SELCAVCD as a result of visual degradation and speculation that geothermal well operations could "disrupt" the mud volcanoes and mud pots. In short, the PSA does not establish, with substantial evidence, either an appropriate, geographically defined tribal cultural landscape for the purposes of CEQA, or that the MBGP will result in significant and unavoidable impacts to a TCR under CEQA. (See, for example, Pub. Resources Code §§ 21074, 21082.2.) Each issue will be discussed in turn below before turning to detailed comments on PSA sections.

Proposed SELCAVCD Geographic Boundary

The Applicant has significant concerns with the PSA's delineation of the SELCAVCD boundary. The district boundary proposed in the PSA: (a) incorporates contributing resources and elements, "as well as their physical and visual connectivity, and setting" including the Salton Sea, "which contributes to the district by creating a visual setting much like Lake Cahuilla did in pre contact times"; (b) roughly follows the Salton Sea Shallow Geothermal Anomaly; (c) is delineated along USGS quadrangle map sections and section subdivision lines; (d) considers fluctuating shoreline levels of the Salton Sea; and (e) and contains only public lands with the exception of Unit B (Mud Pots and Old Volcanoes). (See, PSA, pp. 5.4-49 through 5.4-51) However, the boundary proposed for SELCAVD does not comply with Department of Interior (DOI) guidance on historic district boundary delineation or best practices because it concludes that visual continuity is either a historically significant aspect of the district requiring the boundary to be continuous, or it is not. A discontiguous boundary is only allowed if visual continuity is not historically significant. A historic district may contain discontiguous elements only under the following circumstances "When visual continuity is not a factor of historic significance, when resources are geographically separate, and when the intervening space lacks significance"; When cultural resources are interconnected by natural features that are excluded from the National Register Listing…"; or "When a portion of a district has been separated by intervening development or highway construction and when the separated portion has sufficient significance and integrity to meet the National Register Criteria" (DOI 1997:12). None of these circumstances are applicable for the PSA's proposed district boundary.

Further, the boundary currently considers the Salton Sea as contributing "to the district by creating a visual setting much like Lake Cahuilla did in pre contact times". However, as discussed further below, the PSA concludes that the SELCAVCD lacks integrity of setting. Therefore, the SELCAVCD boundary should not be delineated in consideration of setting. Therefore, the SELCAVCD boundary should not be delineated in consideration of setting and should therefore be reduced or redrawn as a discontiguous district with separate units for each contributing component.

For clarification, the proposed SELCAVCD boundary of the primary unit (excluding Unit B) includes public lands held by Imperial Irrigation District and United States government along with approximately 122 acres held by BHE Renewables' subsidiaries in Section 5 (12S, 13E) and 1,240 acres held by a private landowner in Sections 10 and 11 (11S, 13E).

Finally, it is unclear from the PSA what information was provided by the Native American community for the boundary delineation. From the Technical Advisory for AB 52 and Tribal Cultural Resources in CEQA, "Courts will defer to a lead agency's factual determination that a resource is a tribal cultural resource if that decision is supported by substantial evidence in the record". The advisory adds, "Evidence that may support such a finding could include elder testimony, oral history, tribal government archival information, testimony of a qualified archaeologist certified by the relevant tribe, testimony of an expert certified by the tribal government, official tribal government declarations or resolutions, formal statements from a certified Tribal Historic Preservation Officer, or historical/anthropological records." The PSA summarizes interviews and comments from the Native American community on pages 5.4-45 to 5.4-51. Consultation summaries for the CEC site visits in February 2024 are provided under Contributing Elements and Resources on pages 5.4-58 to 5.4-62. These sections of the PSA report a consensus from the community that the area possesses cultural significance and identify several contributing elements to the TCR, including Obsidian Butte, the mud pots, Rock Hill, and Red Island. Other landmarks mentioned in these sections include Laguna Mountain, Signal Mountain, Pilot Knob, the Santa Rosa Mountains, and the Chocolate Mountains. The TCR boundary does not encompass these latter locations, and it is unclear how the information obtained from the community regarding boundary definition was employed.

Integrity

The Applicant has significant concerns with the PSA's discussion of integrity. The issue of integrity is central to a CEQA evaluation of potential impacts to cultural and tribal cultural resources. A resource's integrity establishes a baseline from which to evaluate the potential impacts of a project. The evaluation of the potential change to a resource's integrity, and whether the change affects a resource's ability to convey its significance is a key factor in determining the significant effects of a project.

The SELCAVCD, as proposed in the PSA, is composed of natural features and archaeological resources that convey significance through several aspects of integrity: location, materials, feeling and association. The SELCAVCD, as acknowledged in the PSA, does not retain integrity of setting, because "the integrity of the SELCAVCD has been compromised by the historic activities associated with farming and irrigation, geothermal drilling, gravel mining, soil and construction debris dumping, infrastructure constriction such as roads and trails, and development associated with a county park and a trailer park." (PSA, 2024, 5.4-58). Construction and operation of the MBGP will occur outside the SELCAVCD's features and would have no impact on the integrity of SELCAVCD's location or materials. Therefore, a determination of the project's potential to substantially change the character of the SELCAVCD, resulting in an impact to the resource under CEQA, is contingent upon an assessment of impacts to the cultural district's feeling and association.

Construction and operation of MBGP would not diminish the integrity of feeling as it relates to the SELCAVCD's historic sense of its period of significance resulting "…from the presence of physical features that, taken together, convey the property's historic character" (OHP 1995:45). Construction of MBGP would alter, but have no impact on, the already compromised setting of the SELCAVCD caused by "…historic activities associated with farming and irrigation, geothermal drilling, gravel mining, soil and construction debris dumping, infrastructure constriction such as roads and trails, and development associated with a county park, and a trailer park" (Preliminary Staff Assessment ("PSA") 2024:5.4-58). The physical features (i.e., contributing components) of the SELCAVCD, as well as important cultural landmarks outside the SELCAVCD, together, would continue to convey the SELCAVCD's historic character long after the construction of the proposed project.

Construction and operation of MBGP would not diminish the integrity of association as it exists between historically significant viewsheds from the SELCAVCD to important cultural landmarks within or outside the SELCAVCD, such as the Chocolate Mountains. With the proposed realignment, the view to these important, cultural landmarks will be maintained, as the features currently exist, and the associated history, traditional knowledge, and teachings will be retained. The MBGP would not diminish the association between the SELCAVCD and its traditional use as a source for raw materials, nor its association as a place for education and the transmission of cultural knowledge because the project is not located on any of the identified contributing features of the SELCAVCD.

Impact Analysis and Proposed Mitigation

The Applicant has significant concerns with the impact analysis prepared for the SELCAVCD, particularly the lack of substantial evidence demonstrating that perceived impacts resulting from the Project will result in a substantial adverse change to cultural or tribal cultural resources. As discussed above and throughout the comments, impact assessments are contingent upon integrity of the resource to convey its historical significance. A significant impact under CEQA occurs if construction and/or operation of a project demonstrably diminishes a resource's integrity or results in the loss of integrity to the point that the resource is no longer able to convey its significance. With respect to the SELCAVCD, MBGP will not physically alter, damage, or destroy any contributing component of the SELVACD, nor will the MBGP affect current tribal access to the places identified as contributing components of the SELVACD. Furthermore, the degree to which perceived visual impacts to the integrity of significant viewsheds associated with the SELCAVCD is not considered from the proposed Project or cumulatively. The PSA does not explain how viewshed integrity would be diminished nor provide a fair measurement of the degree to which the

integrity of specific character defining viewsheds would be diminished. The impact findings related to the SELCAVCD should be reduced to less than significant with mitigation incorporated.

Accordingly, COC CUL-TRI-8/ MM CUL/TRI-8 should be removed from the PSA because mitigation should be commensurate with the degree of the impact on the integrity of the resource from the proposed project or cumulatively.

The Applicant also proposes deletion of the PSA's proposed COC CUL/TRI-9/ MM CUL/TRI-9, which would provide for monitoring of the functioning of the mud pots and volcanoes. There is no scientific data to support the PSA's conclusion that operation of the MBGP will disrupt the mud volcanoes and mud pots. Further, the MBGP will not physically alter, damage, or destroy the mud volcanoes and mud pots, nor will the project otherwise affect access to those sites for the purposes of healing, gathering pigment, or teaching purposes. The Mud Pots Study demonstrates that changes to mud pots and mud volcanoes are the result of natural processes, including drought and climate change, rather than geothermal operations. The MBGP would not result in a disruption to the mud volcanoes and mud pots and would therefore have no impact (please also see comments on Page 5.4-75 for additional information).

Specific Comments

Specific comments on individual sections of the PSA are provided below.

Section 5.4.1, Environmental Setting**:** The Applicant recommends revisions to this section to ensure that the Final Staff Assessment ("FSA") addresses the following comments.

Page 5.4-4, Geology, 4th Paragraph – the PSA states "Recent, direct, radioisotope dating of geological samples from the Salton Buttes suggests a much younger age for these volcanic structures. Obsidian Butte contains at least five obsidian outcroppings that formed during a volcanic eruption approximately 2450 B.P. (Schmitt et al. 2019, pages 16-17, Figures 1B and 5)." Further, the PSA adds, "The Red Hill volcanic domes formed at about the same time as Obsidian Butte (about 2450 B.P.) but could be as much as 100 years younger than Obsidian Butte (Schmitt et al. 2019, page 17). The filling and desiccation of Lake Cahuilla is discussed throughout the document; the age of the buttes would seem to be another example of the dynamic and changing environment and an extremely important influence on determining the SELCAVCD's period of significance that should be discussed.

Page 5.4-5, Lake Cahuilla and the Salton Sea, 2nd Paragraph – Laylander et al. 2008 is a secondary source on the last Pleistocene-age stand of Lake Cahuilla. A primary source reference and bibliographic information should be provided.

Page 5.4-5, Lake Cahuilla and the Salton Sea, 3rd Paragraph – The authors state that the earliest known Native American site associated with Lake Cahuilla dates to 5000 BP (3000 BC) and cited a secondary source (Laylander et al. 2008) for the information. It is unclear if this sentence is referring to Feature 17 (Ancestral Remains) at the Indian Hill Rockshelter site? If so, the ancestral remains were recovered along with grave goods consisting of a quartz Elko point, bifacial mano, bone awl fragment, and quartz flake, which have no direct association with Lake Cahuilla. Freshwater shellfish, fish, avian faunal remains, and obsidian originating from the Lake Cahuilla area do not occur until much later in the Indian Hill Rock Shelter sequence, most likely associated with Lake G (2612-2005 BP) in Rockwell et al.'s (2022:282, Figure 6) model. Schaefer and Laylander (2007:249) identify three sites (CA-RIV-2936, CA-RIV-1974, and CA-RIV-5771/5773) dating to approximately 3,000 BP (1,000 BC) as the earliest sites in the western Colorado Desert. According to Love and Dahdul (2002:75), Feature 3 at CA-RIV-1340 in La Quinta produced the earliest known radiocarbon date (1280 BC) from a Native American site in direct association with Lake Cahuilla. The site was approximately 20 meters below sea level, well below the maximum shoreline elevation of Lake Cahuilla, and buried 2 meters below ground surface.

Page 5.4-7, Early or Paleoindian Period (about 12,000-10,000 B.P.) – The PSA states that datable archaeological materials and time-diagnostic artifacts dating between 12,000-10,000 BP were recovered from the "regional archaeological record" without clarifying what region they refer to. Furthermore, the PSA cites the Obsidian Butte ethnographic study prepared by Gates and Crawford 2010:6 as the source of this information. However, Gates and Crawford (2010:6) states, "Although southern California has extensive evidence of occupation during the Early Period, solid evidence for the Colorado Desert is sparse." The FSA should provide primary source information to support the statement or revise this section consistent with Gates and Crawford (2010:6).

Page 5.4-6, Information about the types/species of plants used by the Native Americans in the ethnographic PAA is included in the Ethnographic Setting. See 5.4-12, 5.4-13, 5.4-19, and 5.4-20. It would be appropriate to add a separate section to discuss which plant resources are located in the TCR, if any. The Applicant is not aware of modern use of plant resources by any regional tribes however, information about the types/species of plants used by the Native Americans in the ethnographic PAA is included in the Ethnographic Setting (Page 5.4-9). See 5.4-12, 5.4-13, 5.4-19, and 5.4-20. It would be appropriate to add a separate section to discuss which plant resources are located in the TCR, if any.

Page 5.4-9, Late Prehistoric Period, 5th Paragraph – PSA states that Obsidian Butte was underwater when the surface elevation of Lake Cahuilla was higher than approximately -225 feet relative to mean sea level. Jacobs (2023C:20-21) reports that Obsidian Butte was "inundated and it's glass inaccessible whenever Lake Cahuilla's surface elevation was higher than 40 m bmsl" or -131.2 feet bmsl (See also Schaefer and Laylander (2007:251). The FSA should clarify what the actual surface elevation of Lake Cahuilla was during periods where the obsidian was not accessible.

Pages 5.4-9 through 5.4-16, Ethnographic Setting – As the TCR is continuously used by the community, the background context would greatly benefit from weaving the modern viewpoints in with the ethnographic material. In general, it would be very helpful to the overall report if information from Staff's Native American consultation and from Gates and Crawford (2010) was added to this section for example to better explain how the physical features of the TCR connect to the area's oral traditions.

Page 5.4-12, Kamia, 2nd Paragraph, 7th Sentence – Delete the period (.) after "occurred" and place a parenthesis before "Luomala 1978, page 597."

Page 5.4-23, Under Ethnographic Setting, Cahuilla, Worldview – The PSA states "Several ethnographic landscape features within the project's area of analysis (PAA) are identified in Bean et al. (1991, page 2), and in their introduction, the authors state that most of the places discussed in the publication are considered sacred or historically significant by the Cahuilla people, underscoring their concerns about potential impacts on these locations." It is unclear whether this is the correct page reference to those landscape features. Below this, "Ethnographic references to the mudpots and mud volcanoes, as well as the rhyolitic domes located within the CEC staff's area of analysis (PAA) can be found in Bean et al. (1991) …" The first sentence seems to imply that there are features, other than the mudpots and rhyolitic domes, within the PAA that are identified in Bean. This should be clarified. Further, the PSA should be revised to clarify the specific features in the PAA that the rhyolitic domes refer to. Paint Island, Pelican Island, and Three Buttes are discussed in this section, but they are not listed in the SELCAVCD later in the document, where their newer names are used. The applicant suggests referencing the old names, once in the TCR Description and then, refer back to the Ethnographic Setting. It would be very helpful to list all of the specific landscape features that are in the PAA and discussed in Bean et al. (1991) in this section. Additionally, it would be both useful and appropriate to add in the modern perspectives on these places.

Pages 5.4-46 through 5.4-47, Native American Consultation, CEC Staff's Methods, 1st Paragraph – CEC consultation with Native American tribes and individuals for the MBGP project was simultaneous conducted with consultation on Elmore North Geothermal Project (ENGP) and Black Rock Geothermal

Project (BRGP). It appears that tribal concerns, potential impacts to the SELCAVCD, and potential mitigation measures were discussed relative to all three projects. The PSA proposes identical mitigation and COCs for all three projects, which includes, among others NRHP/CRHR Nomination of the SELCAVCD. However, CEQA requires not only a link between the nature of the impact and proposed mitigation, but that mitigation must be proportional to the impact. 14 CCR § 15126.4(a)(4)(A). In short, the proposed mitigation measures in the PSA-- COC CUL/TRI-8/ MM CUL/TRI-8 and CUL/TRI-9/ MM COL/TRI-9)—requires each project to mitigate for the impacts ascribed to all three. Thus, the proposed mitigation for each project is not proportional with the impact of the project and its individual contribution to cumulative impacts.). This will be further discussed in the comments below.

Page 5.4-54 through 5.4-63, Southeast Lake Cahuilla Active Volcanic Cultural District – The section does not adequately identify, quantify, or evaluate the significance of historic and modern components of the SELCAVCD, which fall within the period of significance identified in the PSA (page 5.4-62). Any non-confidential information provided during Native American consultations regarding the SELCAVCD should be provided, such as information that was included in the impact analysis but not provided in the background description. For example, the PSA concludes that historic and modern components of the SELCAVCD are disturbances but did not adequately evaluate these components or other non-contributing components. The integrity assessments must "…take into consideration the relative number, size, scale, design, and location of the components that do not contribute to the significance" (DOI 1995:46). The components do not contribute to the significance of the SELCAVCD nor prevent the SELCAVCD from conveying its significance (i.e., integrity), therefore 1) the existing and extensive historic and modern alteration of the landscape outside the SELCAVCD boundary is not a factor in the significance of the resource; 2) the altered landscape outside the SELCAVCD, which is visible from important locations within the district boundary, has not prohibited the important viewsheds from conveying its significance, and; 3) the proposed MBGP project located in the altered landscape outside the SELCAVCD boundary near existing above ground facilities that does not obstruct views to important landmarks identified in the PSA, would likewise not prohibit the important viewsheds from conveying significance.

Page 5.4-55, Southeast Lake Cahuilla Active Volcanic Cultural District, Boundary Justification – This section states that the Salton Sea contributes to the SELCAVCD "by creating a visual setting much as Lake Cahuilla did in pre contact times." The Applicant agrees with CEC staff's assessment that the alteration of the landscape has diminished the setting of the SELCAVCD to the point it no longer conveys the significance of the district. This is demonstrated in part by the historic and modern alterations of the landscape and the large swaths of land within Unit A that contain no contributing components or evidence of the active volcanic landscape. References indicating that the setting contributes to the significance of the SELCAVCD, including visual setting, should be removed in the FSA.

- Fluctuating lake levels, a significant element of a dynamic and active landscape, resulted in short-to-long term restricted access to the SELCAVCD. This occurred multiple times in the past, sometimes lasting more than 100 years. This prevented people from physically gathering materials, connecting to places of sacred and ritual importance, and experiencing the important viewsheds identified in the PSA, all while the metaphysical, spiritual, ritual, and traditional knowledge/cultural heritage aspects associated with the SELCAVCD persisted. Restricted access and loss of viewsheds did not prevent the SELCAVCD from conveying its significance, nor would any future short- or long-term restrictions, including the introduction of new visual elements outside the SELCAVCD boundary. If fluctuating lake levels and the restrictions that followed did not impair the resource's significance, neither would construction and operation of the MBGP. The MBGP, which is in a heavily altered landscape where facilities already exist would not obstruct or block significant viewsheds identified in the PSA, would not prohibit or restrict access to the

SELCAVCD, and would not alter the SELCAVCD such that the significance of the SELCAVCD would be impaired.

Pages 5.4-55 through 5.4-57, SELCAVCD Description – Three themes are presented. This section would benefit from additional tribal input on components of the SELCAVCD, including the Cahuilla ethnohistoric account (Patencio 1971, p. 18), creation stories that "...are written on the landscape here and in the stars that surround it, nightscapes and constellations", and any additional non-confidential information about the SELCAVCD shared by Native American consultants shared with CEC staff. How and why the consulting Native Americans views these tangible features as culturally significant relates directly to the integrity of SELCAVCD's integrity.

Page 5.4-57, SELCAVCD Description, A dynamic and changing landscape – The second paragraph cites the following changes to the SELCAVCD as defining elements of its dynamic landscape: fluctuating water levels, dryness of the mud that limited or granted access to low-lying areas within the district, appearing, disappearing, and migrating mud pots and mud volcanoes along the liniment, and the constant building, collapse, and rebuilding of mud volcanoes. In other words, changes resulting in short-to-long term restricted access, the disappearance of mud pots and mud volcanoes, and the reappearance or migration of mud pots and mud volcanoes, past or future, is required to demonstrate the significance of the SELCAVCD. However, the PSA concludes that the MBGP project would have a significant and unavoidable impact on the mud pots and mud volcanoes, severely damaging the SELCAVCD by altering the way these components exhibit their living qualities (heartbeat and breathing) and changing and degrading the therapeutic qualities (healing) (page 5.4-86). These statements contradict each other. The resource cannot be eligible for physical changes to the mud pots and volcanoes while also being significantly impacted by the physical changes to the mud pots and volcanoes. Furthermore, the Mud Pots Study (Attachment B) demonstrates that surficial activity of the mud pots is influenced more by shallow hydrological changes related to climate change and rainfall variations, rather than changes in deep geothermal reservoir properties, which contradicts the PSA's unsubstantiated claim that MBGP would have a significant and unavoidable impact on the mud pots and mud volcanoes.

Page 5.4-57, SELCAVCD Description, A place where materials are sourced – This historically significant theme focuses on the physical materials sourced and extracted from the SELCAVCD for use in the production of tools and crafts, seasoning and preservation, personal and property decoration, nutrition, and healing. Some of the resource extraction locations were identified among the contributing components (e.g., obsidian from Obsidian Butte, ochre from Red Island; pigment from the mud pots and mud volcanoes; salt from a previously recorded salt deposit); others were not included (e.g., clay, plants for textiles, subsistence resources). Non-confidential locations should be identified and included in the SELCAVCD evaluation and integrity assessment.

Page 5.4-57, SELCAVCD Description, A shared place where people connect to a scared and temporal whole – This theme focuses on tangible and intangible qualities that connect SELCAVCD (place) to the Kamia, Quechan, and Cahuilla (people). This includes physical connection of place to the viewshed (terrestrial, aerial, and cosmological) and landscape; the spiritual connection of place to legends, heroes, and the creation through nightscapes and other sacred places (e.g., mountain peaks); and the connection of past, present, and future generations to each other through viewsheds and the teaching and transmission of knowledge and cultural heritage. The significance of this theme is dependent upon visual, spiritual, and educational continuity within the district both physically and metaphysically. As written, the significance of this theme rests on connections between the people/place to elements outside of the SELCAVCD (e.g., stars, mountain peaks, other sacred places).

- The visual connection and continuity among the various components of the SELCAVCD was not identified as a character defining element of the historic themes and should not be factored into the indirect visual impact assessment, finding of significant impact, or corresponding mitigation in the FSA.

Pages 5.4-58 through 5.4-62, Contributing Resources and Elements – The PSA identifies 11 components of the SELCAVCD but does not evaluate the components as potential contributors to the significance of the SELCAVCD. The significance of some components is clear (e.g., Obsidian Butte), but not all. Specifically, the PSA does not link the following resources to historically significant themes associated with the SELCAVCD: CA-IMP-003251H (The Pond of Good Water), CA-IMP-003254H (Salt Deposit), CA-IMP-003255H (Saltwater Pond), and CA-IMP-3258H. Also, integrity of these resources (the ability of these resources to convey the significance of the SELCAVCD) is questionable. The Salt Deposit is currently underwater and its condition unknown, CA-IMP-3258H no longer exists, eighty percent of the Pond of Good Water is currently under a much larger body of water in Morton Bay and likely destroyed, and the location of the Saltwater Pond was not verified. Furthermore, P-13-006638, an element of Obsidian Butte, was at least partially collected and curated at Imperial Valley college and it current condition is unknown.

Page 5.4-58, Contributing Resources and Elements, Obsidian Butte – The PSA does not identify which of the three historic themes Obsidian Butte is associated with, nor does it adequately assess the integrity of Obsidian Butte or its influence on the integrity of the district.

Page 5.4-59, Contributing Resources and Elements, Rock Hill – The PSA does not identify which of the three historic themes Rock Hill is associated with nor does it consider the integrity Rock Hill or its influence on the integrity of the district.

Pages 5.4-59 through 5.4-60, Contributing Resources and Elements, Red Island – The PSA does not identify which of the three historic themes Red Island, or its associated resources (P-13-003258H and P-13-008176) is associated with, nor does it consider the integrity Red Island or its influence on the integrity of the district.

Pages 5.4-62 through 5.4-63, Evaluation of the SELCAVCD – As stated in the introductory paragraph, the evaluation of SELCAVCD required staff to: establish one or more significant themes derived from a historic context and ensure those themes include tribal perspectives on significance; provide a bounded area; define a period of significance; identify significance under at least one California Register of Historical Resources criteria; and determine integrity.

- Significant themes derived from historic context: The historic context, based on the Native American Archaeological and Ethnographic Contexts, Native American Consultation, and description of the SELCAVCD, was not adequately developed in the PSA and does not provide a sufficient basis for the significant themes proposed.
    - The Native American Archaeological Setting presented at the beginning of the PSA establishes that Lake Cahuilla was an important natural resource that influenced precontact settlement and subsistence practices, as well raw material procurement. Very little of this information was included in the evaluation of the SELCAVCD.
    - The Ethnographic Setting focuses on a general overview of Kamia, Quechan, and Cahuilla lifeways. It does not provide accounts of Kamia, Quechan, or Cahuilla creation or describe if or how the SELCAVCD is associated with their creation stories. The limited information on components of the SELCAVCD was provided from Cahuilla perspective, which appears to contradict other statements regarding the use of the Mud Pots. According to Patencio (1971:18-19) the Mud Pots were considered "bad country" where "no one could go close to them" and the "air was poisoned with gas." Furthermore, "The Indian people do not go

very near them. It is very dangerous and there is nothing to go to them for. The Indians called the place Par-powl, which means water bewitched, and they stayed away." None of this information was considered or assessed in the evaluation of the SELCAVCD.

- Define a period of significance. The PSA identifies the period of significance as time immemorial to the infinite future and states the beginning date is indeterminate "because there is little knowledge of how early the place was used or occupied." Additional discussion of time immemorial is recommended, possibly referring to the Kamia origin story, which describes how the Kamia arrived in the area, and is relayed on Page 5.4-13. Please clarify which groups used the area for time immemorial and address the historic and modern development/land use of the SELCAVCD discussed in the revised Historic Setting (see comment above).
    - The period of significance of the SELCAVCD represents the full span of time people (Kamia, Quechan, and Cahuilla) connected with place (the SELCAVCD) to practice the significant activities identified as historic themes (i.e., resource extraction, teaching, and transmission of cultural knowledge). Thus, the period of significance is steeped in its period of use for traditional purposes. Staff may consider early connections between people/place/use represented in the Native American archaeological context as well as the recent geologic dating of the Salton Domes ca. 3000-2000 B.P. Staff should also consider identifying multiple periods of significance.
    - The period of significance includes historic and modern developments prior to and following the infilling of the Salton Sea ca. 1906. The PSA does not adequately evaluate these components of the SELCAVCD or consider their potential contribution to the historically significant themes.
    - The PSA first states that the "period of significance must have beginning and end dates", but goes on to report that the SELCAVCD period of significance has no end date because it is still used and held sacred by the Kwaaymii Laguna, Fort Yuman Quechan Indian Tribe, and Agua Caliente Band of Cahuilla Indians. Current DOI guidance suggests the end date should be "present" with the understanding of its continued use and importance to Native people.
    - Please also see comments related to the period of significance on Pages 5.4-48 through 5.4-63, Southeast Lake Cahuilla Active Volcanic Cultural District; Page 5.4-55, Southeast Lake Cahuilla Active Volcanic Cultural District, Boundary Justification; and Page 5.4-57, Southeast Lake Cahuilla Active Volcanic Cultural District, SELCAVCD Description, A dynamic and changing landscape.
- Identify significance under at least one California Register of Historical Resources criteria.
    - Criteria 1. The PSA recommends the SELCAVCD eligible under Criterion 1 for the "unique historic events that contributed to Native American understandings of their origins" as well as for the "extraction of resources and ceremonies." Please identify what "unique historic events" occurred and how they relate to the various historically significant themes. If this is based on the dynamic and changing landscape associated with intervals of Lake Cahuilla and the fluctuating shoreline of Lake Cahuilla, is staff able to demonstrate how the conditions in the SELCAVCD are "unique" compared to conditions experienced along the southwest, east, west, northwest and northeast shorelines of the lake?
    - Criteria 4. The PSA recommends the SELCAVCD eligible under Criterion 4, in part, for information related to the procurement, reduction, trade, and distribution of "obsidian quarried" from Obsidian Butte, as well as data derived from hydration and geochemical studies. No other components of the SELCAVCD are referenced for archaeological

information potential. The PSA does not demonstrate the significance of Obsidian Buttes information value or potential. It's limited discussion on research/information potential includes a reference to two projectile points and a note that Obsidian Butte was widely used in Southern California after 950 B.P. (page 5.4-9). The evaluation is based on the significance of Obsidian Butte obsidian recovered from numerous sites outside the region, which implies that all precontact sites containing Obsidian Butte obsidian are contributors to the SELCAVCD. The PSA does not demonstrate the archaeological information value associated with Obsidian Butte itself, or whether Obsidian Butte retains sufficient integrity to yield such information, should it exist. References to archaeological research theme and information should be removed from the Criterion 4 evaluation unless the archeological research value is demonstrated in the FSA.

- Determine integrity. The PSA states that the SELCAVCD retains integrity in the opinion of the community; how it conveys its integrity must be described (DOI 2023:82).
    - The assessment should consider the CRHR criteria that the SELCAVCD is eligible for and identify which aspects of integrity relate to those specific criteria. Different criteria will have different integrity requirements. Establishing integrity under each of the criteria of eligibility is essential for assessing potential impacts to the resource. Establishing the criteria that each component contributes to and the aspects of integrity that convey the significance is also essential for impact assessment.
    - The SELCAVCD integrity assessment in the PSA focuses on the existence of place where the Kamia, Quechan, and Cahuilla continue practice their traditional heritage. Numerous intrusions are listed within the SELCAVCD, which resulted in destruction and alteration of contributing components and the land among the components within significant viewsheds. Yet, the SELCAVCD retains sufficient integrity in the opinion of the community. Integrity of the SELCAVCD rests upon the continued existence of contributing components within a dynamic and changing landscape, which at times may restrict access to those components or change the scenery within significant viewsheds. This includes the heavily altered landscape outside the SELCAVCD, which is visible from important locations within the district boundary. The viewsheds retain integrity in the opinion of the community despite numerous and extensive alterations of the land resulting from historic and modern use and development. The proposed MBGP project is in the altered landscape outside the SELCAVCD boundary near existing above ground facilities and its appearance and function would be consistent with existing facilities and developments. The MBGP does not obstruct views to important landmarks identified in the PSA or prevent the important viewsheds from conveying their significance. The MBGP will not alter or damage components of the district, would not disrupt its continued use for traditional purposes, would not dimmish the districts integrity as it relates to its existence as a place, would not contribute to the changing and dynamic landscape, and would not result in a substantial adverse change to the SELCAVCD.
    - Furthermore, the existing and extensive historic and modern alteration of the landscape outside the SELCAVCD boundary is not a factor in the significance of the resource and the altered landscape outside the SELCAVCD, which is visible from important locations within the district boundary, does not prohibit viewsheds from conveying significance.

Page 5.4-62, Evaluation of the SELCAVCD – A historic property is specific to the National Historic Preservation Act and applies to undertakings with federal involvement. Recommend replacing reference to historic property with historical resource.

Page 5.4-76, Table 5.4.2 Environmental Impacts – A CEQA-level impact occurs when construction and/or operation demonstrably diminishes the integrity of a historical resource or tribal cultural resource or results in the loss of integrity to the point that the historical resource or tribal cultural resource is no

longer able to convey its historical or cultural significance. The MBGP will not alter or damage components of the district or disrupt its continued use for traditional purposes, would not dimmish the districts integrity as it relates to its existence as a place. With the proposed realignment, the view to these important, cultural landmarks will be maintained, as the features currently exist, and the associated history, traditional knowledge, and teachings will be retained. The PSA infers that the SELCAVCD would retain enough integrity to list on the NRHP and/or CRHR even after potential project and cumulative impacts occur. As such, the MBGP would not demonstrably diminish the integrity of the SELCAVCD or result in a loss of integrity that would disqualify the resource from listing on the NRHP and/or CRHR. The MBGP would not result in a substantial adverse change. It is our opinion that MBGP would have no impact on viewshed, and should a potential impact be demonstrated, may be reduced to a level less than significant with proportional mitigation.

Pages 5.4-81 through 5.4-82, Section 5.4.2.2, Direct and Indirect Impacts, A resource determined by the lead agency… – CEC staff conclude that construction of MBGP would result in a significant and unavoidable impact to the SELCAVCD resulting from Visual degradation of the SELCAVCD Viewshed and a less-than significant impact with mitigation incorporated resulting from Intrusive Nighttime Visual Elements.

- Construction Impact, Visual Degradation of the SELCAVCD Viewshed. The CRHR/TCR evaluation does not adequately describe, evaluate, or assess the integrity of viewsheds of cultural importance within the SELCAVCD, nor adequately measure the degree of any impact to culturally significant viewsheds resulting from construction of MBGP. As stated in previous comments, integrity assessments must "…take into consideration the relative number, size, scale, design, and location of the components that do not contribute to the significance" (DOI 1995:46). The altered and developed landscape within the SELCAVCD, which does not contribute to the significance of the resource, does not prevent SELCAVCD from conveying significance, including significant viewsheds. Similarly, the existing extensive historic and modern alteration of the landscape outside the SELCAVCD does not factor into the significance of the resource, including its viewshed, and does not obstruct or prohibit experiencing those viewsheds. How and why the MBGP impacts viewsheds, which viewsheds it impacts, which aspects of integrity are impacted, and how much of an impact MBGP would have individually, as well as its portion of any cumulative impacts, on viewsheds must be clearly demonstrated. It is our opinion that any MBGP impact on viewshed, individual or cumulative, with proportional mitigation, may be reduced to a level less than significant.

- Construction Impact, Intrusive Nighttime Visual Elements. CEC staff presents new information in this section not previously addressed in the PSA regarding Nighttime Visual Elements, and asserts these elements contribute to the significance of the SELCAVCD without formal evaluation or assessment of integrity, concluding that the MBGP project, individually and cumulatively, will impact the SELCAVCD by introducing intrusive nighttime visual elements. Furthermore, it does not answer the following: how and why the MBGP impacts nighttime viewsheds, which viewsheds it impacts, which aspects of integrity are impacted, and how much of an impact MBGP would have individually, as well as its portion of any cumulative impacts, on nighttime viewsheds.

Pages 5.4-82 through 5.4-83, Section 5.4.2.2, Direct and Indirect Impacts, A resource determined by the lead agency… – In its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of…, Operation – CEC staff concludes that construction of MBGP would result in a significant and unavoidable impact to the SELCAVCD resulting from disruption of the Mud Volcanoes and Mud Pots and a less-than significant impact with mitigation incorporated resulting from harm to wildlife.

- Operation Impact, Disruption of the Mud Volcanoes and Mud Pots. The PSA implies that any/all future change to the mud pots and mud volcanoes would be attributed to the MBGP and ignores the significance of the dynamic and changing landscape associated with the SELCAVCD. No scientific data was provided to support CEC staff's allegation that the injection of water and extraction of brine from the Salton Sea Known Geothermal Resource Area could alter the way the mud pots and volcanoes pulse (heartbeat) and breathe (emit steam). A recent study found that "there is no observed mixing of deep reservoir brines with shallow water aquifers revealed by isotopic studies (Williams and McKibben, 1989), so the composition of shallow waters and the capacity for shallow storage of CO2 feeding the mud pots is not necessarily expected to be timed to geothermal power production" (McKibbon 2024). Attachment C presents an analysis of the potential impacts to the nearby mud pots. The impact analysis also ignores lacustrine formulation cycling, punctuated by major seismic events in the Salton Trough, which are the major overall influences on past and future changes in mud pot activity (McKibbon 2024:27). As stated in a previous comment the SELCAVCD cannot be eligible for physical changes to the mud pots and volcanoes while also being significantly impacted by the physical changes to the mud pots and volcanoes. The MBGP would have no impact on the mud pots and volcanoes and CUL/TRI-9/ MM COL/TRI-9 should be removed from the PSA.
- Operation Impact, harm to wildlife – CEC staff presents new information in this section not previously addressed in the PSA regarding wildlife, asserts wildlife contribute to the significance of the SELCAVCD without formal evaluation or assessment of integrity, and concludes that the MBGP project, individually and cumulatively, will impact the SELCAVCD by harming coyotes, reptiles, burrowing owls, and other birds. Furthermore, it does not answer the following: how and why the MBGP impacts wildlife, which aspects of integrity are impacted, and how much of an impact MBGP would have individually, as well as its portion of any cumulative impacts, on wildlife.

Page 5.4-83, Section 5.4.2.3, Cumulative Impacts – Revisions in the FSA in response to Applicants' comments resulting in a finding of no impact or less than significant impact with mitigation incorporated will require a reassessment of cumulative impacts on the SELCAVCD and the projects contribution to those impacts. In consideration of the Applicant's comments, the PSA has not adequately demonstrated that MBGP's contribution to cumulative impacts would be cumulatively considerable. Rather, any potential impact that may result from MBGP will be rendered less than cumulatively considerable through the implementation of, or funding of its share of, a mitigation measure or measures to alleviate the cumulative impact. There must be a connection between the mitigation measure and the impact, it must serve a legitimate government interest (CCR Title 14 Section 15126.4(a)(4)(A)), and the mitigation measure(s) must be "roughly proportional" to the impact of the project (CCR Title 14 Section 15126.4(a)(4)(A)). This applies to all cumulative impacts identified in the PSA.

Page 5.4-84, Section 5.4.2.3, Cumulative Impacts, The Visual Degradation of the SELCAVCD Viewshed – See previous comments regarding the PSA's analysis of visual impacts, which demonstrate MBGP would have no impact or no significant impact with mitigation incorporated. The limited visual impact that may result from MBGP will be rendered less than cumulatively considerable through the implementation of, or funding of its share of, a mitigation measure or measures to alleviate the cumulative impact. Such mitigation would relate to and be proportional to the MBGP's contribution to a potential cumulative impact on viewshed.

Page 5.4-84, Section 5.4.2.3, Cumulative Impacts, Disruption of the Mud Pots and Volcanoes' Functioning – CEC Staff has not demonstrated a significant and unmitigable impact to this component of the SELCAVCD. As stated above, the SELCAVCD cannot be eligible for physical changes to the mud pots and volcanoes while also being significantly impacted by the physical changes to the mud pots and volcanoes. The MBGP would have no direct impact on the mud pots and volcanoes and CUL/TRI-9/ MM COL/TRI-9 should be removed from the PSA.

Page 5.4-84, Section 5.4.2.3, Cumulative Impacts, Intrusive Nighttime Visual Elements and Harm to Wildlife – As stated above, CEC staff did not formally evaluate or assess the integrity of Nighttime Visual Elements but nonetheless concluded that the MBGP project, individually and cumulatively, would impact the SELCAVCD by introducing intrusive nighttime visual elements. Furthermore, it does not answer the following: how and why the MBGP impacts nighttime viewsheds, which viewsheds it impacts, which aspects of integrity are impacted, and how much of an impact MBGP would have individually, as well as its portion of any cumulative impacts, on nighttime viewsheds.

Page 5.4-86, Section 5.4.4, Conclusions and Recommendations – Revisions in the FSA in response to Applicants' comments resulting in a finding of no impact or less than significant impact with mitigation incorporated will require a reassessment of MBGP's individual and contribution to cumulative impacts on the SELCAVCD. In consideration of the Applicant's comments, the PSA has not adequately demonstrated that MBGP's will have a significant and unavoidable impact individually or cumulatively considerable. Rather, any potential impact that may result from MBGP would be mitigated to a level less than significant and rendered less than cumulatively considerable through the implementation of, or funding of its share of, mitigation to alleviate the cumulative impact. There must be a connection between the mitigation measure and the impact, it must serve a legitimate government interest (CCR Title 14 Section 15126.4(a)(4)(A)), and the mitigation measure(s) must be "roughly proportional" to the impact of the project (CCR Title 14 Section 15126.4(a)(4)(A)). This applies to all cumulative impacts identified in the PSA.

Page 5.4-86, COC CUL/TRI-1/ MM CUL/TRI-1 – The Applicant proposes that the bulk of the implementation language be moved to the verification to allow for flexibility and efficiency during construction. Revisions are provided in Attachment A.

Page 5.4-91, COC CUL/TRI-3/ MM CUL/TRI-3 – The Applicant proposes that the bulk of the implementation language be moved to the verification to allow for flexibility and efficiency during construction. Revisions are provided in Attachment A.

Page 5.4-93, COC CUL/TRI-4/ MM CUL/TRI-4 – The Applicant proposes that the bulk of the implementation language be moved to the verification to allow for flexibility and efficiency during construction. The Applicant also proposes additional language that provides for notification to the CPM by the CRS in the event that California Native American tribe members choose not to participate or work with the CRS. Revisions are provided in Attachment A.

Page 5.4-94, COC CUL/TRI-5/ MM CUL/TRI-5 –The Applicant proposes that the bulk of the implementation language be moved to the verification to allow for flexibility and efficiency during construction. Revisions are provided in Attachment A.

Page 5.4-100, COC CUL/TRI-7/ MM CUL/TRI-7 – Final Cultural and Tribal Cultural Resources Report (CTCR): The Applicant proposes that the bulk of the implementation language be moved to the verification to allow for flexibility and efficiency during construction. The Applicant also proposes that exceptions for the requirement to prepare a draft CTCR be provided for certain situations, for example if the suspension is directly related to conferral and treatment of inadvertent cultural or human remains discoveries. Revisions are provided in Attachment A.

COC CUL/TRI-8/ MM CUL/TRI-8 Document and Nominate the Southeast Lake Cahuilla Active Volcanic Cultural District to the California and National Registers – As explained above, the Applicant has significant concerns regarding the boundary justification, integrity assessment, and impact analysis prepared for the SELCAVCD, particularly the lack of substantial evidence demonstrating that perceived impacts resulting from the Project will result in a substantial adverse change to cultural or tribal cultural resources. Impact assessments are contingent upon integrity of the resource to convey its historical significance. A significant impact under CEQA occurs if construction and/or operation of a project demonstrably

diminishes a resource's integrity or results in the loss of integrity to the point that the resource is no longer able to convey its significance. With respect to the SELCAVCD, MBGP will not physically alter, damage, or destroy any contributing component of the SELVACD, nor will the MBGP affect current tribal access to the places identified as contributing components of the SELVACD. Furthermore, the degree to which perceived visual impacts to the integrity of significant viewsheds associated with the SELCAVCD is not considered from the proposed project or cumulatively. The PSA does not explain how viewshed integrity would be diminished nor provide a fair measurement of the degree to which the integrity of specific character defining viewsheds would be diminished. The impact findings related to the SELCAVCD should be reduced to less than significant with mitigation incorporated and COC CUL-TRI-8/ MM CUL/TRI-8 removed from the PSA. Mitigation should be commensurate with the degree of the impact on the integrity of the resource from the proposed project or cumulatively.

COC CUL/TRI-9/ MM CUL/TRI-9 Monitor the Functioning of Mud Pots and Volcanoes – There is no scientific data to support the PSA's conclusion that operation of the MBGP will disrupt the mud volcanoes and mud pots. Further, the MBGP will not physically alter, damage, or destroy the Mud Volcanoes and Mud Pots, nor will the project otherwise affect current access to those sites for the purposes of healing, gathering pigment, or teaching purposes. The Mud Pots Study demonstrates that changes to mud pots and mud volcanoes are the result of natural processes, including drought and climate change, rather than geothermal operations. The MBGP would not result in a disruption to the mud volcanoes and mud pots and would therefore have no impact (please also see comments on Page 5.4-75 for additional information). CUL/TRI-9/ MM COL/TRI-9 should be removed from the PSA.

5.5 Efficiency and Energy Resources

Page 5.5-1, Section 5.5.1, Environmental Setting, 2nd Paragraph – The description of the analysis should be clarified to state: "During the operation of MBGP, **between one and** three emergency standby diesel-fueled generators (gensets) would support the critical facility load in case of a power interruption. Each of these the gensets would have **no more than** a maximum capacity of 3.49 MW."

Page 5.5-3, Section 5.5.2.2 (a), Construction, 1st Sentence – The description of the analysis should be clarified to state: "The expected duration for the construction of the project is **expected to be** approximately 29 months, including additional time for equipment delivery and demobilization."

Page 5.5-6, Section 5.5.2.2 (b), Construction, 3rd Sentence – The following sentence should be struck: "~~The project would also implement measures to promote walking, bicycling and transit use, thereby reducing motor vehicle use (Jacobs 2023a, Section 5.12.1.5).~~"

Page 5.5-6, Section 5.5.2.2 (b), Operation, 3rd Paragraph, 1st Sentence – The text should be clarified: "The project would ~~primarily~~ use renewable energy resources; however, ultra-low sulfur diesel would be used for the gensets (Jacobs 2023a, Section 5.1.7.1.2)."

Page 5.5-9, Section 5.5.4, Conclusions and Recommendations – The following text should be clarified to state: "As discussed above, the project would have a less than significant impact related to ~~solid waste management~~ **efficiency and energy resources** and would conform with applicable LORS."

5.6 Geology, Paleontology, and Minerals

Pages 5.6-29 through 5.6-30, COC PAL-1/MM PAL-1 – Moved text from the Condition to the Verification. Revisions are provided in Attachment A.

Pages 5.6-32 through 5.6-34, COC PAL-3/MM PAL-3 – Moved text from the Condition to the Verification. Revisions are provided in Attachment A.

Pages 5.6-34 through 5.6-35, COC PAL-4/MM PAL-4 – Moved text from the Condition to the Verification. Revisions are provided in Attachment A.

Page 5.6-35, COC PAL-5/MM PAL-5 – Text has been modified to clarify requirements for CPM approved WEAP trainer. Revisions are provided in Attachment A.

Page 5.6-37 COC PAL-7/MM PAL-7 – Text has been removed regarding judgement or analysis by a California licensed Professional Geologist. Geologic determinations to aid palaeontologic analysis in the Salton Sea Geothermal Resource area can be handled by a degreed and/or experienced geologist. The caliber of analysis that a California licensed Professional Geologist would provide far exceeds the potential tasks required to aid palaeontologic analysis. Revisions are provided in Attachment A.

Pages 5.6-37 through 5.6-38, COC PAL-8/MM PAL-8 – Text has been modified to address process if no entities are willing to curate paleontological resource materials. Revisions provided in Attachment A.

5.7 Hazards, Hazardous Materials/Waste, and Wildfire

Page 5.7-28, COC HAZ-1/MM HAZ-1 – The COC has been revised as the HMBP will be submitted to DTSC (the CUPA for Imperial County) through CERS for review and comments. The Applicant also recommends revising the condition to add flexibility in case the method for submission changes in the future. A copy of the CERS submittal will be provided to CPM. Revisions are provided in Attachment A.

Page 5.7-29, COC HAZ-4/MM HAZ-4, 1st Sentence – Please revise to remove demolition from project activities. Revisions are provided in Attachment A.

Pages 5.7-29 through 5.7-31, COC HAZ-6/MM HAZ-6 – Text has been moved from condition to verification section of the condition. Revisions are provided in Attachment A.

Page 5.7-32, COC HAZ 7/MM HAZ-7, Item #8 – A site-specific Health and Safety Plan (HSP) has been removed from the condition because it is duplicative of COC WORKER SAFETY-1. Revisions are provided in Attachment A.

Pages 5.7-32 through 5.7-33, COC HAZ-8/MM HAZ-8 – Condition has been removed as it is duplicative of COC GEN-4 and COC GEN-5. Revisions are provided in Attachment A.

Page 5.7-33, COC HAZ-9/MM HAZ-9, 1st Paragraph – Please revise to remove demolition from project activities. Revisions are provided in Attachment A.

Page 5.7-33, COC HAZ-9/MM HAZ-9, Verification, Last Sentence – Please revise to allow notice to the CPM the following business day to allow discoveries outside of the normal work week. Revisions are provided in Attachment A.

5.8 Land Use, Agriculture, and Forestry

Page 5.8-1 Existing Conditions, 2nd Paragraph. Please revise text as follows, "**Additionally** ~~However~~, any ~~aboveground~~ production and injection pipelines connecting directly from a well to the power plant **and outside of the power plant fence line** would be under the jurisdiction of **Imperial County.** ~~the California Energy Commission (CEC).~~ " CEC's jurisdiction does not include the thermal resource conveyance pipelines, as Public Resources Code section 25120 specifically exempts "resource transmission lines" from the scope of the CEC's jurisdiction. The PSA should be revised to state that Imperial County has jurisdiction over the steam field, production and injection wells, and all associated pipelines, including the thermal resource conveyance pipelines.

Page 5.8-8, Temporary Borrow Pits, 1st Paragraph, last sentence – Temporary features including the construction/laydown areas, construction camps, and borrow pits are under CEC jurisdiction. Please revise text as follows:

> "The borrow pits would be under the jurisdiction of ~~Imperial County, not~~ the CEC~~, as the CEC certificate is only in lieu of local permits for use of the project site and related facilities~~."

Page 5.8-24, Table 5.8-1, CONFORMANCE WITH APPLICABLE LORS –On June 13, 2024, the Applicant submitted a Form 7460-1 to the Federal Aviation Administration (provided in Attachment B). On June 17, 2024, the FAA provided a determination of no hazard to air navigation (provided in Attachment B). As part of this process, the FAA consults with the Department of Defense. The Applicant also met with the U.S. Marine Corps on July 23, 2024. On August 15, 2024, the USMC concluded that there were no negative impacts to USMC operations associated with the geothermal projects. These updates were shared with the OSD Renewable Energy Clearing House and the Informal Review and Discussion was closed out.

Renewable Energy and Transmission Element (Imperial County 2015c)	
Applicable LORS	**Conformance and Basis for Determination**
Goal 6 – Support development of renewable energy while providing for the protection of military aviation and operations. Objective 6.1: Assure that renewable energy facilities proposed in areas adjacent to military installations and training areas will be compatible with these uses. Objective 6.2: Facilitate the early exchange of project-related information with the military for proposed renewable energy facilities within a military operations area (MOA) or within 1,000 feet of a military installation. Objective 6.3: Assure that renewable energy facilities proposed within MOAs will not jeopardize the safety of existing residents or impact military operations.	**Yes.** ~~**In Process**~~ ~~**Undetermined**~~ The applicant ~~has~~ notified the military of the project through the Department of Defense (DoD) Clearinghouse (Jacobs 2024j). The DoD responded in a letter dated April 4, 2024, stating that the proposed siting location of the geothermal project may impact United States Marine Corps low-level flight traffic in Special Use Airspace, and requesting that the applicant contact a DoD staff member to discuss the project. The applicant ~~has~~ contacted the DoD staff member **and met on July 23, 2024. Jeffrey Meeker and JJ Gamelin with the USMC confirmed there were no concerns regarding the MBGP.** ~~is currently awaiting a response (Jacobs 2024r).~~

Page 5.8-26, Section 5.8.4, Conclusions and Recommendations – As the Applicant has coordinated with the DoD regarding air hazards the following edits are requested:

> "As discussed above, with implementation of the proposed COCs, the project would have a less than significant impact related to land use, agriculture and forestry and would conform with

applicable LORS. ~~Until staff receives project review comments from DoD, the project's conformance with Goal 6 of the Imperial County General Plan, "Support development of renewable energy while providing for the protection of military aviation and operations", is undetermined~~."

Page 5.8-27, COC LAND-1/MM LAND-1 – As production and injection pipelines are under the jurisdiction of Imperial County and wells are under CalGEM text has been removed to reflect this fact. Revisions are provided in Attachment A.

Page 5.8-28, COC LAND-2/MM LAND-2 – Minor revisions regarding IID encroachment permit requirements. Within the verification, suggest removing link to hyperlink as they may become non-functional in the future. Revisions are provided in Attachment A.

Pages 5.8-28 through 5.8-29, COC LAND-3/MM LAND-3 –

As proposed in the PSA, LAND-3 requires the project owner to implement one of the County's mitigation options for conversion of Important Farmlands. Currently, these options include "procuring Agricultural Conservation Easements, paying an Agricultural In-Lieu Mitigation Fee, or paying an Agricultural Benefit Fee to Imperial County (Imperial County 2015)" (MBGP PSA 5.8-15), and are identified in the AFC. Although the PSA evaluated MBGP's potential impacts to Prime Farmland through the California Agricultural Land Evaluation and Site Assessment ("LESA") Model as prepared by the California Department of Conservation (MBGP PSA 5.8-15), use of the LESA Model is not mandatory.

Pursuant to the CEQA Guidelines, "in determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland." The permissive language within CEQA's land use section allows for the lead agency's discretion in selecting a method to analyze impacts to farmland, and in subsequent determinations of whether a significant impact would occur. In this case, given site and regional specific factors, including the position of the County of Imperial, the PSA should be revised to consider the relatively small percentage of farmland converted by the project against the large swaths of farmland present in Imperial County.

As described in the AFC, 538,326 acres of land in Imperial County are classified as Important Farmland. The converted acreage for the Project represents a loss of approximately 0.01% of the total net acreage in agricultural production, which is not a substantial loss of farmland. (MBGP AFC, 5.11-21). Based on a totality of facts and circumstances, the Project will not result in a significant impact to agriculture. Further, only a small percentage of Important Farmland will be converted to another use by the Project. Page 5.8-29, COC LAND-4/MM LAND-4 – BIO-11/MM BIO-11 is duplicative of the requirements found in this condition. BIO-11 includes more information and therefore LAND-4 has been deleted in its entirety. Revisions are provided in Attachment A.

5.9 Noise And Vibration

Page 5.9-2, subsection Local, Imperial County Noise Element – The PSA (and COC NOISE-4) should be revised to reflect that the Construction Noise Standards set forth in the Imperial County General Plan Noise Element are applicable to projects "where no discretionary application is required pursuant to the County Zoning Ordinance or Subdivision Ordinance, or a Specific Plan or General Plan Amendment". (Imperial County General Plan Noise Element, p. 27.) Therefore, the Construction Noise Standards in the Noise Element are not applicable to projects like the MBGP that require a discretionary approval.

Page 5.9-6, Section 5.9.2.2, Direct and Indirect Impacts (a), subsection Construction, 2nd Paragraph, 2nd Sentence – The characterization of construction noise should include louder noise events like pile driving. Please modify the following sentence as shown. "Each phase uses a combination of construction equipment. The noise level from each phase is **modeled to generally fall** between 78 and 89 dBA Leq at 50 feet **outside of brief, occasional noise generated from activities like pile driving**."

Page 5.9-7, Section 5.9.2.2, Construction, 3rd paragraph – When pile driving rigs are brought to site, the construction plan will attempt to utilize them efficiently to minimize their overall time at site. Please revise as follows: "~~Typically, pile driving is infrequent and of short duration.~~ Pile driving noise is intermittent and not continuous ~~throughout the day~~. ~~For MBGP, it would occur 3 to 4 days a month for four consecutive months~~."

Page 5.9-8, Section 5.9.2.2, Direct and Indirect Impacts (a), subsection Operation – The Staff's operational noise impact analysis appears to be inconsistent with applicable LORS. The project is within a unique and specially designated renewable and geothermal resource area as well as heavy agricultural area. Residential uses are not encouraged in these areas. The County recognizes the unique value of the renewable geothermal resource and has established policies consistent with their land use goals for this area. Title 9, Division 17, Renewable Energy Resources, of the Imperial County Code requires that operational noise from renewable energy facilities, such as this project, comply with a 70 dBA CNEL limit at the "nearest human receptor site outside the parcel boundary, or one-half mile from the sound, whichever is greater" (Section 91702.00(I)). It is expected that this noise standard would apply at permanent residences rather than at temporary worker housing, such as Red Hill Marina Park. Therefore, NOISE-4 should focus on the closest permanent residences.

Furthermore, the Noise Element acknowledges that mitigation at a receptor is a reasonable option: "… construction modifications may be the most cost-effective solution to the noise problem… by making the windows, doors and other penetrations more resistant to noise transmission. Sealed windows, or well-sealing openable windows are efficient; mechanical ventilation must be provided for closed-windows conditions. Thicker window glass or double glazing may be appropriate. Solid doors and gaskets around door openings should be provided. In addition to door and window treatment, wall and roof insulation may be evaluated for noise reduction effectiveness." In the event that operational noise exceeds the county's limits and results in a legitimate noise complaint, these are noise minimization measures that are consistent with the County's requirements that the project could implement.

Additionally, given the remote area and potential for extreme weather (heat) that can adversely impact sound measurement equipment, additional time to schedule/complete the operational survey may be warranted.

Page 5.9-14, COC NOISE-1/MM NOISE-1, 1st Paragraph – Please remove the reference to demolition and limit the duration for the telephone number to "operational for one year". Revisions are provided in Attachment A.

Page 5.9-14, COC NOISE-2/MM NOISE-2, 2nd Bullet – Please remove the reference to demolition and revise to allow for responding to noise complaints until the next business day in the event complaints are received after normal business hours or over a weekend. Revisions are provided in Attachment A.

Page 5.9-15, COC NOISE-3/MM NOISE-3, 1st Paragraph – Please remove the reference to demolition. Revisions are provided in Attachment A.

Page 5.9-15 through 5.9-16, COC NOISE-4/MM NOISE-4 – As described above, the provisions of the Construction Noise Standards in the Noise Element of the Imperial County General Plan from which this COC is derived are not applicable to the MBGP. Therefore, COC NOISE-4/MM NOISE-4 as proposed should be deleted or modified with an appropriate construction noise limitation. Revisions are provided in Attachment A.

Page 5.9-16, COC NOISE-6 / MM NOISE-6 – The construction noise consistent with county CUP noise provisions. from the project site. Please see the suggested changes provided in Attachment A.

Page 5.9-17, COC NOISE-7/ MM NOISE-7 – This condition should reference “high pressure” steam blows as low pressure steam blows will not result in noise exceeding the applicable standards. Revisions are provided in Attachment A.

Page 5.9-17, COC NOISE-8 / MM NOISE-8 – Several minor changes to this condition are proposed to clarify the requirements. Revisions are provided in Attachment A.

5.10 Public Health

Page 5.10-1, Existing Conditions, 2nd Paragraph, Last Sentence – To more clearly represent the presence of two HCl storage tanks, revise this sentence as follows: "Airborne operation-related emissions would consist primarily of combustion by-products from three diesel-fired emergency generators and one diesel fire water pump, ~~a~~ hydrochloric acid (HCl) storage tanks and associated scrubbers, and those generated by the processing, condensing, and venting of geothermal fluid from the RPF (Jacobs 2023hh, Pg. 5.9-1)."

Page 5.10-13, Footnote 4 – This should refer back to footnote 2 instead of footnote 1.

Page 5.10-21, Operation, 1st Paragraph – To better clarify what each cancer and non-cancer chronic risk scenario includes, add the following sentence at the end of the bullet list: "Combustion emissions from the diesel fire water pump and three diesel-fired emergency generators, as well as emissions from the HCl scrubbers, are also included in these scenarios."

Page 5.10-21, Operation, 2nd Paragraph, 2nd Bullet– This bullet point should not be a stand-alone bullet point but rather part of the first bullet point, since it serves to clarify that the scenario in which routine operation of the cooling tower, sparger, and biological oxidation box is modeled also includes combustion emissions and HCl scrubber emissions.

Page 5.10-24, Characterization of Risks from TACs, 2nd Paragraph, 2nd Sentence – To more clearly describe the emissions estimation methodology for the project's stationary fuel combustion sources, revise this sentence as follows: "TAC emissions **from the diesel fire water pump and three diesel-fired emergency generators** were estimated based upon AP-42 methodology (EPA 1996) (Jacobs 2023hh, pg. 5.1-18)."

Page 5.10-25, Characterization of Risks from TACs, Last Paragraph, Last Sentence – Only two acute risk scenarios were modeled; therefore, revise this sentence as follows: "Although the applicant conducted its HRA according to ~~three~~ **two** different scenarios as mentioned above, staff only reported and discussed the results of the highest values."

Page 5.10-30, Acute Hazard Index (HI), 2nd Paragraph, Last Sentence – Although the Applicant did previously indicate that it would comply with the public notification requirements for the project's acute risks, the CEC's revised analysis indicates that the project's acute risks do not exceed the significance thresholds (see Table 5.10-5). Therefore, public notification should no longer be required and this sentence should be revised as follows: "Also, since the applicant owns the land on which the hazard indices are being exceeded, they would restrict public access to those areas ~~and comply with the public notification requirements for the project's acute risks~~ (Jacobs 2024u)."

Page 5.10-33, Table 5.10-6, CONFORMANCE WITH APPLICABLE LORS – According to the discussion presented on Page 5.10-32, the CEC has "found no potentially significant adverse [public health] impacts for any receptors, including sensitive receptors." Based on this conclusion, the Compliance and Basis for Compliance for the Federal Clean Air Act section 112 (Title 42, U.S. Code section 7412) (National Emission Standards for Hazardous Air Pollutants [NESHAP]) should be revised as follows: "**Yes**. Based on the HRA results, the project's cancer**,** ~~and~~ chronic**, and acute,** health risks do not exceed acceptable levels. ~~Although acute health risks may potentially exceed acceptable levels~~ **In addition, potential health risks** ~~they~~ would be minimized to the extent technically feasible through the use of TBACT. The facility would comply with applicable federal, state, and ICAPCD rules and regulations."

Page 5.10-34, PUBLIC HEALTH-1 – On Page 5.10-8, the CEC correctly indicates that the project will be subject to ICAPCD Rule 1003, which establishes testing requirements to confirm low levels of hexavalent chromium concentrations in non-wooden cooling towers. Although the project is expected to be subject to this rule, neither ICAPCD nor the CEC has provided a condition by which compliance can be demonstrated. To provide a clear path by which the Applicant can demonstrate compliance with this rule, this condition has been revised and provided in Attachment A.

5.11 Socioeconomics

The applicant has no edits to this section.

5.12 Solid Waste Management

Page 5.12-1, subsection Solid Waste Generation and Disposal, 2nd Paragraph, 3rd Sentence – The text should be clarified to state: "The solids slurry discharged from the clarifiers would be directed to a ~~vacuum~~ filtration system to produce filter cake."

Page 5.12-8, COC SOLID WASTE-1/MM SOLID WASTE-1 – Text has been moved from discussion to the verification section as shown in Attachment A.

5.13 Transmission Line Safety and Nuisance

Page 5.13-1 Environmental Setting, Last Sentence – Please revise the last sentence to present the correct acreage of the project site as follows. "The project would be on approximately **51** ~~55~~ acres of a 160-acre parcel within the unincorporated, Known Geothermal Resource Area (KGRA) of Imperial County California."

Page 5.13-3, Section 5.13.2, subsection Transmission System Components, 1st Paragraph – The text should be clarified to state: "The 230-kV transmission interconnection for the proposed project facility would consist of a single gen-tie connection, which would require one take-off, ~~one~~ **nine** dead end structures, and approximately ~~29~~**16** tangent 230-kV structures."

Page 5.13-4, Section 5.13.2, subsection Transmission System Components, 1st Full Paragraph – The text should be clarified to state: "The 3.22-mile-long gen-tie line would be built with Kcmil conductors."

Page 5.13-5, Section 5.13.2.2, Direct and Indirect Impacts (a), 2nd and 3rd Full Paragraph – Please see the Applicant's comments on Section 5.8 Land Use, Agriculture, and Forestry, Table 5.8-1 regarding military air use.

Page 5.13-13, COC TLSN-1/MM TLSN-1 – The EMF reduction guidelines relevant to Alamitos from Southern California Edison discussed in this COC were Southern California Edison standards. The Applicant will comply with local Imperial Irrigation District regulations. Revisions to this COC are provided in Attachment A.

Page 5.13-13 COC TLSN-2/MM TLSN-2 – Condition has been deleted in its entirety as it is duplicative of TSE-6.

Page 5.13-14, COC TLSN-3 / MM TLSN-3 – Minor revisions to clarify the requirements. Revisions are provided in Attachment A.

5.14 Transportation

Page 5.14-5, Table 5.14-2, ROADWAY SEGMENT LEVEL OF SERVICE CRITERIA – The Level of Service with Roadway Volume-to-Capacity (V/C) Ratio of >1.000 should be level F instead of level B.

Page 5.14-15, Section 5.14.2.2, Direct and Indirect Impacts (c), Construction – The text should be modified as follows: "No Impact. ~~The project does not propose changes to any existing roadways or intersections during the construction phase.~~ The project anticipates only improvement of existing roads to limit dusting and road damage. No impacts to travelers of existing roads is expected."

Page 5.14-15, Section 5.14.2.2, Direct and Indirect Impacts (c), Operation – The text should be modified as follows: "No Impact. ~~The project does not propose changes to any existing roadways or intersections during the construction phase.~~ The project anticipates only improvement of existing roads to limit dusting and road damage. No impacts to travelers of existing roads is expected."

5.15 Visual Resources

Pages 5.15-39 through 5.15-40, COC VIS-2/MMW VIS-2 – Revised to enhance worker safety and ensure a safe and secure work environment. Night work is essential due to daytime temperatures. Aligned the lighting requirements with Imperial County regulations and retain "DarkSky Approved" program products.

Pages 5.15-40 through 5.15-41, COC VIS-3/ MM VIS-3 – Due to the rural nature of the project area, Imperial County only requires landscaping for the project site and no landscaping is required for well pads. Therefore, minor changes to this COC are proposed. Edits to this COC are provided in Attachment.

5.16 Water Resources

The page numbering of Section 5.16, Water Resources is duplicative of Section 5.15, Visual Resources.

Page 5.15-7, Cumulative – The discussion in the cumulative impacts section related to the applicants for the Black Rock Geothermal Project and Elmore North Geothermal Project should be corrected. The Applicant, Morton Bay Geothermal LLC, is not the applicant for those two projects.

> "In addition to the proposed MBGP, ~~the applicant is concurrently pursuing certification of~~ two other geothermal projects in the vicinity are pursuing certification; Black Rock Geothermal Project ~~geothermal~~ (77 MWs) and Elmore North Geothermal Project ~~geothermal~~ (140 MWs). Therefore, the cumulative environmental impact of all three projects needs to be considered. With respect to water supply, the combined estimated water supply for all three geothermal projects ~~proposed by the applicant~~ is 13,165 acre-feet per year (AFY). IID has available for non-agricultural uses up to 25,000 AFY, of which 6,380 AFY has been committed to other customers. (IID 2009). Based on email communication with IID, as of January 2024, a remainder of 18,620 AFY (IID 2024) is available to future uses. The water supply estimated for the three ~~applicant~~ projects constitutes nearly 71 percent of the available supply."

Page 5.15-14, Section 5.16.2.2 Direct and Indirect Impacts (f), 4th Paragraph, 2nd sentence – The PSA should be revised to reflect estimated evaporation loss rates from the California Irrigation Management Information System, CimisRefEvapZones.pdf (ca.gov), which provides more specific regional information rather than that utilized in the PSA. The PSA utilized Monthly Average Pan Evaporation information collected from the Indio Fire Station. (PSA, pp. 5.16-13, 5.16- 24.) Instead, the information collected from Imperial Valley, Death Valley, and Palo Verde area is more accurate for the MBGP site. Based on the estimated evaporation loss rate from Imperial Valley, Death Valley and Palo Verde area, the potential annual evaporation loss is 38.6 acre-feet, rather than 56.46 acre-feet per year. Further, as explained below, the Applicant proposes deletion of COC WATER-9/MM WATER-9 as it is not required to mitigate a potentially significant impact of the Project, it will not result in substantial water savings, and is infeasible due to economic, environmental, and technical concerns. The paragraph should be revised as follows:

> "Assuming the pond would be continuously holding water, accounting for the pond surface area, and using an average annual pan evaporation rate of ~~105.35 inches or 8.78 feet~~ from a monitoring station in the region (~~WRCC 2024~~ CIMIS), an evaporative loss of ~~56.46~~ **38.6** AFY is estimated. ~~Although this is a small amount compared to the annual water demand of 6,480 AFY for the project, the amount seems significant enough to recover the water savings. Therefore, WATER-9 is proposed to avoid evaporation loss by incorporating a floating cover over the open service water pond.~~"

Page 5.15-15, Section 5.16.2.3, Cumulative Impacts – The discussion related to the applicants for the Black Rock Geothermal Project and Elmore North Geothermal Project should be corrected. The Applicant, Morton Bay Geothermal LLC, is not the applicant for those two projects.

Page 5.15-18, COC WATER-3– The Applicant proposes a clarification to the annual monitoring report summary and violations, exceedances, enforcement actions, or corrective actions. Verification section address the WDR requirements and documents to be provided to waterboard and the CPM

Revisions of the COC are provided in Attachment A.

Page 5.15-20, COC WATER-4– Condition has been deleted in its entirety as it is redundant to COC WATER-1/MM WATER-1.The Waste Discharge Requirements issued by the CRWRQCB already provides requirements for the monitoring well network, including the standards that must be met. Revisions are provided in Attachment A.

Page 5.15-21, COC WATER-5 – Condition has been deleted in its entirety as the condition is unnecessary. Construction and operation of the geothermal wells are not subject to the jurisdiction of the California Energy Commission.

Page 5.15-22, COC WATER-7, Last Two Sentences – These sentences don't appear applicable to the MBGP's leach field and should be deleted. Revisions are provided in Attachment A.

Page 5.15-22, COC WATER-8/MM WATER-8, 2nd Sentence – The Applicant request increasing the construction water to 200 acre-feet per year and bank unused amounts from one year to another. Revisions are provided in Attachment A.

Page 5.15-22 COC WATER-9 – The Applicant proposes deletion of this condition because the condition is not necessary to mitigate a significant impact of the Project and is infeasible due to environmental, technical, and economic considerations. Due to high winds in the project area, a full floating cover is neither safe nor feasible. Further, installation of a floating cover will preclude monitoring of the pond as required by several biological resources COCs.

6. Environmental Justice

Page 6-14, Cultural and Tribal Cultural Resources – A reference to Section 5.4 of the Staff Assessment should be added to incorporate by reference the Cultural and Tribal Cultural Resources section of the Staff Assessment.

Page 6-16, Land Use, Agriculture, and Forestry – As discussed above in response to the Land Use section of the PSA, the totality of the circumstances should be considered with respect to the assessment of potential impacts to farmland. Therefore, the text should be revised to delete the following: "~~Although the conversion of Important Farmland would be a significant impact without mitigation, it is not the type of impact that typically disproportionately affects EJ populations in the area. Land Use, Agriculture, and Forestry impacts from the project would be less than significant with mitigation, including potential disproportionate impacts on an EJ population.~~"

7. Public Benefits

Page 7-1, 6th Paragraph – The text should be clarified to state that Table 7-1 reports the economic impacts/benefits that would accrue locally to Imperial County, as well as regionally and to the State. "Table 7-1 reports the Applicant's estimates of the economic impacts/benefits that would accrue **locally** to Imperial County, **as well as regionally and to the State**, due to project construction and operation."

Page 7-3, Other Public Benefits – The following public benefit should be added to the list of many economic, environmental, and reliability benefits from the MBGP:

- Creation of new, high-paying construction jobs, operations and maintenance jobs, and skilled trades and professional roles.
- The MBGP would result in the avoidance of over 457,000 MTCO2e per year.
- MBGP will provide 140 megawatts (net) of new, incremental capacity from a renewable energy resource with a capacity factor of at least 80 percent, which the California Public Utilities Commission specifically identified for procurement in its Mid-Term Reliability Decision (D. 21-06-035.)
- **Helps achieve California policy to encourage the use of geothermal resources for thermal power plants, wherever feasible, recognizing that such use has the potential of providing direct economic benefit to the public, while helping to preserve limited fossil fuel resources and promoting air cleanliness (Public Resources Code section 800).**

8. Alternatives

Page 8-11, Section 8.5.1, Air-cooled Condenser (ACC) or Air-cooled Heat Exchanger (ACHE) Alternative – The text should be clarified to more accurately describe the possible configuration of the ACHE and water losses in the cooling tower:

> "Similar to an ACC, an ACHE is a direct dry-cooling heat rejection system. However, fluid vapor enters a surface condenser, converting vapor into fluid. Then the condensed fluid enters the ACHE where additional heat rejection occurs. In the ACHE, condensed fluid passes through finned tubes arranged in parallel rows, and an axial fan forces cool air across the finned tubes. **However, the air passes across a heat exchange to cool an intermediate working fluid (typically water). This working fluid is then pumped to a surface condenser where it is used to reject heat from the geothermal steam downstream of the turbine. Collected condensate may or may not be suitable for use as the working fluid.** ACHEs are manufactured with stainless steel material. Stainless steel is less susceptible to corrosion and the corrosive elements in the geothermal fluid.
>
> ACCs and ACHEs could each replace the cooling tower; however, an ACHE would still require a surface condenser. Replacing the cooling tower with either an ACC or ACHE would eliminate the need for makeup water. Makeup water, which would be supplied by IID, accounts for water loss (drift) **to evaporation and suspended droplets (drift)** from the open system design of the cooling tower."

9. Compliance Conditions and Compliance Monitoring Plan

General Comment

Several of the compliance conditions of certification provide for the email of certain submittals to the CPM. In some cases email may not be a preferable method to transmit information either due to file size or sensitivity of the information. The Applicant recommends that the compliance conditions be clarified to provide for use of a secure-file transfer system as another method for submittals to the CPM.

Specific Comments

Page 9-8, Section 9.6, Emergency Response Contingency Planning and Incident Reporting – Should be clarified as follows to avoid confusion as to when incidents should be reported to the CPM.

> To protect public health and safety and environmental quality, the COC's include contingency planning and incident reporting requirements to ensure compliance with necessary health and safety practices. A well-drafted contingency plan avoids or limits potential hazards and impacts resulting from serious incidents involving personal injury, hazardous spills, flood, fire, explosions or other catastrophic events and ensures a comprehensive timely response. All such incidents must be reported ~~immediately~~ to the CPM and documented **as set forth in the compliance conditions of certification.** These requirements are designed to protect the public, build from "lessons learned," limit the hazards and impacts, anticipate and prevent recurrence, and provide for the safe and secure shutdown and restart of the facility

Page 9-9, COM-1 – The Applicant proposes clarifying edits to ensure that agency consultants have the appropriate credentials and authorization to access the site on behalf of the agency. The proposed condition language is set forth in Attachment A.

Page 9-9, COM-2 – The Applicant proposes clarifying edits to the list of required files that should be maintained as part of the Compliance Record. Item 4 is largely duplicative of other entries but is also so broad as to potentially require inclusion in the Compliance Record of documents not related to the CEC certification. The proposed condition language is set forth in Attachment A.

Page 9-13, COM-10 – The Applicant proposes clarifying edits as set forth in Attachment A.

Page 9-14, COM-12 – The Applicant proposes clarifying edits as set forth in Attachment A.

Page 9-15, COM-13 – The Applicant proposes revisions to make this condition consistent Compliance Incident Reporting guidance issued by the CEC's Siting, Transmission and Environmental Protection Division. The proposed condition language is set forth in Attachment A.

Page 9-16, COM-14 – The Applicant proposes revisions to clarify the contents of the Repair/Restoration Plan and the monthly update to focus on the facility, rather than external factors. COM-14 should also be revised to remove the reference regarding the ability of the Executive Director to assign suspended status and direct permanent closure of the facility as there is no basis in the Warren Alquist Act for this provision, and this provision is not required to ensure compliance with applicable LORS.

Page 9-17, COM-15 – The Applicant proposes clarification of the requirements for the Final Closure Plan as set forth in Attachment A.

Attachment A
Revised Conditions of Certification

Section 4.1 Facility Design

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2022 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the DCBO for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving (onsite), ~~demolition~~, repair, or maintenance of the completed facility.

In the event that the initial engineering designs are submitted to the DCBO when the successor to the 2022 CBSC is in effect, the 2022 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.

Verification: Within 30 days following receipt of the certificate of occupancy (CofO), the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the CEC's decision have been met in the area of Facility Design. The project owner shall provide the CPM a copy of the CofO within 30 days of receipt from the DCBO.

Once the CofO has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, , **or non-routine** repair~~, or~~ maintenance to be performed on any portion(s) of the completed facility that requires DCBO approval for compliance with the above codes. The CPM will then determine if the DCBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for DCBO review, the project owner shall furnish the CPM and the DCBO with a schedule of facility design submittals, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal

packages of designs, calculations, and specifications for major structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the date of each submittal to the DCBO. To facilitate audits by CEC staff, the project owner shall provide specific packages to the CPM **when submitted to the DCBO, or thereafter** upon request.

Verification: At least 60 days (or a project owner- and DCBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO and to the CPM the schedule, and the master drawings and master specifications list of documents to be submitted to the DCBO, for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in COC GEN-2. Major structures and equipment shall be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report (MCR)

GEN-3 The project owner shall make payments to the DCBO (the CEC) for design review, plan checks, construction inspections, and other applicable DCBO activities, based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. If the CEC delegates the DCBO function to a third party or local agency, the project owner, at the CEC's direction, shall make payments directly to the DCBO based upon a fee schedule negotiated between the CEC and the DCBO. These fees may be consistent with the fees listed in the **applicable edition of the CBC** ~~2022 CBC~~, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the DCBO.

Verification: The project owner shall make the required payments to the DCBO (the CEC) in accordance with the agreement between the project owner and the DCBO (the CEC). If the CEC delegates the DCBO function to a third party or local agency, the project owner, at the CEC's direction, shall make payments directly to the DCBO based upon a fee schedule negotiated between the CEC and the DCBO. The project owner shall send a copy of the **documentation confirming payments made to** DCBO~~'s receipt of payment to the CPM~~ in the next MCR indicating that applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California-registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project.

The RE may delegate responsibility for portions of the project to other registered

engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The RE shall:

1. Monitor progress of construction work requiring DCBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to DCBO design review and inspection conforms in every material respect to applicable LORS, these COCs, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;
4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the DCBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the DCBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.

The resident engineer (or ~~his~~ **their** delegate) must be located at the project site or be available at the project site within a reasonable time, during any hours in which construction takes place.

The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

Verification: At least 30 days (or project owner- and DCBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, the resume and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the DCBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has five days to submit the resume and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code sections 6704, 6730, 6731, and 6736 require state registration to practice as a civil engineer or structural engineer in California).

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the DCBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

The civil engineer shall:

a. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

b. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the DCBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and

c. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.

The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:

a. Review all the engineering geology reports;

b. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement, or collapse when saturated under load;

c. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2022 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and

d. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.

The engineering geologist shall:

a. Review all the engineering geology reports and prepare a final soils grading report; and

b. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in **applicable edition of the CBC** (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

The design engineer shall:

a. Be directly responsible for the design of the proposed structures and equipment supports;

b. Provide consultation to the RE during design and construction of the project;

c. Monitor construction progress to ensure compliance with engineering LORS;

d. Evaluate and recommend necessary changes in design; and

e. Prepare and sign all major building plans, specifications, and calculations.

The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the DCBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the CEC's decision.

The electrical engineer shall:

a. Be responsible for the electrical design of the project; and

b. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or project owner- and DCBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

At least 30 days (or project owner- and DCBO-approved alternative time frame) prior to the start of construction, the project owner shall submit to the DCBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.

The project owner shall notify the CPM of the DCBO's approvals of the responsible engineers within five days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the **applicable edition of the CBC**.

A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the DCBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Inspect the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the DCBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the DCBO and the CPM for corrective action; and
4. Submit a final signed report to the RE, DCBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.

Verification: At least 15 days (or project owner- and DCBO-approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the DCBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the DCBO's approval of the qualifications of all special inspectors in the next MCR.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the DCBO for approval. The project owner shall notify the CPM of the DCBO's approval of the newly assigned inspector within five days of the approval.

GEN-8 The project owner shall obtain the DCBO's final approval of all completed work that has undergone DCBO design review and approval. The project owner shall request the DCBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the DCBO's final

approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site, or at another accessible location, during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-built shall be provided to the DCBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the DCBO, with a copy to the CPM in the next MCR, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

Within 90 days of the completion of construction, the project owner shall provide to the DCBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" (Adobe ~~.pdf~~ 6.0 or newer version) files, with restricted (password-protected) printing privileges, on archive quality compact discs **(or other electronic format)**.

CIVIL-1 The project owner shall submit to the DCBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. A **copy of the** construction storm water pollution prevention plan (SWPPP) **as approved by the Regional Water Quality Control Board**;
4. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
5. Soils, geotechnical, or foundation investigations reports required by the **applicable edition of the CBC**~~2022 CBC~~.

Verification: At least 15 days (or project owner- and DCBO-approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the DCBO for design review and approval. In the next MCR following the DCBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the DCBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering, identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the DCBO

based on these new conditions. The project owner shall obtain approval from the DCBO before resuming earthwork and construction in the affected area.

Verification: The project owner shall notify the CPM ~~within 24 hours~~ **by the end of the next business day** when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. ~~Within 24 hours~~ **By the end of the next business day** of the DCBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the DCBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the **GEN-1**~~2022 CBC~~. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the DCBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the DCBO, and the CPM. The project owner shall prepare a written report, with copies to the DCBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

Verification: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the DCBO and the CPM a non-conformance report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the DCBO and the CPM. A list of NCRs for the reporting month shall also be included in the following MCR.

STRUC-2 The project owner shall submit to the DCBO the required number of sets of the following documents related to work that has undergone DCBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall

be in accordance with the **with the applicable edition of the CBC**~~2022 CBC~~.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit a NCR describing the nature of the discrepancies and the proposed corrective action to the DCBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the COCs and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the DCBO and the CPM.

The project owner shall transmit a copy of the DCBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval, and the revised corrective action to obtain DCBO's approval.

STRUC-3 The project owner shall submit to the DCBO design changes to the final plans required ~~by the 2022~~ **in the applicable edition of the** CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the DCBO prior notice of the intended filing.

Verification: On a schedule suitable to the DCBO, the project owner shall notify the DCBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the DCBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the MCR, when the DCBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the ~~2022~~ **applicable edition of the** CBC shall, at a minimum, be designed to comply with the requirements of that chapter.

Verification: At least 30 days (or project owner- and DCBO-approved alternate time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the DCBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the DCBO approvals of plan checks to the CPM in the MCR following receipt of such approvals. The project owner shall also transmit a copy of the DCBO's inspection approvals to the CPM in the MCR following completion of any inspection.

MECH-1 The project owner shall submit, for DCBO design review and approval, the proposed final design, specifications, and calculations for each plant major piping and plumbing system listed in the DCBO-approved master drawing and master specifications list. The submittal shall also include the applicable QA/QC

procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the DCBO's inspection approval of that construction.

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major piping and plumbing systems, subject to DCBO design review and approval, and submit a signed statement to the DCBO when the proposed piping and plumbing systems have been designed, fabricated, and installed in accordance with all of the applicable LORS , which may include, but are not limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ~~ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);~~
- ~~ANSI B31.8 (Gas Transmission and Distribution Piping Code);~~
- ~~ASME TDP-1 (Prevention of Water Damage to Steam Turbines);~~
- ~~NACE SP0169-2013 (Control of External Corrosion on Underground or Submerged Metallic Piping Systems;~~
- NACE SP187-2017 (Design for Corrosion Control of Reinforcing Steel in Concrete);
- ~~NFPA 56 (Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems);~~
- NFPA 70B (Practices for Electrical Equipment Maintenance—to reduce hazard to life safety)
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems); and
- Title 24, California Code of Regulations, Part 2 (California Building Code).

The DCBO may deputize inspectors to carry out the functions of the CEC's code enforcement mandate.

Verification: At least 30 days (or project owner- and DCBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next MCR.

The project owner shall transmit to the CPM, in the MCR following completion of any inspection, a copy of the transmittal letter conveying the DCBO's inspection approvals.

ELEC-1 Prior to the start of any increment of electrical construction for all electrical equipment and systems 110 Volts or higher (see a representative list, below) the project owner shall submit, for DCBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the DCBO inspect the installation to ensure compliance with the requirements of applicable LORS.

A. Final plant design plans shall include:

1. one-line diagram for the ~~13.1~~**13.8** kV, 4.16 kV and 480 V systems;
2. system grounding drawings;
3. lightning protection system; and
4. hazard area classification plan.

B. Final plant calculations must establish:

1. short-circuit ratings of plant equipment;
2. ampacity of feeder cables;
3. voltage drop in feeder cables;
4. system grounding requirements;
5. coordination study calculations for fuses, circuit breakers and protective relay settings for the ~~13.1~~**13.8** kV, 4.16 kV and 110/480 V systems;
6. system grounding requirements;
7. lighting energy calculations; and
8. 110-Volt system design calculations and submittals showing feeder sizing, transformer and panel load confirmation, fixture schedules and layout plans.

C. The following activities shall be reported to the CPM in the MCR:

1. Receipt or delay of major electrical equipment;
2. Testing or energizing of major electrical equipment; and
3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the CEC decision.

Verification: At least 30 days (or project owner- and DCBO-approved alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the DCBO for design review and approval the above listed documents.

The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS and shall send the CPM a copy of the transmittal letter in the next MCR.

Section 4.3 Transmission System Engineering

TSE-2 Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following:

a. a civil engineer;

b. a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering;

c. a design engineer who is either a structural engineer or a civil engineer and fully competent and proficient in the design of power plant structures and equipment supports; or

d. a mechanical engineer (Business and Professions Code Sections 6704 et seq. require state registration to practice as either a civil engineer or a structural engineer in California).

The tasks performed by the civil, geotechnical, mechanical, electrical, or design engineers may be divided between two or more engineers as long as each engineer is responsible for a particular segment of the project, e.g., proposed earthwork, civil structures, power plant structures, or equipment support. No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer. The civil, geotechnical, or civil and design engineer, assigned as required by Facility Design COC GEN-5, may be responsible for design and review of the TSE facilities.

The project owner shall submit to the DCBO, for review and approval, the names, qualifications, and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer. This engineer shall be authorized to halt earth work and require changes; if site conditions are unsafe or do not conform with the predicted conditions used as the basis for design of earth work or foundations.

The electrical engineer shall:

1. be responsible for the electrical design of the power plant switchyard, outlet, and termination facilities; and

2. sign and stamp electrical design drawings, plans, specifications, and calculations.

~~**Verification:** Prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, the names, qualifications, and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the DCBO's approvals of the engineers within five days of the approval.~~

~~If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.~~

~~**TSE-3** If any discrepancy in design and/or construction is discovered in any engineering work that has undergone DCBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. The discrepancy documentation shall become a controlled document and shall be submitted to the DCBO for review and approval and refer to this condition of certification.~~

~~**Verification:** The project owner shall submit a copy of the DCBO's approval or disapproval of **any** corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, the reason for the disapproval, along with the revised corrective action required to obtain the DCBO's approval.~~

TSE-5 The project owner shall ensure that the design, construction, and operation of the proposed transmission facilities will conform to all applicable LORS, and the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations, as determined by the DCBO. Once approved, the project owner shall inform the CPM and DCBO of any anticipated changes to the design and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change to the CPM and DCBO for review and approval.

a. The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, National Electric Code (NEC) and related industry standards.

b. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.

c. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.

d. The project conductors shall be sized to accommodate the full output of the project.

e. Termination facilities shall comply with applicable IID interconnection standards.

~~f. The project owner shall provide to the CPM:~~

~~i. The Special Protection System sequencing and timing if applicable,~~

~~ii. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable, if applicable,~~

~~iii. Any updates to the executed LGIA signed by the IID and the project owner.~~

Verification: Prior to the start of construction or start of modification of transmission facilities, the project owner shall submit to the DCBO for approval:

a. Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.

b. For each element of the transmission facilities identified above, the submittal package to the DCBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions" 1 and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, IID standards, National Electric Code (NEC), and related industry standards.

c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements COC TSE-5 a) through f).

d. Generator ~~Special Facilities~~ **Interconnection** Agreement shall be provided concurrently to the CPM and DCBO. Substitution of equipment and substation configurations shall be identified and justified by the project owner for DCBO and CPM approval.

~~e. Any changes or updates to the executed LGIA signed by the IID and the project owner.~~

f. **Substitution of equipment and substation configurations and modification of transmission facilities may be approved by the CPM.** Prior to the start of construction of any project modification requiring approval of the IID, **the project owner shall** provide **documentation demonstrating IID's approval** ~~the interconnection approval~~ to the CPM. ~~Interconnectional approval for modification of existing facilities can be in the form of an approved Material Modification or approval of the proposed changes to project and the existing interconnection facilities.~~ Within 15 days after cessation of construction the project owner shall provide a statement to the CPM from the registered engineer in responsible charge (signed and sealed) that the switchyard and transmission facilities conform to the above listed requirements.

g. Prior to the start of construction of the transmission system, the project owner shall provide a copy of the executed Generator Interconnection Agreement to the CPM.

Section 4.4 Worker Safety

COC WORKER SAFETY-1 The project owner shall submit to the CPM a copy of the Project Construction Health and Safety Program containing the following:

- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program;
- a Construction Injury and Illness Prevention Program;
- ~~a Construction Drilling and Construction of Wells Safety Program;~~
- a Construction Emergency Action Plan;
- a Heat Illness Prevention Program; and
- a Construction Fire Prevention Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, the Heat Illness Prevention Program, **Construction Injury** and the Injury and Illness Prevention Program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan, ~~the Drilling and Construction of Wells Safety Program~~ and the **Construction** Fire Prevention Plan shall be submitted to the CFD and the ICFPD for review and comment prior to submittal to the CPM for approval.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction and Safety and Health Program. The project owner shall provide to the CPM a copy of letters from the CFD and Imperial County**, if any,** detailing resolved comments on the Construction Fire Prevention Plan, the Drilling and Construction of Wells Safety Program, and the Emergency Action Plan.

COC WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following items:

- an Operation Injury and Illness Prevention Plan;
- an Emergency Action Plan;
- a Hazardous Materials Management Program;
- a Fire Prevention Plan (Cal Code Regs., tit. 8, § 3221);
- a Fire Protection System Impairment Program;
- a Drilling and Construction of Wells Safety Program;

- a Heat Illness Prevention Program; and
- a Personal Protective Equipment Program (Cal Code Regs, tit.8, §§ 3401— 3411).

The Operation Injury and Illness Prevention Plan, Hazardous Materials Management Program, Emergency Action Plan, Fire Prevention Plan, Fire Protection System Impairment Program, ~~Drilling and Construction of Wells Safety Program~~, Heat Illness Prevention Program, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan, Fire Protection System Impairment Program, and the Emergency Action Plan shall also be submitted to the CFD and the ICFPD for review and comment.

Verification: At least 30 days prior to the start**-up** ~~of first-fire~~ or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy to the CPM of letters from the CFD and **ICCFD**~~Imperial County~~**, if any,** detailing the resolved comments on the Operations Fire Prevention Plan, Fire Protection System Impairment Program, and Emergency Action Plan.

WORKER SAFETY-5 The project owner shall ensure that a portable AED is located on site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functional. During construction and commissioning the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the CSS or delegate, and all shift foremen. During operations, all power plant employees on site shall be trained in its use. The training program shall be submitted to the CPM for review and approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable AED ~~is~~ **will be available** on site **at the start of site mobilization** ~~as soon as physically possible along~~ with a copy of the training and maintenance program for review and approval.

COC WORKER SAFETY-6 The project owner shall prepare an Emergency Access Plan that shows a secondary emergency access to the MBGP site where the specifications of the roadway will comply with the ~~latest~~ **applicable** edition of the California Fire Code. A secondary access must be maintained to the standards listed above for the life of the project.

Verification: At least 60 days prior to the start of construction, or within a time frame approved by the CPM, the project owner shall submit the Emergency Access Plan showing the secondary emergency access to the CFD for review and comment, and

to the CPM for review and approval. If a change to the secondary access is proposed by the project owner, 180 days before it would occur, the project owner must submit the proposed change, with an updated Emergency Access Plan that shows the new proposed location/arrangement for the secondary emergency access roads, to the CFD and the ICFPD for review and comment, and to CPM for review and approval.

COC WORKER SAFETY-7 The project owner shall adhere to all applicable provisions of the ~~latest~~ version of NFPA 850: Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations **in effect at the time initial design plans are submitted to the DCBO for review and approval**, as the minimum level of fire protection. The project owner shall interpret and adhere to all applicable NFPA 850 recommended provisions and actions stating "should" as "shall." In any situations where both NFPA 850 and the state or local LORS have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 850 **in effect at the time initial design plans are submitted to the DCBO for review and approval**. At least ~~90~~**60** days prior to the start of construction of the fire protection system, the project owner shall provide all fire protection system specifications and drawings to the CFD and ICFPD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

Section 5.1 Air Quality

AQ-SC2/MM AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification AQ-SC3, AQ-SC4, and AQ-SC5.

Verification: At least 30 days prior to the start of ~~any~~ ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.

AQ-SC3/MM AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in AQ-SC4 from leaving the project site. Any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

~~Report monthly on the following fugitive dust mitigation measures that shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by AQ-SC2:~~

1. ~~The main access roads through the facility will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.~~

2. ~~All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as or more efficient for fugitive dust control than CARB approved soil stabilizers, and that shall not increase any other environmental impacts, including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification AQ-~~

~~SC4. The frequency of watering can be reduced or eliminated during periods of precipitation.~~

3. ~~No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.~~
4. ~~Visible speed limit signs shall be posted at the construction site entrances.~~
5. ~~All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.~~
6. ~~Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.~~
7. ~~All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.~~
8. ~~All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.~~
9. ~~Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.~~
10. ~~All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.~~
11. ~~At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.~~
12. ~~All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or shall be treated with appropriate dust suppressant compounds.~~

~~13. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.~~

~~14. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.~~

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions:

a. A summary of all actions taken to maintain compliance with this condition;

b. Copies of any complaints filed with the District in relation to project construction~~; and~~

~~c. Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.~~

In addition, report monthly on the following fugitive dust mitigation measures that shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by AQ- SC2:

1. **The main access roads through the facility will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.**

2. **All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as or more efficient for fugitive dust control than CARB approved soil stabilizers, and that shall not increase any other environmental impacts, including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives**

of Condition of Certification AQ-SC4. The frequency of watering can be reduced or eliminated during periods of precipitation.

3. **No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.**
4. **Visible speed limit signs shall be posted at the construction site entrances.**
5. **All construction equipment vehicle tires shall be inspected ~~and washed as necessary~~ to be ~~cleaned~~ free of excessive dirt prior to entering paved roadways.**
6. **Gravel ramps of at least 20 feet in length must be provided ~~at the tire washing/cleaning station~~.**
7. **All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.**
8. **All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.**
9. **Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.**
10. ~~All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.~~
11. **At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.**
12. **All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or shall be treated with appropriate dust suppressant compounds.**
13. **All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a**

cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.

14. **Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.**

AQ-SC4/MM AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing the additional mitigation measures described in the verification below and how they will be implemented to meet these fugitive dust control performance standards.

~~The AQCMM or Delegate shall implement the following procedures for additional mitigation measures if visible dust plumes as defined above are observed:~~

~~Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.~~

~~Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.~~

~~Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The project owner may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.~~

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report to include:

a. A summary of all actions taken to maintain compliance with this condition;

b. Copies of any complaints filed with the District in relation to project construction; and

c. Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

The AQCMM or Delegate shall implement the following procedures for additional mitigation measures if visible dust plumes as defined above are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The project owner may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

AQ-SC5/MM AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the AQCMP mitigation measures shall require prior and CPM notification and approval.

~~The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by AQ-SC2:~~

1. ~~All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.~~
2. ~~All construction diesel engines with a rating of 25 hp or higher shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4~~

~~Final engine is not available for any off-road equipment larger than 50 hp, a Tier 4 Interim or Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons.~~

~~i. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question or~~

~~ii. The construction equipment is intended to be on site for 10 days or less; or~~

~~iii. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.~~

~~3. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:~~

~~iv. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.~~

~~v. The retrofit control device is causing or is reasonably expected to cause engine damage.~~

~~vi. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.~~

~~vii. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.~~

~~4. All heavy earth-moving equipment and heavy-duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.~~

~~5. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as~~

~~concrete trucks) are exempted from this requirement.~~

6. ~~Construction equipment will employ zero-emission or hybrid powertrains and electric motors when feasible.~~

Verification: The AQCMM shall include in the Monthly Compliance Report the following to demonstrate control of diesel construction-related emissions:

a. A summary of all actions taken to control diesel construction related emissions;

b. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and

c. ~~Any other documentation deemed necessary by the CPM, and the AQCMM to verify compliance with this condition.~~ Such information may be provided via electronic format or disk at the project owner's discretion.

The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by AQ- SC2:

1. **All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.**

2. **All construction diesel engines with a rating of 25 hp or higher shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 Final engine is not available for any off-road equipment larger than 50 hp, a Tier 4 Interim or Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons.**

3. **There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question or**

4. **The construction equipment is intended to be on site for 10 days or less; or**

5. **The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.**
6. **The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:**
7. **The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.**
8. **The retrofit control device is causing or is reasonably expected to cause engine damage.**
9. **The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.**
10. **Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.**
11. **All heavy earth-moving equipment and heavy-duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.**
12. **All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.**
13. **Construction equipment will employ zero-emission or hybrid powertrains and electric motors when feasible.**

AQ-SC6 New Source Review Permits: The project owner shall provide the CPM copies of any APCD issued Authority to Construct (ATC) and Permit to Operate (PTO) for the facility. The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit **for the facility**. The project owner shall submit to the CPM any modification to any permit proposed by the APCD or U.S. Environmental Protection Agency (U.S. EPA), and any revised permit issued by the APCD or U.S. EPA, for the ~~project~~ **for the facility**.

Verification: The project owner shall submit any ATC, PTO, and proposed air permit modification to the CPM within ~~5~~**10** working days of its submittal either by 1) the

project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-20 The following emissions limits shall not be exceeded by the project owner at the MBGP facility during well flow back conditions.

Pollutant	Per Well	~~Facility-Wide~~ Per Well
	Emission Limits (lb/hr)	Emission Limits (lb/day)
Hydrogen Sulfide (H_2S)	9.95	238.8

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (AQ-SC8).

AQ-21 The following emissions limits shall not be exceeded by the project owner at the MBGP facility during well testing.

Pollutant	Per Well	~~Facility-Wide~~ Per Well
	Emission Limits (lb/hr)	Emission Limits (lb/day)
Hydrogen Sulfide (H_2S)	40.4	969.6

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (AQ-SC8).

AQ-41 The listed three emergency generators, with Kohler Engines Model KD83V16 **(or equivalent)**, shall be limited to the following emission limits:

a. lbs/hr of NOx

b. 25.1 lb/hr of CO

c. 0.21 lb/hr of PM10.

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (AQ- SC8).

AQ-72 In accordance with Condition AQ-57, the project owner shall conduct a source test of the MBGP facility within ninety (90) days of start-up and every four years thereafter or sooner if requested by the APCO to ensure compliance. The source testing shall be witnessed by **IC**APCD Staff, with all analytical results made available at the facility for inspection. The source test protocol shall be submitted for **IC**APCD

approval 30 days prior to source testing being conducted, including testing described in Condition ~~F.8~~ **AQ-57** above. Laboratory analysis shall use the EPA approved methods or an ICAPCD approved equivalent for the following:

f. Hot well condensate from the turbine condensers and cooling tower blow down for ammonia, arsenic, benzene, cadmium, chromium, copper, hydrogen sulfide, lead, manganese, mercury, nickel, radon, selenium, and zinc.

g. Of the non-condensable gases vented for: hydrogen sulfide, ammonia, arsenic, mercury, radon, benzene, toluene, and xylene.

Verification: The project owner shall submit to the CPM for review and ~~the District~~ **ICAPCD** for approval the cooling tower source test protocol 30 days prior to all source tests. The project owner shall notify the CPM and District at least seven days prior to the proposed source test date and time. The project owner will submit all source test reports to the CPM for review and ~~the District~~ **ICAPCD** for approval within 60 days of the completion of those tests.

Reports

AQ-73 The project owner shall submit to the ICAPCD a monthly report within 30 days of the preceding month that includes the following:

a. The combined Ox-Box and sparger abatement efficiency of H_2S, based on the analysis of:

1. The H_2S concentration in the condensate at the inlet of the Ox-Box in ppm and H_2S mass flow in lb/hr per Condition AQ-67;

2. The H_2S concentration in the non-condensable gases at the inlet of the sparger in ppm and H2S mass flow in lb/hr per Condition AQ-68; and

3. The analysis of the H2S concentration (ppm) and mass flow rate (lb/hr) at the exhaust of each cooling tower shroud per Condition AQ-69.

b. The overall H_2S removal efficiency by the air abatement systems, for the Ox- Box and sparger abatement systems combined (percent removal based on mass flow rate).

c. The monthly number of hours during which the sparger abatement system was bypassed or broken down, and the year-to-date total, to demonstrate compliance with Condition AQ-17.

d. The monthly number of hours during which the Ox-Box abatement system was bypassed or broken down, and the year-to-date total, to demonstrate compliance with Condition AQ-18.

e. The monthly number of hours for facility cold startups, and the year-to-date total, to demonstrate compliance with Condition AQ-22.

f. The monthly number of hours for facility warm startups, and the year-to-date total, to demonstrate compliance with Condition AQ-22.

g. The monthly number of facility shutdown hours, and the year-to-date total, to demonstrate compliance with Condition AQ-23.

h. The monthly throughput of hydrogen chloride through the HCl storage tank, and the year-to-date total, to demonstrate compliance with Condition AQ-24.

i. The monthly number of hours per well for flow back, to demonstrate compliance with Condition AQ-28.

j. The results of H2S emissions analyses conducted during flow back in that month, to demonstrate compliance with Conditions AQ-20.

Verification: The project owner shall submit to the CPM the monthly report required by this condition as part of the Quarterly Operation Reports **(AQ-SC8)**.

Section 5.2 Biological Resources

COC BIO-1/ MM BIO-1 Protocol Botanical Surveys ~~The project owner shall conduct focused surveys for special-status plant species prior to ground-disturbing activities that occur in the Spring of 2025 or later.~~ Prior to any vegetation removal or ground-disturbing activities in native or semi-natural habitat (Tamarisk thickets, cattail marsh, **and** iodine bush scrub), **that occurs in the Spring of 2025 or later, the project owner shall conduct focused surveys for special-status plant species in those areas. Surveys shall be conducted by** a qualified botanist(s) approved by the CEC Compliance Project Manager (CPM) shall conduct surveys for special-status plants **in potentially suitable habitat.**~~within the limits of the work zone plus a 100-foot buffer unless otherwise prohibited due to legal access or safety concerns. Surveys may be adjusted to reflect proposed work schedules and locations and need not be performed all at one time.~~ The surveys shall be conducted during the appropriate blooming period(s) according to protocols established by CDFW and CNPS (CDFW, 2018) or more recent protocols, if available. Surveys shall include the following species: Salton milk-vetch (*Astragalus crotalariae*; **typically** blooms January through April), Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*; **typically** blooms May through June**, sometimes in March**), Cooper's rush (*Juncus cooperi*; **typically** blooms April through May), and dwarf germander (*Teucrium cubense* ssp. *depressum*; **typically** blooms March to May).

All special-status plant species, including any listed threatened or endangered, and those ranked CRPR 1A, 1B, 2, 3, and 4 that are subject to project disturbance shall be documented during surveys using a precision GPS unit. **For the purposes of this condition, special-status plant species is defined as those plant species that are listed threatened or endangered under the federal Endangered Species Act or California Endangered Species Act, or those assigned a California Rare Plant Rank (CRPR) of 1A, 1B, 2, 3, and 4.** Surveys shall be valid for a period of three years if conducted during a period of average rainfall; however, the project shall not be delayed during a drought year and would rely on baseline or previously collected data. If vegetation removal does not occur in a previously surveyed area within three years, the surveys shall be repeated provided there is adequate rainfall to support germination.

~~A botanical survey report and map detailing the results of the surveys shall be submitted to the CPM prior to ground disturbance. The report shall include names of surveyors, dates surveys were performed, survey location(s), maps, and a compendium of all plant species identified, and any avoidance buffers established. The map shall clearly depict the survey area and the location of any special-status plant species occurrences, if found, and a description of each occurrence~~

~~(population size, associated species, any distinctive characteristics, reproduction, etc.). Survey reports shall be submitted to the CPM and shall be made available to resource agencies and federal land managers upon request.~~

If ground disturbing or O&M activities are proposed at locations where any special-status plant species are present, or known to occur, the following conditions shall be implemented:

- A qualified botanist(s) approved by the CPM shall establish a 50-foot avoidance buffer around the plant or plant population prior to activities**, if feasible**. All ground- disturbance shall be prohibited within the avoidance buffer unless otherwise directed by the CPM in coordination with CDFW. Only manual clearing of vegetation shall be permitted and no mechanical treatment, including mowers, tractors, chippers, or dozers shall be allowed within 50 feet of the edge of the avoidance buffer. All vehicles shall have rubber tires and shall only be permitted access on well-established roads. Off-road travel shall be avoided to the extent possible.
- If project activities result in the loss of more than 10 percent of the known individuals within the special-status plant species occurrence to be impacted, the project owner shall acquire compensatory mitigation land at a 2:1 mitigation ratio to compensate for impacts to special-status plant species. Habitat acquisition for these species may also be integrated with habitat compensation for other species if the criteria listed below are met:
    - Contain occupied habitat for any occurrence anywhere in the species range in California;
    - Contain unoccupied habitat that is in the immediate watershed of an extant occurrence in California and considered to have a high potential for occurrence; or
    - Provide watershed protection to extend protected occurrences regardless of the habitat the acquired lands support.
- The compensatory mitigation would not be required if the botanical surveys rule out potential presence of these species (i.e., surveys were conducted at the appropriate time of year and under appropriate environmental conditions).

The project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement the measures described in this condition if special-status plant species are discovered. These funds shall be used solely for implementation of the measures associated with the project. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") prior to initiating ground-disturbing project activities.

Verification: A botanical survey report and map detailing the results of the botanical surveys shall be submitted to the CPM no later than 14 days after completion of the survey. **The report shall include names of surveyors, dates surveys were performed, survey location(s), maps, and a compendium of all plant species identified, and any avoidance buffers established. The map shall clearly depict the survey area and the location of any special-status plant species occurrences, if found, and a description of each occurrence (population size, associated species, any distinctive characteristics, reproduction, etc.). Survey reports shall be submitted to the CPM and shall be made available to resource agencies and federal land managers upon request.** If no special-status plant species were identified, no further action is necessary.

If special status plant species were identified, a qualified botanist shall delineate the boundaries of these special-status plant occurrences that shall be preserved within 14 days prior to the initiation of ground disturbing activities. The plant occurrence boundaries shall be monitored during activities described under BIO- 8 (Biological Construction Monitoring).

If project activities shall result in the loss of more than 10 percent of the known individuals within the special-status plant species occurrence to be impacted, the project owner shall provide written verification of "Security" in accordance with this condition of certification for compensatory mitigation to the CPM. Written verification shall be provided no later than 30 days prior to beginning project ground-disturbing activities within the boundaries of the special-status plant occurrences. The project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities.

No less than 90 days prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM and CDFW describing the parcels intended for purchase. The project owner, or an approved third party, shall provide the CPM and CDFW with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFW.

On January 31st of each year following construction for a period of five years, the Designated Biologist (DB) shall provide a report to the CPM and CDFW that describes the results of monitoring and management of the habitat compensation lands for special-status plant species.

COC BIO-2/ MM BIO-2 Pesticide Application Requirements The project owner shall

ensure ~~than any person~~ **that its contractors and employees** using pesticides use on the project site, including herbicides, insecticides, or rodenticides, implements the following best management practices (BMPs).

- All pesticide applicators shall have received training and shall be licensed in appropriate categories.
- Herbicide-free buffer zones shall be maintained per label instructions.
- All herbicide label and material safety data sheet instructions shall be followed regarding mixing and application standards and equipment-cleaning standards to reduce potential exposure to the public through drift and misapplication.
- The project owner shall ensure that areas treated with herbicides shall be posted and reentry intervals specified and enforced in accordance with label instructions. Herbicides and equipment shall never by left unattended in areas with unrestricted access.
- Climate, geology, and soil types shall be considered (including rainfall, wind, depth of aquifer, and soil permeability) in selecting the herbicide with the lowest relative risk of migrating to water resources.
- There shall be no aerial application of herbicides.
- All herbicide spill requirements shall be followed in the rare case of an herbicide spill, including containment, cleanup, and notification procedures.
- All herbicide application by basal spray and foliage spray methods shall be prohibited within 100 feet of any seep, spring, pond, lake, river, stream, marsh, canal, drain or open water. Herbicide application to targeted vegetation by direct application methods (e.g., injection or cut-stump treatment) using herbicide approved for aquatic use by the USEPA shall be prohibited within 50 feet **of any seep, spring, pond, lake, river, stream, marsh, canal, drain or open water after 0.25-inch of rain has fallen within the prior 24 hour period or when 0.25-inch of rain is forecasted within the upcoming two days** ~~during the wet season (generally October 1 to May 31)~~ and allowed up to the edge of ~~the~~ **any seep, spring, pond, lake, river, stream, marsh, canal, drain or open water any other time** ~~seasonal wetlands or riparian habitat in the dry season (generally June 1 to September 30)~~.
- If herbicide use is proposed within **100** ~~250~~ feet of a seasonal wetland, a qualified biologist(s) approved by the CPM must be present to ensure the protection of the work area limits. Alternatively, the seasonal wetlands shall be clearly delineated with staking, flagging, or other conspicuous method for avoidance.
- Rodent control shall be addressed through exclusion and sanitation whenever possible. These include sealing off rodent entrances, removing debris that may

attract and house rodents, and ensuring that food and trash are stored with tight-fitting lids or are removed from the site. If trapping is required, snap traps shall be used in lieu of poison bait whenever possible.

- Rodent baits with the active ingredients brodifacoum, bromadiolone, difethialone and difenacoum shall not be used without the CPM approval to control rodent populations. These ingredients are very toxic and persistent and have been found widely in non-target wildlife.

Verification: No less than 30 days prior to the initial pesticide treatment, project owner shall provide to the CPM a Pesticide Application Plan for review and approval. The plan shall describe pesticides intended for use, target applications, and BMPs to prevent unintended mortality to sensitive species. If the project owner intends to use the active ingredients brodifacoum, bromadiolone, difethialone and/or difenacoum for rodent control, the project owner shall provide an explanation on the reason for usage over less toxic options, and BMPs to avoid exposure to non-target wildlife. The Pesticide Application Plan shall be updated no later than every 5 years to incorporate new pesticide information and BMPs. Any changes to the Plan shall require the CPM approval prior to implementation.

COC BIO-3/ MM BIO-3 Crotch's Bumble Bee Avoidance Measures The project owner shall conduct **a habitat assessment** ~~surveys~~ for Crotch's bumble bee **to identify potentially suitable habitat,** if project activities are scheduled to begin or are ongoing during the colony active period (April 1 through August 31). **If suitable habitat is identified within the project area, additional foraging and nest surveys will be conducted.** The **habitat assessment and** surveys shall be conducted by a qualified entomologist(s) or biologist(s) familiar with the life history and ecology of Crotch's bumble bee.

~~Surveys shall cover all project work areas, including staging and parking areas, plus a 50-foot buffer. Surveys shall follow non-invasive protocols established by CDFW in "Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species" or more recent CDFW-approved methods if they become available prior to project implementation (CDFW 2023d).~~

~~Survey methods should include a minimum of three on-site surveys spaced two to four weeks apart and should be developed to detect foraging bumble bees and potential nesting sites. If handling is required for identification, it shall only be conducted by a person possessing a 2081(a) Memorandum of Understanding (MOU) from CDFW. Otherwise, bumble bees observed during the surveys shall be photographed in the open for identification.~~

~~If any Crotch's bumble bees are detected during surveys, the qualified biologist shall notify CDFW and the CPM within 24 hours. If Crotch's bumble bee(s) is~~

~~observed foraging within the project site, work activities at the location shall pause until the bee moves outside the project site. If an active Crotch's bumble bee nest is identified during the surveys, a 50-foot avoidance buffer shall be clearly delineated with staking, flagging, and/or signage and project activities shall be prohibited from the area until it is determined that the nest is no longer active. Impacts to the nest shall not occur unless authorized by a 2081(b) Incidental Take Permit issued by CDFW.~~

~~Survey results shall be submitted to the CPM and CDFW prior to the initiation of ground-disturbing activities and shall include the following:~~

- ~~Names of surveyors and, if applicable, names of biologist(s) determining identification.~~
- ~~Location (latitude and longitude) and extent of surveyed areas with maps.~~
- ~~Description of conditions during each survey: date, time, temperature, wind speed.~~
- ~~Detailed habitat assessment including percent cover of floral resources and potential nesting and overwintering habitat.~~
- ~~Number of surveyors per acre, number of acres surveyed, amount of time of focused surveys.~~
- ~~List of species observed.~~
- ~~Foraging habitat surveys: name (at least to genus) of host plants observed and whether bees were observed on them.~~
- ~~Nesting habitat surveys: type of nest/structure surveyed and if bees were found in them, number of nests found in project site, photo log of suitable habitat and plants.~~
- ~~Photo vouchers of bumble bees for identification.~~
- ~~Confirmation that photo vouchers were submitted and candidate bumble bees were identified, if applicable.~~
- ~~If any bumble bees or active nests are detected during the survey, the report shall include a map or aerial photo identifying the location of the bee/nest and shall depict the boundaries of the no-disturbance buffer zone around the nest(s) that would be avoided during project construction.~~

~~Survey data shall also be submitted to the CNDDB and shall include specifying the type of observation (individual bee/nest), type of vegetation cover, slope, aspect, GPS location, distance to foraging location (if known), and other relevant conditions noted. Negative survey results shall also be reported. Positive~~

~~observations of Crotch's bumble bee shall not be documented on publicly available databases.~~

Verification: The names and credentials of the qualified entomologist(s) conducting the surveys for Crotch's bumble bee shall be submitted to CDFW for review and comment and to the CPM for review and approval no less than 14 days prior to the surveys.

The DB shall submit information describing the findings of the bumble bee surveys and implementation of any avoidance measures in the Monthly Compliance Report (MCR) (BRMIMP; BIO-21) **or in a standalone report if conducted prior to construction** to CDFW and the CPM.

To determine whether surveys are required, a habitat assessment will be conducted first to delineate the potentially suitable habitat and to determine the likelihood of bumble bees occurring within and adjacent (50-foot buffer) to the project. The habitat assessment ~~Surveys~~ shall cover all project work areas, including staging and parking areas, plus a 50-foot buffer. **The assessment will include evaluation of historical and recent observations and detail the proximity from the proposed project site to the last known sighting of Crotch's bumble bee. The habitat assessment will incorporate data from site visits detailing potential foraging, nesting, and/or overwintering resources within and adjacent to the project site.**

Following the habitat assessment, biologist(s) will perform focused foraging and nesting surveys within the areas identified as potentially suitable habitat during the habitat assessment. Survey protocols are designed on a project-by-project basis in consultation with CDFW. Therefore, proposed foraging and nesting survey plans will be provided to CDFW for review and comment, and to the CPM for review and approval prior to commencement of focused surveys. Surveys shall follow non-invasive ~~protocols~~ **guidelines** established by CDFW in "*Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species*" or more recent CDFW-approved methods if they become available prior to project implementation (CDFW 2023d).

Foraging ~~S~~**s**urvey methods should include a minimum of three on-site surveys spaced two to four weeks apart and should be developed to detect foraging bumble bees and potential nesting sites. **Focused nesting surveys will be conducted in quality habitat areas immediately prior to and in any years with proposed ground disturbance activities during the colony active period (April-August). In consultation with CDFW,** ~~I~~**i**f handling is required for identification, it shall only be conducted by a person possessing a 2081(a) Memorandum of Understanding (MOU) from CDFW. Otherwise, bumble bees observed during the surveys shall be photographed in the open for identification.

If any **foraging or nesting** Crotch's bumble bees are detected during surveys, **biological monitors will be present during all ground and vegetation disturbing work activities occurring during the colony active period (April-August). The biologist(s) will conduct daily sweeps of the work area for additional sensitive bumble bee habitat resources, nests, foraging individuals, etc. prior to ground and/or vegetation-disturbing activities and will be present with the crews when these activities occur. T~~t~~**he qualified biologist shall notify CDFW and the CPM **by the end of the next business day if sensitive bumble bee habitat resources, nests, foraging individuals, etc. are observed**. **Additionally, the biologist(s) will establish, monitor, and maintain no-work buffers around nest colonies and floral resources identified during surveys. The size and configuration of the no-work buffer will be based on best professional judgment of the biologist. At a minimum, the buffer will provide at least 50 feet of clearance around nest entrances and maintain disturbance-free airspace between the nest and nearby floral resources. Construction activities will not occur within the no-work buffers until the colony is no longer active (i.e., no bees are seen flying in or out of the nest for three consecutive days indicating the colony has completed its nesting season and the next season's queen has dispersed from the colony). The biologist(s) may apply additional site-specific avoidance measures to avoid take based on their best professional judgment.**

If Crotch's bumble bee is observed, the project owner may consult with CDFW to obtain an Incidental Take Permit (ITP) if take of CESA-protected bumble bees may occur during project activities on non-CEC jurisdictional areas. If Crotch's bumble bee(s) is observed foraging within the project site, work activities at the location shall pause until the bee moves outside the project site.~~If an active Crotch's bumble bee nest is identified during the surveys, a 50-foot avoidance buffer shall be clearly delineated with staking, flagging, and/or signage and project activities shall be prohibited from the area until it is determined that the nest is no longer active. Impacts to the nest shall not occur unless authorized by the CPM under COC BIO-3 or a 2081(b) Incidental Take Permit issued by CDFW under MM BIO-3.~~

If Crotch's bumble bee individuals or nests are not located during the multiple rounds of focused surveys, but nesting, foraging, or overwintering habitat is documented within the project site, a biological monitor will be required to monitor onsite ground disturbing activities that take place during the Queen flight period (February-March), Gyne flight period (September-October), and Colony Active Period (April-August).

Survey results shall be submitted to the CPM and CDFW prior to the initiation of ground-disturbing activities occurring during the colony active period and shall include the following:

- **Names of surveyors and, if applicable, names of biologist(s) determining**

identification.

- **Location (latitude and longitude) and extent of surveyed areas with maps.**
- **Description of conditions during each survey: date, time, temperature, wind speed.**
- **Detailed habitat assessment including percent cover of floral resources and potential nesting and overwintering habitat.**
- **Number of surveyors per acre, number of acres surveyed, amount of time of focused surveys.**
- **List of species observed.**
- **Foraging habitat surveys: name (at least to genus) of host plants observed and whether bees were observed on them.**
- **Nesting habitat surveys: type of nest/structure surveyed and if bees were found in them, number of nests found in project site, photo log of suitable habitat and plants.**
- **Photo vouchers of bumble bees for identification.**
- **Confirmation that photo vouchers were submitted and candidate bumble bees were identified, if applicable.**
- **If any bumble bees or active nests are detected during the survey, the report shall include a map or aerial photo identifying the location of the bee/nest and shall depict the boundaries of the no-disturbance buffer zone around the nest(s) that would be avoided during project construction.**

Survey data shall also be submitted to the CNDDB and shall include specifying the type of observation (individual bee/nest), type of vegetation cover, slope, aspect, GPS location, distance to foraging location (if known), and other relevant conditions noted. Negative survey results shall also be reported. Positive observations of Crotch's bumble bee shall not be documented on publicly available databases.

COC BIO-4/ MM BIO-4 General Conservation Measures The project owner shall implement the following general conservation measures duration construction **and**~~,~~ operation ~~and decommissioning~~ activities.

- Delineate Work Area. Prior to any ground-disturbing activities project work limits, including staging and parking areas shall be clearly delineated by silt fencing, staking, flagging, or other clearly identifiable materials. The defined work areas and **on-site** access routes shall avoid any impacts to special-status species, and to the greatest extent feasible, native vegetation communities, jurisdictional areas, and any other sensitive resource features; and any

necessary avoidance areas, including an appropriate buffer(s). All persons employed or otherwise working on the project site shall be instructed about the restriction on accessing habitat outside the delineated work area. Delineated materials shall be monitored daily, and maintained, repaired, or replaced immediately if the materials are damaged, lost, stolen or become ineffective in any way. The DB(s) shall ensure the delineation materials do not create a barrier to wildlife movement and shall not pose a risk to wildlife safety. The qualified biological monitor shall routinely inspect the fence on each day when monitoring occurs to ensure it remains in functioning condition and that no wildlife are walking along the silt fence line. All temporary flagging, fencing, and/or barriers shall be removed from the project site upon completion of project activities.

- Lighting and Night Work. ~~Avoid night work whenever feasible.~~ If project activities are to be conducted at night, night lighting shall ~~be of the lowest illumination necessary for human safety~~ **enhance worker safety and ensure a safe work environment**, minimized by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky. Permanent light fixtures on infrastructure shall ~~only~~ be installed ~~where necessary~~ for safety of personnel, **and safe and secure operations**. Facility lighting shall be designed, installed, and maintained to ~~prevent~~ **avoid** side casting of light toward wildlife habitat and sensitive resource features. Lighting shall be **used** ~~kept to the minimum level~~ for safety and security~~. needs by using~~ Motion or infrared light sensors and switches **may be used** to keep lights off when **possible and** not required. ~~and~~ Shielding operational lights downward to minimize skyward illumination. ~~No high intensity, steady burning, bright lights such as sodium vapor or spotlights shall be used.~~

- Trash and Debris. The project site shall be kept as clear of debris as possible. All food-related trash items shall be enclosed in sealed, animal-proof containers to avoid attracting opportunistic predators such as coyotes, ravens, and feral dogs, and regularly removed from the site. All spoils and material disposal shall be disposed of properly. Upon completion **of** project activities within each project location, all construction refuse shall be removed and properly dispose of, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

- SWPPP and Erosion Control. Prepare and implement a construction stormwater pollution prevention plan identifying Best Management Practices to avoid stormwater and erosion control impacts in accordance with WATER-1/ MM WATER-1 (NPDES Construction Permit Requirements). Appropriate Best Management Practices (BMPs) for erosion and sediment control shall be utilized to prevent sediment and construction debris from entering nearby streams,

rivers, and watersheds. Erosion control materials shall be certified weed-free and not contain plastic netting. Plastic netting could entangle wildlife, resulting in injury or death. Fiber rolls or erosion control mesh shall be made of loose-weave mesh that is not fused at the intersections of the weave, such as jute, or coconut (coir) fiber, or other products without welded weaves. Non-welded weaves reduce entanglement risks to wildlife by allowing animals to push through the weave, which expands when spread. BMPs shall not pose a barrier to wildlife movement and shall be installed to allow for the safe passage of wildlife movement out of the project area**, as much as feasible**.

- Avoid IID ~~Canals and~~ Drains~~, Salton Sea,~~ and Alamo River. Construction and operation of the project shall avoid the ~~Salton Sea, the~~ Alamo River~~,~~ and ~~canals and~~ **IID** drains.~~, including all associated riparian habitat, and any canals and drains that have been abandoned but could still convey water to the Salton Sea.~~ **No pipelines or other facilities shall be constructed over the Alamo River** ~~or the Salton Sea~~, **with the exception of gen-tie wires that span between towers**. Gen- tie towers shall be **as far** ~~well~~ away from IID ~~canals~~ **drains** or the Alamo River, **as feasible**, and conductors shall be positioned to avoid aquatic resource impacts. All access to construction, laydown/parking, borrow pit, and construction camp sites shall be through existing crossings over supply and irrigation ~~canals~~ **drains**. Pipelines ~~and gen-tie lines~~ that cross ~~canals and~~ **IID** drains shall be placed as far back from the edge to the extent feasible. When constructing pipelines over irrigation/drain**s** ~~canals~~, construction equipment and work areas shall be staged on existing staging or access roads away from aquatic resources. The pipelines shall be placed on support structures on either side of the ~~canals~~ **drains** with a crane to protect the ~~canals~~ **drains**. **The optimal deep foundation support approach and installation method will be determined based on soils and foundation support requirements and, where feasible, will use alternatives to impact or vibratory pile driving such as augur cast piles and/or rammed aggregate piers.** ~~Auger cast piles shall be used instead of impact or vibratory pile driving to eliminate the potential for hydroacoustic impacts to aquatic species~~. Concrete wash outs shall be placed on the generating facility site, away from any aquatic features.
- Parking and Staging. Vehicles and equipment shall be parked on pavement, existing roads, and**/or** previously disturbed **(including agricultural land)** or developed areas, or work areas **to the extent possible**. Staging and temporary construction areas shall be outside of suitable habitat for listed species and shall use existing roads and developed areas to the extent possible. Project impacts shall be avoided or minimized in vegetation communities likely to be occupied by listed species, as determined by the biological monitor. All riparian vegetation (e.g., cattails and marshland habitats) shall be avoided**, unless otherwise authorized**.

- Refueling Areas. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall be restricted to staging areas. No vehicles or equipment shall be refueled within 100 feet of an aquatic feature unless a bermed and lined refueling area is constructed. A Spill Prevention, Control, and Countermeasure plan shall be prepared for hazardous spill containment. In addition, the below measures shall be implemented as applicable to avoid impacts to natural communities:
    - Drip pans and/or absorbent pads shall be used during fueling operations.
    - Equipment shall be inspected for leaks and spills daily, and repairs shall be made if necessary.
    - Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut-off to control drips. Fueling operations shall not be left unattended.
    - Adequate spill kits shall be onsite; equipment fueling vehicles shall be equipped with absorbent pads and spill kit material.
    - All oilers and fuel truck operators shall be trained to respond to a spill.
    - If a noticeable spill occurs, the spill shall immediately be contained, contaminated soil shall be placed in barrels and removed from the site, and the spill shall be documented and reported to the CPM.
- Vehicle and Equipment Cleaning. The spread of nonnative weeds during construction ~~and decommissioning~~ activities and revegetation efforts shall be controlled. All vehicles shall be ~~cleaned and~~ free of **excessive** mud and debris prior to arriving onsite. ~~Vehicles that contain mud or plant debris shall be prohibited from entering work areas and shall be sent offsite for cleaning. A log detailing records of vehicle and equipment washing shall be kept and maintained onsite by the construction site manager or foreman~~.
- ~~Control of Invasive Species. Project activities shall be conducted in a manner that prevents the introduction, transfer, and spread of invasive species, including plants (e.g., weeds), animals (including invertebrates such as mussels and snails), and microbes (e.g., algae, fungi, parasites, bacteria, etc.), from one project site and/or waterbody to another.~~
    - ~~All erosion and other sedimentation controls used during and after construction shall be certified weed free, as applicable. Weed free hay, straw bales, or mulch may be available through the California Interagency Noxious Weed Free Forage and Mulch Program – Weed Free Forage and Straw Resources – California Invasive Plant Council: cal-ipc.org.~~
    - ~~Prevention Best Management Practices and guidelines for invasive plants can be found on the California Invasive Plant Council's website at:~~

~~https://www.cal-ipc.org/solutions/prevention/.~~

- ~~Prevention Best Management Practices and guidelines for quagga and zebra mussel information can be found on the CDFW invasive species website at: https://wildlife.ca.gov/Conservation/Invasives/Quagga-Mussels; including Aquatic Invasive Species Decontamination Protocol.~~
- ~~Prevention Best Management Practices and guidelines for New Zealand mudsnail can be found on CDFW's invasive species website at: https://wildlife.ca.gov/Conservation/Invasives/Species/NZmudsnail.~~

- Dust Control. Prepare and implement a fugitive dust control plan ~~consistent with ICAPCD requirements and the CPM's construction air quality construction mitigation measures~~ in accordance with AQ-SC3 (Construction Fugitive Dust Control) and AQ-SC4 (Dust Plume Response Requirement). Any soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to plants and wildlife.
- Hazardous Materials. Raw cement/concrete or washings thereof, asphalt, paint, or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish and wildlife resources resulting from project related activities shall be prevented from contaminating the soil and/or entering aquatic features. No broken concrete, cement, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or washings thereof, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into aquatic features. These materials, placed within or where they may enter any aquatic feature, shall be removed immediately. Any hazardous or toxic materials that could be deleterious to aquatic life that could be washed into the stream or its tributaries shall be contained in watertight containers or removed from the project site. When operations are completed, any excess materials or debris shall be removed from the work area.
- Prohibition of Pets, Firearms, and Wildlife Feeding. Personnel should not bring ~~dogs~~ **pets** to the work site and should not feed wildlife on or adjacent to the work site. No firearms shall be permitted at the project site except for licensed security guards.
- Vehicle Speeds. ~~A maximum speed limit of 15 miles per hour shall be enforced on any unpaved roads or work areas within the project site. Signage indicating the 15 miles per hour speed limit shall be installed at all ingress points and at locations within the project site.~~ **No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads within one-half mile of the project site as long as such speeds do not create visible dust**

emissions.

- Wildlife Entrapment. All potable and non-potable water sources, such as water buffaloes and water truck tanks, shall be covered or otherwise secured to prevent animals (including birds) from entering. Project-related excavations shall be secured to prevent wildlife entry and entrapment. Holes and trenches shall be backfilled, securely covered, or fenced. Excavations that cannot be fully secured shall incorporate appropriate wildlife escape ramps at a slope of no more than a 3:1 ratio, or other means to allow trapped animals to escape. All pipes or other construction materials or supplies shall be covered or capped in storage or laydown areas. No pipes or tubing shall be left open either temporarily or permanently, except during use or installation. Any pipes, culverts, or other hollow materials shall be inspected for wildlife before it is moved, buried, or capped. All animals discovered in trenches shall be allowed to escape voluntarily (by escape ramps or temporary structures), without harassment, before construction ~~or decommissioning~~ activities resume, or be removed from the trench or hole by a qualified biologist and allowed to escape unimpeded. If an animal is entrapped, a qualified biological monitor shall be notified immediately to remove the animal, work with construction crews to free it in compliance with safety requirements, or work with animal control, USFWS, or CDFW, and the CPM to resolve the situation.
- Injured Wildlife. Any injured wildlife observed on the project site shall be immediately reported to the qualified biologist. ~~The~~**A** qualified biologist shall be trained in the safe and proper handling and transport of injured wildlife. ~~The~~**A** qualified biologist shall be available to capture and transport injured wildlife to a local wildlife rehabilitation center or veterinarian as needed. Any injured special-status wildlife species found within or near the project site shall be reported to CDFW and/or USFWS within one workday. All incidences of wildlife injury or mortality resulting from project related- vehicle traffic on roads used to access the project shall be reported in the Monitoring Report.
- Dead Wildlife. Dead animals of non-special-status species found within the project site shall be reported to the appropriate local animal control agency within 24 hours. A qualified biological monitor shall safely move the carcass out of the road or work area as needed. Dead animals of special-status species found in the project site shall be reported to CDFW and/or USFWS, and the CPM within one workday and the carcass shall be handled as directed by the regulatory authority. If any contractor or employee inadvertently kills or injures wildlife, or finds one either dead, injured, or entrapped, the contractor shall immediately report the incident to the qualified biologist identified in the Worker Environmental Awareness Program (WEAP) in BIO-5 (Worker Environmental Education Program). The qualified biologist shall contact the USFWS (for federally listed species and migratory birds), CDFW (for all wildlife)

and/or the local animal control agency, and the CPM, as appropriate. The qualified biologist or biological monitor shall safely move the carcass out of the road or work area if needed and dispose of the animal as directed by the agency.

- **Annual Construction** Monitoring Report. The biological monitor shall submit **annual reports during construction** ~~a final report to the lead agency's project biologist within 120 days of the completion of project construction, or on December~~ **January** 31st each year if the project continues for multiple years, that includes photographs of habitat areas that were to be avoided and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with conservation measures was achieved. The lead agency's project biologist shall review the report and forward it to CDFW and USFWS.
- Notification to CNDDB. If any special status species are observed in project surveys, the DB(s) or Biological Monitor(s) shall submit a California Natural Diversity Data Base (CNDDB) forms to the CNDDB within **twenty (20)** ~~five (5) working~~ days of the sightings.
- Implement APLIC Guidelines. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) Suggested Practices for Avian Protection on Power Lines (APLIC 2006) and Mitigating Bird Collisions with Power Lines (APLIC 1994) to reduce the likelihood of large bird electrocutions and collisions. **The project owner shall install a CPM-approved marker on the proposed gen-tie lines.**
- Minimize Noise Impacts. A continuous low-pressure technique shall be used for steam blows, to the extent possible, to reduce noise levels in sensitive habitat proximate to the project. Loud construction~~,~~ **or** operation~~, or decommissioning~~ activities (i.e., steam blowing, both low and high pressure, and pile driving) shall be **managed** ~~avoided during sensitive breeding periods~~ as outlined in BIO-13 (Yuma Ridgway's Rail Survey, Management, and Monitoring), and BIO-14 (Yuma Ridgway Rail Species Noise Assessment and Abatement Plan).

Verification: All mitigation measures and their implementation methods shall be included in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP; BIO-21) and implemented. Implementation of the measures shall be reported in the MCRs by the DB. Any updates to the final BR**M**IMP shall require the CPM approval prior to implementation.

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written construction termination report identifying how measures have been completed.

After construction is completed, for the duration of operations, the project owner shall provide to the CPM for review and approval, and annual report documenting operation and maintenance activities and identifying how measures have been completed.

~~Within 90 days prior to the onset of decommissioning activities, the project owner shall provide an updated BRIMP to include all mitigation measures and their implementation methods for decommissioning activities. Any updates to the final BRIMP shall require the CPM approval prior to implementation. Within 30 days after completion of project decommissioning, the project owner shall provide to the CPM for review and approval, a written decommissioning termination report identifying how measures have been completed~~.

COC BIO-5/ MM BIO-5 Worker Environmental Awareness Program The project owner shall develop and implement a Worker Environmental Awareness Program (WEAP) for all persons employed or otherwise working on the project prior to performing any work onsite. The WEAP shall inform all persons about sensitive biological resources associated with the project and assure that personnel working on the site are aware of the obligation to protect and preserve biological resources. Persons include contractors, subcontractors, inspectors, and monitors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, and operation. The project owner shall ensure that all persons overseeing and performing maintenance activities are familiar with the measures required for the project and the consequences of non-compliance. The project owner shall provide interpretation for non-English speaking workers, and the same instruction shall be provided for any new workers before their performing project construction or maintenance activities. ~~The program shall be repeated annually for projects extending more than one year.~~

~~The WEAP must:~~

- ~~Be developed by or in consultation with the DB and consist of an onsite or training center presentation in which supporting written material is made available to all participants. The specific program can be administered by video or by a competent individual acceptable to the DB.~~
- ~~Describe key personnel (i.e., DB, Biological Monitor) roles and responsibilities.~~
- ~~Discuss the locations and types of sensitive biological resources on the project site and adjacent areas. Personnel shall be advised that handling of any wildlife is prohibited.~~
- ~~Provide a description of special-status species and their habitat needs.~~
- ~~Explain the status of these species and their protection under the Federal~~

~~Endangered Species Act, California Endangered Species Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, Fish and Game Code, and other statutes.~~

- ~~Explain the status of sensitive biological resources, including aquatic resources and sensitive habitats, and their protection under the Clean Water Act, Porter-Cologne Water Quality Control Act, Fish and Game Code, and other statutes.~~
- ~~Present the reasons for protecting these resources and explain the measures developed to prevent impacts to special-status species and sensitive biological resources.~~
- ~~Outline environmentally responsible construction practices.~~
- ~~Maps showing the location of special-status wildlife, fish, or populations of rare plants, exclusion areas, or other construction limitations.~~
- ~~Provide a physical description of invasive species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and impacts.~~
- ~~An Invasive Species Education Program that includes a discussion of the invasive species currently present within the project site as well as those that may pose a threat to or have the potential to invade the project site.~~
- ~~BMPs to be implemented at the project site to avoid the introduction and spread of invasive species into and out of the project site.~~
- ~~A contact person in the event of the discovery of dead or injured wildlife.~~
- ~~Identify whom to contact if there are further comments and questions about the material discussed in the program.~~
- ~~Describe protocol to resolve conflicts that may arise at any time during the construction process.~~
- ~~Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.~~

Verification: Within 30 days prior to the ~~onset~~ **start** of construction, the project owner shall provide to the CPM a copy of the final WEAP and all supporting written materials and electronic media prepared or reviewed by the DB and ~~a resume~~ **identification** of the person(s) administering the program.

The WEAP must:

- **Be developed by or in consultation with the DB and consist of an onsite or training center presentation in which supporting written material is made available to all participants. The specific program can be administered by video or by a competent individual acceptable to the DB.**

- **Describe key personnel (i.e., DB, Biological Monitor) roles and responsibilities.**
- **Discuss the locations and types of sensitive biological resources on the project site and adjacent areas. Personnel shall be advised that handling of any wildlife is prohibited.**
- **Provide a description of special-status species and their habitat needs.**
- **Explain the status of these species and their protection under the Federal Endangered Species Act, California Endangered Species Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, Fish and Game Code, and other statutes.**
- **Explain the status of sensitive biological resources, including aquatic resources and sensitive habitats, and their protection under the Clean Water Act, Porter- Cologne Water Quality Control Act, Fish and Game Code, and other statutes.**
- **Present the reasons for protecting these resources and explain the measures developed to prevent impacts to special-status species and sensitive biological resources.**
- **Outline environmentally responsible construction practices.**
- **Maps showing the location of special-status wildlife, fish, or populations of rare plants, exclusion areas, or other construction limitations.**
- **Provide a physical description of invasive species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and impacts.**
- **An Invasive Species Education Program that includes a discussion of the invasive species currently present within the project site as well as those that may pose a threat to or have the potential to invade the project site.**
- **BMPs to be implemented at the project site to avoid the introduction and spread of invasive species into and out of the project site.**
- **A contact person in the event of the discovery of dead or injured wildlife.**
- **Identify whom to contact if there are further comments and questions about the material discussed in the program.**
- **Describe protocol to resolve conflicts that may arise at any time during the construction process.**
- **Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.**

During construction, u~~U~~pon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection

measures. These forms shall be maintained by the project owner for at least six months **following the completion of construction** and shall be made available to the CPM ~~and~~ upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training.

The project owner shall provide in the MCR (BRMIMP; BIO-21) the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

Throughout the life of the project, the WEAP shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. **During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.**

COC BIO-6/ MM BIO-6 Designated Biologist(s) and Biological Monitor(s) The project owner shall retain a DB(s) ~~to be onsite throughout the entirety of the~~ **for** project **construction**. The project owner shall ensure that the DB(s) is/are knowledgeable and experienced in the identification, biology, natural history, collecting, and handling of appropriate species. The DB(s) shall conduct pre-activity surveys, approve the Worker Environmental Awareness Program (WEAP), monitor all construction ~~and decommissioning~~ activities in and around sensitive biological resources, monitor any active bird nests, perform necessary pre-construction surveys, and implement protection measures as outlined in BIO-1 through BIO-22.

- DB Qualifications. A DB is an individual who holds a bachelor's degree from an accredited university and 1) is knowledgeable in relevant species' life histories and ecology, 2) can correctly identify relevant species, 3) has conducted field **multiple** surveys for **at least one of the** relevant species **with positive sightings**, 4) is familiar with relevant survey protocols, and 5) is knowledgeable of state and federal laws regarding the protection of sensitive species.
- DB Responsibilities. The DB shall serve as the primary point of contact for the CPM and regulatory agencies regarding biological resources mitigation and compliance. The responsibilities of the qualified biologist shall include, but are not limited to, the following:
    - Advise the project owner's Construction ~~and Operation~~ Managers on the implementation of the biological resource conditions of certification.
    - Prepare, conduct, and/or oversee WEAP Training and shall ensure that all avoidance and minimization measures are implemented and maintained.
    - Supervise the Biological Monitor(s).
    - Ensure that proper biological monitoring coverage is maintained during all

required project activities.

- Monitor compliance with any project-related applicable jurisdictional water permit(s).
- Conduct or overseeing weekly site inspections upon completion of initial vegetation removal and ground-disturbing activities, and communicating any remedial actions needed (i.e., trash, fencing repairs, etc.) to maintain compliance with biological resource mitigation measures, including applicable project-related jurisdictional water permit(s).
- ~~Inform the project owner's Construction and Operation Managers on the implementation of the biological resource condition of certification.~~
- Notify the project owner and the CPM of any non-compliance with any biological resources condition of certification.
- Prepare or oversee the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan and MCRs (BRMIMP; BIO-21).

- Biological Monitor(s). A Biological Monitor is an individual experienced with construction level biological monitoring and who can recognize species in the project area and who is familiar with the habits and behavior of those species. Biological Monitors shall have academic and professional experience in biological sciences and related resource management activities as it pertains to this project. All Biological Monitors for the project shall be approved by the CPM~~, in consultation with CDFW,~~ prior to commencement of covered activities.
- Biological Monitor(s) Responsibilities. A biological monitor shall monitor all construction-related activities with the potential to impact listed species to ensure that all conditions of certification are being implemented. The biological monitor shall be familiar with the habitats, plants, and wildlife of the project area, and shall be present while equipment is being used to ensure that issues relating to biological resources are appropriately and lawfully managed. The biological monitor shall be provided with a copy of all protection measures as they relate to the project. The contracts of the project biologist(s) shall allow direct communication with the USFWS and CDFW at any time regarding the project. The responsibilities of the biological monitor shall include, but are not limited to, the following:
  - During monitoring duties, perform clearance surveys (sweeps) for sensitive biological resources that may be within or adjacent to work areas prior to crews initiating work activities.
  - Conduct compliance monitoring during project activities consistent with the timeline identified above.
  - Ensure that work activities are contained within approved disturbance area

limits at all times.

- Clearly delineating sensitive biological resources with staking, flagging, or signage, or other appropriate materials that are readily visible and durable. The biological monitors shall inform work crews of these areas and the requirements for avoidance and shall inspect these areas at appropriate intervals for compliance with mitigation measures and permit conditions.
- Routinely inspect wildlife exclusionary fencing to ensure that it remains intact and functional. Any needs for fencing repairs shall be immediately communicated to the responsible party and repairs shall be completed in a timely manner, generally within one workday.
- Routinely inspect work areas where animals may have become trapped or entangled, including equipment covered with bird deterrent netting (if any) and release any trapped or entangled animals. Inspections should also include high traffic areas, such as access roads and staging areas, to locate animals that are potentially in harm's way and relocate them, if necessary.
- Maintain the authority and responsibility to halt any project activities that are not in compliance with applicable mitigation measures or permit conditions or shall have an unauthorized adverse effect on biological resources.
- **At the start of each monitoring day, the construction staff or biological monitor will inspect wildlife entrapment hazards for presence of wildlife and the construction staff will report any entrapped wildlife to the biological monitor.**
- At the end of each monitoring day, the biological monitor shall verify that all excavations, open tanks, trenches, pits, or similar wildlife entrapment hazards have been adequately covered or have sufficient escape ramps installed to prevent wildlife entrapment and communicate with work crews to ensure covers or ramps are installed and functioning properly.
- **During all initial vegetation removal and ground-disturbing activities, a qualified biological monitor shall be onsite daily to ensure compliance with project mitigation measures and permit conditions. Upon completion of initial vegetation removal and ground-disturbing activities, the qualified biological monitor shall inspect the project site at least once weekly until construction activities are completed.**
- Documenting monitoring activities on each day when monitoring occurs, as performed to include location and description of activities monitored.
- The Biological Monitor shall inform the project owner's Construction and Operation Managers on the implementation of the biological resource

protection measures and any noncompliance.

Authority of DB(s) and Biological Monitors(s). To ensure compliance with the mitigation measures, the DB(s) and Biological Monitor(s) shall have the authority to immediately halt any activity that does not comply with the mitigation measures, order any reasonable measure to avoid the violation of any mitigation measure, and directly contact the CPM, CDFW or USFWS for any reason. If the DB(s) or Biological Monitor(s) determines that the project may have an adverse effect on any special-status species (threatened, endangered, candidate, species of special concern, etc.), they must halt construction and notify the appropriate agencies immediately.

Verification: No fewer than 30 days prior to construction-related ground disturbance, ~~the DB(s) and Biological Monitor(s) shall submit a~~ **the Project Owner shall submit the** resume**s of the DB and Biological Monitor(s)** ~~highlighting their experience~~ to USFWS and CDFW for review and comment and to the CPM for review and approval. No construction related ground disturbance, grading, boring, or trenching shall commence until an approved DB is available to be on site and communicates to the contractor that work may begin. If additional biological monitors are needed during construction the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

The DB(s) and Biological Monitor(s) shall ~~not~~ have the authority to handle any state-listed or special-status species ~~unless~~ **as** authorized by CDFW; or handle any federal listed species ~~unless~~ **as** authorized by USFWS. Handling, relocation, release from entrapment, or other interactions with wildlife shall be safe, practicable, and consistent with mitigation measures and permit conditions to relocate (actively or passively) wildlife out of harm's way. If safety or other considerations prevent the biological monitor from aiding trapped or entangled animals or animals in harm's way, the project owner or its designee shall consult with CDFW and/or USFWS, a wildlife rehabilitator, or other appropriate party to obtain aid for the animal, consistent with applicable mitigation measures and permit conditions. If consultation with CDFW and/or USFWS is required, the CPM shall be notified within one day of the consultation.

During construction, ~~I~~if a DB needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM least 10 working days prior to the termination or release of the preceding DB. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent DB is proposed to the CPM for consideration.

The DB shall submit in the MCR to the CPM as described under BIO-21 (BRMIMP) that includes the authorized DB(s) and Biological Monitor(s) assigned to the project and a summary of implementation of all Conditions of Certification (BIO-1 through BIO-22).

The project owner shall ensure that the DB or Biological Monitor notifies the CPM ~~immediately~~ **as soon as practicable** (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any dead or injured special-status species or any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, or operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure shall be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

COC BIO-7/MM BIO-7 Conduct Pre-Activity Surveys for Special-Status Wildlife No later than seven (7) days prior to start of project construction ~~or decommissioning~~ activities, the Qualified Biologist(s) shall conduct surveys for special-status wildlife. Surveys shall include the project site and a 250-foot buffer (or ~~larger~~ as required by species specific measures) where legal **and safe** access is available. Surveys shall focus on areas of potential habitat and special status species and should include inspections of potential microhabitats where smaller species could occur. Any special status wildlife found within the project site during surveys shall be allowed to leave on its own volition prior to the onset of construction **and the biologist will confirm that the individual has left the site**. If **special-status** species ~~of special concern~~ are found within the project site during surveys and shall not leave on its own volition, the species shall be relocated to the nearest suitable habitat outside of the project site. **Special-status s**~~S~~pecies ~~of special concern~~ shall only be handled by qualified personnel as authorized by CDFW and/or USFWS under an issued state scientific collecting permit (SCP) or memorandum of understanding (MOU). ~~Impacts or relocation of federally or state-listed species or state-listing candidate species are not authorized. If any State or federally listed, candidate, or proposed species are detected work shall be stopped and the project owner shall notify the CPM, CDFW, and or USFWS within 24-hours for further direction.~~

Verification: The DB shall submit information describing the findings of the surveys in the MCR (BRMIMP; **BIO-21**) to CDFW and the CPM. The information shall include the date, time, and duration of the surveys; identity of the surveyor(s); a list of all common and special-status species observed; locations of any special-status species identified, including any established avoidance buffers; and any actions taken at the direction of the CPM, CDFW, and/or USFWS to avoid or minimize

impacts to special-status species.

~~Records of special-status species observed shall also be submitted to the CNDDB and shall include information specifying the type of observation, type of vegetation cover, slope, aspect, GPS location, observed behavior, presence of nests or young, and other relevant conditions noted. Positive observations of special-status species shall not be documented on publicly available databases.~~

~~**COC-BIO-8/ MM-BIO-8 Biological Construction Monitoring** The DB(s) and Biological Monitor(s) shall be retained to oversee project activities and to ensure compliance with biological resource mitigation measures and permit conditions set forth in BIO-1 through BIO-21 and outlined in the Biological Resources Mitigation Implementation and Monitoring Plan (BIO-21). Monitoring must include any special-status species during the pre-construction baseline survey or species-specific surveys and any areas identified as suitable habitat. Sensitive biological resource areas shall be clearly marked and inspected at appropriate intervals for compliance with regulatory terms and conditions.~~

~~Prior to construction commencing each day, the Biological Monitor(s) shall inspect active construction areas where animals may have become trapped. At the end of the day, the Biological Monitor(s) shall inspect the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Areas with high vehicle activity (parking lots) shall be periodically inspected for animals in harm's way.~~

~~During all initial vegetation removal and ground-disturbing activities, a qualified biological monitor shall be onsite daily to ensure compliance with project mitigation measures and permit conditions. Upon completion of initial vegetation removal and ground-disturbing activities, the qualified biological monitor shall inspect the project site at least once weekly until construction or decommissioning activities are completed.~~

~~**Verification:** The DB(s) shall respond directly to inquiries of the CPM regarding biological resource issues. The DB(s) shall notify the project owner and the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any noncompliance with any biological resources Conditions of Certification, of any dead or injured special-status species, if there is a halt in any activities, and any corrective actions that have been taken, or shall be instituted, as a result of the halt.~~

~~Whenever corrective action is taken by the project owner, a determination of success or failure shall be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner would be notified~~

~~by the CPM that coordination with other agencies would require additional time before a determination can be made.~~

~~The DB shall submit in the MCR to the CPM as described under BIO-21 (BRMIMP) that includes a summary of implementation of all Conditions of Certification (BIO-1 through BIO-22) during construction and decommissioning activities.~~

~~Records of special-status species observed shall also be submitted to the CNDDB and shall include information specifying the type of observation, type of vegetation cover, slope, aspect, GPS location, observed behavior, presence of nests or young, and other relevant conditions noted. Positive observations of special-status species shall not be documented on publicly available databases.~~

MM BIO-9 Desert Pupfish Protection and Relocation Plan Handling or relocation of desert pupfish shall require a Biological Opinion (BO) from USFWS and a Consistency Determination or 2081 Incidental Take Permit from CDFW **for non-CEC jurisdictional areas**. Handling of desert pupfish shall be conducted by individuals with a USFWS 10(a)(1)(a) recovery permit or otherwise authorized by USFWS. No take of desert pupfish can occur prior to consultation with USFWS and CDFW.

If **occupied desert pupfish water features** ~~irrigation drains or ponded water at the end of drains shall~~ require dewatering during construction or operation activities, the DB(s) shall prepare and implement a desert pupfish protection and relocation plan. This plan shall be submitted to CDFW and USFWS for review and comment and to the CPM for review and approval prior to any ground-disturbing activities that have a water component. This plan shall provide:

- Protocols for pre-activity surveys to assess species presence and spawning within or immediately adjacent to work areas (e.g., in **occupied water features**, ~~or at the end of, the irrigation drains/drain canals, and around pond margins).~~ The protocols shall also outline the qualifications required for biologists to conduct desert pupfish survey, capture, and relocation activities and the process for biologist approval.
- Capture (e.g., trapping in the **occupied water feature** ~~irrigation drains~~ for construction and maintenance; or trapping, dip netting, and seining in **occupied water feature** ~~ponds~~ that are drained or if the water level is dropped) and transport methods to minimize handling and stress as well as exposure to heat, low dissolved oxygen (DO), and crowding.
- Monitor relocated desert pupfish for signs of stress/injury.
- Habitat assessment and suitability of locations for release of captured desert pupfish, including dissolved oxygen, salinity, and other parameters.

- Timing windows when construction ~~or maintenance~~ in shallow shoreline areas and in the irrigation drain mouths/canals may be conducted with minimal effects on desert pupfish spawning.
- Adaptive management procedures that include assessment of mitigation measure effectiveness, development of revised measures to improve effectiveness, and similar assessment of revised measures to verify effectiveness.

Verification: The project owner shall consult with USFWS, CDFW and the CPM prior to preparation of the dewatering plan to discuss the process for obtaining a BO from USFWS, a Consistency Determination or 2081 Incidental Take Permit from CDFW, and approved biologists for handling of desert pupfish.

~~Within~~ 30 days prior to the initiation of dewatering activities, the DB(s) shall submit to Desert Pupfish Protection and Relocation Plan to USFWS and CDFW for review and comment, and to the CPM for review and approval. Modifications to the Desert Pupfish Protection and Relocation Plan shall only be made in coordination with USFWS, CDFW, and the CPM.

~~The DB shall submit information on the implementation of the~~ **A** Desert Pupfish Protection and Relocation Plan **implementation information will be submitted** in the MCR (BRMIMP; BIO-21) to USFWS, CDFW, and the CPM. The information shall include the date, time, and duration of the surveys; identity of the surveyor(s); number of individuals captures and relocated; agency-approved relocation sites; stress/injury observations of relocated desert pupfish; and any actions taken at the direction of the CPM, CDFW, and/or USFWS to avoid or minimize impacts.

~~Records of special-status species observed shall also be submitted to the CNDDB and shall include information specifying the type of observation, type of vegetation cover, slope, aspect, GPS location, observed behavior, and other relevant conditions noted. Positive observations of special-status species shall not be documented on publicly available databases.~~

COC BIO-10/ MM BIO-10 Invasive Species Management Plan The project owner shall develop and implement an Invasive Species Management Plan for those areas not being placed back into agricultural production. The purpose of this plan is to prevent invasive and exotic species from establishing themselves in the temporary disturbance areas. ~~The Invasive Species Management Plan shall describe invasive and exotic species eradication and control methods, a reporting plan for management during and after construction, and shall include at least the following Best Management Practices to prevent the spread and propagation of invasive species:~~

~~1. Limit the size of any vegetation and/or ground disturbance to the absolute minimum, and limit ingress and egress to defined routes.~~

~~2. Maintain vehicle wash and inspection stations and closely monitor the types of materials brought onto the site.~~

~~3. Reestablish vegetation quickly on disturbed sites.~~

~~4. Monitoring and rapid implementation of control measures to ensure early detection and eradication for weed invasions.~~

~~5. Use only weed-free straw or hay bales used for sediment barrier installations and weed-free seed.~~

~~6. Implementation of BMPs and guidelines for invasive and exotic species as outlined in **BIO-4** (General Conservation Measures), Control of Invasive Species.~~

Verification: Within 30 days prior to the onset of construction, the project owner shall submit to the CPM a copy of the final Invasive Species Management Plan. All modifications to the Management Plan shall be made only after approval from the CPM.

The Invasive Species Management Plan shall describe invasive and exotic species eradication and control methods, a reporting plan for management during and after construction, and shall include at least the following Best Management Practices to prevent the spread and propagation of invasive species:

1. **Limit the size of any vegetation and/or ground disturbance to the absolute minimum, and limit ingress and egress to defined routes.**

~~2. Maintain vehicle wash and inspection stations and closely monitor the types of materials brought onto the site.~~

3. **Reestablish vegetation quickly on disturbed sites.**

4. **Monitoring and rapid implementation of control measures to ensure early detection and eradication for new weed invasions.**

5. **Use only weed-free straw or local** ~~hay~~ **straw bales for sediment barrier installations and weed-free seed.**

~~6.~~ **Implementation of BMPs and guidelines for invasive and exotic species** ~~as outlined in BIO-4 (General Conservation Measures), Control of Invasive Species~~. ~~BMPs and guidelines may~~ **include:**

   a. **The California Interagency Noxious Weed Free Forage and Mulch Program - Weed Free Forage and Straw Resources – California Invasive Plant Council: cal-ipc.org.**

   b. **Prevention Best Management Practices and guidelines for invasive**

plants from the California Invasive Plant Council.

c. **Prevention Best Management Practices and guidelines for quagga mussel information from CDFW, including Aquatic Invasive Species Decontamination Protocol.**

d. **Prevention Best Management Practices and guidelines for New Zealand mudsnail from CDFW.**

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a report identifying which items of the Invasive Species Management Plan have been completed, a summary of all modifications to invasive species measures made during the project's construction phase, and which items are still outstanding.

On January 31st of each year following construction until the completion of the revegetation monitoring specified in the Revegetation Plan (BIO-11 ~~Closure,~~ Revegetation~~,~~ and Rehabilitation Plan), the DB shall include information on invasive species management. Information includes abundance of invasive species in revegetated areas, identification of new sources of invasive species, and recommendations for remedial action, if warranted, planned for the upcoming year.

COC BIO-11/ MM BIO-11 ~~Closure,~~ Revegetation, and Rehabilitation Plan The project owner shall develop and implement ~~Closure,~~ **a** Revegetation, and Rehabilitation Plan (Plan) that describes site restoration of temporary disturbed areas immediately following construction. The Plan shall identify semi-natural and native communities, sensitive natural communities, aquatic resource features, areas that shall be reverted areas back to previous land use, such as agricultural production. **Reverting temporary disturbance areas back to agricultural production will not require long-term monitoring because it is not a natural/native land cover type.** All temporarily disturbed areas not subject to long-term use or ongoing vegetation maintenance shall be revegetated with native species characteristic of the adjacent native vegetation communities. **An exception will be area south of Red Island Volcano that are managed by IID for dust control. Temporary disturbance in these areas will continue to be managed for dust control.** The Plan shall identify the total acreages of temporary disturbance to each of these communities, plant species used for revegetation efforts, locations of plantings, hydroseeding (including the species composition), hand-seeding, imprinting, soil and plant salvage, replacement of topsoil, and/or other appropriate method of restoration. The Plan shall include success criteria and monitoring specifications for a period no less than 5 years, or until success criteria are met. Target performance standards shall be included and based on typical vegetation cover of habitat communities in the region. The final plan shall include a cost estimate, adjusted for inflation, reflecting the costs of the revegetation and rehabilitation.

Verification: Within 6 months prior to the completion of construction, the project owner shall submit a ~~Closure,~~ Revegetation, and Rehabilitation Plan ~~to CDFW for review and comment and~~ to the CPM for review and approval. All modifications to the Revegetation Plan shall be made only after approval from the CPM.

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a report identifying which items of the ~~Closure,~~ Revegetation, and Rehabilitation Plan have been completed, a summary of all modifications to revegetation measures during implementation (and approved by the CPM), and which items are still outstanding.

On January 31st of each year following construction until the completion of the revegetation monitoring period of 5 years, **or until success criteria are met,** the DB shall provide a report to the CPM that includes: a summary of revegetation activities for the year, a discussion of whether revegetation performance standards for the year were met; and recommendations for revegetation remedial action, if warranted, planned for the upcoming year.

COC BIO-12/ MM BIO-12 Conduct Pre-Activity Surveys for Nesting Birds If project construction or decommissioning activities must occur during the breeding season for bird species (February 1 through August 31), a pre-activity survey for nesting birds shall be conducted by a DB(s) or Biological Monitor(s) no less than seven (7) ~~and no more than three (3)~~ days prior to initiating project activities.

Pre-Activity Surveys. Pre-activity surveys shall be conducted by the approved biologist at the appropriate time of day/night, during appropriate weather conditions. Surveys shall include the entire project site and all work areas, including staging and parking areas, plus a ~~500-foot~~ buffer **which is to be determined by the DB or qualified biologist** where legal access is available. Surveys shall focus on all areas within the project site and buffer care that could potentially support nesting birds and raptors, including trees, shrubs, bare ground, burrows, cavities, structures, equipment, and materials. Survey duration shall take into consideration the size of the area, density and complexity of the habitat, number of survey participants, and survey techniques employed. The survey duration shall be sufficient to ensure the data collected is complete and accurate.

Pre-activity surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior (e.g., copulation, carrying of food or nest materials, nest building, removal of fecal sacs, flushing suddenly from atypically close range, agitation, aggressive interactions, feigning injury or distraction displays, or other behaviors). ~~If a nest is suspected, but not confirmed, the biologist(s) shall establish a disturbance-free buffer until the location can be~~

~~inferred based on observations or until a determination can be made.~~ The biologist(s) **may** ~~shall~~ not risk failure of the nest to determine the exact location or status and shall make every effort to limit or avoid any potential nest predation as a result of the survey/monitoring efforts (e.g., limit number of surveyors, limit time spent at/near the nest, scan the site for potential nest predators before approaching, immediately depart nest area if indicators of stress or agitation are displayed). If a nest is observed, but thought to be inactive, the biologist(s) shall monitor the nest for one hour (four hours for raptors during the nonbreeding season) prior to approaching the nest to determine status. The biologist(s) shall use their best professional judgement regarding the monitoring period and whether approaching the nest is appropriate.

Buffers. If an active nest is detected, a ~~100-foot~~ **an approved nest** avoidance buffer **zone (protected area surrounding the nest) by species** ~~for passerines, and a 500-foot avoidance buffer for raptors or pelicans~~, shall be established and clearly delineated by staking, flagging, and/or signage. The buffer shall be delineated to ensure that its location is known by all persons working within the vicinity but shall not be marked in such a manner that it attracts predators. Once the buffer is established, the biologist(s) shall document baseline behavior, stage of reproduction, and existing site conditions, including vertical and horizontal distances from proposed work areas, visual or acoustic barriers, and existing level of disturbance. The avoidance and protection measures shall remain in effect until the nest is no longer active.

The project owner may identify species-specific buffer distances or variable distances, depending on activity levels (e.g., driving past the nest to access work sites may be less disruptive than vegetation clearing) for ~~review and comment by CDFW and~~ review and approval by the CPM. The extent of nest protection shall be based on proposed construction~~/decommissioning~~ activities, species, human activities already underway when the nest is initiated (e.g., a house finch nest built in the eaves of an occupied structure would warrant less avoidance or protection than a loggerhead shrike nest build in native shrubland), topography, vegetation cover, and other factors.

Monitoring. The biologist(s) shall monitor the nest at the onset of project activities, and at the onset of any changes in project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.), to determine the efficacy of the buffer. If the Biological Monitor(s) determines that project activities may be causing an adverse reaction/impact, then the Biological Monitor(s) shall adjust the buffer accordingly.

Any active nests and avoidance buffers shall be inspected weekly by the biologist(s) until the nest is determined to be inactive. If a nest is discovered during construction ~~or decommissioning~~ activities, all work in the area shall be immediately halted and/or relocated and an avoidance buffer (as defined above) shall be implemented.

Avoidance buffers may be reduced ~~only with the approval of the CPM, in consultation with CDFW, or~~ in accordance with the species-specific buffer distances approved the CPM in consultation with CDFW **or USFWS**. Buffers can be reduced by the biologist(s) if it is determined that a reduced buffer shall not cause disturbance based on their best professional judgement and individual observations; the species present; the individual or pair's behavior(s); stage of reproduction; visual, acoustic, or other screening; and proximity and type of project activities (e.g., intensity and duration) being buffered.

Verification: Within 30 days prior to initial construction activities the DB(s) shall submit proposed table of nest avoidance buffer distances by species for CPM review and approval.

Within 14 days prior to the nesting bird survey, the names and credentials of the biologists conducting the survey shall be submitted to the CPM for review and approval.

The DB shall submit information describing the findings of the pre-construction nest surveys in the MCR (BRMIMP; BIO-21) to CDFW and the CPM. The report shall include the time, date, and duration of the survey; identity and qualifications of the surveyor (s); list of species observed; results of the survey; and any designated buffer zones. The report(s) shall contain maps showing the location of all nests, species nesting, status of the nest (e.g., incubation of eggs, feeding of young, near fledging), and the buffer size around each nest.

~~Records of special-status species observed shall also be submitted to the CNDDB and shall include information specifying the type of observation, type of vegetation cover, slope, aspect, GPS location, observed behavior, presence of nests, dens, burrows, or young, and other relevant conditions noted. Positive observations of special-status species shall not be documented on publicly available databases.~~

COC BIO-13/ MM BIO-13 Yuma Ridgway's Rail Survey, Management, and Monitoring Monitoring Plan: A Yuma Ridgway's Rail Survey, Management, and Monitoring Plan shall be prepared prior to construction. The plan shall include the schedule for construction and operations activities within and adjacent to **potentially suitable foraging or nesting listed** rail **species** habitat and appropriate avoidance and minimization measures, including measures provided below and in BIO-14 (Yuma

Ridgway Rail Species Noise Assessment and Abatement Plan).

Pre-Activity Surveys and Construction Monitoring: Pre-activity surveys and construction monitoring for Yuma Ridgway's rail shall be conducted by a biologist(s) approved by the CPM, in consultation with USFWS and CDFW. Surveys would be conducted within ~~all project areas that contain suitable habitat and a~~ 500-foot buffer from suitable **rail foraging or nesting** habitat. If Yuma Ridgway's rail or other listed marshland bird species are detected within the work area (the area of active equipment use), all construction ~~or decommissioning~~ activities in the area shall halt ~~and the USFWS and CDFW shall be notified no later than noon of the next business day. Project activities in the area may not proceed~~ until the birds have left the work area.

Habitat Modification or Removal: Construction ~~and decommissioning~~ activities **resulting in habitat modification or removal** within or adjacent to suitable **foraging or nesting** habitat for Yuma Ridgway's rail (i.e., ~~cattail marsh~~, Invasive Southwest Riparian Woodland and Shrubland, and **cattail marsh/**North American Arid West Emergent Marsh) shall be scheduled to avoid the nesting and molting flightless season (i.e., February 15 – September 15) unless surveys **verify** ~~verity~~ that no nesting is occurring.

Reduced Vehicle Speed Adjacent to Rail Habitat or Burrowing Owl Habitat: All employees, contractors, and visitors shall adhere to speed limits and to avoid any animals which may be encountered on or crossing the roads to and from the project area. Vehicle speeds shall be reduced to **10**~~15~~ mph within portions of any access road adjacent to or within 300 feet of any special-status species habitat, including Yuma Ridgway's rail or burrowing owl habitat, or within the 300 feet of any managed wildlife areas, such as ~~Obsidian Butte,~~ NWR, Imperial Wildlife Management Area Hazard Unit, or IID Managed Marsh Complex.

Verification: Within 30 days prior to initial construction or decommissioning activities within 500 feet of **suitable foraging or nesting rail** ~~marshland~~ habitat, the DB(s) shall submit a Yuma Ridgway's Rail Survey, Management, and Monitoring Plan to USFWS and CDFW for review and comment and to the CPM for review and approval. All modifications to the Yuma Ridgway's Rail Survey, Management, and Monitoring Plan shall be made only after approval from USFWS, CDFW and the CPM.

The DB shall submit information describing the findings of the Yuma Ridgway's rail surveys in the MCR (BRMIMP; BIO-21) to CDFW and the CPM. The report shall include the time, date, and duration of the survey; identity and qualifications of the surveyor (s); list of species observed; results of the survey; locations of any special-status species identified; any designated buffer zones; and any actions taken at the

direction of the CPM, CDFW, and/or USFWS to avoid or minimize impacts to special-status species. The report(s) shall contain maps showing the location of observations of special-status species and buffer zones. Ongoing monitoring and measure implementation for Yuma Ridgway's rails shall be document in subsequent MCRs and submitted to CDFW and the CPM.

~~Records of Yuma Ridgway rail or other protected species observed shall also be submitted to the CNDDB and shall include information specifying the type of observation, type of vegetation cover, slope, aspect, GPS location, observed behavior, presence of nests or young, and other relevant conditions noted. Positive observations of special-status species shall not be documented on publicly available databases.~~

COC BIO-14/ MM BIO-14 Yuma Ridgway Rail Species Noise Assessment and Abatement Plan

Noise Assessment and Abatement Plan: The project owner, in coordination with the DB(s), shall prepare a Marshland Species Noise Assessment and Abatement Plan prior to activities within 500-foot from suitable rail habitat. The plan shall address potential noise impacts from grading, site clearing, pile driving, steam-blow noise levels, road maintenance work, and any other construction~~,~~ **or** operation~~,~~ or ~~decommissioning~~ activities that could cause noise impacts. The following noise attenuation measures shall be implemented to minimize noise impacts on Yuma Ridgway's rail and other sensitive marshland species:

Breeding season activities (i.e., February 15 – September 15)

- At least 30 days prior to any maintenance activities within 500-feet of **suitable** marshland habitat, the project owner shall conduct a noise study to evaluate the maximum predicted noise level within rail habitat.
- If the maximum predicted noise is less than **80** ~~60~~ dBA Leq (Equivalent Continuous Level) **at the outer boundary(ies) of rail habitat**, no additional measures are required.
- If the maximum predicted noise level exceeds **80** ~~60~~ dBA **Leq** in ~~marshland~~ **rail suitable breeding** habitat, noise attenuation measures such as noise walls or **straw** ~~hay~~ bales can be implemented between the noise source and the suitable habitat to reduce noise levels. Noise ~~monitors~~ **levels** shall be **monitored such that levels at the edge of the nearest occupied rail breeding habitat can be calculated to** ~~installed at the edge of the nearest marshland habitat to assess the noise levels and~~ verify that attenuation measures are successful. If necessary, additional noise reduction measures shall be implemented to reduce the maximum noise level to below **80** ~~60~~ dBA **Leq** at the edge of occupied

habitat.

- ~~Ensure overall noise levels at the power plant site during the breeding season shall not exceed the threshold of an hourly average of 60 dBA at occupied habitat areas for during the first 3 hours of daylight (0.5 hours before civil sunrise through 2.5 hours after civil sunrise) and during the last 3 hours of daylight, typically before 9:00 AM and after 5:00 PM.~~
- ~~Conduct regular inspections of project equipment, including pipes and valves associated with well pads to ensure proper operations do not exceed an hourly average sound level above 60 dBA in proximity to rail habitat during the breeding season during the first 3 hours of daylight (0.5 hours before civil sunrise through 2.5 hours after civil sunrise) and during the last 3 hours of daylight, typically before 9:00 AM and after 5:00 PM.~~

Non-breeding season activities (i.e., ~~February 15 –~~ September 16 – February 14)

- Work conducted outside the breeding season within a 500-foot buffer of **occupied rail** ~~potential marshland~~ habitat that has the potential to exceed **100**~~80~~ dBA **Leq** shall have an approved biological monitor present. If disturbance to **occupied rail habitat** ~~marshland species~~ is observed, all work shall stop and USFWS and CDFW shall be contacted for further guidance. Further guidance may include additional measures to protect rails at the direction of USFWS or CDFW.

Verification: Within 30 days prior to initial construction ~~or decommissioning~~ activities within 500 feet of ~~marshland~~ **occupied rail** habitat, the project owner, in coordination with the DB(s), shall submit a Yuma Ridgway Rail Species Noise Assessment and Abatement Plan to USFWS and CDFW for review and comment and to the CPM for review and approval. All modifications to the Yuma Ridgway Rail Species Noise Assessment and Abatement Plan shall be made only after approval from USFWS, CDFW and the CPM.

The DB shall submit information on the implementation of the Yuma Ridgway Rail Species Noise Assessment and Abatement Plan in the MCR (BRMIMP; BIO-21) to CDFW and the CPM.

COC BIO-15/ MM BIO-15 Burrowing Owl Surveys, Monitoring, Prevention, and Relocation

The project owner shall conduct burrowing owl **take avoidance (pre-construction)** surveys, monitoring, avoidance, and relocation in accordance with the applicable sections of the 2012 *CDFG Staff Report on Burrowing Owl Mitigation* (CDFG, 2012) **except as noted below**.

Areas Within Direct Disturbance: The DB(s) or Biological Monitor(s) shall conduct **take avoidance** ~~pre-activity~~ surveys during the non-breeding season to determine the presence of colonizing owls that may have recently moved into the site,

migrating owls, resident burrowing owls changing burrow use, and young of the year that may still be present and have not dispersed. A minimum of two surveys, spaced at least one week apart **with the final survey occurring 24 hours prior to ground disturbance**, shall be conducted by a qualified biologist, during the non-breeding season, to ascertain the burrows that require exclusion and the ones that can be protected with no-disturbance buffers. Surveys shall be conducted on a weekly basis until exclusion has occurred**, or surveys must be re-performed prior to proceeding with exclusion**.

During the breeding season, a minimum of two take avoidance surveys shall occur, spaced at least one week apart, with the final survey occurring 24 hours prior to ground disturbance. During the breeding season, all active nests shall be monitored and protected as described below.

During the non-breeding season, f~~F~~ollowing the completion of **take avoidance** ~~pre-activity~~ surveys, the Designated Biologist(s) shall submit a Burrowing Owl Exclusion Plan to CDFW for review and comment and to the CPM for review and approval. The Burrowing Owl Exclusion Plan shall follow guidance in Appendix E of the 2012 *CDFG Staff Report on Burrowing Owl Mitigation*. Burrowing owl exclusion shall only occur during the non-breeding season. If new burrows are formed or determined to be occupied within the construction impact area, exclusion activities as described in the Burrowing Owl Exclusion Plan shall be re-initiated. Burrowing owl exclusion can commence after approval of the plan from the CPM and CDFW. The plan shall include monitoring for at least one (1) week to verify owls have vacated the burrows ~~owls~~ prior to excavation and closure of the burrow.

Areas Outside Direct Disturbance **but Within A Defined Buffer**: ~~The DB(s) or Biological Monitor(s~~) **A qualified biologist, knowledgeable in burrowing owl behavior and approved by the CPM** shall **determine buffer distance to** monitor occupied burrowing owl burrows **consistent with disturbance level, as appropriate** ~~within 1,000 feet of~~ project activities for at least 3 days prior to construction ~~or decommissioning~~ to determine baseline foraging behavior (i.e., behavior without construction). Additional monitoring during construction shall occur on a weekly basis to determine any signs of disturbance or changes to baseline behavior.

No-disturbance buffers: Active n~~N~~ests shall not be disturbed during the breeding season (1 February through 31 August). During the breeding season, ~~the DB(s) or Biological Monitor(s)~~ **a qualified biologist** shall **determine**~~, implement~~ a no disturbance buffer **consistent with the disturbance level, as appropriate**. ~~of 656 feet (200 meters) around active burrows~~. During the non-breeding season

(September 1 through January 31), the DB(s) or Biological Monitor(s) shall **determine** ~~implement~~ a no-disturbance buffer **consistent with the disturbance level, as appropriate** ~~of 328 feet (100 meters) around inhabited burrows~~.

The buffer can be reduced if a qualified biologist, ~~knowledgeable in burrowing owl behavior and approved by the CPM, in consultation with CDFW~~, determines a reduced buffer shall not result in disturbance to nesting or foraging behavior. Visual and noise barriers and other measures can be implemented to minimize disturbance during construction and decommissioning activities. If at any time, the qualified biologist determined that a burrow is no longer active, the no-disturbance buffer can be removed.

Verification: The DB(s) shall submit the Burrowing Owl Exclusion Plan outlining the burrows to be excluded, the approach for exclusion, and the approach for habitat creation under BIO-16 (*Burrowing* Owl Habitat Preservation and Enhancement) to the CPM and CDFW within 14 days prior to implementation. All modifications to the Burrowing Owl Exclusion Plan shall be made only after approval from the CPM.

The DB shall submit information describing the findings of the burrowing owl surveys in the MCR (BRMIMP; BIO-21) to CDFW and the CPM. The report shall include the time, date, and duration of the survey; identity and qualifications of the surveyor (s); list of species observed; results of the survey; numbers of active burrows observed; any designated non-disturbance buffers; burrows proposed for exclusion; and any actions taken at the direction of the CPM or CDFW to avoid or minimize impacts to special-status species. The report(s) shall contain maps showing the location of observations of active burrows, non-disturbance buffers, and burrows proposed for exclusion. Information shall also be provided on inactive burrows, how the determination was made, and approach for excavation and closure. Ongoing monitoring and measure implementation for burrowing owls shall be document**ed** in subsequent MCRs and submitted to CDFW and the CPM.

~~Records of burrowing owl observations shall also be submitted to the CNDDB and shall include information specifying the type of observation, type of vegetation cover, slope, aspect, GPS location, observed behavior, presence of nests or young, and other relevant conditions noted. Positive observations of special-status species shall not be documented on publicly available databases.~~

COC BIO-16/ MM BIO-16 Burrowing Owl Habitat Preservation and Enhancement The project owner, in coordination with the DB(s), shall conduct burrowing owl preservation and enhancement in suitable habitat for burrowing owls displaced during construction activities. The project owner shall prepare a Burrowing Owl Habitat Preservation and Enhancement Plan in accordance with Appendix F of the

2012 *CDFG Staff Report on Burrowing Owl Mitigation* for review and comment by CDFW and for review and approval by the CPM prior to implementation. The **Burrowing Owl Habitat Preservation and Enhancement** Plan shall include the following components.

Burrow Sites: The project owner shall enhance or create new burrows at a 2:1 ratio for any active burrow requiring exclusion, closure, and relocation due to project activities. Enhancement may include clearing of debris or enlarging existing mammal burrows. Mitigation lands should be on, adjacent to, or proximate to the impact site where possible and where habitat is sufficient to support burrowing owls' presence. Where there is insufficient habitat on, adjacent to, or near project sites, selected mitigation lands should focus on consolidating and enlarging conservation areas known to support burrowing owl populations. ~~If these two options are not available, the mitigation land requirement shall be increased in consultation with CDFW.~~

Foraging Habitat: The project owner shall replace foraging habitat that is permanently destroyed ~~shall be replaced~~ at a 1:1 ratio. **Foraging habitat is defined as 600 meters (1,968 feet) surrounding occupied burrows (Gervais et al., 2003; Rosenberg and Haley, 2004)[1].** Foraging habitat shall be suitable for the protection of burrowing owls. Replacement shall be through the preservation of comparable habitats or enhancement of habitat through vegetation restoration and habitat characteristics suitable for burrowing **owls**.

Temporarily Impacted Areas: Temporarily disturbed burrowing owl habitat shall be restored to pre-project condition including decompacting soil and revegetating**, or reverting back to agricultural use**. Additional burrowing owl creation or enhancement shall be conducted for temporary impacts that render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable for use or occupation by burrowing owls due to project activities.

Verification: The project owner, in coordination with the DB(s), shall submit Burrowing Owl Habitat Preservation and Enhancement Plan to the CPM and CDFW within 30 days after completion of exclusion activities. All modifications to the Burrowing Owl Exclusion Plan shall be made only after approval from the CPM. The **Burrowing Owl Habitat Preservation and Enhancement** Plan shall include exclusion methods **consistent with those described in the BIO-15 Burrowing Owl Exclusion Plan**, impact criteria, lands that could serve as receptor sites for evicted burrowing owls,

[1] Gervais, J. A., and Anthony, R. G. 2003. "Chronic organochlorine contaminants, environmental variability, and demographics of a Burrowing Owl population." Ecol. Applications 13:1250–1262.

Rosenberg, D. K., and K. L. Haley. 2004. "The Ecology of Burrowing Owls in the Agroecosystem of the Imperial Valley, California. Studies Avian Biology Vol. 27. pp. 120–135.

management practices for mitigation lands identified in consultation with the agencies, burrow replacement ratios, cleaning and maintenance methods for replacement burrows, monitoring requirements, and evaluation criteria for determining success of the burrowing owl relocation efforts. If the **Burrowing Owl Habitat Preservation and Enhancement P~~p~~**lan includes formal acquisition of mitigation lands, the project owner shall submit a Property Analysis Record (PAR) or PAR-like analysis for the parcels for review and comment by CDFW and for review and approval by the CPM.

No later than 18 months after approval of the Burrowing Owl Habitat Preservation and Enhancement Plan, the project owner shall provide written verification to the CPM and CDFW that the **mitigation has been satisfied by securing alternative mitigation,** compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

On January 31st of each year following construction for a period of five years, the DB shall provide a report to the CPM and CDFW that describes the results of monitoring and management of the burrowing owl relocation area.

COC BIO-17/ MM BIO-17 Habitat Conservation or Restoration Plan Permanent impact to all natural and semi-natural vegetation communities, including but not limited to, tamarisk thickets, Typha herbaceous alliance, **and** iodine bush shrub~~, and desert holly scrub,~~ shall be compensated through habitat compensation and/or habitat restoration at a minimum of a 1:1 ratio. Habitat compensation shall be accomplished through land preservation, in perpetuity, of CPM-approved lands supporting comparable vegetation communities and habitats to those lands impacted by the project. Habitat restoration may be appropriate as compensation for permanent impacts provided that the restored lands are protected in perpetuity and the restoration effort is implemented pursuant to an CPM-approved Habitat Restoration Plan, which includes success criteria and monitoring specifications as described in BIO-11 (~~Closure,~~ Revegetation~~,~~ and Rehabilitation Plan). All habitat compensation and restoration lands used as mitigation for the project shall include long-term management and legal protection assurances.

Verification: The project owner, in coordination with the DB(s), shall submit a Habitat Conservation or Restoration Plan to the CPM within 90 days prior to completion of construction activities. All modifications to the Plan shall be made only after approval from the CPM.

Conservation or restoration lands can be included with Burrowing Owl Habitat Preservation and Enhancement lands (BIO-16) if it can be shown that these areas also provide equivalent coverage of one or more natural and semi-natural vegetation communities impacted by the project.

No less than 90 days prior to acquisition of the habitat compensation lands, the project owner, or an approved third party, shall submit a formal acquisition proposal to the CPM and CDFW describing the conservation or restoration lands intended for purchase. At the same time the project owner shall submit a PAR or PAR-like analysis for the parcels for review and comment by CDFW and for review and approval by the CPM.

No later than 18 months after approval of the Habitat Conservation or Restoration Plan, the project owner shall provide written verification to the CPM and CDFW that the **mitigation has been satisfied by securing alternative mitigation,** compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

On January 31st of each year following construction for a period of five years, the DB shall provide a report to the CPM and CDFW that describes the results of monitoring and management of the conservation or restoration lands. The report shall describe which items of the Habitat Conservation or Restoration Plan have been completed, a summary of all modifications to revegetation measures made during the project's construction phase, and which items are still outstanding.

COC BIO-18/ MM BIO-18 American Badger, Desert Kit Fox, and Yuma Hispid Cotton Rat Avoidance and Minimization Measures No more than 14 **business** days prior to construction ~~or decommissioning~~ activities, the DB(s) shall conduct pre-**construction** ~~activity~~ surveys for American badger and desert kit fox dens, and cotton rats' runways and connecting burrows, in the project site and a 250 ft buffer **(or other buffer determined appropriate by the DB)** around the project site. If dens or burrows are detected, each den/burrow shall be classified as inactive, potentially active, or definitely active.

Inactive dens or burrows that would be directly impacted by construction activities shall be excavated by hand or mechanized equipment under the direct supervision of a qualified biologist and backfilled to prevent use or reuse.

A 250-foot avoidance buffer shall be placed around any potentially active or definitely active dens or burrow. Vegetation removal or grading activities shall be avoided within the buffer of any potentially and definitely active den or burrow. The avoidance buffer may be adjusted following coordination with the CPM and CDFW provided the buffer reductions would not result in adverse impacts to the species.

Potentially and definitely active dens or burrows that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in

the tracking medium or no photos of the target species are captured after three nights, the den or burrow shall be excavated by hand or mechanized equipment under the direct supervision of a qualified biologist to ensure that no wildlife are trapped, and backfilled to prevent use or reuse.

If tracks are observed, and activities are proposed during the breeding season of badger or kit fox (February 1 through July 1) or cotton rat (year-round), the DB shall implement a 250-ft buffer around the den or burrow. No construction activities shall occur within the buffer until the biologist had determined the den or burrow is no longer in use, or not being used for breeding activities.

If tracks are observed, and activities are proposed outside the breeding season of badger or kit fox, or within the winter season of cotton rat (December 15-February 28), the den or burrow shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage continued use. Vegetation removal with non-motorized equipment (hand tools) shall be conducted around the den or burrow to also discourage continued use. After verification that the den or burrows is unoccupied, either through the tracking medium or negative photos, it shall be excavated by hand or mechanized equipment under the direct supervision of a qualified biologist to ensure that no wildlife are trapped, and backfilled to prevent use or reuse.

Verification: The DB shall submit information describing the findings of the surveys and monitoring in the MCR (BRMIMP; BIO-21) to CDFW and the CPM. The information shall include the date, time, and duration of the surveys; identity of the surveyor(s); a list of special-status species observed; locations of any dens or burrows identified and their classification (inactive, potentially active, or definitely active); established avoidance buffers; results of tracking medium or camera stations; discouragement measures; and any actions taken at the direction of the CPM, CDFW, and/or USFWS to avoid or minimize impacts to special-status species.

~~Records of special-status species observed shall also be submitted to the CNDDB and shall include information specifying the type of observation, type of vegetation cover, slope, aspect, GPS location, observed behavior, presence of nests or young, and other relevant conditions noted. Positive observations of special-status species shall not be documented on publicly available databases.~~

COC BIO-19 Facility Pond Wildlife Escape and Monitoring Plan The project owner shall incorporate design features to allow escape of wildlife that may enter the ponds within the facility. These may include, but are not limited to, gradual slopes, side traction to facilitate upward movement, escape ramps, floating platforms, and/or wildlife ledges. ~~Prior to construction of the facility ponds, the project owner will~~

~~submit a Facility Pond Wildlife Escape and Monitoring Plan to CDFW for review and comment and to the CPM for review and approval. The plan will outline the wildlife escape methods, procedures for handling dead or injured wildlife, wildlife rehabilitation centers that take injured animals, and schedule for monitoring during the first year of pond operation.~~

~~The project owner, DB(s), or Biological Monitor(s) shall monitor the facility ponds at least once per month starting with the first month of operation of the facility ponds. The purpose of the surveys shall be to determine if wildlife are using the facility ponds and any injury or mortality as a result of use. Operations staff at the project site shall also report finding any dead or injured birds or other wildlife at the facility ponds to the DB(s) within one day of the detection.~~

~~If after 12 consecutive monthly site visits no bird or wildlife injury or deaths are detected by or reported to the DB(s), no further monitoring would be required. If any dead bird or other wildlife at the facility ponds is detected by Operations staff, the CPM and the DB(s) shall be notified immediately. Corrective actions shall be implemented at the direction of the DB(s) and the CPM to prevent future injury or mortality of birds and wildlife.~~

~~In addition to the requirements above, the project owner may suggest adaptive management measures to remedy any problems that are detected during monitoring or post-monitoring activities. Implementation of adaptive management measures shall be made only after approval from the CPM, in consultation with CDFW.~~

Verification: **Prior to construction of the ponds, the project owner, in coordination with the DB, shall submit the Facility Pond Wildlife Escape and Monitoring Plan outlining the methods to facilitate wildlife escape should wildlife access the facility ponds, method for handling dead and injured wildlife, wildlife rehabilitation centers, and the schedule for monitoring during the first year of pond operation. The plan shall be submitted to CDFW for review and comment and to the CPM for review and approval within 15 business days prior to construction of the facility ponds. All modifications to the Facility Pond Wildlife Escape and Monitoring Plan shall be made only after approval from the CPM**.

The project owner, DB(s), or Biological Monitor(s) shall monitor the facility ponds at least once per month starting with the first month of operation of the facility ponds. The purpose of the surveys shall be to determine if wildlife are using the facility ponds and **report** any injury or mortality as a result of use. Operations staff at the project site shall also report finding any dead or injured birds or other wildlife at the facility ponds to the DB(s) **as soon as possible, or at least by close of business the next day** ~~within one day of the detection~~. **The DB(s) shall notify the**

project owner and the CPM ~~within one day (or Monday morning in the case of a weekend)~~ **of any dead or injured special-status species as a result of the facility pond.**

Corrective actions shall be implemented at the direction of the DB(s) and following approval by the CPM to avoid future injury or mortality of special-status birds and wildlife.

In addition to the requirements above, the project owner may suggest adaptive management measures to remedy any problems that are detected during monitoring or post-monitoring activities. Implementation of adaptive management measures shall be made only after approval from the CPM, in consultation with CDFW.

If after 12 consecutive monthly site visits no bird or wildlife injury or deaths are detected by or reported to the DB(s), no further monitoring would be required.

The DB shall submit results of the facility pond monitoring and any detection of dead or injured wildlife in the MCR under BIO-21 (BRMIMP) to the CPM and CDFW.

Whenever corrective action is taken by the project owner, a determination of success or failure shall be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

COC BIO-20/ MM BIO-20 Avian Collision Deterrent Proposal and Monitoring Plan The project owner shall prepare an Avian Collision Deterrent Proposal and Monitoring Plan in consultation with a working group of interested agency personnel, including personnel from CDFW and USFWS. ~~This plan shall incorporate Suggested Practices for *Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) guidelines and provide specific details on design, placement, and maintenance of line markers, as well as the associated analysis requested.~~

~~The plan shall detail the monitoring methods and duration, methods for estimating carcass persistence and searcher efficiency, impact thresholds (i.e., number of collision deaths), and remedial actions to be implemented during operations. The statistical methods to be used to compare collisions deaths at the proposed gen-tie line and sections of unmarked but comparable gen-tie line in the project area shall also be described in the plan. The Plan shall include detailed specifications on data and carcass collection protocol and a rationale justifying the proposed schedule of carcass searches. The Plan shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias. Incidental~~

~~observations of avian or wildlife mortality shall be reported to the monitoring personnel in charge of reporting.~~

~~Gen-tie lines and all electrical components shall be designed, installed, and maintained following APLIC guidelines to reduce the likelihood of electrocutions of birds. The project owner shall install a CPM-approved marker on the grounding wire of the proposed gen-tie lines. These markers shall be placed and maintained on the highest-bird-use portions of the proposed gen-tie lines.~~

~~The project owner must implement the remedial actions that are approved by the working group of interested agency personnel wherever high bird use and evidence of bird collisions are found during post-construction monitoring and measure the effectiveness of the remedial actions for reducing impacts for at least one year following their implementation.~~

~~Monitoring of the entire proposed gen-tie line, and sections of unmarked but comparable gen-tie line in the project area, shall be implemented for the first two (2) years of operation. If impacts are found to be excessive by a working group of interested agency personnel, monitoring shall continue, up to a period of 10 years, to determine effectiveness of remedies. The project owner shall observe the areas under power gen-tie lines during the course of regularly scheduled duties to informally monitor for birds that have struck the gen-tie lines.~~

Verification: No less than 30 days prior to the installation of the gen-tie ~~line~~, the project owner shall submit the Avian Collison Deterrent Proposal and Monitoring Plan to the CPM. The plan shall include a description of APLIC design features and plan for monitoring the gen-tie line over the two-year period.

This plan shall incorporate Suggested Practices for *Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) guidelines and provide specific details on design, placement, and maintenance of line markers, as well as the associated analysis requested.

The plan shall detail the monitoring methods and duration, methods for estimating carcass persistence and searcher efficiency, impact thresholds (i.e., number of collision deaths), and remedial actions to be implemented during operations. The statistical methods to be used to compare collisions deaths at the proposed gen-tie line ~~and sections of unmarked but comparable gen-tie line in the project area~~ **shall also be described in the plan. The Plan shall include detailed specifications on data and carcass collection protocol and a rationale justifying the proposed schedule of carcass searches. The Plan shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias. Incidental observations of avian or wildlife mortality shall be**

reported to the monitoring personnel in charge of reporting.

Gen-tie lines and all electrical components shall be designed, installed, and maintained following APLIC guidelines to reduce the likelihood of electrocutions of birds. The project owner shall install a CPM-approved marker on the grounding wire of the proposed gen-tie lines. ~~These markers shall be placed and maintained on the highest-bird-use portions of the proposed gen-tie lines.~~

The project owner must implement the remedial actions that are approved by the working group of interested agency personnel wherever ~~high bird use and~~ **evidence of bird collisions are found during post-construction monitoring and measure the effectiveness of the remedial actions for reducing impacts for at least one year following their implementation.**

Monitoring of the entire proposed gen-tie line~~, and sections of unmarked but comparable gen-tie line in the project area,~~ **shall be implemented for the first two (2) years of operation. If impacts are found to be excessive by a working group of interested agency personnel, monitoring shall continue, up to a period of 10 years, to determine effectiveness of remedies. The project owner shall observe the areas under power gen-tie lines during the course of regularly scheduled duties to informally monitor for birds that have struck the gen-tie lines.**

The DB shall submit information describing the implementation and monitoring in the MCR **or Annual Compliance Report** (BRMIMP; **BIO-21**) to USFWS, CDFW and the CPM. The information shall include a detailed description of any Project-related avian deaths or injuries detected during the monitoring study or at any other time. The MCR shall summarize all avian related injuries or fatalities to date, analyzes any project- related avian fatalities or injuries detected, and provide recommendations for future monitoring and any adaptive management actions needed.

COC BIO-21/ MM BIO-21 Biological Resources Mitigation Implementation and Monitoring Plan The project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and shall submit the proposed BRMIMP to the CPM for review and approval. The project owner shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of all plans required under **BIO-1** through **BIO-22**.

The BRMIMP shall be prepared in consultation with the DB and shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or permanent protection during construction and operation. The BRMIMP shall include complete and detailed descriptions of the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner.
2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts.
3. All biological resources mitigation, monitoring, and compliance measures required in federal and state agency terms and conditions.
4. All biological resources mitigation, monitoring, and compliance measures required in local agency permits, such as site grading and landscaping requirements.
5. All sensitive biological resources to be impacted, avoided, or mitigation by project construction, operation, and closure.
6. All required mitigation measures for each sensitive biological resource.
7. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources.
8. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction or decommissioning activities.
9. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction.
10. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction ~~or decommissioning~~ activities – one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction; include planned timing of aerial photography and a description of why times were chosen.
11. Duration for each type of monitoring and a description of monitoring methodologies and frequency.
12. Performance standards to be used to help decide if/when proposed mitigation is or is not successful.
13. All performance standards and remedial measures to be implemented if performance standards are not met.
14. A discussion of biological resources-related facility closure measures.
15. A process for proposing plan modifications to the appropriate agencies for review and comment and to the CPM for review and approval.
16. A copy of all biological resources permits obtained.
17. A requirement to submit any sightings of any special-status species that are

observed on or in proximity to the project site, or during project surveys, to the California Natural Diversity Data Base (CNDDB) per CDFW requirements.

18. Include all mitigation measures and their implementation methods in the BRMIMP.

Verification: The project owner shall submit the final BRMIMP to the CPM at least 30 days prior to start of any pre-activity site mobilization and construction-related ground disturbance, grading, boring, and/or trenching. The BRMIMP shall contain the required measures included in all biological COC/MM. No construction-related ground disturbance, grading, boring or trenching may occur prior to approval of the final BRMIMP by the CPM. Any changes to the approved BRMIMP must be approved by the CPM and in consultation with CDFW and USFWS.

If any permits have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition within at least 10 days of their receipt by the project owner.

To verify that the extent of construction disturbance does not exceed that described in this analysis, the project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM. The first set of aerial photographs shall reflect site conditions **prior** to any pre-activity site mobilization and construction-related ground disturbance, grading, boring, and trenching, and shall be submitted at least 60 days prior to initiation of such activities. The second set of aerial photographs shall be taken **after** completion of construction and shall be submitted to the CPM no later than 90 days after completion of construction. The project owner shall also provide a final accounting of the acreages of vegetation communities/cover types present before and after construction.

Implementation of BRMIMP measures (for example, construction ~~or decommissioning~~ activities that were monitored, species observed) shall be reported in the MCRs by the DB(s). The MCRs shall continue for any required post-construction monitoring activities.

Within 30 days after completion of project construction and all required monitoring activities, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's pre-activity site mobilization and construction-related ground disturbance, and a summary of all required post-construction monitoring activities.

COC BIO-22/ MM BIO-22 Provide Evidence of Applicable Jurisdictional Waters Permits

The project shall avoid wetland and water loss to the greatest extent possible when placing facility features. The project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state.

The project shall comply with all applicable laws and regulations regarding requirements of the United States Army Corps of Engineers and the Regional Water Quality Control Board for aspects of the project, if any, which fall within those agencies' respective purview, including obtaining any permits required for the construction, as well as compliance with any additional conditions attached to any required permits and monitoring requirements (if any). Copies of all regulatory waters permits shall be submitted to the CPM prior to ground-disturbing activities in areas supporting jurisdictional waters.

The project owner shall acquire, in fee or in easement, ~~a parcel or parcels of~~ land for any permanent impacts~~, up to 58.78 acres,~~ to compensate for impacts to state and federal jurisdictional waters. The project owner shall provide financial assurances to the CPM and CDFW to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of state waters as described in this condition. These funds shall be used solely for implementation of the measures associated with the project. Financial assurance can be provided to the CPM and CDFW in the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing project activities.

The project owner shall submit to the CPM and CDFW a draft Management Plan that reflects site-specific enhancement measures for the aquatic resources on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, livestock exclusion, or erosion control.

Verification: Within 30 days prior to ground-disturbing activities in areas supporting jurisdictional waters, the project owner shall submit the following: all copies of jurisdictional waters permits; a discussion of work in in areas supporting jurisdictional waters; written verification of financial assurance for compensation lands acquisition up to 58.78 acres **or mitigation has been satisfied by securing alternative mitigation**, for any permanent impacts to state and federal jurisdictional waters. This information shall be provided in the MCR (BRMIMP; BIO-21) submitted to USFWS, CDFW and the CPM.

The project owner, or an approved third party, shall provide the CPM and CDFW with a Compensatory Mitigation Management Plan for the compensation of impacted jurisdictional waters and associated management funds within 180 days

of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFW.

Within 90 days after completion of project construction, the project owner shall provide to the CPM and CDFW an analysis with the final accounting of the amount of jurisdictional state waters disturbed during project construction to verify no additional compensatory mitigation is needed.

The project owner shall notify the CPM and CDFW of any proposed change in impacts to jurisdictional waters or compensatory mitigation efforts. The notifying report shall be provided to the CPM and CDFW no later than seven days after the changes are identified. A copy of the notifying change of conditions report shall be included in the MCR (BRMIMP; BIO-21) submitted to USFWS, CDFW and the CPM.

Section 5.4 Cultural and Tribal

COC CUL/TRI-1/ MM CUL/TRI-1 APPOINTMENT AND QUALIFICATIONS OF CULTURAL RESOURCES PERSONNEL

CULTURAL RESOURCE SPECIALIST The project owner shall assign a Cultural Resource Specialist (CRS) to the project. The project owner may elect to assign one or more alternate CRSs as well. The project owner shall submit the resumes of the proposed CRS and Alternative CRS(s), with at least three references and contact information, to the CEC's Compliance Project Manager (CPM) for review and approval.

Verification: The project owner shall submit the prospective CRS's and any Alternate CRS's qualifications at least 45 days prior to the start of ground disturbance associated with site mobilization.

The CRS and Alternate CRS(s) shall have training and background that conform to the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS and Alternate CRS(s) shall have the following qualifications:

A background in anthropology, archaeology, history, architectural history, or a related field, and

- At least 10 years of archaeological or historical experience (as appropriate for the project site), with resources mitigation and fieldwork;
- At least one year of field experience in California; and
- At least three years of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The project owner may replace the CRS by submitting the required resume, references and contact information of the proposed replacement CRS to the CPM.

The CRS shall manage all cultural resource monitoring, mitigation, curation, and reporting activities, and any pre-construction cultural resource activities, unless management of these is otherwise provided for in accordance with the cultural resource and tribal cultural resource COCs. The CRS shall serve as the primary point of contact on all cultural resource matters for the CEC. The CRS shall retain Native American Monitors**, if available,** and may elect to obtain the services of Cultural Resource Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the CEQA significance of any cultural or tribal cultural resources that are newly discovered or that may be affected in an

unanticipated manner. After all ground disturbances are completed and the CRS has fulfilled all responsibilities specified in these cultural and tribal cultural resource COCs, the project owner may discharge the CRS, after receiving approval from the CPM.

CULTURAL RESOURCE MONITORS The CRS may assign Cultural Resources Monitors (CRMs). CRMs shall have the following qualifications:

- B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field; and one year of archaeological field experience in California; or
- A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years of archaeological field experience in California; or
- Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of archaeological field experience in California.

NATIVE AMERICAN MONITORS Preference in selecting Native American Monitors shall be given to California Native Americans with:

- Traditional ties to the area being monitored
- Knowledge of local Native American village sites and habitation patterns
- Knowledge and understanding of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq.
- Ability to effectively communicate the requirements of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq.
- Ability to work with law enforcement officials and the Native American Heritage Commission (NAHC) to ensure the return of all associated grave goods taken from a Native American grave during excavation
- Ability to travel to project sites within traditional tribal territory
- Knowledge and understanding of Title 14, California Code of Regulations, section 15064.5
- Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding California Environmental Quality Act (CEQA) mitigation provisions
- Ability to read a topographical map and be able to locate site and reburial locations for future inclusion in the NAHC's Sacred Lands Inventory
- Knowledge and understanding of archaeological practices, including the phases of archaeological investigation

CULTURAL RESOURCE TECHNICAL SPECIALISTS The resume(s) of any additional

technical specialist(s) (e.g., geoarchaeologist, historical archaeologist, historian, architectural historian, or physical anthropologist), shall be submitted to the CPM for approval. The resume of each proposed specialist shall demonstrate that their training and background meet the U.S. Secretary of Interior's Professional Qualifications Standards for their specialty (if appropriate), as published in Title 36, Code of Federal Regulations, part 61. The resumes of specialists shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the resumes and demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research. All specialists are under the supervision of the CRS.

~~**Verification:** The project owner shall submit the prospective CRS's and any Alternate CRS's qualifications at least 75 days prior to the start of ground disturbance associated with site mobilization and construction.~~

The project owner may replace a CRS by submitting the required resume, references and contact information to the CPM ~~at least 10 working days prior to the termination or release of the then-current CRS. In an emergency,~~ **If necessary,** the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent CRS is proposed to the CPM for consideration. **At least 10 days prior to the start of construction-related ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions.**

No ground disturbances shall occur prior to CPM approval of the CRS and alternates unless such activities are specifically approved by the CPM.

At least 20 days prior to site mobilization, the CRS shall provide proof of qualifications for any anticipated CRMs and additional specialists for the project to the CPM.

Within 15 days of receiving from a California Native American tribe a request that Native American Monitors be employed, the project owner shall submit a copy of the request and a copy of a response letter to the group notifying them that Native American Monitors have been employed and identifying the Native American Monitors.

If efforts to obtain the services of qualified Native American Monitors are unsuccessful, the project owner shall inform the CPM of this situation in writing at least 30 days prior to the beginning of post-certification cultural resources field work or construction-related ground disturbance.

At least 5 days prior to ~~additional~~ CRMs or Native American Monitors beginning on-site duties during the project, the CRS shall review the qualifications of the

proposed CRMs or Native American Monitors and send approval letters to the CPM, identifying the monitors and attesting to their qualifications. At least 10 days prior to any technical specialists beginning tasks, the resume(s) of the specialists shall be provided to the CPM for review and approval. ~~At least 10 days prior to the start of construction-related ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions.~~

~~No ground disturbances shall occur prior to CPM approval of the CRS and alternates unless such activities are specifically approved by the CPM.~~

COC CUL/TRI-2/ MM CUL/TRI-2 INFORMATION TO BE PROVIDED TO CRS Prior to the start of ground disturbance, the project owner shall provide the CRS with copies of the application for certification (AFC), data responses, confidential cultural resources reports, all supplements, the cultural and tribal cultural resources section from the CEC's Final Staff **Decision** ~~Assessment (FSA)~~, and the cultural and tribal cultural resources COCs from the Final Decision for the project, if the CRS does not already possess copies of these materials. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas~~. Maps shall include the appropriate United States Geological Survey quadrangles and a map at an appropriate scale (e.g., 1:24,000 and 1 inch = 200 feet, respectively) for plotting cultural features or materials.~~ If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings unless such activities are specifically approved by the CPM. Maps shall include any cultural and tribal cultural resources, including any historic built environment resources, identified in the **Final Decision** ~~FSA's project area of analysis~~. If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

The project owner shall provide the documents described in the first paragraph of this condition to new CRSs if the approved CRS is terminated or resigns.

Verification: At least 40 days prior to the start of ground disturbance, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, and Final Commission Decision have been provided to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.

At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS and CPM.

Weekly, during ground disturbance, a schedule of the next week's anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

If a new CRS is approved by the CPM as provided for in **CUL/TRI-1**, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, Final Commission Decision, and maps and drawings have been provided to the new CRS within 10 days of such approval.

COC CUL/TRI-3/ MM CUL/TRI-3 CULTURAL AND TRIBAL RESOURCES MITIGATION AND MONITORING PLAN (CTRMMP) Prior to the start of ground disturbance, the project owner shall submit the CTRMMP, as prepared by or under the direction of the CRS, to the CPM for review and approval. The CTRMMP shall follow the content and organization of the draft model CTRMMP, provided by the CPM, and the authors' name(s) shall appear on the title page of the CTRMMP. The CTRMMP shall identify measures to minimize potential impacts to cultural and tribal cultural resources. Implementation of the CTRMMP shall be the responsibility of the CRS and the project owner. Copies of the CTRMMP shall reside with the CRS, alternate CRS, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CTRMMP, unless such activities are specifically approved by the CPM. Portions of the CTRMMP that describe or map the location(s) of cultural and tribal cultural resources shall be designated as confidential.

Verification: Upon approval of the CRS proposed by the project owner, the CPM will provide to the project owner an electronic copy of the draft model CTRMMP for the CRS.

The CTRMMP shall include the following elements and measures.

- The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification (COCs) in this CTRMMP is intended as general guidance and as an aid to the user in understanding the COCs and their implementation. The COCs, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CTRMMP. The Cultural and Tribal Cultural Resources COCs from the Commission Decision are contained in Appendix A."
- A proposed general research design that includes a discussion of cultural research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design. The research design will specify that the preferred treatment strategy for any cultural or tribal cultural resource is avoidance. A specific mitigation plan shall be prepared for any unavoidable impacts to any historical resources, unique archaeological resources, or tribal cultural resources (as defined in the California Environmental Quality Act and determined by the CPM). A prescriptive treatment plan may be included in the CTRMMP for limited data types. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground-disturbance analysis phases of the project.
- Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.
- A description of how Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities.
- A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to cultural or tribal cultural resources that are to be avoided during ground disturbance, construction, and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related effects. A statement that all encountered cultural and tribal cultural resources over 50 years old shall be recorded on Department of Parks and Recreation (DPR) 523 forms and mapped and photographed. In addition, all archaeological materials retained during

archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's (SHRC's) Guidelines for the Curation of Archaeological Collections (1993, or future updated guidelines from the SHRC), into a retrievable storage collection in a public repository or museum.

- A statement that the project owner will pay all curation fees for artifacts recovered and for related documentation produced during cultural and tribal cultural resource investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept archaeological materials resulting from project activities.
- A statement demonstrating when and how the project owner will comply with Health and Human Safety Code, section 7050.5(b), and Public Resources Code, section 5097.98(b) and (e), including the statement that the project owner will notify the CPM and the NAHC of the discovery of human remains.
- A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any archaeological materials that are encountered during ground disturbance and cannot be treated prescriptively.
- A description of the contents, format, and review and approval process of the final Cultural and Tribal Cultural Resources Report (CTRR), which shall be prepared according to *Archaeological Resource Management Report (ARMR)* guidelines.

~~**Verification:** Upon approval of the CRS proposed by the project owner, the CPM will provide to the project owner an electronic copy of the draft model CTRMMP for the CRS.~~

At least 30 days prior to the start of ground disturbance, the project owner shall submit the CTRMMP to the CPM for review and approval.

At least 30 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected during archaeological investigations (survey, testing, data recovery).

Within 90 days after completion of ground disturbance (including landscaping), if archaeological materials requiring curation were generated or collected, the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the SHRC's *Guidelines for the Curation of Archaeological Collections* (1993, or future updated guidelines from SHRC), to accept the archaeological materials from this project. Any agreements concerning curation will be retained and available for audit

for the life of the project. **If artifacts are recovered and the curation facilities choose not to accept the archaeological materials, the Applicant will consult with the CPM for directions on how to proceed.**

COC CUL/TRI-4/ MM CUL/TRI-4 CULTURAL RESOURCES WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP) Prior to and for the duration of ground disturbance, the project owner shall provide WEAP training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The cultural and tribal cultural resources part of this training shall be prepared by the CRS, may be conducted by any member of the cultural and tribal cultural resources team, and may be presented in the form of a video. The CRS shall collaborate with one or more California Native American tribal members in preparing and presenting the training. **If California Native American tribal members choose not to collaborate with the CRS, the CRS shall notify the CPM.** During the training and during construction, the CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes.

Verification: At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the draft text and/or training video for the cultural and tribal cultural resources WEAP, including Native American participation, and graphics and the informational brochure to the CPM for review and approval.

The training shall include:

- A discussion of applicable laws and penalties under law;
- Samples or visuals of artifacts that might be found in the project vicinity;
- A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
- A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
- Instruction that the CRS, Alternate CRS, and CRMs have the authority to halt ground disturbance around a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
- Instruction that employees, if the CRS, Alternate CRS, or CRMs are not present, are to halt work on their own in the vicinity of a potential cultural or tribal cultural resource discovery, and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;

- An informational brochure that identifies reporting procedures in the event of a discovery;
- An acknowledgement form signed by each worker indicating that they have received the training; and
- A sticker that shall be placed on hard hats indicating that environmental training has been completed.
- No ground disturbance shall occur prior to implementation of the WEAP program unless such activities are specifically approved by the CPM.
- **The training program may be combined with other training programs prepared for paleontological and biological resources, hazardous materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.**

~~**Verification:** At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the draft text and/or training video for the cultural and tribal cultural resources WEAP, including Native American participation, and graphics and the informational brochure to the CPM for review and approval.~~

At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

COC CUL/TRI-5/ MM CUL/TRI-5 UNDISCOVERED CULTURAL RESOURCES The project owner shall ensure that a CRS, alternate CRS, or CRM and Native American Monitor shall be on site for any ground disturbance associated with construction of the project.

Prior to the start of ground disturbance, the project owner shall notify the CPM and all interested California Native American tribes **(as identified by the CPM)** of the date on which ground disturbance will begin. Where excavation equipment is actively removing dirt and hauling the excavated material farther than 50 feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than 50 feet from the location of active excavation, one monitor shall observe both the location of active excavation and inspect the dumped material.

If the CRS believes that the required number of monitors is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the number of monitors shall be provided to the CPM for review and approval prior to any change in the number of monitors.

The research design in the CTRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered. On forms provided by the CPM, monitors shall keep a daily log of any monitoring and other cultural and tribal cultural resource activities and any instances of non-compliance with the COCs or applicable laws, ordinances, regulations, and standards (LORS).

Verification: Prior to the start of ground disturbance, the project owner will notify the CPM of the date on which ground disturbance will begin. The CPM will provide the project owner a list of all interested California Native American tribes that should be notified of the date on which ground disturbance will begin.

At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log and information to be included in the cover sheet for the daily monitoring logs.

The daily monitoring logs shall at a minimum include the following information.

- First and last name of the monitors
- Time in and out
- Weather. Specify if weather conditions led to work stoppages.
- Work location (project component). Provide specifics—.e.g., power block, landscaping.
- Proximity to cultural or tribal cultural resource(s). Specify if work conducted within 1,000 feet of a known cultural resource.
- Work type (machine)
- Work crew (company, operator, and foreman)
- Depth of excavation
- Description of work
- Stratigraphy
- Artifacts, listed with the following identifying features
    - Field artifact #: When recording artifacts in the daily monitoring logs, the CRS shall institute a field numbering system to reduce the likelihood of repeat artifact numbers. A typical numbering system could include a project

abbreviation, monitor's initials, and a set of numbers given to that monitor: e.g., MBGP-MB-123.
    - Description
    - Measurements
    - Universal Transverse Mercator (UTM) coordinates
    - Whether artifacts are likely to be isolates or components of larger resources
    - Assessment of significance of any finds
- Actions taken
- Plan for the next work day

A cover sheet shall be submitted with each day's monitoring logs, and shall at a minimum include the following.

- Count and list of first and last names of all monitors for that day
- General description (in paragraph form) of that day's overall monitoring efforts, including monitor names and locations
- Any reasons for halting work that day
- Count and list of all artifacts found that day: include artifact #, location (i.e., grading in Unit X), measurements, UTMs, and very brief description (i.e., historic can, granitic biface, quartzite flake)
- Whether any artifacts were found out of context (i.e., in fill, caisson drilling, flood debris, spoils pile)

Copies of the daily monitoring logs and cover sheets shall be provided by email from the CRS to the CPM, as follows.

- Each day's monitoring logs and cover sheet shall be merged into one PDF document
- The PDF title and headings, and emails shall clearly indicate the date of the applicable monitoring logs
- PDFs for any revised or resubmitted versions shall use the word "revised" in the title

Daily and/or weekly maps shall be submitted along with the monitoring logs as follows.

- The CRS shall provide daily and/or weekly maps of artifacts at the request of the CPM. A map shall also be provided if artifact locations show complexity, high density, or other unique considerations.

- Maps shall include labeled artifacts, project boundaries, previously recorded sites and isolates, aerial imagery background, and appropriate scales

From the daily monitoring logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring did not occur.

The Cultural and Tribal Cultural Resources section of the MCR shall be prepared in coordination with the CRS and shall include a monthly summary report of cultural and tribal cultural resources-related monitoring. The summary shall:

- List the number of monitors on a daily basis, as well as provide monthly monitoring-day totals
- Give an overview of cultural and tribal cultural resource monitoring work for that month and discuss any issues that arose
- Describe fulfillment of requirements of each cultural and tribal cultural resource mitigation measure
- Summarize the confidential appendix to the MCR, without disclosing any specific confidential details
- Include the artifact concordance table (as discussed below), but with removal of UTMs

Each MCR, prepared under supervision of the CRS, shall be accompanied by a confidential appendix that contains:

- Completed DPR 523A forms for all artifacts recorded or collected in that month. For any artifact without a corresponding DPR form, the CRS shall specify why the DPR form is not applicable or pending (i.e. as part of a larger site update).
- A concordance table that matches field artifact numbers with the artifact numbers used in the DPR 523 forms shall be included. The sortable table shall contain each artifact's date of collection and UTM coordinates and note if an artifact has been deaccessioned or otherwise does not have a corresponding DPR 523 form. Any post-field log recordation changes to artifact numbers shall also be noted. DPR forms shall be submitted as one combined PDF. The PDF shall organize DPR forms by site and/or artifact number
- The PDF shall include an index and bookmarks

If artifacts from a given location (near each other or an existing resource) are collected month after month, and if agreed upon with the CPM, a final updated DPR 523 form for the resource may be submitted at the completion of monitoring. The monthly concordance table shall note that the DPR 523 form for the included artifacts is pending.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural and tribal cultural resource-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM. If the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring. The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural and tribal cultural resource monitoring and mitigation activities with CEC technical staff.

Cultural and tribal cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these COCs.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM.

The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the COCs. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

~~**Verification:** At least 30 days prior to the start of ground disturbance, the CPM will notify all Native Americans with whom the CEC communicated during the project review of the date on which the project's ground disturbance will begin.~~

~~At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log and information to be included in the cover sheet for the daily monitoring logs.~~

While monitoring is on-going, the project owner shall submit each day's monitoring logs and cover sheet merged into one PDF document by email within 24 hours.

The CRS and/or project owner shall notify the CPM of any incidents of non- compliance with the conditions and/or applicable LORS by telephone or email within 24 hours.

The CRS shall provide daily maps of artifacts along with the daily monitoring logs if more than 10 artifacts are found per day, or as requested by the CPM.

The CRS shall provide weekly maps of artifacts if there more than 50 artifacts are found per week, or as requested by the CPM. The map shall be submitted within two business days after the end of each week.

While monitoring is on-going, the project owner shall submit monthly MCRs and accompanying weekly summary reports. The project owner shall attach any new DPR 523A forms, under confidential cover, completed for finds treated prescriptively, as specified in the CTRMMP.

Final updated DPR 523 forms with sites (where artifacts are collected month after month) can be submitted at the completion of monitoring, as agreed upon with the CPM.

At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.

Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by California Native American tribes in response to the project owner's transmittals of information.

COC CUL/TRI-7/ MM CUL/TRI-7 FINAL CULTURAL AND TRIBAL CULTURAL RESOURCES REPORT (CTRR) The project owner shall submit the final CTRR to the CPM for approval. The final CTRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format. The final CTRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, DPR 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resources Information System (CHRIS) shall be included as appendices to the final CTRR.

Verification: If the project owner requests a suspension of all construction activities for more than 30 days, then a draft CTRR that covers all cultural and tribal cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review**, unless the suspension is directly related to conferral and treatment of inadvertent cultural or human remains discoveries** ~~and approval on the same day as the suspension/extension request~~. **Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CTRR to the CPM for review and approval.** The draft CTRR shall be retained **by the project owner** ~~at the project site~~ in a secure facility until construction resumes or the project is withdrawn. If the project is withdrawn, then a final CTRR shall be submitted to the CPM for review and approval at the same time

as the withdrawal request.

~~**Verification:** Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CTRR to the CPM for review and approval.~~ Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CTRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.

Within 10 days after CPM approval of the CTRR, the project owner shall provide documentation to the CPM confirming that copies of the final CTRR have been provided to the CHRIS, the curating institution (if any), if archaeological materials were collected, and to the tribal chairpersons of any California Native American tribes that request copies of project-related reports.

[As described in the Morton Bay Geothermal Project (23-AFC-01) Preliminary Staff Assessment Comments, the Applicant proposes deletion and replacement of COC CUL/TRI-8/MM CUL/TRI-8 and COC CUL/TRI-9/MM CUL/TRI-9 as proposed in the Preliminary Staff Assessment, with an alternative mitigation proposal to be discussed at the public workshop on tribal mitigation to be held on September 6, 2024.]

~~**COC CUL/TRI-8 DOCUMENT AND NOMINATE THE SELCAVCD TO THE CALIFORNIA AND NATIONAL REGISTERS** The project owner shall retain a professional cultural anthropologist to document the SELCAVCD on a National Register of Historic Places (NRHP) Nomination Form and submit the form to nominate the cultural district to the NRHP (successful nomination to the NRHP will automatically list the SELCAVCD on the California Register of Historical Resources as well). In the event that NRHP nomination is not attainable, the professional cultural anthropologist shall nominate the SELCAVCD to the California Register of Historical Resources.~~

~~The selected cultural anthropologist shall work with members of the Kwaaymii Laguna Band of Mission Indians (care of Courtney Coyle), Agua Caliente Band of Cahuilla Indians, and Fort Yuma Quechan Tribe during documentation of the SELCAVCD.~~

~~**Verification:** Within 90 days of certification, the project owner shall submit the qualifications of at least three professional cultural anthropologists to the CPM and the designees of the Kwaaymii Laguna Band of Mission Indians (care of Courtney Coyle), the Agua Caliente Band of Cahuilla Indians, and the Fort Yuma Quechan Tribe for review and approval.~~

~~The CPM and the designees of the Kwaaymii Laguna Band of Mission Indians, Agua Caliente Band of Cahuilla Indians, and Fort Yuma Quechan Tribe shall inform the~~

project owner within 60 days whether any of the candidate cultural anthropologists appear suited to implementation of this COC.

The cultural anthropologist shall submit a draft NRHP nomination form to the CPM and aforementioned tribes prior to submittal to federal agencies or the California State Historic Preservation Officer.

COC CUL/TRI-9/ MM CUL/TRI-9 MONITOR THE FUNCTIONING OF MUD POTS AND VOLCANOES The project owner shall work with the CPM, CRS, and the Kwaaymii Laguna Band of Mission Indians, Agua Caliente Band of Cahuilla Indians, and Fort Yuma Quechan Tribe to devise a monitoring plan for the three sets of mud pots and volcanoes documented in this staff assessment. The monitoring plan will establish standards for measuring both the pre-project and post-construction behavior of the mud pots and volcanoes. Minimally, these standards must consist of the mud volcanoes' pulse, steam emissions, and audibility of these characteristics. The monitoring plan must also identify responsible personnel, a monitoring schedule, and standards for reporting. Finally, if the monitoring plan identifies negative changes to the functioning of the mud pots and volcanoes, it will recommend ways that the operation of the geothermal wells could be altered to benefit the functioning of the mud pots and volcanoes, if feasible.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit the monitoring plan to the CPM for review and approval. The plan must include input from the Kwaaymii Laguna Band of Mission Indians, Agua Caliente Band of Cahuilla Indians, and Fort Yuma Quechan Tribe.

Implementation of the monitoring plan shall commence no later than 30 days prior to the start of construction activities.

The frequency of progress reports shall be determined in the monitoring plan and shall include the CPM and tribes in the reporting distribution.

Section 5.6 Geology, Paleontology, and Minerals

COC PAL-1/MM PAL-1 The project owner shall provide the CPM with the resume, qualifications, and contact information of its paleontological resource specialist (PRS) for review and approval. The PRS's resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

~~As determined by the CPM, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources by the Society of Vertebrate Paleontology (SVP 2010). The experience of the PRS shall include the following:~~

1. ~~Institutional affiliations, appropriate credentials, and college degree (M.S., Ph.D., or equivalent).~~
2. ~~Ability to recognize and collect fossils in the field.~~
3. ~~Local geological and biostratigraphic expertise.~~
4. ~~Proficiency in identifying vertebrate and invertebrate fossils.~~
5. ~~At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.~~

~~The project owner shall ensure that the PRS obtains qualified paleontological resource monitors (PRMs) to monitor as the PRS deems necessary on the project. PRMs shall have the equivalent of the following qualifications:~~

~~BS or BA degree in geology or paleontology and a minimum of one year of relevant experience monitoring in California; or~~

~~AS or AA in geology, paleontology, or biology and a minimum of four years' relevant experience monitoring in California; or~~

~~Enrollment in upper division classes pursuing a bachelor's degree or more advanced degree in the field of geology or paleontology and a minimum of three years relevant monitoring experience in California.~~

~~If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified PRMs. The PRM's resume shall include the names and~~

~~contact information of references. If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.~~

Verification: At least 60 days prior to the start of ground disturbance, a resume and statement of availability of its designated PRS for on-site work shall be supplied to the CPM, whose approval must be obtained prior to initiation of ground disturbing activities.

At least 30 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated PRM's for the project. The letter shall state that the identified PRM's meet the minimum qualifications for paleontological resource monitoring as required by this condition of certification. If additional PRM's are needed during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM for approval no later than one week prior to the monitor's beginning on-site duties.

As determined by the CPM, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources by the Society of Vertebrate Paleontology (SVP 2010). The experience of the PRS shall include the following:

6. **Institutional affiliations, appropriate credentials, and college degree (M.S., Ph.D., or equivalent).**
7. **Ability to recognize and collect fossils in the field.**
8. **Local geological and biostratigraphic expertise.**
9. **Proficiency in identifying vertebrate and invertebrate fossils.**
10. **At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.**

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors (PRMs) to monitor as the PRS deems necessary on the project. PRMs shall have the equivalent of the following qualifications:

BS or BA degree in geology or paleontology and a minimum of one year of relevant experience monitoring in California; or

AS or AA in geology, paleontology, or biology and a minimum of four years' relevant experience monitoring in California; or

Enrollment in upper division classes pursuing a bachelor's degree or more advanced degree in the field of geology or paleontology and a minimum of three years relevant monitoring experience in California.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified PRMs. The PRM's resume shall include the names and contact information of references. If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.

~~Prior to any change of the PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.~~

COC PAL-3/MM PAL-3 The project owner shall not commence ground disturbance until the PRS prepares a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) and submits the PRMMP to the CPM for review and approval. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, sampling, and reporting activities, and may be modified with CPM approval. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and reside with the PRS, each PRM, the project's on-site manager, and the CPM.

~~The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP 2010) and shall include, but not be limited to, the following:~~

1. ~~Procedures for and assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation shall be performed according to PRMMP procedures.~~
2. ~~Identification of the person(s) expected to assist with each of the tasks required by the PRMMP and these conditions of certification.~~
3. ~~A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units.~~
4. ~~An explanation of why sampling is needed, a description of the sampling~~

~~methodology, and how much sampling is expected to take place in which geologic units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units.~~

5. ~~A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations.~~
6. ~~A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and how notifications shall be performed.~~
7. ~~A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.~~
8. ~~Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum that meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources.~~
9. ~~Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they shall be met, and the name and phone number of the contact person at the institution.~~
10. ~~A copy of the paleontological resources conditions of certification.~~
11. ~~A copy of the daily monitoring log form.~~

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. Approval of the PRMMP by the CPM shall occur prior to ~~any~~ ground disturbance. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP 2010) and shall include, but not be limited to, the following:

1. **Procedures for and assurance that the performance and sequence of project- related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation shall be performed according to PRMMP procedures.**

~~2. Identification of the person(s) expected to assist with each of the tasks required by the PRMMP and these conditions of certification.~~

3. **A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units.**
4. **An explanation of why sampling is needed, a description of the sampling methodology, and how much sampling is expected to take place in which geologic units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units.**
5. **A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations.**
6. **A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and how notifications shall be performed.**
7. **A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.**
8. **Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum that meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources.**
9. **Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they shall be met, and the name and phone number of the contact person at the institution.**
10. **A copy of the paleontological resources conditions of certification.**
11. **A copy of the daily monitoring log form.**

COC PAL-4/MM PAL-4 Prior to ground disturbance the project owner and the PRS shall prepare a CPM-approved Worker Environmental Awareness Program (WEAP).

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The purpose of the WEAP is to train project workers to recognize paleontologic resources and identify procedures they must follow to ensure there are no impacts to sensitive paleontologic resources.

~~The WEAP shall include:~~

~~1. A discussion of applicable laws and penalties under the law.~~

~~2. Good quality photographs or physical examples of fossils expected to be found in units of high paleontologic sensitivity at, or near, the site.~~

~~3. Information that the PRS and PRM has the authority to stop or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource.~~

~~4. Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM.~~

~~5. An informational brochure that identifies reporting procedures in the event of a discovery.~~

~~6. A WEAP certification of completion form signed by each worker indicating that they has received the training.~~

~~7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.~~

~~The project owner shall submit the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that shall be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological resources.~~

Verification: At least 30 days prior to ground disturbance, the project owner shall submit to the CPM for review and comment the draft WEAP, including the brochure and sticker. The submittal shall also include a draft training script and the set of reporting procedures for workers to follow.

The WEAP shall include:

1. **A discussion of applicable laws and penalties under the law.**
2. **Good quality photographs or physical examples of fossils expected to be found in units of high paleontologic sensitivity at, or near, the site.**
3. **Information that the PRS and PRM has the authority to stop or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource.**
4. **Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM.**
5. **An informational brochure that identifies reporting procedures in the event of a discovery.**

6. **A WEAP certification of completion form signed by each worker indicating that they have ~~has~~ received the training.**
7. **A sticker that shall be placed on hard hats indicating that environmental training has been completed.**

The project owner shall submit the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that shall be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological resources.

At least 15 days prior to ground disturbance, the project owner shall submit to the CPM for approval the final WEAP and training script. If the project owner is planning to use a video for training, a copy of the training video shall be submitted following final approval of WEAP and training script.

COC PAL-5/MM PAL-5 No worker shall excavate or perform any ground disturbance activity prior to receiving CPM-approved WEAP training ~~by the PRS~~, unless specifically approved by the CPM.

Prior to project ground disturbance the following workers shall be WEAP trained by the PRS ~~in-person~~ **or a competent individual approved by the PRS**: project managers, construction supervisors, foremen, and all general workers involved with or who operate ground-disturbing equipment or tools. ~~Following the start of ground disturbing activities and after the initial WEAP training conducted prior to ground disturbance, a CPM- approved video or in- person training may be used for new employees~~. If a video is used a qualified trainer shall be present to monitor training and respond to questions.

The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

Verification: In the Monthly Compliance Report (MCR), the project owner shall supply copies of the WEAP certification of completion forms with the names of those trained, trainer identification, and type of training (in-person and/or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

~~The resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to providing WEAP training.~~

~~If the project owner requests an alternate paleontological WEAP trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct WEAP training prior to CPM authorization.~~

COC PAL-7/MM PAL-7 The project owner shall ensure preparation of a paleontological resources report (PRR) by the designated PRS. The PRR shall be prepared following completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and shall be submitted to the CPM for approval.

The report shall include, but not be limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; and the PRS' description of sensitivity and significance of those resources; and indicate if and how fossil material was curated in accordance with COC PAL-3.

~~Any portions of this report that involve any independent judgment or analysis of the earth's crust, and the rocks and other materials which compose it, must be done by or under the responsible charge of a California licensed Professional Geologist.~~

Verification: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall supply the PRR under confidential cover to the CPM.

COC PAL-8/MM PAL-8 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed, including collection of fossil material, preparation of fossil material for analysis, analysis of fossils, identification and inventory of fossils, preparation of ~~fossils for curation~~ **significant paleontological resource materials for transportation to a repository and, if possible, to provide a tentative identification**, and delivery for curation of all significant paleontological resource materials encountered and collected during project construction. The project owner shall pay all curation fees ~~charged by the museum~~ for ~~fossil material collected~~ **significant paleontological resource materials** and curated as a result of paleontological mitigation. The project owner shall also provide the curator with documentation showing the project owner irrevocably and unconditionally donates, gives, and assigns permanent, absolute, and unconditional ownership of the ~~fossil~~ **significant paleontological resource** material.

Verification: Within 60 days after the submittal of the PRR, the project owner shall supply documentation to the CPM identifying the entity that would be responsible for curating collected specimens. This documentation shall also show that fees have been paid for curation and the owner relinquishes control and ownership of all

fossil material. **If there are no entities available and willing to accept curation of collected specimens, the project owner shall consult with the CPM as to the appropriate manner for disposition of significant paleontological resources**

Section 5.7 Hazards, Hazardous Materials/Waste, and Wildfire

COC HAZ-1/MM HAZ-1 The project owner shall prepare a Hazardous Materials Business Plan (HMBP) ~~and a Spill Control and Countermeasure Plan (SPCC)~~ and ~~provide these~~ **submit this** plan~~s to the California Department of Toxic Substances Control (DTSC)~~ **through the CERS online system (or other approved method) by DTSC the designated CUPA for Imperial County** for review and comment and **a copy of the CERS online system submittal** to the Compliance Project Manager (CPM) **will be provided** ~~for review and approval~~.

Verification: At least 60 days prior to the start of operation the project owner shall prepare and submit the HMBP ~~and SPCC~~ to **the CERS online system (or other approved method) for review by** ~~the~~ **(the CUPA for Imperial County)** DTSC ~~for review and comment.~~ **A copy of this submittal will be provided** ~~and~~ to the CPM ~~for review and approval~~. The project owner shall also provide the CPM with a copy of the transmittal letter to DTSC requesting review and comment.

At least 30 days prior to the start of operation, the project owner shall provide copies of any comment letters received from DTSC along with any changes to the HMBP ~~and SPCC plans~~ for CPM review and approval. After CPM review and approval, the project owner shall provide complete copies of the final HMBP ~~and SPCC~~ to the DTSC, sending copies of the correspondence to the CPM.

COC HAZ-4 The project owner shall report new or temporary hazardous waste generator identification numbers from the United States Environmental Protection Agency (USEPA) prior to generating any hazardous waste during ~~demolition,~~ construction~~,~~ or operations.

Verification: The project owner shall keep a copy of the identification number(s) on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once, unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM 30 days before the change occurs.

COC HAZ-6/MM HAZ-6 The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that would be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per the latest version of the NERC Security Guideline for the Electricity Sector: Physical Security).

Verification: At least 30 days prior to the initial receipt of hazardous materials onsite, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval.

The Operation Security Plan shall include the following:

1. permanent full perimeter fence or wall, at least eight feet high and topped with barbed wire or the equivalent (and with slats or other methods to restrict visibility if a fence is selected);
2. main entrance security gate, either hand operated or motorized;
3. evacuation procedures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. written standard procedures for employees, contractors, ~~and~~ **or** vendors when encountering suspicious objects or packages on site or off site;
    a. a statement (refer to sample, Attachment A), signed by the project owner certifying that background investigations have been conducted on all project **employees** ~~personnel~~. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;
    b. a statement(s) (refer to sample, Attachment B), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;
6. site access controls for employees, contractors, vendors, and visitors;
7. a statement(s) (refer to sample, Attachment C), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;

8. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the remote power plant control room with cameras able to pan, tilt, and zoom, have low-light capability, and able to view 100 percent of the perimeter fence, and outside entrances to the site; and,
9. additional measures to ensure adequate perimeter security consisting of either:
    a. perimeter breach detection or onsite motion detector capabilities; and
    b. security guard(s) present 24 hours per day, seven days per week; or
    c. power plant personnel on site 24 hours per day, seven days per week.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures~~, or may require additional measures such as protective barriers for critical power plant components— transformers, gas lines, and compressors—depending upon circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Corporation (NERC), after consultation with both appropriate law enforcement agencies and the project owner.~~

~~**Verification:** At least 30 days prior to the initial receipt of hazardous materials onsite, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval.~~ In the annual compliance report, the project owner shall include signed statements similar to Attachments A and B that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a signed statement similar to Attachment C that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

COC HAZ-7/MM HAZ-7 The project owner shall prepare and submit to the CPM a Site Management Plan (SMP) prior to any ground disturbing activities. The SMP shall be prepared by a California Registered Civil Engineer or a California Registered Geologist with sufficient experience in hazardous waste management. The purpose of the SMP is to establish appropriate management practices and procedures for handling impacted soil and/or groundwater or other materials that may be encountered during construction activities to ensure worker protection from toxicant exposure. The SMP shall be updated as needed to reflect changes in laws, regulations or site conditions. All ground disturbing activities at the site and

potential disposal of contaminated soil and/or groundwater shall be conducted in accordance with the SMP. Where actions are required in accordance with the SMP, an SMP summary report, which includes all analytical data and other findings, shall be submitted once the earthwork has been completed.

Topics covered by the SMP shall include, but not be limited to:

1. Land use history including description and locations of any known contamination.
2. The nature and extent of any previous investigations and remediation at the site.
3. The nature and extent of any unremediated contamination at the proposed site.
4. A listing and description of institutional controls such as the county's excavation ordinance and other local, state, and federal regulations and laws that would apply to the project.
5. ~~Names and p~~Positions of individuals involved with site management and their specific roles.
6. An earthwork schedule.
7. A description of protocols for the investigation and evaluation of any previously unidentified contamination that may be encountered in time. The protocol shall be for temporary and permanent controls that may be required to reduce exposure to onsite workers, visitors, and the public.
8. ~~A site-specific Health and Safety Plan (HSP) to be implemented by all contractors and subcontractors at the site. The HSPs shall be specific to each of the contractors' or subcontractors' scopes of work. The HSPs shall be prepared by a Certified Industrial Hygienist and would protect onsite workers by including engineering controls, personal protective equipment, monitoring, and security to prevent unauthorized entry and to reduce construction related hazards. The HSPs shall address the possibility of encountering subsurface chemical contamination and include procedures to protect workers and the public. The HSPs shall be updated as needed if site conditions change significantly, such as discovery of contaminated soil or groundwater. Copies of the approved HSPs shall be kept at the project site.~~
9. Hazardous waste determination and disposal procedures for known and previously unidentified contamination.
10. Requirements for site-specific techniques at the site to minimize dust, manage stockpiles, run-on and run-off controls, waste disposal procedures, etc.
11. Copies of relevant permits or closures from regulatory agencies.

Verification: At least 45 days prior to any ground disturbance, the project owner shall submit the SMP to the DTSC for review and comment and to the CPM for review and approval. An SMP summary shall be submitted to the CPM within 30 days of completion of any ground disturbance.

~~**COC HAZ-8/MM HAZ-8** The project owner shall provide the resume of an experienced and qualified professional engineer or professional geologist, who shall be available for consultation during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall reflect experience in remedial investigation and feasibility studies.~~

~~The professional engineer or professional geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil and/or groundwater.~~

~~**Verification:** At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.~~

COC HAZ-9/MM HAZ-9 If ~~seemingly~~ **suspected** contaminated soil and/or groundwater is identified during site characterization, ~~demolition,~~ excavation, or grading at either the proposed site or linear facilities (as evidenced by discoloration, odor, detection by handheld instruments, or other signs), the professional engineer or professional geologist **(as provided in HAZ-7)** shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and provide a written report to the project owner, representatives of DTSC, and the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the professional engineer or professional geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the professional engineer or professional geologist, significant remediation may be required, the project owner shall contact the CPM and representatives of the DTSC for guidance and possible oversight.

Verification: The project owner shall submit any final reports filed by the professional engineer or professional geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within ~~24 hours~~ **by the close of the following business day** of any orders issued to halt construction.

Section 5.8 Land Use, Agriculture, and Forestry

COC LAND-1/MM LAND-1 Prior to ~~development of any temporary construction camps, laydown and parking areas, and borrow pits for project construction activities, and prior to any~~ development of wells, or ~~of~~ production or injection pipelines ~~not connecting directly with the geothermal plant~~, the project owner shall provide copies of the required permits issued by the Imperial County Planning & Development Services Department to ensure compliance with local regulations. The project owner shall also provide copies of the necessary permits issued by CalGEM for wells ~~and for the production and injection pipelines not connecting directly with the geothermal plant~~.

Prior to the development of the switching station, the project owner shall provide verification of its approval by the Imperial Irrigation District.

Prior to any grading or development for the permanent project facilities under CEC jurisdiction (the geothermal plant, gen-tie line, **and** water supply line, ~~and production and injection lines connecting directly with the geothermal plant)~~, the project owner shall develop a site plan and submit it to the Imperial County Planning & Development Services Department for comment to ensure compliance with local regulations.

The project owner shall ensure that local regulations are complied with during construction, operation, and restoration of the temporary construction camps, laydown and parking areas, and borrow pits. ~~The project owner shall also ensure that local regulations are complied with during construction and operation of the permanent project facilities.~~

Verification: At least 30 days prior to development of any ~~temporary construction camps, laydown and parking areas, and borrow pits for project construction activities, and prior to any development of~~ wells, or ~~of~~ production and injection pipelines ~~not connecting directly~~ with the geothermal plant, the project owner shall provide to the CPM the required approved permits from the Imperial County Planning & Development Services Department **and/or** ~~. The project owner shall also provide to the CPM the necessary permits from~~ CalGEM.~~for the wells and for the production and injection pipelines not connecting directly with the geothermal plant.~~

At least 30 days prior to any grading or development for the switching station, the project owner shall provide verification of IID approval.

At least 60 days prior to any grading or development for permanent project facilities under CEC jurisdiction (the geothermal plant, gen-tie line, water supply line, ~~and production and injection lines connecting directly with the geothermal plant~~) the project owner shall submit proposed site plans for these facilities to the

Imperial County Planning & Development Services Department. The project owner shall provide the site plans to the CPM for review and approval, along with any review comments from Imperial County, at least 30 days prior to any grading or development for these permanent project facilities. ~~Note that plan submittals to Imperial County should meet the requirements in Section 91701.04(A), "New Project Application Requirements", of the Imperial County Land Use Ordinance.~~

COC LAND-2 Obtain an encroachment permit or encroachment agreement from the Imperial Irrigation District (IID) for any construction or operation of project linears under jurisdiction of the CEC (water supply pipeline, gen-tie line to the first point of interconnect) on IID property or within its existing or proposed right-of-way or easements. Construction or operation activities which ~~would~~ **may** require an encroachment permit or encroachment agreement from IID include but are not limited to: surface improvements, such as proposed new streets, driveways, parking lots, and landscaping; and all water, sewer, stormwater, or any other aboveground or underground utilities. No foundations or buildings are allowed within IID's right-of-way**, without explicit approval from IID**.

Verification: At least 60 days prior to any ~~potential~~ encroachment on IID property or IID's existing or proposed right-of-way, the project owner shall apply to IID for an encroachment permit or encroachment agreement. A copy of the IID encroachment permit application and instructions for its completion are available **on the IID website.** ~~at:~~

~~https://www.iid.com/about-iid/department-directory/real-estate#:~:text=IID%27s%20real%20estate%20section%20maintains,water%20rights%20and%20water%20availability.~~

The project owner shall submit a copy of IID's permit and/or comments to the CPM within 30 days of the ~~potential~~ encroachment.

COC LAND-3/MM LAND-3 The project owner shall implement one of the three options to mitigate for agricultural land conversion of Farmland of Statewide Importance (including the transmission line and switching station) **identified in**~~. These options are based on~~ Imperial County's Mitigation Monitoring and Reporting Program in the Final Programmatic Environmental Impact Report for the Imperial County Renewable Energy and Transmission Element Update **(2015).**

~~For Non-Prime Farmland (such as Farmland of Statewide Importance):~~

~~Option 1: The project owner shall procure Agricultural Conservation Easements on a "one-to-one" basis on land of equal size, of at least equal quality of farmland, outside the development footprint. The Conservation Easement shall meet the~~

~~State Department of Conservation's regulations and shall be recorded prior to any project grading or building.~~

~~Option 2: The project owner 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 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.~~

~~Option 3: The project owner and County shall voluntarily enter into an enforceable Public Benefit Agreement or Development Agreement that includes an Agricultural Benefit Fee payment that is: (1) is consistent with Board Resolution 2012-005; and (2) the Agricultural Benefit Fee 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, as specified in the Development Agreement, including addressing the mitigation of agricultural job loss on the local economy.~~

Verification: At least 60 days prior to **the start of construction** ~~any project grading or building~~, the project owner shall provide documentation to the CPM verifying implementation of the selected option(s) and acceptance by Imperial County ~~The project owner shall provide details to the CPM regarding how the options were implemented.~~

~~**COC LAND-4/MM LAND-4** The project owner shall develop and implement a restoration plan which includes stockpiling excavated topsoil and using it to restore the original conditions as closely as possible at sites of temporary construction activity, such as laydown and parking areas, construction camp areas, borrow sites, and any work areas.~~

~~**Verification:** At least 60 days prior to any project grading, the project owner shall submit a stockpiling and restoration plan to the CPM for review.~~

Section 5.9 Noise and Vibration

PUBLIC NOTIFICATION PROCESS

COC NOISE-1/MM NOISE-1 Prior to the start of ground disturbance, the project owner shall notify SBR, RHMP, and businesses in the vicinity of the project site, by mail, or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the ~~demolition,~~ construction, and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This or a similarly effective telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for ~~at least~~ one year.

Verification: At least 15 days prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site and shall provide that telephone number.

NOISE COMPLAINT PROCESS

COC NOISE-2/MM NOISE-2 Throughout the ~~demolition,~~ construction, and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.8 The project owner or its authorized agent shall:

- use the Noise Complaint Resolution Form (shown below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to the noise complaint;
- attempt to contact the person(s) making the noise complaint within **one business day** ~~24 hours~~;
- conduct an investigation to determine the source of noise in the complaint;
- if the noise is project related, take all feasible measures to reduce the source of the noise; and
- submit the Noise Complaint Resolution Form to the CPM documenting the complaint and actions taken. The form shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant that states that the noise problem has been resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file with the CPM the Noise Complaint Resolution Form, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within three business days, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

EMPLOYEE NOISE CONTROL PROGRAM

COC NOISE-3/MM NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during ~~demolition and~~ construction in accordance with Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM. The project owner shall make the program available to Cal-OSHA upon request.

OPERATIONAL NOISE RESTRICTIONS

COC NOISE-4/MM NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due to power plant operation to exceed ~~50 dBA L_{eq} at RHMP~~ **70 dBA CNEL at the closest permanent residence**.

No new pure-tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

When the project first achieves a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a continuous daytime noise ~~survey at RHMP~~. This survey during power plant operation shall also include measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.

If the results from the noise survey indicate that the **sound level attributable to the** power plant ~~noise levels (Leq)~~ at the affected receptors exceed the above values **or indicate that new pure tones are present** ~~for any given hour during the survey~~, mitigation measures shall be implemented ~~to reduce noise to a level of compliance with this limit~~.

~~If the results from this noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.~~

Verification: The survey shall take place within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity **and receipt of a**

legitimate complaint. Within 30 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, **alternatively identification of mitigation measures at the receptor** and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place **and upon request from the CPM**, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

CONSTRUCTION AND DEMOLITION NOISE RESTRICTIONS

COC NOISE-6/MM NOISE-6 Heavy equipment operation and construction work relating to any project features, including linear facilities and pile driving shall be limited to the hours between 7:00 am to 7:00 pm within 1,000 feet of any permanent residence. Construction work shall be performed in a manner to ensure excessive noise (noise that draws a project-related complaint) is prohibited and the potential for noise complaints is reduced as much as practicable. Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the demolition and construction of the project.

HIGH-PRESSURE STEAM BLOW RESTRICTIONS

COC NOISE-7/~~MM NOISE-7~~ When using a high-pressure steam blow process, the project owner shall limit noise from steam blows by requiring the use of a rock muffler or other forms of effective silencers to reduce the noise at the project site. The project owner shall notify RHMP and the business owners in the vicinity of the project site of **any** ~~the~~ impending **high-pressure** steam blows prior to start of steam blow activities. ~~The~~ **High-pressure** steam blows shall be conducted between 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and between 9:00 a.m. and 6:00 p.m. on Saturdays.

Verification: At least 15 days prior to the first **high-pressure** steam blow, the project owner shall notify RHMP and the business owners in the vicinity of the project site. The notification may be in the form of letters, or other effective means as approved by the CPM. The notification shall include a description of the purpose and nature of the **high-pressure** steam blows, the planned schedule, expected sound levels at RHMP and businesses in the vicinity of the project, and an explanation that it is a one-time activity and not part of normal power plant operation.

PILE DRIVING

COC NOISE-8/ ~~MM NOISE-8~~ The project owner shall perform pile driving in a manner to ~~reduce~~ **manage** the potential for any project-related noise and vibration complaints. The project owner shall notify RHMP and business owners in the vicinity of pile driving prior to start of these activities.

Verification: At least 15 days prior to first pile driving, the project owner shall submit to the CPM a description of the pile driving technique to be employed, including calculations showing its projected noise impacts ~~and peak particle velocity~~ at monitoring locations RHMP. Examples of **possible** noise-reducing techniques include: (1) the use of pads or impact cushions of plywood; (2) dampened driving, which involves some form of blanket or enclosure around the hammer; and (3) the use of vibratory drivers or hydraulic pile pushers instead of impact drivers.

At least 10 days prior to first production pile driving, the project owner shall notify RHMP and the business owners in the vicinity of the project. The notification may be in the form of letters, or other effective means, as approved by the CPM. In this notification, the project owner shall state that it will perform this activity in a manner to reduce the potential for any project-related noise and vibration complaints.

Section 5.11 Public Health

PUBLIC HEALTH-1 The project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth **and hexavalent chromium concentrations** in all 14 cooling tower cells is kept to a minimum. The Plan shall be consistent with either staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of Legionella" guidelines but in either case, the Plan must include sampling and testing for the presence of Legionella bacteria **and hexavalent chromium concentrations** at least every six months. After two years of power plant operations, the project owner may ask the CPM to re-evaluate and revise the Legionella bacteria **and hexavalent chromium concentrations** testing requirement.

Verification: At least 60 days prior to the commencement of cooling tower operations, the Cooling Water Management Plan shall be provided to the CPM for review and approval.

Section 5.12 Solid Waste Management

COC SOLID WASTE-1/MM SOLID WASTE-1 The project owner shall prepare a Construction Waste Management Plan (CWMP) and an Operation Waste Management Plan (OWMP) for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the Compliance Project Manager (CPM) for review and approval. ~~The plans shall contain, at a minimum, the following:~~

~~A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and~~

~~Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.~~

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the CWMP to the CPM.

The plans shall contain, at a minimum, the following:

- **A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and**
- **Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans**.

The OWMP shall be submitted to the CPM no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

COC SOLID WASTE-2/MM SOLID WASTE-2 If at any time the Desert Valley Company Monofill (DVCM) Class II facility can no longer accept nonhazardous geothermal filter cake, the project owner shall notify the CPM of a proposed alternative disposal facility ~~in sufficient time to ensure a seamless transition avoiding any disruption to project operation~~. The project owner shall verify that the proposed alternative disposal facility is permitted to accept the nonhazardous geothermal filter cake waste and assess if the estimated waste volume would create a significant impact to the disposal facility and the surrounding environment.

Verification: The project owner shall notify the CPM of the need to change disposal facilities with**in** 10 days of discovery that the DVCM Class II facility will no longer accept geothermal filter cake waste.

The project owner shall provide the impact assessment of the alternative disposal facility to the CPM for review and approval within 30 days of the DVCM Class II facility change discovery. The project owner shall not transport the geothermal filter cake to the alternative disposal facility until the CPM approves the disposal facility prior to transport.

The project owner shall document any change of disposal facility for nonhazardous geothermal filter cake in the Annual Compliance Report.

Section 5.13 Transmission Safety and Nuisance

COC TLSN-1/~~MM TLSN-1~~ The project owner shall construct the proposed 230-kV transmission lines according to the requirements of California PUC's GO- 95, GO- 52, GO-131-D, Title 8, and Group 2, High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations~~, and IID's EMF reduction guidelines~~**.**

Verification: At least 30 days prior to the start of construction of the transmission lines or related structures and facilities, the project owner shall submit to the compliance project manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

COC TLSN-2/MM TLSN-2 The project owner shall **comply with the Imperial Irrigation District's Regulation No. 23 regarding vegetation management and clearance requirements for transmission and distribution lines**~~ensure that the route of the proposed transmission lines is kept free of combustible material, as required under the provisions of GO-95 and section 1250 of Title 14 of the California Code of Regulations~~.

Verification: During the first five years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the proposed route and provide such summaries in the Annual Compliance Report on transmission line safety and nuisance-related requirements.

COC TLSN-3/~~MM TLSN-3~~ The project owner shall ensure that all permanent metallic objects **required for the transmission line** within the proposed route are grounded according to industry standards.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

Section 5.15 Visual Resources

COC VIS-2/MM VIS-2 New outdoor light and glare from the project site shall not result in light being a pollutant offsite and skyward, "light pollution." The project owner shall include use of luminaires **to enhance worker safety and ensure safe and secure work conditions** that:

~~a. Only be on when needed.~~

~~b. Only light the area that needs it.~~

~~c. Illuminate no brighter than necessary.~~

~~d. Minimize blue light emissions.~~

e. Are fully shielded ~~(BUG Rating U0)~~ **and downward directed to avoid offsite and skyward light pollution**.

f. Are "DarkSky Approved" program products.

g. Comply with the applicable adopted outdoor lighting regulations of the County of Imperial.

The project owner shall submit to the CPM for approval and simultaneously to the Director of Planning and Development Services for the County of Imperial for review and comment a light pollution control plan or equivalent plan prepared for the project that satisfy the above requirements and include the following:

a. Supply one set of product brochures and/or printouts (e.g., diagram, drawing) showing and describing the types of outdoor luminaires to be applied/installed to buildings, equipment, structures, and other locations on the project site (lighting schedule).

b. A diagram(s) or drawing(s) of the project site showing the approximate location of the installation/placement of the luminaire and its direction and angle (luminaire location).

Verification:

a. The project owner shall submit a light pollution control plan to the CPM for approval and simultaneously to the Director of Planning and Development Services for the County of Imperial for review and comment ninety (90) days prior to executing a contract to purchase permanent outdoor luminaires for the project. The Director of Planning and Development Services shall have at least 30 days to review the plan and provide comments to the applicant and the CPM.

b. If the CPM determines the light pollution control plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed.

Any revision to the plan must be approved by the CPM.

c. The project owner shall notify the CPM when the installation of the luminaires has been completed and are ready for inspection. After inspection if the CPM requires a modification to a luminaire(s) (e.g., design, installation, location), the project owner shall have 30 days after receiving the notification to complete the modification and request a follow-up inspection.

d. If a light and glare complaint is filed with the project owner within 48 hours of receiving the complaint, the project owner shall supply the CPM with a completed complaint resolution form report as specified in the Compliance Conditions, a proposal to resolve the complaint and time schedule for resolution. The project owner shall notify the CPM within 48 hours after completing/resolving the complaint.

COC VIS-3/MM VIS-3 The project owner shall plant/install and maintain landscaping-related improvements including trees, shrubs, ground cover ~~and similar on new geothermal well sites (drilling and production well sites)~~ in conformance with the applicable adopted Renewable Energy Project standards and Geothermal Projects - Production Standards of the County of Imperial (Imperial County Ordinance, Title 9, Division 17) **and consistent with other developments in the project area**.

The project owner shall submit to the CPM for approval and simultaneously to the Director of Planning and Development Services for the County of Imperial for review and comment a landscape-related improvement, plantings, and irrigation plan (landscaping design plan) or equivalent plan prepared for the project that satisfy the above requirements and include the following:

a. The landscape design plan shall be presented at a reasonable scale. The plan shall include a planting plan with plant list prepared by a qualified landscape architect familiar with local growing conditions of proposed species, specifying installation sizes, growth rates, expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions; specifications for ground cover, top-dressing of planting areas and weed abatement measures. Existing vegetation (if any) shall be noted on the plan.

~~b. Landscape-related improvements and the irrigation system on the geothermal production well site shall comply with state and county water conservation/efficient landscaping requirements.~~

c. A maintenance plan that includes procedures for the upkeep of the landscape-related improvements and the irrigation system on the well site for the life of the project.

Verification:

a. The project owner shall submit a landscaping design plan to the CPM for approval and simultaneously to the Director of Planning and Development Services for the County of Imperial for review and comment ninety (90) days prior to executing a contract to purchase landscaping-related improvements for the project ~~and well sites~~. The Director of Planning and Development Services shall have at least 30 days to review the plan and provide comments to the applicant and the CPM.

b. If the CPM determines the landscaping design plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity is executed. Any revision to the plan must be approved by the CPM.

c. The project owner shall notify the CPM when the planting/installation of the landscaping-related improvements have been completed and are ready for inspection. With this notification, the applicant shall supply to the CPM one set of color photographs showing the landscaping-related improvements on the project ~~and well sites~~. Color photographs may be electronically filed or manually filed on electronic media. After inspection if the CPM requires a modification to a landscaping-related improvement (e.g., design, installation, location), the project owner shall have 30 days after receiving the notification to complete the modification and request a follow-up inspection.

~~d.~~ The project owner shall supply a description of the condition (status) of the landscaping-related improvements and the irrigation system, and maintenance activities performed during the reporting year in the Annual Compliance Report.

Section 5.16 Water Resources

WASTE DISCHARGE REQUIREMENTS

COC WATER-3 The project owner shall comply with Waste Discharge Requirements (WDRs) established ~~in Appendix D~~ **by the Colorado River Basin Regional Water Quality Control Board**. Compliance with Appendix D will assure protection of water resources associated with facility operation. Appendix D was developed in consultation with staff of the Colorado River Basin RWQCB (RWQCB) and includes discharge prohibitions, monitoring requirements, and other specifications provided by the RWQCB staff for future adoption by the Board, as appropriate to facilitate enforcement activities by the RWQCB. In accordance with the Memorandum of Understanding between the two agencies, the Commission staff and RWQCB staff will confer with each other and coordinate, as needed, in the enforcement of Conditions of Certification and WDRs. Title 27 prescriptive standards for design and construction of the surface impoundment (brine pond) for siting within a flood zone, waste separation from groundwater, necessary freeboard, and slope stability considerations shall be complied with as set forth in the WDRs.

~~The proposed WDRs include siting restrictions specifying Waste Management Units cannot be sited within a 100-year floodplain. The Applicant's proposed berm design may only be in compliance with FEMA regulations (Title 44, CFR, Part 65.10) for levee design for flood protection if designed, constructed and maintained to preclude the site from 100-year flood events. The Applicant has applied to FEMA for a Letter of Map Revision to allow for this method of compliance, and upon approval, shall apply for a Conditional Letter of Map Revision from FEMA or the local Flood Manager that demonstrates the berm would be constructed to protect the area inside of the berm from a 100-year flood. Approval of a Conditional Letter of Map Revision is required to demonstrate compliance with siting restrictions specified in the WDRs.~~

~~The WDRs include siting restrictions specifying a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water (WDR, Part D.1. per CCR Title 27, §20240, (c)). Brine pond design, as currently proposed, does not show compliance with this prescriptive standard and may only be approved if the elements of CCR Title 27, §20080(b)&(c) are met. Brine pond design must also demonstrate compliance by showing that that the design would provide sufficient capacity to handle a design storm while maintaining a required two-foot freeboard, as specified in WDR, Part D.2. Brine pond design must also demonstrate compliance that the design provided would be capable of withstanding the maximum credible earthquake, as specified in WDR, Part 5.e. In addition, a slope stability analysis per CCR Title 27, §21750(f)(5), as recommended in the preliminary geotechnical investigation, is required, and shall include a site-specific~~

~~ground motion hazard analysis. Revised design information demonstrating compliance with these provisions is required.~~

~~Full compliance with Title 27 includes submittal of these additional documents: a quality assurance plan, an operational plan, a closure plan, and financial assurance cost estimates, among others as listed in the regulation, for the reliable and responsible construction and operation of the brine pond. CPM approval of final documents is required to demonstrate compliance with siting requirements specified in the WDRs.~~

Verification: Prior to discharging any waste (including geothermal fluids from well construction, operational brine waste from clarifiers, or any other ancillary waste streams) to the brine pond, the project owner shall submit the following documents to the CPM to be forwarded to RWQCB:

1. Written approval of a Conditional Letter of Map Revision from FEMA or the local Flood Manager along with correspondence in agreement or authorization from the Regional Board that the facility complies with the siting restrictions specified in the WDRs.
2. Revised construction drawings and details showing brine pond siting would comply with terms and conditions of WDRs or proposed engineered alternatives including the necessary demonstrations for approval pursuant to Title 27.
3. Design calculations, prepared by a licensed professional engineer, demonstrating pond design would provide sufficient capacity to handle a design storm while maintaining a required two-foot freeboard, and that the brine pond design is otherwise in compliance with terms and conditions of the WDRs.
4. A slope stability analysis report, prepared by a licensed professional engineer or geologist, to include a site-specific ground motion hazard analysis, demonstrating that the brine pond, as designed, would withstand a maximum credible earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion, and that the brine pond design is otherwise in compliance with terms and conditions of the WDRs.
5. Final documents including a quality assurance plan, an operational plan, a closure plan, and financial assurance cost estimates, prepared by a licensed professional engineer, prepared in compliance with terms and conditions of the WDRs.

The project owner shall provide to the CPM in the ACR, all monitoring reports as required by the WDRs. Any change to the design, construction, or operation of the surface impoundment shall be requested by the project owner in writing to the CPM, and approved by the CPM, in consultation with the RWQCB, prior to the

initiation of any construction and/or operational changes.

DETECTION MONITORING WELLS

COC WATER-4 The monitoring well network associated with the WDRs required in WATER-3 shall comply with the requirements of a detection monitoring program as described in CCR Title 27, Section 20380. Wells installed to monitor groundwater quality in the vicinity of the brine pond shall conform to the California Department of Water Resources Bulletins 74-81 and 74-90.

Verification: At least sixty (60) days prior to construction, the project owner shall submit to the CPM and the Colorado River Basin RWQCB, for review and approval, the Groundwater Quality Monitoring and Reporting Plan presenting all the data and information necessary to establish a well network to monitor groundwater quality in compliance with Title 27 regulation.

At least thirty (30) days prior to the start of construction, the project owner shall begin installation of the detection monitoring wells per the Groundwater Quality Monitoring and Reporting Plan.

At least thirty (30) days prior to the start of construction, a pre-construction groundwater quality report shall be submitted to the CPM and the Colorado River Basin RWQCB for review and approval.

Subsequent groundwater quality monitoring reports shall be submitted semi-annually by the project owner to the CPM and the Colorado River Basin RWQCB for review and approval.

PRODUCTION/INJECTION WELL INSTALLATION

COC WATER-5 The project owner shall notify the CPM when the Underground Injection Control (UIC) permitting process begins and shall provide a copy of the UIC permit issued by CalGEM. The project shall not receive geothermal brine from or discharge to these wells without the final permit in place or without emergency/temporary authorization from CalGEM. The project shall provide to the CPM on a continuing basis, copies of all monitoring or other reports, as well as any changes made to the permit by CalGEM related to the operation of these wells.

Verification: At least thirty (30) days prior to the installation of any production or injection well, the project owner shall provide the CPM all information required to obtain a permit from CalGEM. The project owner shall notify the CPM when the UIC permitting process begins. No later than fifteen (15) days prior to the construction of the injection wells, the project owner shall submit copies of the final UIC permit to the CPM. All copies of permit changes and monitoring or other reports must be received within thirty (30) days of their submittal to CalGEM.

ONSITE SEPTIC SYSTEM PERMIT REQUIREMENTS

COC WATER-7 The project owner shall install an on-site septic **and leach field** system designed for site- specific soil and percolation conditions. The septic system design shall comply with the SWRCB's onsite wastewater treatment system (OWTS) regulations (Title 27 CCR) and Imperial County Division of Environmental Health (ICDEH) OWTS permit requirements. The project owner shall operate the septic system following an operations and maintenance manual prepared by a qualified professional. ~~The project owner shall monitor the septic system for detectable effects on groundwater or surface water. If the site conditions are unfavorable to support a conventional leach field system, the project owner shall work with the SCEHD and the CPM to evaluate a viable alternative.~~

Verification: No later than 90 days prior to project operation, the project owner shall submit to the CPM evidence that the septic system design has the approval of the chief building official (CBO), and evidence that it has been reviewed by the ICDEH. No later than 60 days prior to project operation, the project owner shall submit the operations and maintenance manual to the ICDEH for review and comment. No later than 30 days prior to project operation, the project owner shall submit the operations and maintenance manual to the CPM for review and approval. The submittal shall include copies of any agency comments the project owner has received. The wastewater system shall be monitored following either the general standards adopted in SWRCB's OWTS regulations or the procedures outlined in the CPM-approved operations and maintenance manual. Any testing results or correspondence exchanged between the project owner and the California Department of Health Services or the ICDEH during operations **relating to the on-site septic and leach field system** shall be provided to the CPM in the annual compliance report.

WATER USE AND REPORTING

COC WATER-8/MM WATER-8 Supply of fresh water for the project construction will be provided by the IID. The project owner shall enter into an agreement with IID. Project water use for project construction shall not exceed **200 AFY** ~~365 acre-feet~~. **Any unused amounts can be utilized during the subsequent year. Additional water for dust suppression or vehicle cleaning may be used if authorized by the CPM.** Project operation water use shall not exceed 6,500 AFY. The project owner shall record daily water use for the project's construction and operation. The project owner shall comply with the water use limits and reporting requirements described below.

Verification: During project construction, the monthly compliance report shall include a summary of monthly water use. After construction is complete, the project's annual compliance report shall include a monthly and annual summary of water use.

~~**COC WATER-9** To avoid loss of water supply due to evaporation, the project owner shall install a floating cover over the proposed service water pond.~~

~~**Verification:** No later than thirty (30) days prior to project construction, the project owner shall provide the CPM the specifications for the floating pond cover for review and approval. No later than thirty (30) days prior to power plant operation, the project owner shall provide to the CPM confirmation that the floating cover has been implemented.~~

Section 9 Compliance Conditions and Compliance Monitoring Plan

COM-1 Unrestricted Access The project owner shall take all steps necessary to ensure that the CPM, responsible CEC staff, and delegate agencies or ~~consultants~~ **authorized representatives with appropriate credentials** have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on site for the purpose of conducting audits, surveys, inspections, or general or closure-related site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time, whether such visits are by the CPM in person or through representatives from CEC staff, delegated agencies, or ~~consultants~~ **authorized representatives with appropriate credentials**.

COM-2 Compliance Record. The project owner shall maintain electronic copies of all project files and submittals on site, or at an alternative site approved by the CPM, for the operational life and closure of the project. The files shall also contain at least one hard copy of:

1. facility's Application of Certification;
2. all amendment petitions and CEC orders;
3. all site-related environmental impact and survey documentation;
4. ~~all appraisals, assessments, and studies for the project;~~
5. all finalized original and amended structural plans and "as-built" drawings for the entire project;
6. all citations, warnings, violations, or corrective actions applicable to the project, and
7. the most current versions of any plans, manuals, and training documentation required by the COC's or applicable LORS.

The CEC staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files maintained pursuant to this condition.

COM-10 Amendments, Staff-Approved Project Modifications, Ownership/Operational Control Changes, Staff and Project Owner Jointly Initiated Amendments and Verification Changes. The project owner shall petition the CEC, pursuant to title 20, California Code of Regulations, section 1769, to modify the design, operation, or performance requirements of the project or linear facilities, or to transfer ownership or operational control of the facility. The CPM will determine whether staff approval will be sufficient, or whether Commission approval will be necessary. It is the project owner's responsibility to contact the CPM to determine if a proposed project change triggers the requirements of section 1769. Section 1769 details the required contents for a petition to amend a CEC Decision.

A project owner is required to submit a $5,000 fee for every petition to amend a previously certified facility, pursuant to Public Resources Code section 25806 (e). If the actual

amendment processing costs exceed $5,000, the total PTA reimbursement fees owed by a project owner will not exceed the AFC cap ~~of $1,050,850, adjusted annually~~ **as set forth in the Public Resources Code Section 25806(e)**. Current amendment fee information is available on the CEC's website ~~at http://www.energy.ca.gov/siting/filing_fees.html~~.

Staff and Project Owner Jointly Initiated Amendments, and Verification Changes, are exempt from 25806(e) and, therefore, do not require a filing fee.

COM-11 Reporting of Complaints, Notices, and Citations. Prior to the start of construction ~~or closure~~, the project owner shall send a letter to property owners within one mile of the project, notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it must include automatic answering with date and time stamp recording.

The project owner shall respond to all recorded complaints ~~within 24 hours or~~ **by** the **close of the** next business day. The project owner shall post the telephone number onsite and make it easily visible to passersby during construction~~, operation, and closure~~. The project owner shall provide the contact information to the CPM and promptly report any disruption to the contact system or telephone number change to the CPM, who will provide it to any persons contacting **them** ~~him or her~~ with a complaint.

Within five business days of receipt, the project owner shall report, and provide copies to the CPM, all complaints, including, but not limited to, noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the Noise and Vibration conditions of certification. All other complaints shall be recorded on the complaint form **which is substantially similar to the form** at the end of ~~this~~ **these** ~~c~~**C**ompliance ~~plan~~ **Conditions**. Additionally, the project owner must include in the next MCR **(during construction) or**~~,~~ ACR **(during operations)** ~~or PCR~~, copies of all complaints, notices, warnings, citations and fines, a description of how the issues were resolved, and the status of any unresolved or ongoing matters.

COM-12 Emergency Response Site Contingency Plan. No less than ~~60~~**30** days prior to the start of construction (or other CPM-approved) date, the project owner shall submit, for CPM review and approval, an Emergency Response Site Contingency Plan (**Site** Contingency Plan). Subsequently, no less than ~~60~~**30** days prior to the start of commercial operation, the project owner shall update (as necessary) and resubmit the Contingency Plan for CPM review and approval. The Contingency Plan shall evidence a facility's coordinated emergency response and recovery preparedness for a series of reasonably foreseeable emergency events. The CPM may require Contingency Plan updating over the life of the facility. Contingency Plan elements include, but are not limited to:

1. a site-specific list and direct contact information for **offices** ~~persons~~, agencies, and responders to be notified for an unanticipated event;
2. a detailed and labeled facility map, including all fences and gates, the windsock

location (if applicable), the on and off-site assembly areas, and the main roads and highways near the site;

3. a detailed and labeled map of population centers, sensitive receptors, and the nearest emergency response facilities;
4. a description of the on-site, first response and backup emergency alert and communication systems, site-specific emergency response protocols, and procedures for maintaining the facility's contingency response capabilities, including a detailed map of interior and exterior evacuation routes, and the planned location(s) of all permanent safety equipment;
5. an organizational chart including the name, contact information, and first aid/emergency response certification(s) and renewal date(s) for ~~all~~ **designated** personnel ~~regularly on-site~~;
6. a brief description of reasonably foreseeable, site-specific incidents and accident sequences (on- and off-site), including response procedures and protocols and site security measures to maintain twenty-four-hour site security;
7. procedures for maintaining contingency response capabilities; and
8. the procedures and implementation sequence for the safe and secure shutdown of all non-critical equipment and removal of hazardous materials and waste (see also specific conditions of certification for the technical areas of Public Health, Waste Management, Hazards, Hazardous Materials Management, and Wildfire and Worker Safety and Fire Protection).

COM-13 Incident-Reporting Requirements. The project owner shall notify the CPM within one hour after **the Project Owner determines** it is safe and feasible, of any incident at the facility that results in any of the following:

1. **Any release of hazardous materials to the environment that could result in public concerns due to fire, smoke, noise, odor, visual plume or potential health impacts, or one that requires notification to, or emergency response by, any federal, state, or local agency; and,**
2. **The discharge (including accidental) of onsite fixed emergency fire or plume suppression equipment (excluding portable handheld fire extinguishers) for other than routine maintenance, readiness testing, or training; or,**
3. **Any breach of the power plant's physical or cyber security which requires notification to, or emergency response by, any federal, state, or local agency.**

~~1. An event of any kind that causes a "Forced Outage" as defined in the CAISO tariff;~~

~~2. The activation of onsite emergency fire suppression equipment to combat a fire;~~

~~3. Any chemical, gas or hazardous materials release that could result in potential health impacts to the surrounding population; or create an offsite odor issue; and~~

~~4. Notification to, or response by, any off-site emergency response federal, state or local agency regarding a fire, hazardous materials release, onsite injury, or any physical or cyber security incident.~~

Notification shall describe the circumstances, status, and expected duration of the incident. ~~If warranted, as soon as it is safe and feasible, the project owner shall implement the safe shutdown of any non-critical equipment and removal of any hazardous materials and waste that pose a threat to public health and safety and to environmental quality (also, see specific conditions of certification for the technical areas of Hazards, Hazardous Materials Management and Wildfire and Waste Management).~~

Within ~~six~~ **ten** business days of the incident, the project owner shall submit to the CPM a detailed incident report that includes, as applicable, the following information:

1. A brief description of the incident, including its date, time, and location;
2. A description of the cause of the incident, or likely causes if it is still under investigation;
3. The location **and description** of any off-site impacts;
4. Description of any resultant impacts;
5. A description of emergency response actions associated with the incident;
6. Identification of responding agencies;
7. Identification of emergency notifications made to federal, state, and local agencies;
8. Identification of any hazardous materials released and an estimate of the quantity released;
9. A description of any injuries, fatalities, or property damage that occurred as a result of the incident;

~~10. Fines or violations assessed or being processed by other agencies;~~

11. Name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event; and

12. ~~Corrective actions to prevent a recurrence of the incident~~ **Initial corrective actions**.

The project owner shall maintain all incident report records for the life of the project~~, including closure. After the submittal of the initial report for any incident, the project owner shall submit to the CPM copies of incident reports within 48 hours of a request.~~

~~If the project owner requests that an incident notification or report be designated as a confidential record and not publicly disclosed, the project owner shall submit copies of notices or reports with an application for confidential designation in accordance with CEC regulations~~.

COM-14 Non-Operation and Repair/Restoration Plans.

a. If the facility ceases operation temporarily (excluding planned and unplanned

maintenance for longer than one week ~~(or other CPM approved date)~~, but less than three months ~~(or other CPM-approved date)~~, the project owner shall notify the CPM. Notice of planned non-operation shall be given at least two weeks prior to the scheduled date. Notice of unplanned non-operation shall be provided no later than one week after non-operation begins.

For any non-operation, a Repair/Restoration Plan for conducting the activities necessary to restore the facility to availability ~~and reliable and/or improved performance~~ shall be submitted to the CPM within one week after notice of non- operation is given. If non-operation is due to an unplanned incident, temporary repairs and/or corrective actions may be undertaken before the Repair/Restoration Plan is submitted. The Repair/Restoration Plan shall include:

1. Identification of operational and non-operational components of the plant;
2. A detailed description of the repair and inspection or restoration activities**, if any**;
3. A proposed schedule for completing the repair and inspection or restoration activities;
4. An assessment of whether or not the proposed activities would require changing, adding, and/or deleting any COC's, and/or would cause noncompliance with any applicable LORS; and
5. Planned activities during non-operation, including any measures to ensure continued compliance with all COC's and LORS.

The CPM may approve different intervals or contents of the Repair/Restoration Plan from those specified above.

b. Written monthly updates (or other CPM-approved intervals) **shall be provided** to the CPM ~~for~~ **during** non- operational periods, until operation resumes~~,~~**. Updates** shall include:
   1. Progress relative to the schedule;
   2. Developments that delayed or advanced progress or that may delay or advance future progress;
   ~~3. Any public, agency, or media comments or complaints; and~~
   4. Projected date for the resumption of operation.
c. During non-operation, all applicable COC's and reporting requirements remain in effect. ~~If, after one year from the date of the project owner's last report of productive repair/restoration plan work, the facility does not resume operation or does not provide a plan to resume operation, the Executive Director may assign suspended status to the facility and recommend commencement of permanent closure activities. Within 90 days of the Executive Director's determination, the project owner shall do one of the following:~~

~~1. If the facility has a closure plan, the project owner shall update it and submit it for CEC review and approval; or~~

~~2. If the facility does not have a closure plan, the project owner shall develop one consistent with the requirements in this Compliance Plan and submit it for CEC review and approval.~~

COM-15: Facility Closure Planning. To ensure that a facility's eventual permanent closure and maintenance do not pose a threat to public health and safety and/or to environmental quality, the project owner shall coordinate with the CEC to plan and prepare for eventual permanent closure.

Final Closure Plan and Cost Estimate

a. No less than one year (or other CPM-approved date) prior to initiating a permanent facility closure, or upon an order compelling permanent closure, the project owner shall submit for CEC review and approval a Final Closure Plan and Cost Estimate, which includes any site maintenance and monitoring.

   Prior to submittal of the facility's Final Closure Plan to the CEC, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM will hold one or more workshops and/or the CEC may hold public hearings as part of its approval procedure.

b. Final Closure Plan and Cost Estimate contents include, but are not limited to:

   1. a statement of specific Final Closure Plan objectives;
   2. a statement of qualifications and resumes of the technical experts proposed to conduct the closure activities, with detailed descriptions of previous power plant closure experience;
   3. identification of any facility-related installations or maintenance agreements not part of the CEC certification, designation of who is responsible for these, and an explanation of what will be done with them after closure;
   4. a comprehensive scope of work and itemized budget for permanent plant closure and site maintenance activities, with a description and explanation of methods to be used, broken down by phases, including, but not limited to:
      a. dismantling and demolition;
      b. recycling and site clean-up;
      c. impact mitigation and monitoring;
      d. site remediation and/or restoration;
      e. exterior maintenance, including paint, landscaping and fencing;
      f. site security and lighting; and

g. any contingencies.

5. a final cost estimate for all closure activities, by phases, including site
   a. monitoring and maintenance costs, and long-term equipment
   b. replacement;
6. a schedule projecting all phases of closure activities for the power plant site and all appurtenances constructed as part of the CEC-certified project;
7. an electronic submittal package of all relevant plans, drawings, risk assessments, and maintenance schedules and/or reports, including an above and below-ground infrastructure inventory map and registered engineer's or DCBO's assessment of demolishing the facility;
8. additionally, for any facility that permanently ceased operation prior to submitting a Final Closure Plan and Cost Estimate and for which only minimal or no maintenance has been done since, a comprehensive condition report focused on identifying potential hazards;
9. all information additionally required by the facility's COC's applicable to plant closure;
10. an equipment disposition plan, including:
    a. recycling and disposal methods for equipment and materials; and
    b. identification and justification for any equipment and materials that will remain on-site after closure.
11. a site disposition plan, including but not limited to proposed rehabilitation, restoration, and/or remediation procedures, as required by the conditions of certification and applicable LORS, and site maintenance activities;
12. identification and assessment of all potential direct, indirect, and cumulative impacts and proposal of mitigation measures to reduce significant adverse impacts to a less-than-significant level. Potential impacts to be considered shall include, but not be limited to:
    a. traffic;
    b. noise and vibration;
    c. soil erosion;
    d. air quality degradation;
    e. solid waste;
    f. hazardous materials;
    g. waste water discharges; and

h. contaminated soil;

13. identification of all current conditions of certification, LORS, federal, state, regional, and local planning efforts applicable to the facility, and

14. proposed strategies for achieving and maintaining compliance during closure;

15. updated mailing list and Listserv of all responsible agencies, potentially interested parties, and property owners within one mile of the facility;

~~16. identification of alternatives to plant closure and assessment of the feasibility and environmental impacts of these; and~~

17. description of and schedule for security measures and safe shutdown of all non-critical equipment and removal of hazardous materials and waste (see COC's Public Health, Waste Management, Hazards, Hazardous Materials Management, and Wildfire and Worker Safety and Fire Protection).

If the CEC-approved Final Closure Plan and Cost Estimate procedures are not initiated within one year of the plan approval date, it shall be updated and re-submitted to the CEC for supplementary review and approval. If a project owner initiates but then suspends closure activities, and the suspension continues for longer than one year, the CEC may initiate corrective actions against the project owner to complete facility closure. The project owner remains liable for all costs of contingency planning and closure.

Attachment B
FAA Supporting Documents

From: Gamelin CIV John J
To: Salamy, Jerry; Trujillo, Jon (BHE Renewables); Meeker CIV Jeffrey L
Cc: Bhangoo, Manjot (BHE Renewables); Singer, Emily (BHE Renewables); Madams, Sarah
Subject: [EXTERNAL] RE: [INTERNET] Geothermal Project Informal Review for Morton Bay, Black Rock, Elmore North
Date: Thursday, August 15, 2024 3:28:20 PM
Attachments: [redacted]

Hi Jerry,

As indicated below, after discussion with the development team, we have concluded that there is know negative impacts to USMC operations associated with these projects. We have shared that information with OSD Clearing House and closed out the Informal Review and Discussions. Please let me know if there are any further questions.
SF,
JJ

John J. Gamelin
Deputy G-7, Governmental and External Affairs
Marine Corps Installation West
Camp Pendleton, CA
[redacted]

From: Salamy, Jerry [redacted]
Sent: Wednesday, August 14, 2024 11:43 AM
To: Gamelin CIV John J [redacted]; Trujillo, Jon (BHE Renewables) [redacted]; Meeker CIV Jeffrey L [redacted]
Cc: Bhangoo, Manjot (BHE Renewables) [redacted]; Singer, Emily (BHE Renewables) [redacted]; Madams, Sarah [redacted]
Subject: [Non-DoD Source] RE: [INTERNET] Geothermal Project Informal Review for Morton Bay, Black Rock, Elmore North

Mr. Gamelin,

Has a decision been reached on whether the Black Rock, Elmore North, and Morton Bay Geothermal Projects will impact Marine Corps operational equities?

Thanks,

Jerry Salamy | Jacobs | Project Manager
[redacted]

From: Gamelin CIV John J [redacted]>
Sent: Tuesday, July 23, 2024 2:02 PM
To: Trujillo, Jon (BHE Renewables) <[redacted]>; Meeker CIV Jeffrey L

[redacted]
Cc: Bhangoo, Manjot (BHE Renewables) [redacted]; Singer, Emily (BHE Renewables) [redacted]; Salamy, Jerry [redacted]
Subject: [EXTERNAL] RE: [INTERNET] Geothermal Project Informal Review for Morton Bay, Black Rock, Elmore North

Thanks Jon and Team. Appreciate the education provided and ensuing discussion during our meeting today. Thanks again for sending the slide deck as well. As I mentioned, we will be reaching out to the OSD Renewable Energy Clearing house to relay that after today's discussion, we do not anticipate any negative impacts to Marine Corps operational equities associated with the development of these projects.
SF,
JJ

John J. Gamelin
Deputy G-7, Governmental and External Affairs
Marine Corps Installation West
Camp Pendleton, CA
[redacted]

From: Trujillo, Jon (BHE Renewables) [redacted]
Sent: Tuesday, July 23, 2024 1:48 PM
To: Gamelin CIV John J [redacted]; Meeker CIV Jeffrey L [redacted]
Cc: Bhangoo, Manjot (BHE Renewables) [redacted]; Singer, Emily (BHE Renewables) [redacted]; Salamy, Jerry/SAC [redacted]
Subject: [Non-DoD Source] RE: [INTERNET] Geothermal Project Informal Review for Morton Bay, Black Rock, Elmore North

Hello JJ and Jeffrey,

Thank you for your time today and I really appreciate your questions. It's always fun seeing the military aircraft in the area.

Please see the brief slide deck that I shared on today's meeting.

Best regards,
Jon

Jon Trujillo | GM, Geothermal Development
BHE Renewables | CalEnergy Operating Corp
[redacted]
Pronouns: He/Him/His

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

§ 77.7 Form and time of notice.

(a) If you are required to file notice under §77.9, you must submit to the FAA a completed FAA Form 7460–1, Notice of Proposed Construction or Alteration. FAA Form 7460–1 is available at FAA regional offices and on the Internet.

(b) You must submit this form at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest.

(c) If you propose construction or alteration that is also subject to the licensing requirements of the Federal Communications Commission (FCC), you must submit notice to the FAA on or before the date that the application is filed with the FCC.

(d) If you propose construction or alteration to an existing structure that exceeds 2,000 ft. in height above ground level (AGL), the FAA presumes it to be a hazard to air navigation that results in an inefficient use of airspace. You must include details explaining both why the proposal would not constitute a hazard to air navigation and why it would not cause an inefficient use of airspace.

(e) The 45-day advance notice requirement is waived if immediate construction or alteration is required because of an emergency involving essential public services, public health, or public safety. You may provide notice to the FAA by any available, expeditious means. You must file a completed FAA Form 7460–1 within 5 days of the initial notice to the FAA. Outside normal business hours, the nearest flight service station will accept emergency notices.

§ 77.9 Construction or alteration requiring notice.

If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of:

(a) Any construction or alteration that is more than 200 ft. AGL at its site.

(b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:

(1) 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 ft. in actual length, excluding heliports.

(2) 50 to 1 for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 ft. in actual length, excluding heliports.

(3) 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.

(c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.

(d) Any construction or alteration on any of the following airports and heliports:

(1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;

(2) A military airport under construction, or an airport under construction that will be available for public use;

(3) An airport operated by a Federal agency or the DOD.

(4) An airport or heliport with at least one FAA-approved instrument approach procedure.

(e) You do not need to file notice for construction or alteration of:

(1) Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;

(2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;

(3) Any construction or alteration for which notice is required by any other FAA regulation.

(4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177
Fax: (817) 222-5920

Website: https://oeaaa.faa.gov

INSTRUCTIONS FOR COMPLETING FAA FORM 7460-1

PLEASE TYPE or PRINT

ITEM #1. Please include the name, address and phone number of a personal contact point as well as the company name.

ITEM #2. Please include the name, address and phone number of a personal contact point as well as the company name.

ITEM #3. New Construction would be a structure that has not yet been built.

Alteration is a change to an existing structure such as the addition of a side mounted antenna, a change to the marking and lighting, a change to power and/or frequency, or a change to the height. The nature of the alteration shall be included in ITEM #21 "Complete Description of Proposal".

Existing would be a correction to the latitude and/or longitude, a correction to the height, or if filing on an existing structure which has never been studied by the FAA. The reason for the notice shall be included in ITEM #21 "Complete Description of Proposal".

ITEM #4. If Permanent, so indicate. If Temporary, such as a crane or drilling derrick, enters the estimated length of time the temporary structure will be up.

ITEM #5. Enter the date that construction is expected to start and the date that construction should be completed.

ITEM #6. Please indicate the type of structure. DO NOT LEAVE BLANK.

ITEM #7. In the event that obstruction marking and lighting is required, please indicate type desired. If no preference, check "other" and indicate "no preference" DO NOT LEAVE BLANK. NOTE: High Intensity lighting shall be used only for structures over 500' AGL. In the absence of high intensity lighting for structures over 500' AGL, marking is also required.

ITEM #8. If this is an existing tower that has been registered with the FCC, enter the FCC Antenna Structure Registration number here.

ITEM #9 and #10. Latitude and longitude must be geographic coordinates, accurate to within the nearest second or to the nearest hundredth of a second if known. Latitude and longitude derived solely from a hand-held G P S instrument is NOT acceptable. A hand-held GPS is only accurate to within 100 meters (328 feet) 95 percent of the time. This data, when plotted, should match the site depiction submitted under ITEM #20.

ITEM #11. NAD 83 is preferred; however, latitude and longitude may be submitted in NAD 27. Also, in some geographic areas where NAD 27 and NAD 83 are not available other datum may be used. It is important to know which datum is used. DO NOT LEAVE BLANK.
ITEM #12. Enter the name of the nearest city and state to the site. If the structure is or will be in a city, enter the name of that city and state.

ITEM #13. Enter the full name of the nearest public-use (not private-use) airport or heliport or military airport or heliport to the site.

ITEM #14. Enter the distance from the airport or heliport listed in #13 to the structure.

ITEM #15. Enter the direction from the airport or heliport listed in #13 to the structure.

ITEM #16. Enter the site elevation above mean sea level and expressed in whole feet rounded to the nearest foot (e.g. 17'3" rounds to 17', 17'6" rounds to 18'). This data should match the ground contour elevations for site depiction submitted under ITEM #20.
ITEM #17. Enter the total structure height above ground level in whole feet rounded to the next highest foot (e.g. 17'3" rounds to 18'). The total structure height shall include anything mounted on top of the structure, such as antennas, obstruction lights, lightning rods, etc.

ITEM #18. Enter the overall height above mean sea level and expressed in whole feet. This will be the total of ITEM #16 + ITEM #17.

ITEM #19. If an FAA aeronautical study was previously conducted, enter the previous study number.

ITEM #20. Enter the relationship of the structure to roads, airports, prominent terrain, existing structures, etc. Attach an 8-1/2" x 11" non-reduced copy of the appropriate 7.5 minute U.S. Geological Survey (USGS) Quadrangle Map MARKED WITH A PRECISE INDICATION OF THE SITE LOCATION. To obtain maps, contact USGS at 1-888-275-8747 or via internet at "http://store.usgs.gov". If available, attach a copy of a documented site survey with the surveyor's certification stating the amount of vertical and horizontal accuracy in feet.

ITEM #21.

- For transmitting stations, include maximum effective radiated power (ERP) and all frequencies.
- For antennas, include the type of antenna and center of radiation (Attach the antenna pattern, if available).
- For microwave, include azimuth relative to true north.
- For overhead wires or transmission lines, include size and configuration of wires and their supporting structures (Attach depiction).
- For each pole/support, include coordinates, site elevation, and structure height above ground level or water.
- For buildings, include site orientation, coordinates of each corner, dimensions, and construction materials.
- For alterations, explain the alteration thoroughly.
- For existing structures, thoroughly explain the reason for notifying the FAA (e.g. corrections, no record or previous study, etc.).

Filing this information with the FAA does not relieve the sponsor of this construction or alteration from complying with any other federal, state or local rules or regulations. If you are not sure what other rules or regulations apply to your proposal, contact local/state aviation's and zoning authorities.

Please Type or Print on This Form

Form Approved OMB No.2120-0001
Expiration Date: 05/31/2026

U.S. Department of Transportation
Federal Aviation Administration

Failure To Provide All Requested Information May Delay Processing of Your Notice

Notice of Proposed Construction or Alteration

FOR FAA USE ONLY
Aeronautical Study Number

1. Sponsor *(person, company, etc. proposing this action)*:
Attn. of
Name: Jon Trujillo, Morton Bay Geothermal LLC
Address: 7030 Gentry Rd
City: Calipatria State: CA Zip: 92233
Telephone: 760-604-0045 Fax:

2. Sponsor's Representative *(if other than #1)*:
Attn. of
Name: ANOOP SUKUMARAN
Address: SAME
City: State: Zip:
Telephone: 760-348-4275 Fax:

3. Notice of: ☑ New Construction ☐ Alteration ☐ Existing

4. Duration: ☐ Permanent ☑ Temporary (60 months, ____days)

5. Work Schedule: Beginning 1-1-26 End 12-31-30

6. Type: ☐ Antenna Tower ☐ Crane ☐ Building ☐ Power Line ☐ Landfill ☐ Water Tank ☑ Other Geothermal Power Plant, Crystallizers Structure

7. Marking/Painting and/or Lighting Preferred:
☐ Red Lights and Paint ☐ Dual - Red and Medium Intensity
☐ White-Medium Intensity ☐ Dual - Red and high Intensity
☐ White -High Intensity ☐ Other

8. FCC Antenna Structure Registration Number *(if applicable)*:

9. Latitude: 33 ° 12 06 . 69 "
10. Longitude: 115 ° 35 03 . 80 "
11. Datum: ☑ NAD 83 ☐ NAD 27 ☐ Other
12. Nearest: City: Calipatria State CA
13. Nearest *Public-use* *(not private-use)* or Military Airport or Heliport:
Calipatria Municipal Airport
14. Distance from #13. to Structure: 5.9 miles
15. Direction from #13. to Structure: Northwest
16. Site Elevation ***(AMSL)***: -228 ft.
17. Total Structure Height ***(AGL)***: 95 ft.
18. Overall Height (#16 + #17) ***(AMSL)***: -133 ft.
19. Previous FAA Aeronautical Study Number *(if applicable)*:
-OE

20. Description of Location: *(Attach a USGS 7.5 minute Quadrangle Map with the precise site marked and any certified survey)*

Project is located at the NW corner of Davis Road and Schrimpf Road and just east of Morton Bay within Calipatria, CA (Imperial County) as shown in the attached 7.5 minute Quadrangle Map.

21. Complete Description of Proposal:

Morton Bay Geothermal LLC (the Applicant), an indirect, wholly owned subsidiary of BHE Renewables, LLC (BHER), proposes to site and construct the Morton Bay Geothermal Project (Project) within the Salton Sea Known Geothermal Resource Area located near Calipatria, Imperial County, California. The Project will be owned and operated by Morton Bay Geothermal LLC, along with the associated generation interconnection transmission line (gen-tie). The Project includes geothermal production wells, pipelines, fluid and steam handling facilities, a solids handling system, a Class II surface impoundment, a service water pond, a stormwater retention basin, process fluid injection pumps, three power distribution systems, borrow pits, and injection wells.

The Project will provide an efficient method for meeting power needs in California by providing firm, clean power from a renewable geothermal source. The Project design applies known equipment, operational lessons learned, and corrosion resistant materials for a planned operational life of 40 years. The Project's maximum continuous rating is approximately 157 megawatts (MW) gross output, with an

Frequency/Power (kW)	

Notice is required by 14 Code of Federal Regulations, part 77 pursuant to 49 U.S.C., Section 44718. Persons who knowingly and willingly violate the notice requirements of part 77 are subject to a civil penalty of $1,000 per day until the notice is received, pursuant to 49 U.S.C., Section 46301(a)

I hereby certify that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to mark and/or light the structure in accordance with established marking & lighting standards as necessary.

Date	Typed or Printed Name and Title of Person Filing Notice	Signature

Federal Aviation Administration

The FAA is currently experiencing delays in processing off-airport aeronautical studies. These delays are currently resulting in an approximate 15 additional days in processing time. The FAA will continue to work aeronautical studies on a first come, first served basis. Please take this possible delay into consideration when determining when to submit your case. If your submitted aeronautical study requires priority and 60 days has elapsed since submission, please contact the OEG Specialist for your state with the rationale for your request and it will be reviewed for escalation. The issue causing these delays is actively being mitigated and is expected to be resolved around August.

« OE/AAA

Project Submission Success
Project Name: JON T-000864520-24

Project JON T-000864520-24 has been submitted successfully to the FAA.

Your filing is assigned Aeronautical Study Number (ASN):
2024-AWP-7238-OE

Please refer to the assigned ASN on all future inquiries regarding this filing.

Please return to the system at a later date for status updates.

It is the responsibility of each e-filer to exercise due diligence to determine if coordination of the proposed construction or alteration is necessary with their state aviation department. Please use the link below to contact your state aviation department to determine their requirements:
State Aviation Contacts

To ensure e-mail notifications are delivered to your inbox please add noreply@faa.gov to your address book. Notifications sent from this address are system generated FAA e-mails and replies to this address will NOT be read or forwarded for review. Each system generated e-mail will contain specific FAA contact information in the text of the message.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-7238-OE

Issued Date: 06/17/2024

Morton Bay Geothermal LLC
Jon Trujillo
7030 Gentry Rd
Calipatria, CA 92233

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	MBGP Geothermal Power Plant - Crystallizer
Location:	Calipatria, CA
Latitude:	33-12-06.69N NAD 83
Longitude:	115-35-03.80W
Heights:	-228 feet site elevation (SE) 95 feet above ground level (AGL) -133 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (206) 231-2877, or Nicholas.Sanders@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-7238-OE.

Signature Control No: 624421021-624650676 (DNE)
Nicholas Sanders
Technician

Attachment C Mud Pots Impact Assessment

Potential for impact of new geothermal developments on southeast Salton Sea mud pots

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Research Professor

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Executive Summary

The geological literature on the "Old Mud Pots" on the River Ranch property near proposed new geothermal development is reviewed. The alignment of these mudpots, mud volcanoes and related features is controlled by fixed northwest-trending active faults parallel to the San Andreas system and their general layout has remained constant for at least a century, including during the highest intensity of recent geothermal power plant development in the early 1980s through the mid 2010s. Although the heights and thermal/degassing activities of individual mudpots and mud volcanoes has varied through time and especially seasonally, there has been no documented shift in their relative positions and overall activities during or after development of the closest geothermal power plants, including the 2012 Hudson Ranch 1 plant located immediately northeast of the Old Mud Pots. (In fact, the only mudpot feature in the region showing dramatic recent shifts in its position, the "Niland moving mudspring", is located farthest away from any geothermal development). This immobility of the Old Mud Pots is consistent with C-O-H-S stable isotopic data showing that the surficial activity of these features, though ultimately driven by CO_2 generated from metamorphic decarbonation reactions occurring in the deep geothermal reservoir, is influenced more by shallow hydrological changes related to climate change and rainfall variations rather than to any changes in deep reservoir properties caused by geothermal power development. Given this detached history, it is expected that future power development affecting the deep geothermal reservoir should continue to have little or no measurable effect on the activity of the mudpots. The ongoing drought in the Colorado River Basin and Imperial Valley and its influence on shallow water hydrology, along with future seismic activity related to the San Andreas system, should remain the major factors influencing the future activity of the mudpots.

Location and recent history of the Salton Sea mud pots

In this report, the term "mud pots" is used somewhat loosely to refer to the common occurrence together of gryphons (conical mud-emitting structures or mud volcanoes), pools ("mud calderas") and vents ("fumaroles") associated with surface eruptions of geothermal gasses (mainly carbon dioxide (CO_2)) and aqueous fluids concentrated along active fault zones in and near the Salton Sea geothermal filed (SSGF). There are two main current locations of

concentrated mud pot activity in the SSGF. One, on the River Ranch property near the corner of Davis and W. Schrimpf Roads, is called "Old Mud Pots" on Google Earth and the "Davis Schrimpf field" in some publications. It has been a popular and easily-accessible natural feature for a long time in the region, even though the feature is on private land and has posted no trespassing signs. The other is found farther north to the west of Davis Road, along the westward projection of Pound Road. It is labelled "New Mud Pots" on Google Earth. It is not easily accessible and is a relatively recent feature, having been submerged under the Sea until about 2007, but becoming exposed with the drought-induced drying out of the Salton Sea and the dramatic recession of its shoreline (Lynch et al., 2013). Other more isolated mud pots occur proximal to these two main areas.

Gates and Crawford (2010) cite historic accounts of the presence of active mud volcanoes in the area surrounding the Salton Buttes in 1876, 1904 and 1906. They state that these are now mostly covered by the waters of the Salton Sea.

Kelley and Soske (1936) described in detail the occurrences of mud volcanoes near the Salton rhyolite volcanic domes found along the southeast edge of the Salton Sea. They stated that the land surrounding the domes was fully submerged as late as 1913, but by 1933 the shoreline had retreated 1.5 miles from them. They noted that there were three clusters of mud pots and one cluster of submerged springs running from the presently designated "Old Mud Pots" to the springs at the northwest edge of Mullet Island, and proposed that they were aligned along a northeast trending fault related to the larger San Andreas system. They also described shallow wells drilled to produce CO_2 at depths of 400-500 feet at 200-300 pounds per square inch (PSI) for the former dry ice plant located along Davis Road.

Rook and Williams (1942) describe the Imperial carbon dioxide gas field, whose first development began in 1927 by attempts to drill for steam near Mullet Island at depths up to 1,475 feet. Temperatures up to 245 degrees Fahrenheit (^{0}F) but pressures and steam volumes insufficient for commercial power generation were encountered. Subsequent attempts to produce commercial quantities of relatively pure carbon dioxide gas starting in 1932 were partially successful, but high temperature waters were encountered. Production of dry ice at 10 to 32 tons per day occurred by numerous companies until up to 1940, including one that piped the recovered gas four miles to a dry ice plant in Niland.

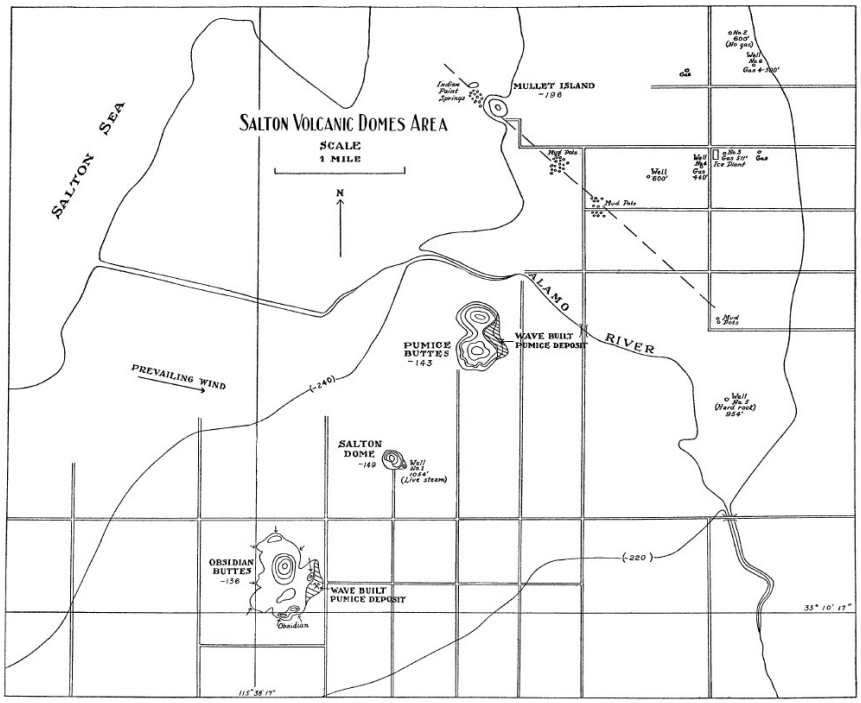


FIG. 1.—Salton volcanic domes showing the locus of the mud pots and the wave-built pumice deposits on the east side of the hills

Kelley and Soske's (1936) map of the Salton Sea mud pots and volcanic domes.

Muffler and White (1968) described two lineaments of thermal springs (including mud pots) aligned along parallel NW-SE trending fault zones, one running through Mullet Island (which at the time was largely inundated by the Salton Sea) and the second lineament located west of Niland, forming the northern boundary of the Imperial CO_2 field (see their Figure 2 reproduced below). They describe commercial CO_2 production from 66 shallow wells drilled into the Imperial field from 1933-1954, from sand layers found at depths of 492 to 689 feet.

They also describe the discovery well that first encountered deep hot brines of the Salton Sea geothermal reservoir in 1957, with 10 more deep geothermal wells being completed in 1960 to 1965. This and other pioneering papers in the late 1960s first proposed that the CO_2 found at shallow depths in the Imperial field (and likewise in the mud pots) owed its origin to deeper hydrothermal metamorphism of the deltaic sediments and the resulting decarbonation reactions involving calcite and dolomite occurring at temperatures above 392^0 F under active greenschist facies conditions of metamorphism (Helgeson, 1967; Muffler and White, 1969). This linked the persistence and permanence of the mud pots not simply to fault mechanisms alone but also to active ongoing chemical processes occurring in the deep geothermal reservoir.
Using the carbon isotopic composition of the CO_2 gas and the detrital carbonate and dolomite in the deltaic sediments, Muffler and White (1968) argued that metamorphism of the sediments was sufficient to account for the mass and composition of the CO_2 produced, and that interaction of basement rocks containing limestone or dolomite with deeper igneous masses within the rift were not needed to explain its occurrence. The coincidence of active fractures and shallow sand layers

provided the geologic conditions conducive to storage and accumulation of the CO_2 at shallow depths above the degassing geothermal reservoir. More recently, Mazzami et al. (2011) argued for a larger component of mantle contribution to the degassing CO_2.

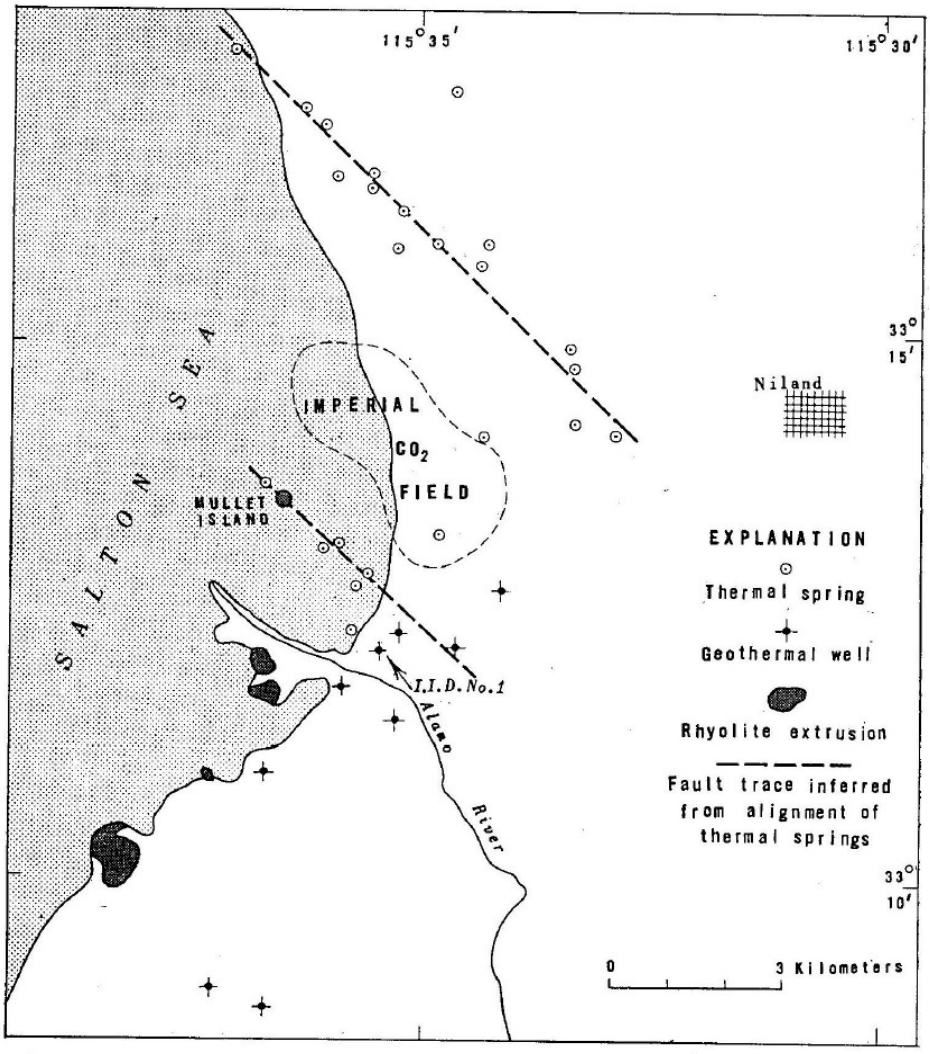


Fig. 2 — Map of the Salton Sea geothermal field

Muffler and White's (1968) map (Figure 2) of the thermal features associated with the Salton Sea geothermal field and Imperial CO_2 field.

A chronic history of repeated cycles of exposure and submergence of the CO_2 mud pots and other thermal features near the arc of young rhyolite domes near the southeast edge of the Salton Sea is to be expected, given the eruption frequency of the geologically young domes (Wright et al., 2015) and the ~200 year-duration cycles of repeated infilling and desiccation of the Imperial Valley by Lake Cahuilla taking place over the past several thousand years (Rockwell et al., 2022). Much like the Salton Sea/Lake Cahuilla itself, the "normal" status of these features is not stability and constancy, but instead is repeated cycles of instability and destruction/rebuilding.

Because it is geologic in origin, this cyclic characteristic of the mud pots and related features extends back in time for thousands of years.

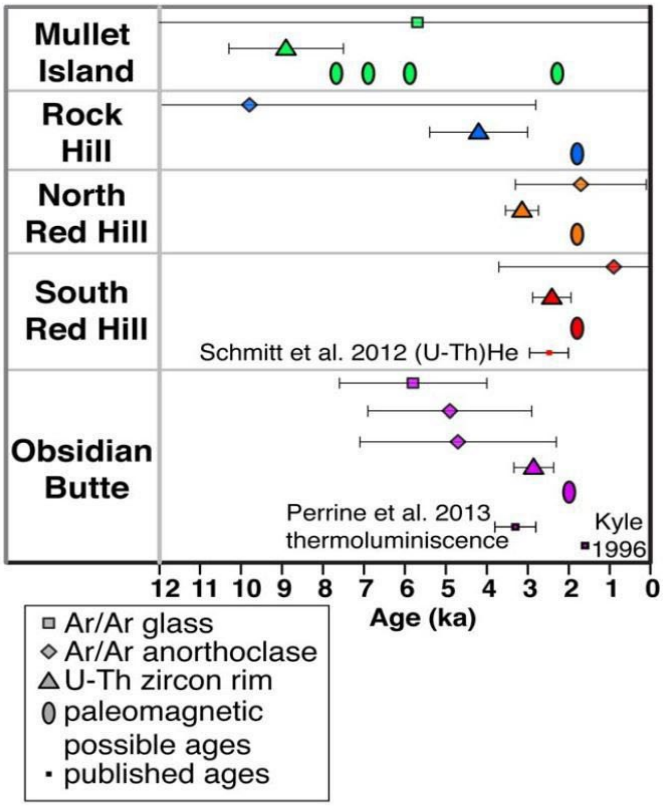


Figure 8. Compilation of $^{40}Ar/^{39}Ar$ and ^{238}U-^{230}Th age results (with 2 sigma uncertainties for Ar ages and 95% confidence intervals for U-Th ages) from this study, including permissible ages for paleomagnetic data within uncertainty limits of other age determinations and previously published age constraints for Salton Buttes surface domes.

Holocene eruption history of rhyolite domes at the Salton Sea (Wright et al. (2015).

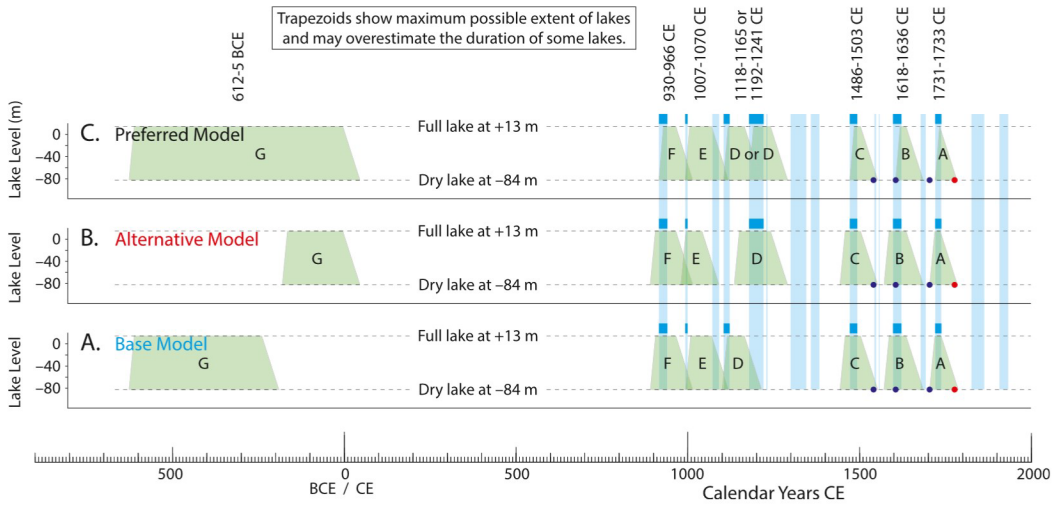


Fig. 6. Preferred Lake Cahuilla chronology. Initially, for each lake highstand, the full range of possible dates is considered, allowing for uncertainties in either (a) the base model or (b) the alternative model. In (c), the preferred model, the full range of possible dates is then trimmed based on historical observations and a streamflow reconstruction. This trimming includes delaying the onset of each lake so that the earliest possible initiating of filling (lower left corner of each trapezoid) aligns with the beginning of the wet period (left side of the corresponding blue rectangle). Trapezoids show maximum possible extent of lakes; the actual timing and extent of a given lake could be anywhere within the respective trapezoid. The years shown above the trapezoids in (c) represent the maximum allowable window for each lake highstand. Symbology follows from Fig. 4.

Lake Cahuilla late Holocene chronology from Rockwell et al. (2022)

Lynch and Hudnut (2008) compiled data on all known mud pots, CO_2 wells and thermal springs in the area of the SSGF and correlated their spatial distribution to known or inferred faults including the Wister/Sand Hills/Algodones faults and Calipatria fault (their Figure 4 is reproduced below). Some features could not be correlated with known or inferred faults. They argued that the Wister mud pot lineament is a likely extension of the San Andreas fault, and that the high flux of CO_2 along these faults reflected an extensional component of crustal motion normal to these faults.

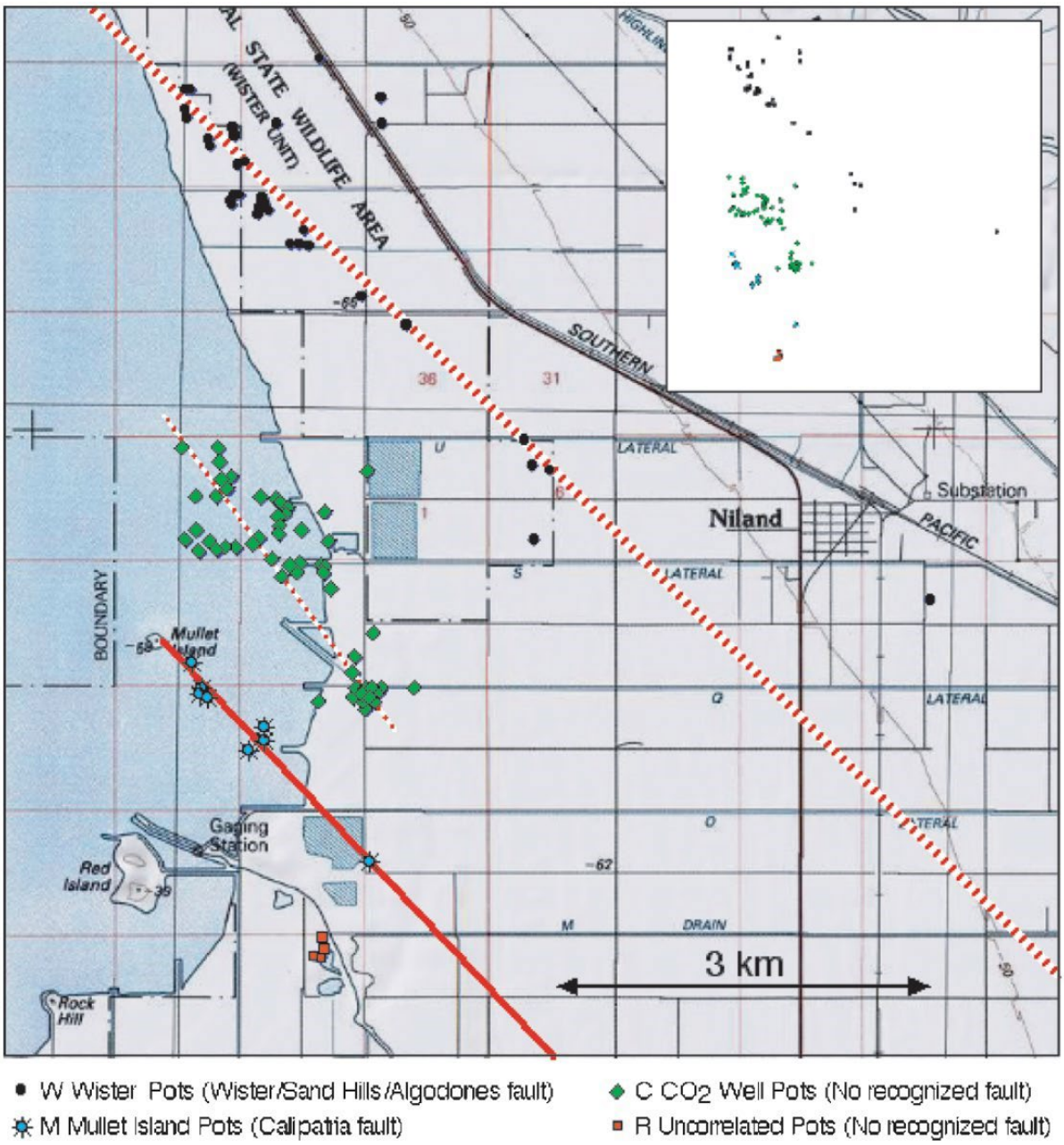


Figure 4 from Lynch and Hudnut (2008). Compare with Figure 2 of Muffler and White (1968) and Figure 1 of Kelly and Soske (1936) above.

The geomorphology, development and stability of SSGF mud pot, gryphon and fumarole structures was studied by Onderonk at el. (2011) using field measurements and GPS surveys and by Lynch et al. (2013) using LIDAR, aerial and field surveys. Onderonk et al (2011) found that the structures exhibit an overall stability over 28 months time. Gryphons experienced periods of growth and erosion due to changes in the degree of activity or small variations in the vent locations within the gryphons, but the net change in height distributions over time was negligible. Although changes in vent morphology and activity occur, their data demonstrate that the system is steady-state in terms of the height distribution of the gryphons, and the location of

the main seeps. Their Figure 12 below shows how stable the positions of the Old Mud Pot features have been from 2002-2010.

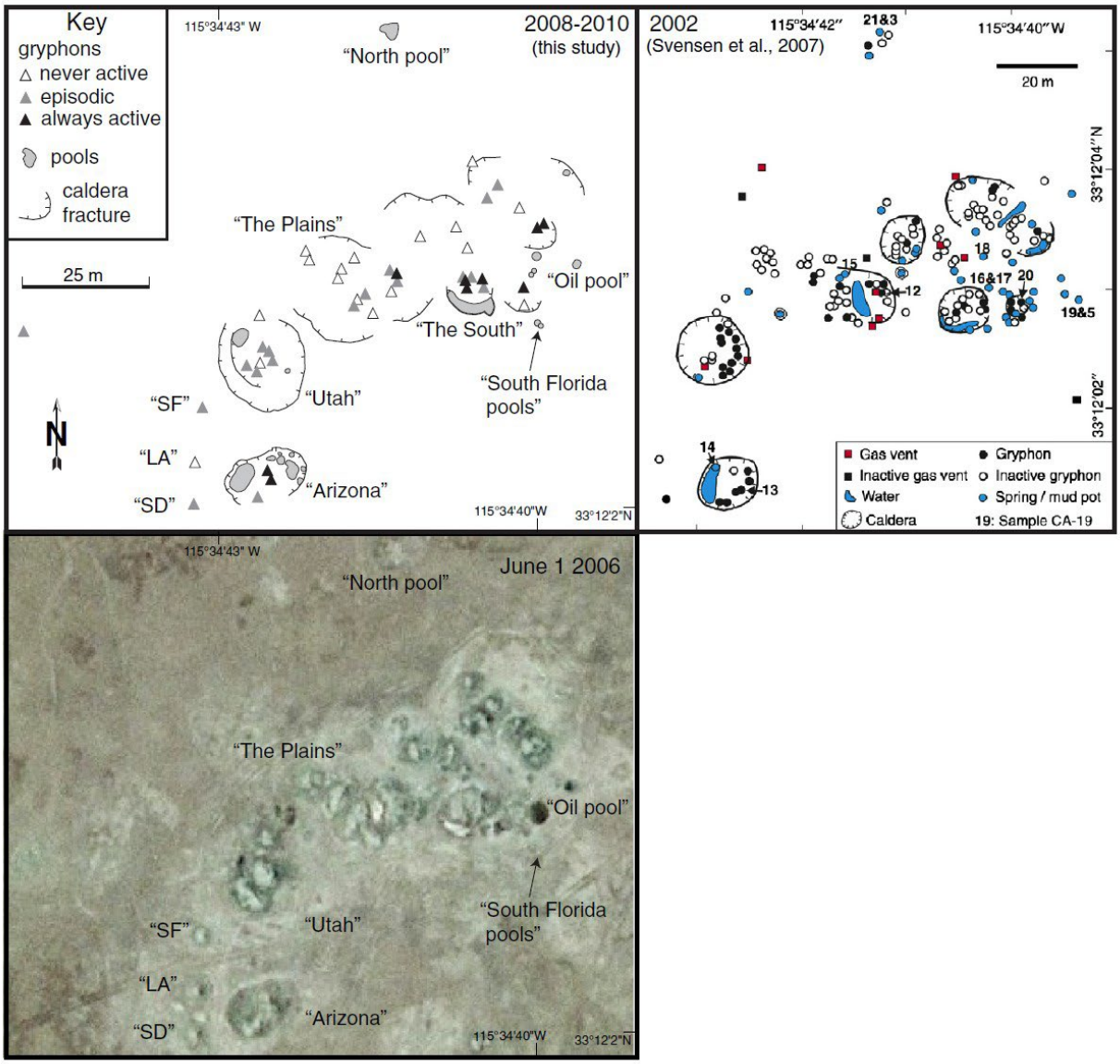


Fig. 12. Comparison of mapping from this study (left) with that of Svensen et al. (2007) done in 2002 (reproduction of their Fig. 1), and an air photo from 2006. Note that the recent mapping does not include every vent within the seep field, but only shows vents monitored during the course of the study. The apparent decrease in the number of vents is a result of our selective mapping of monitored features, but locations of the main gryphon clusters and pools are the same in both maps, as well as the air photo.

Figure 12 from Onderdonk et al. (2011).

Lynch et al. (2013) found that since fumarole exposure began in ~2007 with the drying of the Sea, the surface morphology has changed dramatically, with a trend toward more and growing gryphons, larger mud pots and the development of sulfur vents. Along with other geothermal features, the fumaroles define a well-defined lineament marking the trace of a probable fault.

Fig. 2. Annotated Google Earth image of the fumaroles in our study area from Table 1. Mullet Island is upper left, the Davis–Schrimpf gryphons at lower right (DS). The eviden NW-trending lineament of the geothermal features is suggestive of a fault, probably the Calipatria Fault (Lynch and Hudnut, 2008).

Fumarole locations studied by Lynch et al (2013).

Lynch et al. (2013) developed a model for gryphon growth shown below.

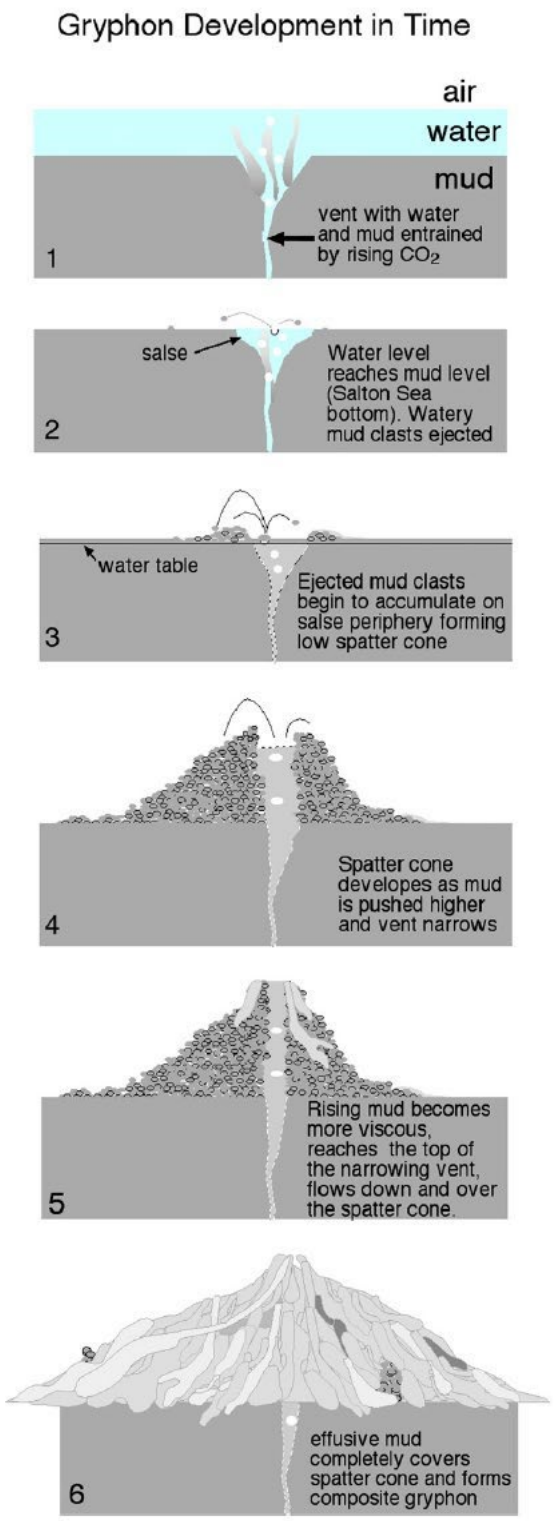


Figure 12 from Lynch et al. (2013). The development of gryphons in the Salton Sea areas seems to follow a regular pattern that correlates with water table level. The end stage – if reached – is extinct, effusive (composite) volcanoes whose surface consists of dried mud that originally

emanated from a central or side vents. After activity has ceased, the gryphons erode due to rain and aeolian processes.

A series of time dispersed images taken from Google Earth shows the Old (River Ranch) mud pots remaining fixed in location from 1992 through 2023:


12/30/2005
Old Mud pots
Legend
Old Mud Pots
Google Earth
N


2/28/2008
Old Mud pots
Legend
Old Mud Pots
Google Earth
N

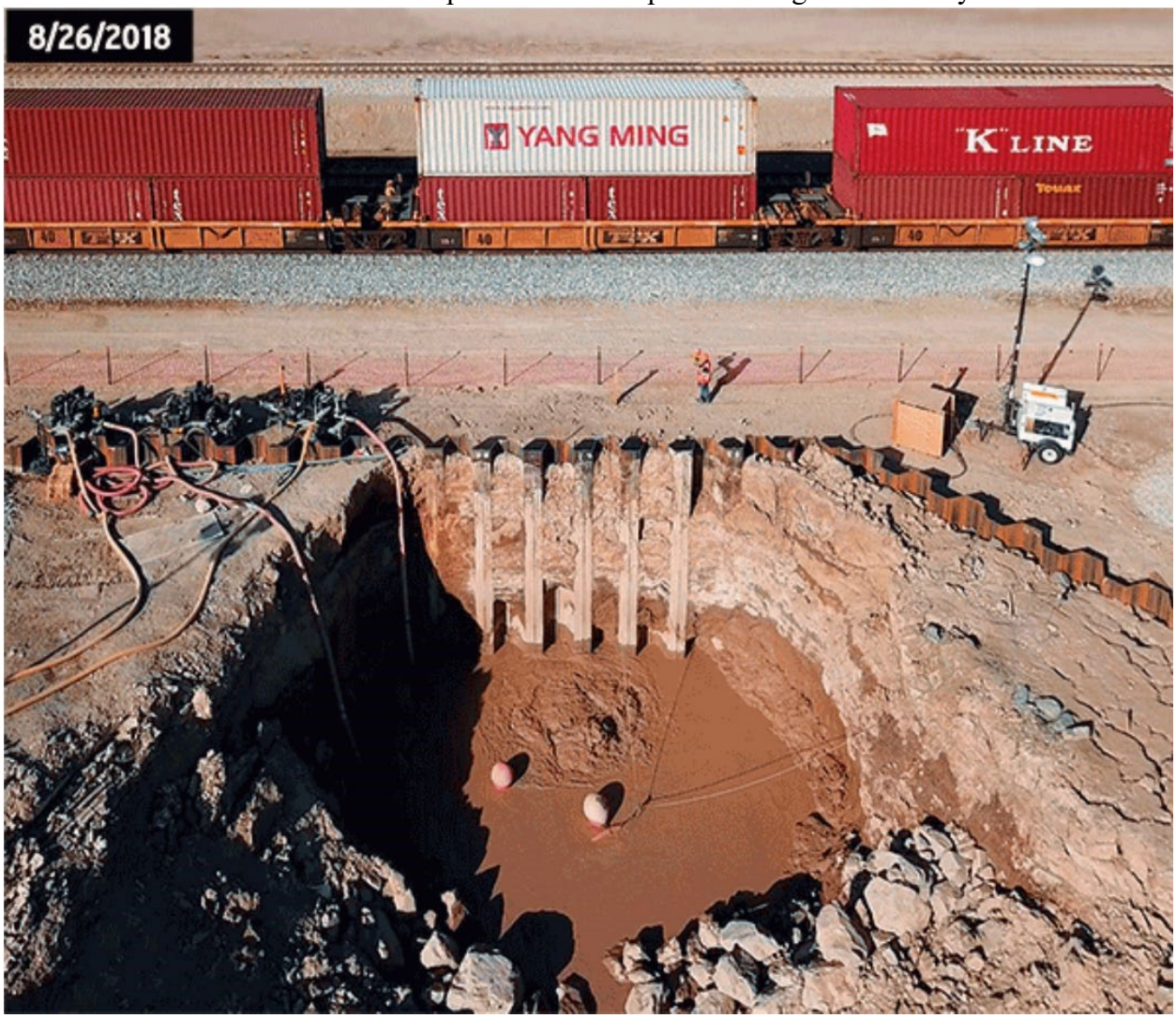

6/26/2012
Old Mud pots
Legend
Old Mud Pots
Google Earth
N


3/20/2015
Old Mud pots
Legend
Old Mud Pots
Google Earth
N

This stable locational behavior of the Old and New Mud Pots is distinct from the "Niland geyser" (moving mud spring) (Lynch and Deane, 2019; Lynch et al. 2020) which was widely reported to have migrated 370 feet southwest, first under the railroad and then under Highway 111 at a location north of Niland from 2018 to the present day, possibly as a result of post-earthquake activity, the recent placement of shallow ponds nearby, or of drying out of the sea and changes to the shallow water table.

The moving spring has caused significant disruption to local infrastructure, especially the Union Pacific Railroad, which had to reroute and reduce speed limits on their tracks. Kinder Morgan diverted its underground pipeline and AT&T raised its buried fiber optic cables to poles above ground. Caltrans built a detour on CA SR111 in anticipation of the spring's continued movement toward the highway. Attempts to geoengineer the migrating spring feature were undertaken by

Caltrans and Union Pacific but the impact of the attempt on the migration is not yet confirmed.



View of geoengineering attempts on moving Niland mud pot, next to Union Pacific Railroad line, from Lynch and Deane (2019).

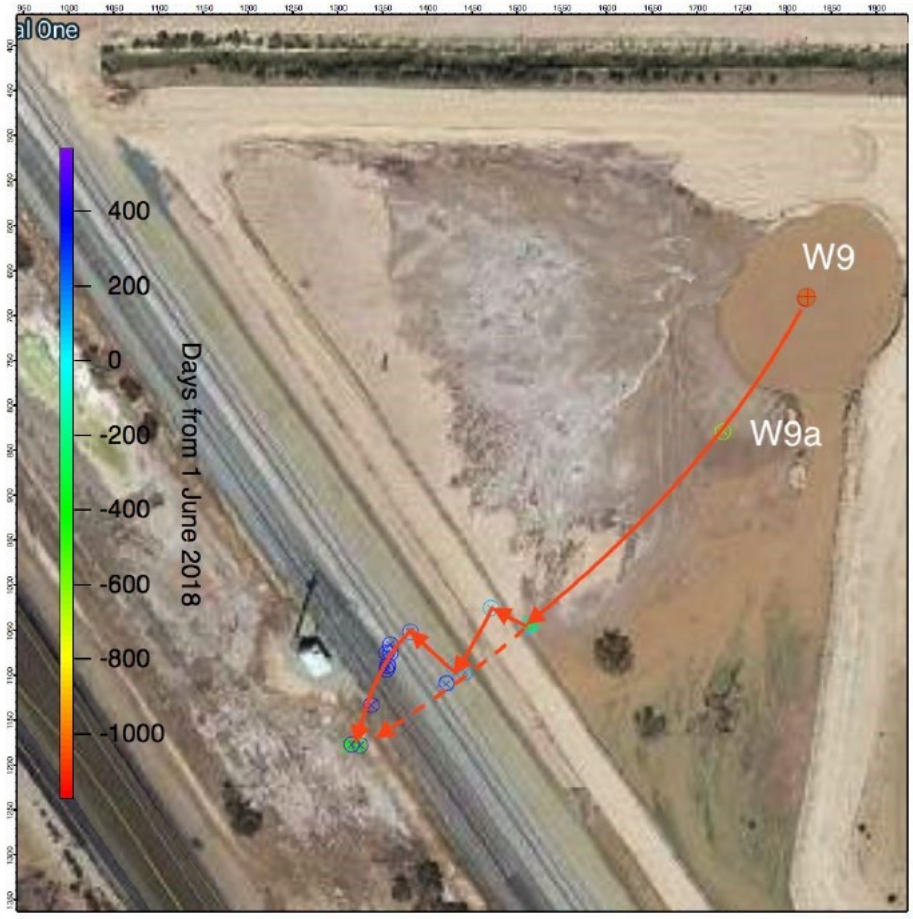


Figure 4. Trajectory from Figure 4 overplotted on Google Earth image from 3/20/15. Note that the spring has crossed and moved beyond the original railroad tracks, necessitating their relocation. Color scale refers to the day symbols (circle with x). See Figure 5 for dates.

Motion history of the Niland mud pot, 2015-2018 (Figure 4 from Lynch et al., 2020).

The permanence of the locations of the mud pots

The maps in the literature sources described above (Kelly and Soske, 1936, Rook and Williams, 1948, Muffler and White, 1968, Lynch and Hudnut, 2008, Onderdonk et al., 2011, Lynch et al., 2013) show a steady consistency in the location of most of the mud pots and related thermal features in and near the SSGF over the past 90 years, as controlled by known and inferred faults parallel to the San Andreas Fault. The lone exception to this locational permanence is the isolated 2015-2018 "moving mud pot" north of Niland.

Onderdonk et al. (2011) reached a similar conclusion, noting that their analysis of historical air photos that were at sufficient resolution to resolve the individual gryphons and pools in the Davis–Schrimpf field showed that there had been no recognizable changes in the position of features in the field since June of 2005.

Svenson at al. (2009) and Onderdonk et al. (2011) attempted to quantify changes in the activity of the mud pots by measuring changes in temperature, fluid density, water content and geometric dimensions over time spans of one to several years. The gryphons in the Davis–Schrimpf field vary in size, mud expulsion style, and temperature. They currently range from 1.64 feet to 8.2 feet (0.5 m to 2.5 m) in height and previous observations indicate that this size distribution has not changed since the 1980s (e.g., Sturz et al., 1992, 1997). Variations in temperature of as much as 86º F (30ºC) for individual gryphons and variations among vents across the field of as much as 68º F (20ºC) showed no correlation with seasonality or gryphon height. Decreasing mud density and increasing water content showed a slight correlation with seasonality and wetter times of year.

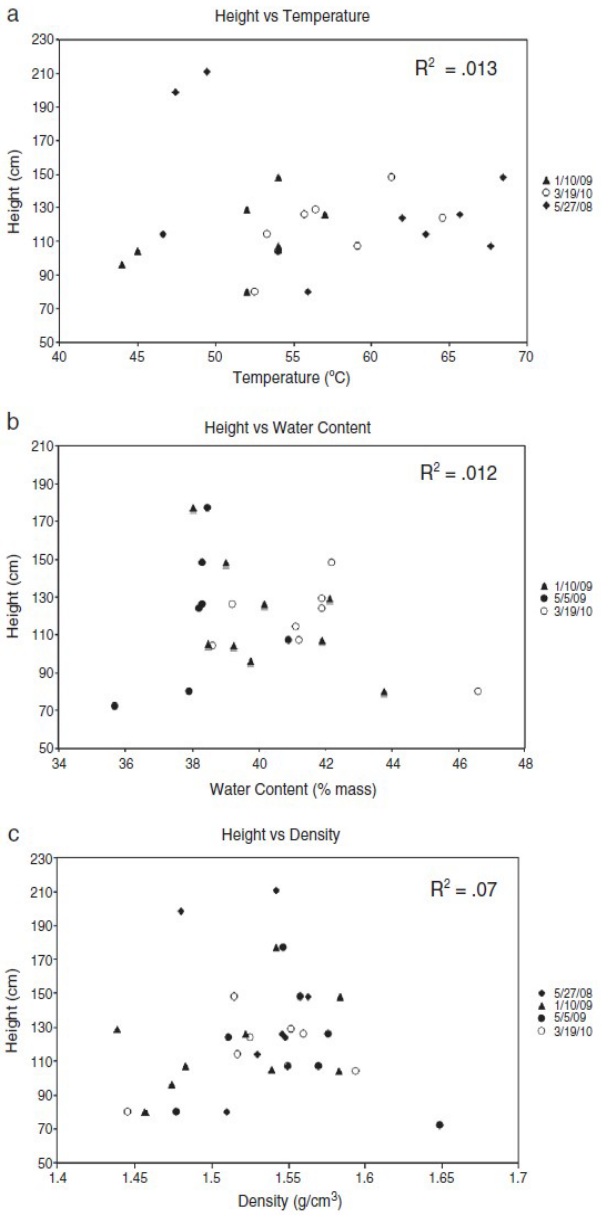


Fig. 8 from Onderdonk et al. (2011), showing no correlation between gryphon heights and (a) temperature, (b) water content, or (c) density of the actively erupting mud.

Pool levels showed a wide variability and fluctuated with rain patterns as well as water levels of the Salton Sea. There appeared to be little or no connectivity between the individual seeps at shallow depths.

Over the course of the Onderdonk et al. (2011) study, no changes in the position of established gryphons or pools were observed. However, comparison of their mapping with the mapping of the Davis–Schrimpf field done in 2002 by Svensen et al. (2007) suggested to Onderoke et al. that some minor changes in the position of smaller features in the field may have occurred and several new features (both gryphons and pools) might have formed in the last five to six years prior to 2011.

These authors made no attempts to correlate mud pot characteristics with the history of geothermal development of the SSGF, and the long gap in time between initial geothermal field development in 1982-2000 and the latest power plant commissioning in 2012 make it difficult to draw any conclusions from a comparison of their 2006-2010 data to the geothermal field's development history.

Mineralogy and geochemistry of the mud pots.

Lynch et al. (2013) reported chemical analysis of mud from several New Mud Pot gryphons revealed the presence of the ammoniated sulfate minerals boussingaultite and lecontite among other more common sulfates.

Table 3
Samples from September 2011.

Name	Setting	Composition
F2-1	Sulfur vent	Sulfur, quartz, calcite
F2-2	Sulfur vent	Sulfur, gypsum
F1-1	Sulfur vent	Sulfur, quartz
F2 background	33.2172–115.6028	Halite, quartz, glauberite $Na_2Ca(SO_4)_2$
f2 rind	33.2174–115.6026	Halite, quartz, gypsum, calcite

Table 4
Samples from October 2011.

Name	Location	Composition
S1-1	Salse S1 in F2 33.21731–115.60124	Gypsum, quartz, minor bassinite $2CaSO_4$ (H_2O) & halite
S1-2	"	Halite, gypsum, anhydrite $CaSO_4$, quartz
S1-3	"	Sulfur, minor quartz & gypsum
S1-4	"	Boussingaultite $(NH_4)_2Mg(SO_4)_2 \cdot 6(H_2O)$, thenardite $Na_2(SO_4)$, minor quartz & lecontite $(NH_4,K)Na(SO_4) \cdot 2(H_2O)$
S1-5	"	Sulfur, minor quartz & gypsum
S5-1	Salse S5 in F2 33.21954–115.59950	Quartz, halite, calcite
S5-2	Salse S5 33.21954–115.59950	Quartz, halite, minor calcite & bloedite $Na_2Mg(SO_4)_2 \cdot 4(H_2O)$
S vent rind	Sulfur vent in F1	Gypsum, quartz, minor bassinite & halite
S vent background	Near sulfur vent in F1	Quartz, glauberite $Na_2Ca(SO_4)_2$, halite, minor calcite & dolomite

Tables 3 and 4 from Lynch et al. (2013), showing the sulfate-dominated mineralogy of vents and mud sediment.

Adams and Lynch (2014) and Adams et al. (2017) made a comprehensive inventory of minerals found in mud pots, gryphons and fumaroles in and near the SSGF. Sulfate, carbonate, and chloride compounds of sodium, calcium, magnesium dominate, as expected in this saline lake environment, with no inherently toxic minerals containing arsenic, mercury or lead having been identified.

Evaporation of aqueous fluids from these features also show a similar mineralogy (Table 1 below),

Table 1. Total dissolved solids (TDS, wt%) from water sources and mineralogy of solid residues after evaporation.
XXXX = Major, Xxxx = Minor, xxxx = trace constituent.

Location	Sample	TDS (wt%)	Residue Determined by XRD
F1	A	0.3	GYPSUM, Halite, Sal ammoniac, lecontite, boussingaultite
F1	B	0.3	HALITE, Gypsum, lecontite, boussingaultite, sal ammoniac
F2	WP303	0.3	HALITE, Sal ammoniac, Gypsum, lecontite
F2	WP450	0.3	GYPSUM, Mascagnite, boussingaultite, lecontite
F2	WP451	3.4	HALITE, gypsum, sal ammoniac, sylvine, calcite?
F2	N Pool	8.7	HALITE, gypsum, unknown?
F2	SE Pool	0.3	HALITE, Gypsum, Sal ammoniac, boussingaultite
Rt 111	S1	2.0	HALITE, dolomite, magnesite
Rt 111	S2	1.9	HALITE, sylvine, dolomite, magnesite
Rt 111	S6	2.0	HALITE, dolomite, magnesite, sylvine
Salton Sea		4.8	HALITE, gypsum, bloedite, hexahydrite

Fluid TDS and the mineralogy of fluid evaporation residues from Salton Sea fumaroles/mud pots. Adams and Lynch (2014).

Adams et al. (2017) note that ammonia-bearing minerals are common in the fumaroles found at the New Mud Pots locality, but absent at the Old Mud Pots. Their Table 6 below shows the mineralogy of the fumaroles at the New Mud Pots. Tratt et al. (2011) were able to remote sense ammonia emissions from these fumaroles using long-wave infrared spectra.

Table 6
Summary of major surface and subsurface mineralogy of fumarole zones.

	Fumarole zone	Transition zone	Evaporite zone
Surface	Mascagnite, boussingaultite, gypsum, lecontite, koktaite, sulfur[a]	Nitratine	Blödite, thenardite, mirabilite, halite
Sub-surface[b]	Quartz, sulfur	Quartz, anhydrite, bassanite	Quartz, glauberite

[a] Localized to active vents.
[b] Based on limited sampling.

Older chemical analyses (see below) of various Salton Sea mud pots (DWR 143-7, 1970) likewise show aqueous components consisting mainly of dissolved chlorides, sulfates, nitrates and carbonates. The only component of concern for its negative agricultural impacts is boron.

STATE WELL NO DATE SAMPLED	TEMP	PH	6 ECX10	MINERAL CONSTITUENTS IN PARTS PER MILLION EQUIVALENTS PER MILLION PERCENT REACTANCE VALUE CA	MG	NA	K	CO 3	HCO 3	SO 4	CL	NO 3	F	B	SIO 2	TDS 180C 105C COMP[a]	HARD-NESS CALC 3
								WATER WELL									
12S/10E-26M 1 1- 8-18	--	--	--	56 2.79	13 1.07	270[b] 11.74	--	0	98 1.61	216 4.50	336 9.48	--	--	--	15	955	193
1- 9-49	--	--	1770	87 4.34	34 2.80	222[b] 9.65	--	--	97 1.59	284 5.91	355 10.01	--	--	0.22	--		357
9-25-62	--	--	1920	61 3.04	14 1.15	292[b] 12.70	--	--	96 1.57	233 4.85	370 10.43	--	0.8	--	15		210
1- 9-67	--	8.5	--	56 2.79 8	21 1.73 5	645 28.04 85	16 0.41 1	10 0.33 1	89 1.46 4	427 8.89 26	830 23.41 69	0.0	1.3	--	-- 2050	2035	226
5-12-67	75	7.7	1754	62 3.09 19	12 0.99 6	280 12.17 74	5 0.13 1	0	105 1.72 11	221 4.60 28	352 9.93 61	1.3 0.02	0.8	0.70	-- 986	1024	204
12S/10E-34G 1 1- 4-49	--	--	--	140 6.99	67 5.51	1210[b] 52.61	--	0	104 1.70	25 0.52	2308 65.09	--	--	0.22	--		626
9-25-62	--	6.6	8430	109 5.44	46 3.78	1590[b] 69.13	--	--	66 1.08	5 0.10	2740 77.27	--	--	--	0		461
				SPRING OR MUD VOLCANO (MUD POT)													
7S/10E-11AS1 2- 9-61	58	7.5	1280	41 2.05 15	24 1.97 14	226 9.83 70	7 0.18 1	0	393 6.44 46	234 4.87 35	92 2.59 19	4.5 0.07 1	4.3	1.20	15 876 842		201
8S/11E- 3CS1 1876	--	--	--	96 4.79	63 5.18	908[b] 39.48	--	--	--	477 9.93	1400 39.48	--	--	--	--		499
11-11-17	80	--	--	67 3.34 12	34 2.80 10	485[b] 21.09 77	--	17 0.57 2	204 3.34 12	182 3.79 14	688 19.40 71	5.1 0.08	--	--	31 1609	1623	307
2-13-61	82	7.7	2300	56 2.79 12	28 2.30 10	401 17.44 76	21 0.54 2	0	205 3.36 14	335 6.97 30	465 13.11 56	2.1 0.03	2.0	2.20	20 1433	1460	255
5-10-67	82	7.9	2293	53 2.64 12	31 2.55 12	376 16.35 75	15 0.38 2	0	205 3.36 15	316 6.58 30	432 12.18 55	2.2 0.04	2.0	1.90	-- 1330	1400	260
8S/11E- 3CS3 5-10-67	84	7.8	2165	57 2.84 14	30 2.47 12	348 15.13 73	16 0.41 2	0	195 3.20 15	295 6.14 29	406 11.45 55	3.5 0.06	1.8	1.60	-- 1255	1309	266
9S/11E- 9PS1 11-22-60	--	8.2	19000	135 6.74 3	182 14.97 7	4140 180.01 88	118 3.02 1	0	369 6.05 3	1603 33.37 16	5920 166.94 81	0	5.5	15.80	29 12330	12582	1086
8S/11E-12PS1 3- 5-54	80	8.5	3145	39 1.95 6	27 2.22 7	646 28.09 86	10 0.26 1	4 0.13	214 3.51 11	144 3.00 9	893 25.18 79	7.0 0.11	9.0	3.35	-- 1888	2006	209
8S/12E-36NS1 5-11-67	80	7.7	1936	123 6.14 30	41 3.37 17	238 10.35 51	11 0.28 1	0	283 4.64 23	481 10.01 50	196 5.53 27	0.0	2.5	0.82	-- 1232	1335	476
9S/ 9E- 9MS 11-19-17	--	--	--	92 4.59	15 1.23	619[b] 26.91	--	0	102 1.67	240 5.00	923 26.03	--	--	--	30	1994	291
9S/13E-20LS1 12-10-17	--	--	--	199 9.93	41 3.37	1198[b] 52.09	--	0	542 8.88	193 4.02	1858 52.40	--	--	--	55	3893	666
10-29-64	75	8.1	6000	124 6.19 10	41 3.37 5	1180 51.31 83	45 1.15 2	0	465 7.62 12	260 5.41 9	1720 48.50 79	0.0	2.8	4.00	-- 3605	3530	478
10S/ 9E-20NS 1-10-49	--	--	4070	73 3.64 9	26 2.14 5	775[b] 33.70 85	--	0	222 3.64 6	41 0.85 1	2141 60.38 93	0.0	--	1.2[c]	-- 3169	2260	289
10S/13E-27BS1 3-15-67	68	6.0	61730	2083 103.94 12	1714 140.96 17	13500 586.98 70	410 10.48 1	0	2013 32.99 4	1536 31.98 4	27900 786.78 92	17 0.27	3.6	84.00	-- 48237	51632	2255
11S/10E-1PAS 1909	--	--	--	436 21.76 20	224 18.42 17	1678 70.79 64	4 0.10	--	1549 25.39 30	68 1.42 2	2028 57.19 68	0.0	--	--	-- 5150	5937	2011

STATE WELL NO DATE SAMPLED	TEMP	PH	EC x 10	MINERAL CONSTITUENTS IN PARTS PER MILLION				EQUIVALENTS PER MILLION PERCENT REACTANCE VALUE					PARTS PER MILLION					
				CA	MG	NA	K	CO 3	HCO 3	SO 4	CL	NO 3	F	B	SIO 2	IDS 180C 105C COMP[a]	HARDNESS CACO 3	
SPRING OR MUD VOLCANO (MUD POT)																		
11S/10E-18AS 11-20-17	--	--	--	65 3.24 4	31 2.55 3	1554[b] 67.57 92	--	44 1.47 2	2160 35.40 48	7 0.15	1282 36.15 49	1.3 0.05	--	--	38	4108 4[illegible]	290	
11S/13E-24ES1 11-23-64	100	7.4	25900	360 17.96 7	22 1.81 1	5540 240.88 90	307 7.85 3	0	1260 20.65 7	218 4.54 2	9010 254.23 91	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] 16[illegible]	[illegible]	
12S/11E-21MS1 11-20-17	--	--	--	30 1.50 4	22 1.81 5	705[b] 30.65 90	--	0	207 3.39 10	451 9.39 28	748 21.09 62	1.4 0.02	--	--	26	2152 2085	164	
	67	8.0	5189	69	22	1070	4	0	610	491	1130	2.0	2.8	5.70	--	3161	263	
5-12-67				3.44 7	1.81 3	46.52 90	0.10		10.00 19	10.22 20	31.87 61	0.03				3046		
12S/12E-29NS1 5-12-67	70	6.8	6831	249 12.43 16	285 23.44 29	990 43.05 54	32 0.82 1	0	2300 37.70 47	453 9.43 12	1150 32.43 41	24 0.39	0.6	5.00	--	4656 4320	1795	
SEA, RIVER, OR IRRIGATION CANAL																		
SALTON SEA																		
8S/10E- 2P 5- 8-67	80	6.9	39570	873 43.56 7	1073 88.24 15	10300 447.84 77	219 5.60 1	--	153 2.51	7910 164.69 28	14810 417.64 71	12 0.19	4.0	3.00	--	36466 35274	6515	
	89	7.9	41085	842	1138	10250	164	0	181	7851	14800	5.0	3.8	4.80	--	35988	6786	
7- 3-67				42.02 7	93.59 16	445.67 76	4.19 1		2.97 1	163.46 28	417.36 71	0.08				35153		
9S/12E-31D 6- 7-67	--	8.4	41150	900 44.91 8	1075 88.41 15	10150 441.32 76	168 4.30 1	14 0.47	146 2.39	7871 163.87	14600 411.72 71	5.0 0.08	3.2	4.20	--	36142 34967	6671	
10S/13E-17H 6- 7-67	72	8.2	40650	882 44.01 8	1060 87.17 15	10100 439.15 76	164 4.19 1	0	159 2.61	7861 163.67	14400 406.00 71	5.0 0.08	3.8	4.15	--	35596 34462	6564	
11S/11E-21P 6- 8-67	77	7.7	42100	954 47.60 8	1078 88.65 15	10500 456.54 76	172 4.40 1	0	203 3.33 1	8146 169.60 28	15000 423.00 71	14 0.23	4.2	4.20	--	37082 35976	6818	
11S/12E- 1R 8-21-64	88	8.3	44200	--	--	9620 418.28	--	--	--	--	13600 383.92	0.0	--	8.50	--	34100		
9-15-64	82	8.2	36800	--	--	9880 429.58	--	--	--	--	13500 380.70	0.0	--	10.00	--	33200		
11S/13E- 9F 6- 9-67	--	8.0	30300	687 34.28 8	730 60.04 15	7050 306.53 76	120 3.07 1	0	185 3.03 1	5544 115.43 29	10000 282.00 70	10 0.16	2.4	6.40	--	24862 24241	4720	
11S/13E- 9M 8-21-64	86	8.2	43600	--	--	9620 418.28	--	--	--	--	13300 375.06	0.0	--	8.50	--	33500		
9-15-64	82	8.2	38000	--	--	9700 421.76	--	--	--	--	13600 383.52	0.0	--	10.00	--	34600		
11S/13E-15F 8-21-64	82	8.0	42200	--	--	9200 400.02	--	--	--	--	12600 355.32	0	--	8.20	--	31900		
9-15-64	80	8.0	28800	--	--	8150 354.36	--	--	--	--	7640 215.45	1.1 0.02	--	8.60	--	31400		
8-21-64	85	8.2	42800	--	--	9200 400.02	--	--	--	--	12800 360.96	0.2 0	--	8.30	--	32300		
11S/13E-16A 9-15-64	81	8.4	37900	--	--	10100 439.15	--	--	--	--	14000 394.80	0.8 0.01	--	9.90	--	35500		
WHITEWATER RIVER																		
7S/ 9E-30R 7- 2-57	87	7.6	3021	157 7.83 26	46 3.78 12	428 18.61 61	12 0.31 1	0	281 4.61 14	746 15.53 49	410 11.56 36	8.0 0.13	1.2	0.56	15	2112 1962	581	
5- 4-60	70	7.9	4464	196 9.78 20	49 4.03 8	775 33.70 70	16 0.41 1	0	373 6.11 13	1118 23.28 49	608 17.15 36	33 0.53 1	3.8	1.68	21	3070 3005	691	

Muffler and White (1968) also presented chemical analyses of two mud pot fluids (analyses 1 and 2) in their Table 1 (reproduced below). Potential heavy or toxic metals were below detection limits at the time.

Table 1 — Chemical analyses, in parts per million, of thermal springs and geothermal brine from the Salton Sea geothermal system

Characteristics	1	2	3
	Sportsman mud volcano	Section 26 Mudpots	I.I.D. No. 1 well
Temperature, °C	34	21	~300
Density	1.011	1.030	1.210
pH (25°C)	6.33	6.43	5.2
Evaporated residue (ppm)	15,400	45,400	279,000
Total as reported (ppm)			257,000
SiO_2	41	22	400
Al	<0.5		41
Fe	<0.3		2,090
Mn	1		1,560
Ca	435	1,790	28,000
Mg	69	1,670	233
Sr	10		413
Ba	0.0	3.4	235
Na	5,430	10,800	50,400
K	334	292	17,500
Li	12		215
Rb	2		147
Cs			17
NH_4	52	41	409
B	62	62	390
HCO_3	1,630	1,880	>150
SO_4	414	1,520	5.4
Cl	8,920	23,200	155,000
F			15
Br	9.1	25	120
I			19
As			13
Cu	<0.03		9
Zn			850
Pb	<0.3		91
Ag			1
Total sulfide as H_2S			16

Analysis No. 1: SW 1/4 NW 1/4 Sec. 24, T. 11 S., R. 13 E. Collected by D. E. White 4-19-66. Analysis by D. E. Donaldson. Al, Fe, Cu, and Zn recalculated from quantitative emission spectroscopy by R. E. Mays on evaporated residue.

Analysis No. 2: NW 1/4 Sec. 26, T. 10 S., R. 13 E. Collected by D. E. White 4-19-66. Analysis by D. E. Donaldson.

Analysis No. 3: Presently considered best values, largely from samples of erupted brine and condensed vapor collected April 21, 1966, and analyzed by D. E. Donaldson. Contents reported for As, Pb, Zn, Sr, Cu, Cs, I from brine analysis of White (1965) decreased by 18.8 percent because of selective loss of steam and other gases.

Isotopic data cited by Williams and McKibben (1989), McKibben and Eldridge (1989), McKibben and Williams (1994), McKibben and Hardie (1997), and Mazzini et al. (2011) show that the Old Mud Pots on the River Ranch property emit a mixture of gasses coming from multiple source depths in the crust of the earth, including helium leaking up from the upper mantle (more than 12.4 miles below), CO_2 being generated from the mantle as well as by metamorphic decarbonation reactions of calcite and dolomite in the geothermal reservoir metasediment (3,280 feet to 6,562 feet), and biogenic hydrogen sulfide (H_2S) being generated by sulfate reducing bacteria living in the shallow mud pots sediments (near-surface). Muffler and White (1968) also pointed out that the CO_2 generated by decarbonation reactions in the reservoir has migrated up along fault zones and accumulated in shallow sandstone layers at a few hundred foot depth, from where it was originally pumped to make dry ice in the early part of the 20th century (Rook and Williams, 1948), before refrigerated rail cars were developed to ship fresh agricultural crops out of the Imperial Valley.

Table showing mud pot temperatures, salinity and stable isotopes (Williams and McKibben (1989)

TABLE 1a.
SSGS geothermal fluids, "low TDS"

WELL	REF.	TEMP °C	TDS wt.%	$\delta^{18}O$	δD	DEPTH INTERV. meters
Mud pot cr	1	39		-5.5	-80.0	surf.
Mud pot rr1	N	33	1.5	-5.8	-77.0	surf.
Mud pot rr3	N	32	1.6	-6.4	-78.0	surf.
Mud pot sp	2	34	1.7			surf.
Mud pot rr	4	38	1.8			surf.
Mud pot wsp	N	32	2.1	-5.2	-78.0	surf.
Mud pot wws	N	32	2.1	-5.1	-77.5	surf.
Mud pot wis	3	21	2.1			surf.
Mud pot nw	N	29	2.6	-3.6	-58.5	surf.
Mud pot da	2	21	4.1			surf.
Mud pot et	4	20	4.9			surf.

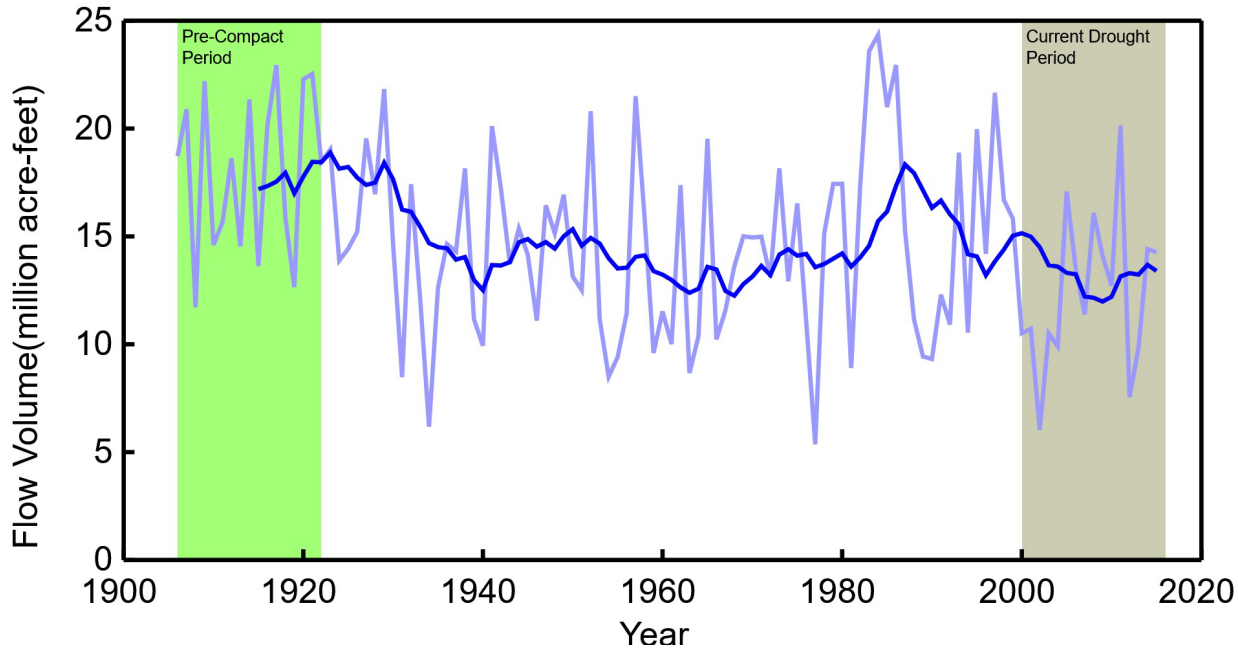
Discussion

Literature review and the author's long experience with observing the mud pots and the SSGF indicate that the spatial distribution and geographic locations of the mud pots, mud volcanoes and pools of the "Old Mud Pots" (Davis-Schrimpf or River Ranch field) have not changed appreciably since they were first mentioned in western literature. That is not to say that their degrees of submersion by the Sea, thermal vigor, degassing activity, gryphon height growth and erosion have not varied over time, but recent time series mapping of these features on Google Earth and by various research groups demonstrate the relative permeance of their *spatial* distribution and geographic locations over the past few decades, with the lone exception being the "moving mud pot" located north of Niland. The very recent timing of the individual

movement by this lone feature and its location relatively far from geothermal development suggest that peculiar local subsurface hydrologic changes driven by new pond emplacements and/or drying up of the Salton Sea may be causative effects, rather than any direct consequence of geothermal development. Otherwise we would expect to see similar movements of other mud pot features located even closer to the existing geothermal plant and wells that have been constructed over the past 40 years. In contrast, the bulk of the mud pot and thermal features have remained distinctively constant in their locations before and throughout geothermal development in the SSGF beginning in the early 1980s, due to their deep thermal source and degassing mechanism is driven by long-term faulting patterns and metamorphic decarbonation reactions between brine and reservoir sediments. Such long-term geologic phenomena may not be impacted by relatively recent human-driven geothermal developments because they tend not to have profound influences on larger-scale heat flow and hydrothermal alteration processes that are driven largely by plate tectonics in the Salton Trough.

The literature review also shows that the mineralogical and chemical composition of the mud pots and their fluids and gasses do not appear to be a direct threat in containing any significant toxic components, other than boron levels that might be problematic for some crops such as citrus. Dissolved components such as potassium and ammonia may actually be beneficial for crop growth.

My frequent visits to and observations of the Old Mud Pots over that past few decades indicate that the most dramatic shifts in their activity and hydrology have taken place within the last decade, coincident with rapid recent climate change, regional drought conditions and the consequent drying out of the Sea from 2000-2018:



Recent 2000-2018 drought period for the lower Colorado River as measured at the USGS stream gauge at Lees Ferry (https://labs.waterdata.usgs.gov/visualizations/OWDIdrought/en/index.html)

The subaerial emergence of the formerly submerged New Mud Pots thermal features and the recession of the Salton Sea shoreline appear to be the most influential factors on changes in this mud pot activity, and the more recent timing of these drought or anthropogenic pond effects would seem to be better able to explain the unusual motions of the problematic Niland mud pot near Highway 111 from 2016-2020, rather than geothermal power development in 1982-2000 and 2012. Recent declines in the activity of the Old Mud Pots likewise do not exhibit trends that could be unequivocally tied to major SSGF geothermal power development over the time specific periods 1982-2000 and 2012. The table below (Table 1.1 from Dobson et al., 2023) shows the commissioning dates, nameplate capacity in megawatts, and other information for the 11 existing power plants in the SSGF.

Table 1.1. Existing geothermal power plants

Power Plant Name	Operator or Owner	Operational Unit Name or Management Unit	Year Permitted	Plant Capacity (MW)[d]	Electrical Generation per Month[a] (Mean MWh)	Net Electrical Capacity[b] (MW)	Gross Annual Electricity Generation[c] (MWh)	Net Annual Electricity Generation[c] (MWh)	Gross Efficiency per Nameplate Capacity (%)
Featherstone *(aka Hudson Ranch I)*	Cyrq	Featherstone	2012	55.00	35,928	50	456,856	417,498	95
Elmore	BHER	Elmore	1987	48.49	27,380	49	373,518	333,102	88
Leathers	BHER	Leathers	1988	43.20	28,003	42	378,152	339,083	100
Unit 1	BHER	Region 1	1994	10.25	6,102	10	78,235	72,581	87
Unit 2	BHER	Region 1	1994	19.70	8,741	16	128,072	113,372	74
Unit 3	BHER	Region 1	1994	53.97	27,594	50	385,806	356,379	82
Unit 4	BHER	Region 1	1994	47.50	23,977	42	345,394	311,533	83
Unit 5	BHER	Region 1	2011	58.30	27,263	46	389,120	335,506	76
Vulcan	BHER	Region 2	1991	39.72	22,070	38	329,288	280,827	95
Del Ranch *(aka Hoch)*	BHER	Region 2	1991	43.20	26,647	42	356,262	321,468	94
Turbo	BHER	Region 2	2000	11.50	5,912	10	68,159	66,409	68

[a]Energy Information Agency 2014-2021.
[b]California Energy Commission (CEC, 2023b).
[c]California Energy Commission mean of 2014-2021.
[d]California Energy Commission power plant list (downloaded 3/22/2022).

The Hudson Ranch 1power plant, located closest to the Old Mud Pots and thus presumably expected to have the most likely impact on these mud pots, was commissioned in 2012, well after publication of the 2002-2010 data sets of Svensen et al. (2007) and Onderdonk et al. (2011), thus limiting the ability to directly correlate any changes in published mud pot measurements with development of this specific youngest power plant.

It should be noted that over 80% of the hot brine produced from SSGF power plants is reinjected back into the reservoir with no observed chemical breakthrough (Dobson et al., 2023) and there is no observed mixing of deep reservoir brines with shallow water aquifers revealed by isotopic studies (Williams and McKibben, 1989), so the composition of shallow waters and the capacity

for shallow storage of CO_2 feeding the mud pots is not necessarily expected to be tied to geothermal power production.

Because of the role of active faulting in controlling the location and hydrology of mud pot activity, it is likely that seismic activity along with drought influences will instead play a far more major role in modifying the characteristics and locations of mud pot areas in the future.

Conclusions and Recommendations

Published literature sources indicate that both the Old and New Mud Pot areas have remained relatively constant in their locations and spatial distributions since long before geothermal field development, due to their causative relation to active faulting and deep-seated metamorphic processes, with no significant modifications to these geographical characteristics having occurred with geothermal power development in the time periods 1982-2000 and 2012. More recent phenomena such as the moving mud pot north of Niland and the recent changes in activity of both the Old and New Mud Pots appear more tied to recent drought conditions, the resulting Salton Sea shoreline recession, and the consequent emergence of formerly submerged thermal features. The fact that the "moving mud pot" is located relatively far from the active geothermal fields, and the "more stable" mud pots are proximal to the geothermal wells, further enforces that geothermal operations do not appear to have a measurable impact on the mud pots.

Similar effects on pre-historic mud pot activities are likely to have occurred throughout the Holocene, as the repeated formation and evaporation of ancient Lake Cahuilla has likely caused the reemergence and re-submergence of mud pots approximately every ~200 years (Rockwell et al., 2022). This lacustrine formational cycling in the Salton Trough, punctuated by major seismic events related to the plate tectonics of the Trough, are likely the major overall influences on past and future changes in mud pot activity.

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