DRAFT
ENVIRONMENTAL IMPACT REPORT
FOR THE
HELL'S KITCHEN POWERCO 1 AND LITHIUMCO 1
PROJECT
IMPERIAL COUNTY, CALIFORNIA

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Draft Environmental Impact Report (Draft EIR or DEIR), prepared in accordance with the California Environmental Quality Act (CEQA), addresses potential environmental effects associated with the development of a commercial lithium hydroxide production plant within the Salton Sea geothermal field in Imperial County, California. The DEIR provides an overview of the Project and considered alternatives, identifies the anticipated environmental impacts from the Project and the alternatives, and identifies mitigation measures designed to reduce the level of significance of any impact.

ES.2 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The primary purpose of the CEQA process is to inform the public and decision makers as to the potential impacts of a project and to allow an opportunity for public input to ensure informed decision-making by the Lead Agency. CEQA requires all State and local government agencies to consider the environmental effects of projects over which they have discretionary authority. CEQA also requires each public agency to mitigate or avoid the significant environmental impacts resulting from proposed projects, when feasible, and to identify a range of feasible alternatives to the proposed project that could reduce those environmental effects.

Under CEQA, an EIR analyzes the impacts of an individual activity or specific project and focuses primarily on changes in the environment that would result from that activity or project. The Draft EIR must include the contents required by CEQA and the CEQA Guidelines and examine all phases of the project, including planning, construction, operation, and any reasonably foreseeable future phases.

ES.3 PROJECT DESCRIPTION

Controlled Thermal Resources (US) Inc. via its subsidiary Hell's Kitchen Geothermal, LLC is proposing the Hell's Kitchen PowerCo 1 (HKP1), and Hell's Kitchen LithiumCo 1 LLC is proposing the Hell's Kitchen LithiumCo 1 (HKL1) in Imperial County, California. HKP1 involves the development of a geothermal power plant that will produce up to 49.9 megawatts (MW) net of geothermal green energy. HKL1 involves development of mineral extraction and processing facilities capable of producing lithium hydroxide, silica and polymetallic products, and possibly boron compounds, for commercial sale. HKP1 and HKL1 (together referred to as the Proposed Project) will be constructed by Hell's Kitchen PowerCo 1 LLC and Hell's Kitchen LithiumCo 1 LLC respectively, both subsidiaries of Controlled Thermal Resources (US) Inc. (CTR) and will have shared facilities. Hell's Kitchen Operating Services LLC, also a subsidiary of Controlled Thermal Resources (US) Inc. will operate and maintain these facilities.

ES.4 INTENDED USES OF THIS EIR

This Draft EIR examines the environmental impacts of the Proposed Project. It is the intent of this Draft EIR to enable the County, other responsible agencies, and interested parties to evaluate the environmental impacts of the Proposed Project and identify feasible measures to mitigate such impacts, thereby enabling them to make informed decisions with respect to the requested entitlements.

The CEQA Guidelines require an EIR to include a statement briefly describing the intended uses of the EIR, including a list of agencies expected to use the EIR in their decision-making and the list of the permits and other approvals required to implement the Project.

The County will use this Draft EIR to provide information on the potential environmental effects of the following proposed actions:

- Imperial County Planning Department – Conditional Use Permit
- Imperial County Planning Department – Zoning Variance
- Imperial County Planning Department – Development Agreement (if required)
- Imperial County Building Department – Building and Grading Permits
- Imperial County Public Works Department – Encroachment Permit(s)

ES.5 PROJECT OBJECTIVES

The Proposed Project has the following objectives:

The HKP1 objectives include the following:

- To produce 49.9MW (net) of geothermal green energy from within CTR's geothermal lease area.
- To provide power to the Imperial Irrigation District and other potential off takers.
- To minimize and mitigate potential impacts to sensitive environmental resources while producing renewable energy and creating jobs.

The HKL1 objectives include the following:

- To provide a sustainable domestic source of lithium, a designated critical material identified by the U.S. Department of Energy.
- To extract and produce lithium hydroxide, silica, bulk sulfide, and polymetallic products for commercial sale from the geothermal brine within the Hell's Kitchen lease area.
- To minimize the distance between the geothermal power plant and lithium extraction plant for production efficiency and to reduce the extent of pipeline required to convey brine and steam to and from the geothermal power facility to the mineral extraction plant, therefore minimizing the overall industrial footprint of the combined power and mineral operations.
- To minimize and mitigate potential impacts to sensitive environmental resources within the Project area.

ES.6 SUMMARY OF ALTERNATIVES AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE

As previously discussed, only one alternative was considered feasible and analyzed in this analysis. A comparison of the Project's impacts and the No Project Alternative impacts is shown in Table 5.0-2. The

No Project Alternative would be considered the environmentally superior alternative, as it would avoid or reduce all of the potential impacts associated with construction and operation of the Project. The No Project Alternative would not meet most of the Project objectives including that it would not provide a sustainable domestic source of lithium, a designated critical material identified by the U.S. Department of Energy, (2) produce 49.9MW (net) of geothermal green energy from within CTR's geothermal lease area.; or (3) minimize the distance between the geothermal power plant and lithium extraction plant for production efficiency and to reduce the extent of pipeline required to convey brine and steam to and from the geothermal power facility to the mineral extraction plant, therefore minimizing the overall industrial footprint of the combined power and mineral operations. Furthermore, the No Project Alternative may result in future projects other than and potentially with greater impacts than the Proposed Project.

CEQA Guidelines requires that, if the No Project Alternative is determined to be the environmentally superior alternative, an environmentally superior alternative must also be identified among the remaining alternatives. However, reducing the Project size and relocating the Project to another site in the area were deemed to be infeasible alternatives. Thus, the only environmentally superior alternative identified is the No Project Alternative.

ES.7 TABLE OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

A summary of the potential environmental impacts of the Proposed Project is provided below for each topic addressed in this Draft EIR. Table ES-1 summarizes the significance of the impacts of the Project based on the information and analysis in Chapter 4.0 of this Draft EIR.

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
Aesthetics			
Threshold a) Have a substantial adverse effect on a scenic vista or scenic highway?			
Due to the distance of the Project site from the nearest scenic highway, the Proposed Project is not anticipated to have a substantial adverse effect on a scenic highway. Additionally, as shown in viewpoint 3 in Figure 4.1-4, the Proposed Project would not result in substantial adverse effect on a scenic highway because it would neither be located near a scenic highway nor would its presence interrupt the views seen along Highway 111. Viewpoints 1 and 2 show that the Proposed Project would affect the existing viewshed by partially blocking the mountain ranges to the north of the Project, such as the Orocopia and Chocolate Mountains to the north/northwest. While the mountains within Imperial County provide visual character to the area, the Project site is not a designated scenic viewpoint and therefore, the presence of Project features would not be considered to have a substantial adverse effect on a scenic vista. Furthermore, the Sonny Bono Salton Sea Wildlife Refuge is located 4 miles southwest of the Project site. Due to its distance from the Project site, the construction and operation of the Proposed Project would not result in substantial adverse effect to its use.	Less than Significant	No Mitigation Required.	Less than Significant
Threshold c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surrounding? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
The construction and operation of the Proposed Project would not substantially degrade the existing visual character of the area. While the Project is not designated to contain high visual quality, it would be designed and constructed to be consistent with the existing power plants in the region so as to maintain visual consistency. Furthermore, the proposed uses of the site would be consistent with the permitted uses of the area as the land use ordinance by the County authorizes the development and operation of renewable energy projects with a CUP. Impacts therefore are less than significant.	Less than Significant	No Mitigation Required.	Less than Significant
Air Quality			
Threshold a) Conflict with or obstruct implementation of the applicable air quality plan?			
Both construction and operational emissions created from the Proposed Project would not be within their respective ICAPCD thresholds. According to the ICAPCD Handbook, projects that are within the ICAPCD thresholds are consistent with the regional air quality plans. Furthermore, the standard mitigation measures provided in the ICAPCD Handbook have been incorporated into the Project Description for the Proposed Project as Project Design Features (see Section 2.10), and the Proposed Project will be required to implement all of the ICAPCD Regulation VIII, fugitive dust control measures during construction and operation of the Proposed Project. Furthermore, any stationary sources of emissions operated on site will be required to adhere to ICAPCD Rule 207, New and Modified Stationary Source Review and Rule 201 that require permits to construct and	Potentially Significant	**MM-AQ-1** Prior to commencing construction, the Project proponent shall submit a Dust Control Plan to the Imperial County Air Pollution Control District (ICAPCD) for approval identifying all sources of PM10 and PM2.5 emissions and associated mitigation measures during the construction and operational phases of the Project. The Project proponent shall submit a Construction Notification Form to the ICAPCD ten days prior to the commencement of any earthmoving activity. This plan would provide a detailed list of control measures to reduce fugitive emissions from construction and operational activities, including but not limited to watering of unpaved roads, vehicle speed limits, windbreaks, transport container covers, and cleaning and sweeping procedures. The Dust Control Plan submitted to the ICAPCD shall meet all applicable requirements for control of fugitive dust emissions, including the following measures designed to achieve the no greater than 20-percent opacity performance standard for dust control:	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
operate stationary sources. The Proposed Project would have the potential to conflict with or obstruct implementation of the applicable air quality plans. However, the Project would implement mitigation measures AQ-1 and AQ-2 to reduce CO and NOx emissions. Table 4.2 7 shows that once mitigated, all criteria pollutants would be reduced to a level that is less than significant. Therefore, with implementation of the above mitigation measure, impacts to air quality plans would be reduced to a level less than significant.		• All disturbed areas, including bulk material storage, that is not being actively used shall be effectively stabilized; and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative groundcover. Bulk material is defined as earth, rock, silt, sediment, and other organic and/or inorganic material consisting of or containing PM with 5 percent or greater silt content. • All on- and off-site unpaved roadway segments being used for 50 or more average vehicle trips per day shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by the use of restricting vehicle access, paving, chemical stabilizers, dust suppressants, and/or watering. • All unpaved traffic areas one acre or more in size with 75 or more average vehicle trips per day shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering. • All track-out or carry-out, which includes bulk materials that adhere to the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto the pavement on paved public roads, shall be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road in an urban area. • Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water or chemical stabilizers, or by sheltering or enclosing the operation and transfer line except, where such material or activity is exempted from stabilization by the rules of ICAPCD.	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		• Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering. • Fugitive dust generation during construction would be minimized by watering as needed to meet Imperial County standards for fugitive dust control. To further reduce fugitive dust emissions, vehicle traffic on unpaved roads would be kept below 15 miles per hour. • During grading, the Project would be watering actively disturbed on-site areas at least three times a day as necessary to reduce fugitive dust emissions. • Access to the site would be via Highway 111, McDonald Road, and Davis Road. All workers, vendors and haul trucks would be required to utilize these roadways. • An agreement between County of Imperial Public Works and the applicant would be established requiring the applicant to improve a two-mile section of the unpaved Davis Road adjacent to the site by installing a 12- to 18-inch- thick engineered Class II base section. In addition, at the request of the County, the applicant would utilize the improved section during construction and would wet the site continuously during construction activities. The road would be immediately paved after construction prior to operations of the plant to avoid damaging a new asphalt section. • During construction, the Project would be required to maintain daily dust suppression at the two-mile section of Davis Road adjacent to the site using a water truck operating continuously while vehicles are using the road. • The Project would provide wheel shakers at the exit(s) of the construction site to minimize dust being tracked off the Project site and onto the roadways.	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		• Operational on-road trips shall not operate on unpaved dirt roads. **MM-AQ-2** Prior to commencing construction, the Project proponent shall submit and commit to a Combustion Exhaust Emissions Control Program. This plan would provide a detailed list of control measures to minimize exhaust emissions during Project construction, including but not limited to fuel use, engine maintenance, and procedures: • The Exhaust Emission Control Plan shall provide a detailed list of control measures to minimize exhaust emissions during Project construction, including but not limited to fuel use, engine maintenance, and procedures. • The construction contractor shall be required to utilize construction equipment using diesel engines less than 50 horsepower with certified NOx emissions rated as Tier 3 or better. All off-road diesel-powered equipment greater than 50 horsepower that is used on-site during construction of the Project shall meet USEPA Tier 4 offroad emission standards and Level 3 diesel particulate filters. • When commercially available, fossil fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set). • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California Airborne Toxics Control Measure, Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Where access to alternative sources of power are available, portable diesel engines shall be prohibited. Haul truck shall be 2010 model year trucks or newer (a gross vehicle weight rating of at least 14,001 pounds), or best commercially available equipment, that meet the California Air Resources Board 2010 engine emissions standards at 0.01 g/horsepower-hour of particulate matter and 0.20 g/horsepower-hour of NOx emissions or newer, cleaner trucks. • The volatile organic compounds (VOC) architectural coating limits specify that the use paints and solvents with a VOC content of 100 grams per liter or less for interior and 150 grams per liter or less for exterior surfaces shall be required.	
Threshold b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?			
During start-up conditions, air emissions of CO and NOx associated with the HKP1 were estimated to exceed the CEQA significance thresholds and air emissions of CO associated with HKP1 were estimated to exceed the Rule 207, Section C.2.g thresholds. ICAPCD Rule 207 Section C.2 requires emissions offsets for sources with pollutant emissions that exceed 137 pounds per day. Pursuant Rule 207, Section C.2.g, the Proposed Project has prepared a CO Air Quality Impact Analysis (Part F of Rule 207), which demonstrates that the HKP1 would not cause or contribute to a violation of the CO NAAQS/CAAQS. The 1-hour and 8-hour CO modeled concentration plus background concentrations are 2,213 and 1,369 micrograms per cubic meter (µg/m3), respectively, which are well below the NAAQS/CAAQS. Therefore,	Less Than Significant	None required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
the startup operations associated with the proposed standby/black-start diesel engine generator would have a less than significant impact on CO concentrations.			
Biological Resources			
Threshold a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			
The Project includes removal of cattails and other vegetation that provide breeding habitat for Yuma hispid cotton rat. Yuma hispid cotton rat could be impacted by construction activities if the species were to occur in the construction area at the time of construction. In addition, construction activities include excavation of trenches and steep walled foundations where cotton rat could become trapped. Because a qualified biologist would be on site to observe all vegetation removal activities and could relocate Yuma hispid cotton rat out of harm's way if one were observed in the area, the impact from vegetation removal activities would be less than significant. In addition, because open trenches will be covered to avoid cotton rats from becoming trapped and a biologist will observe open excavations daily, the impact of open excavations on cotton rats will be less than significant.	Potentially Significant	**BIO-1.** Designated Biologist: The Applicant shall retain the services of a Qualified Biologist. The Qualified Biologist will be employed during construction and all vegetation removal and ground-disturbing activities. The Qualified Biologist will document compliance with the projects mitigation measures and permits. The Qualified Biologist will have the authority to halt any Project activities that are in violation of the terms and conditions of the Project biological opinion(s) or incidental take permit, as appropriate. **BIO-2.** Biological Monitors: Biological monitor(s) will be employed to assist the Designated Biologist in conducting preconstruction surveys and monitoring ground disturbance, grading, construction, decommissioning, and restoration activities. The biological monitor(s) will have sufficient education and field experience to understand resident wildlife species biology. To avoid and minimize effects to biological resources, the biological monitor(s) will assist the Designated Biologist with the following: • Conduct inspections for listed species during ground-disturbing construction activities and document that	Less Than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		habitat within the construction zone is not occupied by Yuma Ridgway's rail or desert pupfish. • Document compliance with all conservation measures, including but not limited to monitoring for presence of listed species; halting construction activity in the area if an individual listed species is found; and checking the staking/flagging of all disturbance areas to be sure that they are intact and that all construction activities are being kept within the staked/flagged limits. If a Yuma Ridgway's rail or desert pupfish is found within a work area, the Biological Monitor(s) will immediately notify the Designated Biologist, who will determine measures to be taken to ensure that the individual is not harmed, such as temporarily halting construction. **BIO-3.** Worker Environmental Awareness Program Training: A Worker Environmental Awareness Program will be implemented for construction crews prior to the commencement of Project activities. Training materials and briefings will include, but not be limited to, discussion of the federal and State statutes protecting threatened and endangered species, the consequence of noncompliance with these statutes, identification of values of wildlife and natural plant communities, hazardous substance spill prevention and containment measures, and review of all required conservation measures. **BIO-4.** Flagging of Work Area Limits: All areas to be disturbed by the Project will be flagged prior to construction. All disturbance will be confined to these flagged areas, and all employees will be instructed that their activities must be confined to locations within the flagged areas.	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		BIO-6. Sediment and Erosion Control: The Project proponent will acquire the appropriate Clean Water Act regulatory permits, prepare a Stormwater Pollution and Prevention Plan (SWPPP), and implement BMPs prior to construction and site restoration. The SWPPP will identify specific actions and BMPs relating to the prevention of stormwater pollution from Project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP reflects localized surface hydrological conditions and will be reviewed by the USFWS prior to commencement of work. A SWPPP will be a condition of the contract with each contractor selected to build and decommission the Project. The SWPPP(s) at a minimum will incorporate soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching), dewatering and/or flow diversion practices, sediment control practices (temporary sediment basins, fiber rolls), temporary and post-construction onsite and offsite runoff controls, and special considerations and BMPs for water crossings, wetlands, and drainages. The SWPPP will be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and that represent the best available technology that is economically achievable. Emphasis for BMPs is placed on controlling discharges of oxygen-depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. Performance and effectiveness of these BMPs are determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		(inadvertent petroleum release) is required to determine adequacy of the measure. **BIO-7.** Solid Waste Management: Solid waste will be properly contained in designated collection areas on site and regularly disposed of. **BIO-8.** Desert Pupfish Protection and Relocation Plan: A desert pupfish protection and relocation plan will be prepared prior to construction activities in any suitable habitat for desert pupfish. Its implementation will ensure construction in the drain mouths and channels will be conducted with minimal effects on desert pupfish. The plan will provide the following: • Avoidance of construction activities within suitable habitat for desert pupfish during the desert pupfish spawning season (April to October). • Protocols for preconstruction surveys to assess species presence and spawning within or immediately adjacent to work areas (i.e., areas with ponded water). • Protocols for capture (e.g., trapping for construction) and transport methods that will minimize handling and stress as well as exposure to heat, low dissolve oxygen, and crowding. • Identification of locations for release of captured desert pupfish. Yuma Ridgway's Rail Measures, Black Rail, and Other Marsh Bird Measures **BIO-9.** Construction Timing: Construction activities within habitat for Yuma Ridgway's rail (i.e., cattail marsh) will be scheduled to avoid the nesting and molting flightless season (i.e., February 15 – September 15). Pile driving activities adjacent to Yuma Ridgway's rail habitat will avoid Yuma Ridgway's rail nesting season.	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		BIO-10. Pre-Construction Surveys and Construction Monitoring for Yuma Ridgway's Rail and Black Rail: Pre-construction surveys for Yuma Ridgway's rail and black rail and construction monitoring will be conducted within all Project development areas within suitable habitat and a 500-foot buffer from suitable habitat. In the event that Yuma Ridgway's rail(s) or black rail(s) are detected within the work area (the area of active equipment use), all construction activities in the area will halt and the USFWS and CDFW will 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. The USFWS and CDFW will also be notified if any Yuma Ridgway's rail are detected within 500 feet of the construction area. Project activities may proceed with caution in this buffer area under the direction of the Designated Biologist. **BIO-11.** Reduced Vehicle Speed Adjacent to Rail Habitat: Vehicle speeds will be reduced to 15 miles per hour (mph) on access roads adjacent to Yuma Ridgway's rail habitat. These areas will be appropriately signed to identify the speed limit. **BIO-12.** Noise Attenuation: The following noise attenuation measures will be implemented to minimize noise impacts on Yuma Ridgway's rail during the nesting season: • At least 30 days prior to activities within 500 feet of Yuma Ridgway's rail habitat, the Applicant will conduct a noise study to evaluate the maximum predicted noise level within rail habitat. • If the maximum predicted noise is less than 60 A-weighted decibel scale (dBA) equivalent continuous sound level (Leq), no additional measures are required. • If the maximum predicted noise level exceeds 60 dBA Leq in rail habitat, noise attenuation measures such as noise walls	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		or hay bales will be installed between the noise source and the suitable habitat. Noise monitors will be installed at the edge of the nearest Yuma Ridgway's rail habitat to assess the noise levels and verify that attenuation measures are successful. If necessary, additional noise reduction measures will be implemented to reduce the noise level to below 60 dBA at the edge of occupied habitat. **BIO-13**. Habitat Conservation: To offset the loss of Yuma Ridgway's rail habitat, the Project proponent will preserve, create, or enhance habitat near the Project site for Yuma Ridgway's rail. The Project proponent will provide funding for construction and long-term management of the created habitat and will provide financial assurance for the construction of the wetland habitat in the form of performance bonds, escrow accounts, casualty insurance, or letters of credit. The performance bond, escrow account, casualty insurance, or letter of credit shall be of sufficient value to cover all construction, monitoring and reporting costs until the habitat is fully established. The financial assurance shall be in place prior to ground disturbance. Long-term management funding will be provided sufficient to cover, at a minimum, the management costs related to procurement of water from IID, weed control, levee and control structure maintenance, and control structure repair or replacement. The Applicant will prepare a detailed Habitat Enhancement Mitigation and Mitigation Monitoring Plan for review and approval by the USFWS, Corps, and CDFW prior to Project construction. Habitat creation activities will be conducted outside of the bird breeding season (February 15 – September 15) to avoid potential noise impacts on Yuma Ridgway's rail.	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		BIO-14. Burrowing Owl. A pre-construction survey will be conducted for burrowing owls. The survey will be conducted during peak activity period (one hour before to two hours after sunrise or two hours before to one hour after sunset) no more than 14 days prior to the start of construction and within 500 feet surrounding the construction area. If owls are located during the pre-construction survey between February 1 and August 31 (nesting season), a buffer area will be established according to the guidelines in the 2012 Staff Report. A modified buffer reduction may be used with CDFW concurrence. If burrowing owls are located during the nonbreeding season, owls may be passively relocated in coordination with CDFW, by a qualified biologist according to the procedures outlined in the 2012 Staff Report on Burrowing Owl Mitigation. If burrowing owls are found on site during pre-construction surveys, the Project proponent shall contact CDFW to prepare a plan of action for buffers or passive relocation. **BIO-15**. Lighting. Except as necessary for safety or security purposes, no lighting shall be allowed to impact wetland or riparian habitats. **BIO-16**. Nesting Bird Plan. A Nesting Bird Plan will be prepared that defines procedures for avoidance of nesting birds during Project construction. The Project will be scheduled to start construction activities outside the nesting season (February 1 through August 31), to the extent feasible. In the event that construction has to start during the nesting season, a qualified biologist will conduct surveys of the Project development area no more than 72 hours before any ground disturbance. If an active nest is observed in the Project development area, the qualified biologist will employ appropriate procedures for nest avoidance, and	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		construction activities will not begin in the area of the active nest until all nesting activities have ceased and the young have fledged the nest. **BIO-17.** Bird Flight Diverters. Bird flight diverters will be installed on any new transmission and power lines serving the Project, to limit bird mortality associated with introducing new transmission lines in bird flyways. Flight diverters make transmission lines more visible to birds. The transmission and power lines will be designed to meet Avian Power Line Interaction Committee (APLIC) guidelines. **BIO-18.** Excavation Areas. Any open trench or excavated area shall be securely covered anytime Project activities within the excavated/trenched rea have ceased. The designated biologist shall oversee the covering of all excavated, steep-walled holes or trenches by placing plywood or other barrier materials such that animals are unable to enter and become entrapped. The use of temporary fencing around the perimeter or trenches or holes may be an acceptable minimization measure, if deemed appropriate by the biological monitor. Before holes or trenches are filled, the Biological Monitors shall thoroughly inspect the areas for trapped animals. If any worker discovers that any animal has become trapped, they shall halt Project-related activities and notify the biological monitor immediately.	
Threshold b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			
The Project study area contains wetlands and riparian habitats that are potentially subject to RWQCB, CDFW, and USACE jurisdiction. The removal of vegetation and discharge of fill to these wetland and riparian resources from temporary construction activities, or	Less than Significant	**BIO-19.** Wetland and Riparian Area Restoration/Compensation. The Project will provide restoration/compensation for all unavoidable impacts on areas under the jurisdiction of USACE, RWQCB, and CDFW. Impacts on jurisdictional areas will be avoided to the extent feasible. Where avoidance of	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
permanent conversion to a developed land use during operation of the proposed Project, could be a significant impact. Hell's Kitchen PowerCo 1 LLC and Hell's Kitchen LithiumCo 1 LLC will obtain all required USACE, CDFW, and RWQCB permits for impacts to wetlands and riparian areas prior to construction in any jurisdictional wetland or riparian area. The agencies permit processes requires compensatory mitigation for impacts to jurisdictional water resources. Because the Project will comply with all permit requirements, including development of compensatory wetland and riparian mitigation, the impacts on wetlands and riparian areas would be less than significant. Further details on the proposed wetland mitigation plan can be found in Section 4.3.8, Mitigation Measure BIO-19.		jurisdictional areas is not feasible, the Project applicant will provide the necessary mitigation required as part of wetland permitting, by creation, restoration, or preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional areas. The Mitigation ratio will be 1:1 or as approved by the permitting agencies. The proposed Mitigation Plan area is located in Section 35 approximately 2 miles north of the HKP1 and HKL1 Projects at the corner of Beach Road and Access Road. The proposed mitigation area will total 159.61 acres; approximately 152 acres will be created native wetland/open water habitat and approximately 7 acres will be enhanced native upland habitat. Proposed native wetland communities include Willow Scrub Shrub, Cattail Bullrush Marsh and Desert Riparian Woodlands. Proposed upland communities include Sonoran Desert Scrub/Alkali Sink.	
Threshold c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			
Project construction would occur within a relatively small area of comparatively low habitat quality along the roadside adjacent to the large, contiguous wetlands to the east. Following construction completion, vegetated areas and unvegetated open space would be converted permanently to developed land uses. The conversion of these vegetated and unvegetated open space areas would not result in a noteworthy loss of habitat compared to the large contiguous wetlands and open space areas to the north, west, and east, and would not impede wildlife access to foraging habitat, breeding habitat, water		**BIO-19.** Wetland and Riparian Area Restoration/Compensation. The Project will provide restoration/compensation for all unavoidable impacts on areas under the jurisdiction of USACE, RWQCB, and CDFW. Impacts on jurisdictional areas will be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible, the Project applicant will provide the necessary mitigation required as part of wetland permitting, by creation, restoration, or preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional areas. The Mitigation ratio will be 1:1 or as approved by the permitting agencies. The proposed	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
sources, or other areas necessary for their movement or reproduction. The Project impacts are collocated adjacent to Davis Road, IID's existing power line, and other infrastructure. As discussed in Section 4.3.4, the Project study area does not contain any wildlife nursery sites. The impact would be less than significant.		Mitigation Plan area is located in Section 35 approximately 2 miles north of the HKP1 and HKL1 Projects at the corner of Beach Road and Access Road. The proposed mitigation area will total 159.61 acres; approximately 152 acres will be created native wetland/open water habitat and approximately 7 acres will be enhanced native upland habitat. Proposed native wetland communities include Willow Scrub Shrub, Cattail Bullrush Marsh and Desert Riparian Woodlands. Proposed upland communities include Sonoran Desert Scrub/Alkali Sink.	
Threshold d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			
Project construction would occur within a relatively small area of comparatively low habitat quality along the roadside adjacent to the large, contiguous wetlands to the east. Following construction completion, vegetated areas and unvegetated open space would be converted permanently to developed land uses. The conversion of these vegetated and unvegetated open space areas would not result in a noteworthy loss of habitat compared to the large contiguous wetlands and open space areas to the north, west, and east, and would not impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their movement or reproduction. The Project impacts are collocated adjacent to Davis Road, IID's existing power line, and other infrastructure. As discussed in Section 4.3.4, the Project study area does not contain any wildlife	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
nursery sites. The impact would be less than significant.			
Threshold e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			
In accordance with the consistency analysis provided in Table 4.3-1, the proposed Project is not anticipated to conflict with the Imperial County General Plan. There are no other local policies or ordinances protecting biological resources that apply to the proposed Project. Therefore, construction and operation of the proposed Project is anticipated to have a less-than-significant impact with respect to conflicting with any local policies or ordinances protecting biological resources. However, the Imperial County Board of Supervisors provides the ultimate determination regarding the proposed Project's consistency with the Imperial County General Plan.	Less than Significant	No Mitigation Required.	Less than Significant
Cultural Resources			
Threshold a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?			
Threshold b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?			
The intensive pedestrian survey resulted in identification of a newly recorded resources which consists of a remnant of a historic-era house dating back to 1953(TES-HK-001H). The structure is comprised of adobe brick. However, the structure has been altered over the years. The structure no longer contains walls, windows, doors, and room, and shows evidence of damage, graffiti, and other modern effects such as furniture and refuse. Based on the condition of	Less than Significant	**CUL-1** The Applicant shall retain the services of a Qualified Archaeologist, meeting the Secretary of the Interior Standards or County standards, whichever is greater, and require that all initial ground-disturbing work be monitored by archaeological specialist (monitor) proficient in artifact and feature identification in monitoring contexts. The Consultant (Qualified Archaeologist and/or monitor) shall be present at the Project construction phase kickoff meeting. **CUL-2** Prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project site, the	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
the structure, there is not enough original structure remaining to understand the original appearance of the structure. Standard DPR site records have been completed for this resource and are waiting permanent designation from the information center. Its severely dilapidated condition does not allow for the structure to meet the criteria needed for listing on the CRHR and is not known to be affiliated with anyone of significance or contribute to local cultural heritage or yield additional information to local history. Therefore, the Proposed Project would not result in significant impact to a historical resource. Impacts would be less than significant. An archaeological investigation was conducted for the Project to determine if there are any impacts that would occur that would disrupt or adversely affect a prehistoric or historic-era archaeological site to a community, ethnic or social group. The investigation resulted in resources being found within the Project area. However, because of the conditions of these resources, these have not been determined to be significantly impacted by the Proposed Project. However, given the largely undeveloped nature of the Project site with no previous development, there remains potential that the Project's ground disturbing activity would impact undiscovered resources. These resources could include but not		Consultant shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the Lead Contractor and all subcontractors shall make their personnel available. A tribal monitor shall be provided an opportunity to attend the preconstruction briefing, if requested. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to archaeological resources and maintain environmental compliance. This WEAP training will educate the monitor(s) of construction procedures to avoid construction-related injury or harm. This training may be performed periodically, such as for new personnel coming on to the Project as needed. **CUL-3** The Contractor shall provide the Consultant with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours will be provided to the Consultant of commencement of any initial ground-disturbing activities such as vegetation grubbing or clearing, grading, trenching, or mass excavation. A monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the Qualified Archaeologist, shall observe initial ground-disturbing activities and, as they proceed, adjust the number of monitors as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project. The Consultant and the Lead Contractor and subcontractors shall maintain a line of communication regarding schedule and activity	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
limited to lithic materials, faunal, pottery, ceramics, building materials, or glassware. Therefore, mitigation measure CUL-1 through CUL-5 would be implemented to ensure that impacts would be less than significant.		such that the monitor is aware of all ground-disturbing activities in advance to provide appropriate oversight. **CUL-4** In the event of the discovery of previously unidentified archaeological materials, the Contractor shall immediately cease all work activities within an area of no less than 100 feet of the discovery. After cessation of excavation, the Contractor shall immediately contact the County. Except in the case of cultural items that fall within the scope of the Native American Grave Protection and Repatriation Act (NAGPRA), California Health and Safety Code 7050.5, CEQA 15064.5, or California Public Resources Code 5097.98, the discovery of any cultural resource within the Project area shall not be grounds for a Project-wide "stop work" notice or otherwise interfere with the Project's continuation except as set forth in this paragraph. Additionally, all consulting Native American Tribal groups that requested notification of any unanticipated discovery of archaeological resources on the Project shall be notified appropriately. If a discovery results in the identification of cultural items that fall within the scope of NAGPRA, the Contractor shall immediately cease all work activities within an area of no less than 100 feet (30 meters) of the discovery. In the event of an unanticipated discovery of archaeological materials during construction, the Applicant-retained Qualified Professional Archaeologist shall be contacted to evaluate the significance of the materials prior to resuming any construction-related activities near the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and it cannot be avoided, the Applicant shall implement an archaeological data recovery program. **CUL-5** At the completion of all ground-disturbing activities, the Consultant shall prepare an Archaeological Resources Monitoring	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds as well as providing follow-up reports of any finds to the SCCIC, as required. In the event unanticipated, buried prehistoric archaeological resources (lithic material, faunal, pottery, etc.) or historical archaeological resources (ceramics, building materials, glassware, etc.) are unearthed during construction or any ground disturbing activities within the Project area, additional resource treatments would become necessary. Once a potential resource has been identified, all work within 100 feet must be halted until the find can be assessed by a qualified archaeologist.	
Threshold c) Would the project disturb any human remains, including those interred outside of formal cemeteries?			
Construction of the Proposed Project would involve grading, which may have the potential to uncover unknown human remains. However, if human remains are encountered during the proposed work, no further excavation or disturbance may occur near the find until the County coroner has been contacted. HSC 7050.5 states (a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code. (b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
area discovered has determined that the remains are not subject to the provisions of Section 27481. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or to his or her authorized representative, notifying the coroner of the discovery if recognition of human remains. (c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Compliance with these regulations would ensure impacts to human remains resulting from the Project would be less than significant.			
Energy			
Threshold a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			
The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions provided in Appendix H, which found that the off-road equipment utilized during construction of the Project would consume 636,310 gallons of diesel fuel. The on-road fuel consumption during construction was calculated through use of the construction vehicle trip assumptions and fuel use assumptions provided in Appendix H, which found that the on-road trips	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
generated from construction of the Project would consume 8,554,787 gallons of fuel. As such, the combined fuel used from off-road construction equipment and on-road construction trips for the Project would result in the consumption of 9,191,096 gallons of diesel fuel. Construction activities associated with the Project would be required to adhere to all State and Imperial County Air Pollution Control District regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. Construction activities for the Project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. In addition, the operation of the Project would result in a net increase of 147,732,2kilowatt-hours (kWh) per year. Operation of the Project would result in increased consumption of petroleum-based fuels related to vehicular travel to and from the Project site. Operations related to fuel consumption were calculated using information related to the estimated number of employees, their estimated vehicle miles traveled per day, and the number of operational days per year. The Based on these assumptions, the Project would consume 25,217,394 gallons of transportation fuel per year (diesel and gasoline). Additionally, the Project would comply with all federal, State, and County requirements related to the consumption of transportation energy, including CCR Title 24, Part 11, the CALGreen Code, which requires			

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
all new parking lots to provide preferred parking for clean air vehicles. Therefore, it is anticipated the Project will be designed and built to minimize transportation energy through the promotion of the use of electric-powered vehicles and that existing and planned capacity and supplies of transportation fuels would be sufficient to support the Project's demand. Thus, impacts regarding transportation energy supply and infrastructure capacity would be less than significant, and no mitigation measures would be required.			
Threshold b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			
The Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The applicable Renewable Energy and Transmission Element for the Project is included in the County's General Plan. The Proposed Project's consistency with the applicable energy-related policies in the Renewable Energy and Transmission Element of the General Plan are shown in Table 4.4-1.	Less than Significant	No Mitigation Required.	Less than Significant
Geology and Soils			
Threshold a) i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?			
The CBC requires that a site-specific ground motion hazard analysis be performed in accordance with American Society of Civil Engineers (ASCE) 7-16 Section 11.4.8 for structures. The parameters were determined and provided in the Geohazard Evaluation Report. General earthwork considerations pertaining to the Project include remedial grading/over excavation, excavatability, and fill materials. Design considerations would take into account expansion potential, collapse potential, and corrosivity. The Geohazard Evaluation Report notes that based on the preliminary site plans, no conditions on the Project site would preclude development of the Proposed Project, provided that Mitigation Measures GEO-1 and GEO-2 would be implemented. Therefore, the Proposed Project would be less than significant and is considered feasible from a geotechnical standpoint.	Less than Significant	GEO-1: A complete geotechnical engineering investigation shall be completed, with a Final Geotechnical Report to be prepared prior to submittal of a grading permit. The Final Geotechnical Report shall be prepared by a qualified consultant and be submitted to the County for review and approval. The investigation will include soil test borings; specific and detailed recommendations; soil and sediment analysis; detailed analysis and design standards; geotechnical design criteria; and detailed design recommendations. GEO-2: All grading operations and construction shall be conducted in conformance with the recommendations included in the Geohazard Evaluation Report prepared on August 17, 2022, and Final Geotechnical Report on the Project site. Design, grading, and construction shall be performed in accordance with the recommendations of the project geotechnical consultant and corrosion engineer, subject to review by the County, prior to commencement of grading activities.	Less than Significant
iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?			
As discussed, based on the presence of shallow groundwater and the nature of subsurface soils, the potential for liquefaction is high. As such, site-specific liquefaction and dynamic settlement shall be evaluated with data obtained through the soils borings during the Project's geotechnical investigation phase. Implementation of Mitigation Measures GEO-1 and GEO-2, in addition to compliance with the CBC, would result in less than significant impacts.	Less than Significant	GEO-1: A complete geotechnical engineering investigation shall be completed, with a Final Geotechnical Report to be prepared prior to submittal of a grading permit. The Final Geotechnical Report shall be prepared by a qualified consultant and be submitted to the County for review and approval. The investigation will include soil test borings; specific and detailed recommendations; soil and sediment analysis; detailed analysis and design standards; geotechnical design criteria; and detailed design recommendations.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		GEO-2: All grading operations and construction shall be conducted in conformance with the recommendations included in the Geohazard Evaluation Report prepared on August 17, 2022, and Final Geotechnical Report on the Project site. Design, grading, and construction shall be performed in accordance with the recommendations of the project geotechnical consultant and corrosion engineer, subject to review by the County, prior to commencement of grading activities.	
Threshold c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? **Threshold d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?**			
Based on the Project's topography and relatively flat nature of the Project site, the risk of landslides is considered remote. However, unstable soils could result in subsidence, expansive soil, liquefaction and lateral spreading. Therefore, site-specific potential for these instabilities shall be evaluated with data from the soil borings during the geotechnical investigation phase. Implementation of Mitigation Measures GEO-1 and GEO-2, as well as the considerations provided in the Geohazard Evaluation Report, would ensure that construction of the Proposed Project would not result in significant impacts due to subsidence, expansive soil, liquefaction and lateral spreading.. Impacts would be less than significant with mitigation incorporated.	Less than Significant	GEO-1: A complete geotechnical engineering investigation shall be completed, with a Final Geotechnical Report to be prepared prior to submittal of a grading permit. The Final Geotechnical Report shall be prepared by a qualified consultant and be submitted to the County for review and approval. The investigation will include soil test borings; specific and detailed recommendations; soil and sediment analysis; detailed analysis and design standards; geotechnical design criteria; and detailed design recommendations. GEO-2: All grading operations and construction shall be conducted in conformance with the recommendations included in the Geohazard Evaluation Report prepared on August 17, 2022, and Final Geotechnical Report on the Project site. Design, grading, and construction shall be performed in accordance with the recommendations of the project geotechnical consultant and corrosion engineer, subject to review by the County, prior to commencement of grading activities.	Less than Significant
Threshold e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
The Proposed Project would include a septic system that would be constructed to handle wastewater generated during Project operation. The Geohazard Evaluation Report notes that based on the anticipated soil types, Project site soils are expected to be moderately to severely corrosive to ferrous metals in contact. Therefore, the Proposed Project's soils shall be evaluated with data from the soil borings during the geotechnical investigation phase and will include consultation with a corrosion engineer to identify the appropriate protective measures based on the soils samples. Therefore, impacts would be less than significant with mitigation measures GEO-1 and GEO-2 incorporated.	Potentially Significant	GEO-1: A complete geotechnical engineering investigation shall be completed, with a Final Geotechnical Report to be prepared prior to submittal of a grading permit. The Final Geotechnical Report shall be prepared by a qualified consultant and be submitted to the County for review and approval. The investigation will include soil test borings; specific and detailed recommendations; soil and sediment analysis; detailed analysis and design standards; geotechnical design criteria; and detailed design recommendations. GEO-2: All grading operations and construction shall be conducted in conformance with the recommendations included in the Geohazard Evaluation Report prepared on August 17, 2022, and Final Geotechnical Report on the Project site. Design, grading, and construction shall be performed in accordance with the recommendations of the project geotechnical consultant and corrosion engineer, subject to review by the County, prior to commencement of grading activities.	Less than Significant
Threshold f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?			
Based on information in the Geohazards Evaluation Report, sensitive Late Pleistocene- to Holocene-age Lake Cahuilla Beds exist within the Proposed Project area, and subsurface ground-disturbing activities have the potential to impact sensitive paleontological resources. Therefore, Mitigation Measures PALEO-1 through PALEO-5 would be implemented to reduce impacts to a less than significant level.	Potentially Significant	PALEO-1: The Applicant shall retain the services of a Qualified Paleontologist and require that all initial ground-disturbing work be monitored by someone trained in fossil identification in monitoring contexts. The Qualified Paleontologist shall prepare a Paleontological Resource Mitigation Plan to be implemented during ground-disturbing activity for the proposed Project. This program should outline the procedures for paleontological monitoring, including extent and duration; protocols for salvage and preparation of fossils; and the requirements for a final mitigation and monitoring report. The Qualified Paleontologist and a paleontological monitor shall be present at the Project construction-phase kickoff meeting.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		PALEO-2: Prior to commencing construction activities and, thus, prior to any ground disturbance in the Proposed Project site, the Qualified Paleontologist and paleontological monitor shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the start of the Project construction work phase, for which the Applicant, or their designated Contractor, and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to paleontological resources and maintain environmental compliance, and it shall be performed periodically for new personnel coming on to the Project as needed. PALEO-3: The Applicant, or their designated Contractor, shall provide the Qualified Paleontologist with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours will be provided to the consultant prior to the commencement of any initial ground-disturbing activities, such as vegetation grubbing or clearing, grading, trenching, or mass excavation. As detailed in the schedule provided, a paleontological monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the Qualified Paleontologist, shall observe initial ground-disturbing activities and, as they proceed, make adjustments to the number of monitors as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		daily record of observations as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project. The Qualified Paleontologist, paleontological monitor, and the Applicant, or their designated Contractor, and subcontractors shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance to provide appropriate oversight. PALEO-4: If paleontological resources are discovered, construction shall be halted within 50 feet of any paleontological finds and shall not resume until the Qualified Paleontologist can determine the significance of the find and/or the find has been fully investigated, documented, and cleared. PALEO-5: At the completion of all ground-disturbing activities, the Qualified Paleontologist shall prepare a Paleontological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all paleontological finds and shall provide follow-up reports of any finds to the preferred paleontological repository, as required.	
Greenhouse Gases			
Threshold a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			
The GHG emissions are based on the proposed design detailed in the Project Description as well as IID's adherence to the State's Renewable Portfolio Standards (RPS) that require 60 percent of electricity provided by IID to be from zero-carbon emissions sources by the year 2030. Table 4.7 3 shows that the operational GHG emissions do not exceed either the	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
USEPA's 25,000 MTCO2e emissions threshold or ICAPCD Rule 903 – 20,000 MTCO2e emissions threshold, where exceedance of either threshold would require the Project to perform additional GHG emissions recordkeeping and reporting. Therefore, the Project would offset greenhouse gas emissions. and a less than significant impact would occur.			
Threshold b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			
with implementation of the Project Design Features committed to by the Project applicant and Statewide regulatory requirements including the CALGreen building standards, the Proposed Project would be consistent with all feasible mitigation measure for individual projects provided in the CARB's 2017 Scoping Plan. Therefore, implementation of the Proposed Project would not conflict with any applicable plan that reduces GHG emissions. Impacts would be less than significant.	Less than Significant	No Mitigation Required.	Less than Significant
Hazards and Hazardous Materials			
Threshold a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			
During construction and operations of the Project, hazardous materials would be transported to and from the Project site. Traffic barriers would protect piping and tanks on the site from potential traffic hazards. The Project Applicant would be required to follow all applicable federal, State, and local laws and regulations. Further, transportation would be subject to licensing and inspection by the CHP. With adherence to the regulatory measures and	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
requirements for hazardous materials, impacts would be less than significant.			
Threshold b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			
Based on the assessment conducted at the Project site, further investigations may be required if the areas containing RECs cannot be avoided by future development. Therefore, for the Project to not have a significant impact to the public and environment, the Project shall comply with local, State and federal guidelines and to the Mitigation Measures HAZ-1 and HAZ-2 to ensure the any accidental releases would be mitigated to a less than significant impact.	Less than Significant	MM HAZ-1: To avoid health risks to construction workers, the Applicant shall require the contractor to prepare and implement a site Health and Safety Plan (HSP) if areas containing hazardous materials are to be disturbed. This plan will outline measures that will be employed to protect construction workers and the public from exposure to hazardous materials during construction activities. This plan shall be prepared prior to any ground-disturbing activities and shall be reviewed and approved by the Project Applicant. Workers shall review and sign the site HSP prior to proceeding with the assigned work. MM HAZ-2: For any gen-tie structures or other areas of project ground disturbance that are close to a REC, a Phase 2 limited soil sampling shall be conducted to determine if there are any hazardous materials present on-site. The soil sampling shall be conducted during final design and prior to construction. Soil sampling will determine the California Human Health Screening Levels (CHHSL) of the testing protocol (CAM 17 metals, a list of 17 metals found typically in hazardous materials and mining sites). The CHHSLs are a list of 54 hazardous chemicals in soil or soil gas that the California Environmental Protection Agency (CalEPA) considers to be below thresholds for risks to human health. The Imperial County Public Health Department, Division of Environmental Health (DEH) shall review the soil sampling results. If the results are above the CHHSLs, then the DEH would refer the project to the California Department of Toxic Substances Control for proper soil handling and removal procedures.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
Threshold g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			
During operations, a brush control program would be prepared and implemented on those portions of the Project site that will not be developed. The Imperial County Fire District would be consulted to review and approve all proposed fire equipment, apparatus, and related fire prevention plans. Due to compliance with the measures identified above, and the distance from an identified area of high fire harzard risk, the Project would result in a less than significant impact associated with wildfires.	Less than Significant	No Mitigation Required.	Less than Significant
Hydrology and Water Quality			
Threshold a) Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality?			
Due to the size of the Project, Postconstruction Standards from the Phase II Small MS4 Permit will be applied to the Project. The proposed Project will implement site-design BMPs, source-control measures, low-impact development (LID) BMPs, and hydromodification-management BMPs to meet the permit criteria. The Project owner will maintain all on-site site-design BMPs, source-control measures, postconstruction BMPs, and retention basins during the lifetime of the Project. A full list of postconstruction BMPs is provided in Appendix I. With implementation of Mitigation Measures HWQ-1 and HWQ-2 impacts to water quality standards and waste discharge requirements would be less than significant.	Less than Significant	HWQ-1 Prepare SWPPP and Implement BMPs Prior to Construction and Site Restoration. The Project applicant or its contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) specific to the Project and be responsible for securing coverage under the State Water Resources Control Board's National Pollution Discharge Elimination System stormwater permit for general construction activity (Order 2009-0009-DWQ). The SWPPP shall identify specific actions and best management practices (BMPs) related to the prevention of stormwater pollution from Project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by the appropriate agency prior to commencement of work and shall be made conditions of the contract with the contractor selected to build and decommission the Project. The	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		SWPPP shall incorporate control measures in the following categories: - Soil stabilization and erosion control practices - Sediment control practices - Temporary and postconstruction on- and off-site runoff controls - Special considerations and BMPs for water crossings and drainages - Monitoring protocols for discharge(s) and receiving waters, with emphasis place on the following water quality objectives: dissolved oxygen, floating material, oil and grease, potential of hydrogen (pH), and turbidity - Waste management, handling, and disposal control practices - Corrective action and spill contingency measures - Agency and responsible party contact information - Training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP The SWPPP shall be prepared by a Qualified SWPPP Practitioner and/or Qualified SWPPP Developer, with BMPs selected to achieve maximum pollutant removal and representative of the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen-depleting substances; floating material; oil and grease; acidic or caustic substances or compounds; and turbidity. BMPs for soil-stabilization, erosion-control, and sediment-control practices will also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		elimination, (inadvertent petroleum release) is required to determine adequacy of the measure. HWQ-2 Incorporate Postconstruction Runoff BMPs into Project Drainage Plan. The Project Drainage Plan shall adhere to the County's Engineering Guidelines Manual, IID Draft Hydrology Manual or other recognized source with approval by the County Engineer to control and manage the on- and off-site discharge of stormwater to existing drainage systems. Infiltration basins will be integrated into the Drainage Plan to the maximum extent practical. The Drainage Plan shall provide both short and long-term drainage solutions to ensure the proper sequencing of drainage facilities and management of runoff generated from Project-related impervious surfaces as necessary.	
Noise			
Threshold a)	**Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**		
Implementation of the Project would not result in a substantial increase in ambient noise levels at off-site noise-sensitive receptors or exceed the County of Imperial Property Line Noise Standards (70 dBA anytime for Light Industrial/Industrial Park Zones) and the applicable Noise/Land Use Compatibility criteria. Based on reported noise levels from similar operations, it is anticipated that noise levels would not exceed the County property line noise limits at the closest sensitive receptors. Therefore, operational noise impacts would be less than significant.	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
Transportation			
Threshold a) **Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?** **Threshold b)** **Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?**			
The Project's traffic analysis zone (TAZ 5600) has an estimated VMT per employee of 20.84, which is approximately 82.5% of the Countywide average of 25.25 and falls below the 85% threshold of 21.46. Therefore, based on the VMT analysis presented above, the Proposed Project represents a less than significant transportation impact and no further VMT analysis is required.	Less than Significant	No Mitigation Required.	Less than Significant
Tribal Cultural Resources			
Threshold a) **Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American tribe, and that is:** **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as define in Public Resources Code Section 5020.1(k), or** **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth is subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.**			
Based on the results of the Cultural Resources Survey and in consultation with the tribes, the County has determined there are no known tribal cultural	Less than Significant	CUL-1 The Applicant shall retain the services of a Qualified Archaeologist meeting the Secretary of the Interior Standards or County standards, whichever is greater, and require that all initial	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
resources within the Project site. However, the potential remains for the Project's ground-disturbing activity to impact undiscovered resources. These resources could include but not be limited to lithic materials, faunal, pottery, ceramics, building materials, or glassware. Impacts would be considered less than significant with implementation of the mitigation measures outlined in Section 4.4.		ground-disturbing work be monitored by archaeological specialist (monitor) proficient in artifact and feature identification in monitoring contexts. The Consultant (Qualified Archaeologist and/or monitor) shall be present at the Project construction phase kickoff meeting. CUL-2 Prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project site, the Consultant shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the Lead Contractor and all subcontractors shall make their personnel available. A tribal monitor shall be provided an opportunity to attend the preconstruction briefing, if requested. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to archaeological resources and maintain environmental compliance. This WEAP training will educate the monitor(s) of construction procedures to avoid construction-related injury or harm. This training may be performed periodically, such as for new personnel coming on to the Project as needed. CUL-3 The Contractor shall provide the Consultant with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours will be provided to the Consultant of commencement of any initial ground-disturbing activities, such as vegetation grubbing or clearing, grading, trenching, or mass excavation. A monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the Qualified Archaeologist, shall observe initial ground-disturbing activities and, as they proceed, adjust the number of monitors as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		monitor will maintain a daily record of observations to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project. The Consultant and the Lead Contractor and subcontractors shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance to provide appropriate oversight. CUL-4 In the event of the discovery of previously unidentified archaeological materials, the Contractor shall immediately cease all work activities within an area of no less than 100 feet of the discovery. After cessation of excavation, the Contractor shall immediately contact the County. Except in the case of cultural items that fall within the scope of the Native American Grave Protection and Repatriation Act (NAGPRA), the California Health and Safety Code 7050.5, CEQA Section 15064.5, or California Public Resources Code Section 5097.98, the discovery of any cultural resource within the Project area shall not be grounds for a Project-wide "stop work" notice or otherwise interfere with the Project's continuation except as set forth in this paragraph. Additionally, all consulting Native American tribal groups that requested notification of any unanticipated discovery of archaeological resources on the Project shall be notified appropriately. If a discovery results in the identification of cultural items that fall within the scope of NAGPRA, the Contractor shall immediately cease all work activities within an area of no less than 100 feet (30 meters) of the discovery. In the event of an unanticipated discovery of archaeological materials during construction, the Applicant-retained Qualified Professional Archaeologist shall be contacted to evaluate the significance of the materials prior to resuming any construction-related activities in the vicinity of the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and it	

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
		cannot be avoided, the Applicant shall implement an archaeological data recovery program. CUL-5 At the completion of all ground-disturbing activities, the Consultant shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds as well as providing follow-up reports of any finds to the SCCIC, as required. In the event unanticipated, buried prehistoric archaeological resources (lithic material, faunal, pottery, etc.) or historical archaeological resources (ceramics, building materials, glassware, etc.) are unearthed during construction or any ground disturbing activities within the Project area, additional resource treatments would become necessary. Once a potential resource has been identified, all work within 100 feet must be halted until the find can be assessed by a qualified archaeologist.	
Utilities and Service Systems			
Threshold a)	**Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?**		
New facilities would be constructed for the purpose of water, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications. Expansion of these facilities would utilize existing infrastructure no limited to existing irrigation canals and power/telephone lines which would minimize	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
damage to existing facilities. Therefore, no significant environmental effects are expected to result. Impacts would be less than significant.			
Threshold b) **Have sufficient water supplies available to serve the project from existing and reasonably foreseeable future development during normal, dry and multiple dry years?**			
When drought conditions exist within the IID water service area, as has been the case for the past decade or so, the water supply available to meet agricultural and nonagricultural water demands remains the same as normal year water supply because IID continues to rely on its entitlement for Colorado River water. Due to the priority of water rights and other agreements, drought affecting Colorado River water supplies causes shortages for Arizona, Nevada, and Mexico, but not California or IID. Therefore, the likelihood that IID will not receive its annual 3.1 million AF apportionment under the QSA obligations of Colorado River water is low due to the high priority of the IID entitlement relative to other Colorado River contractors (see Appendix J for further details on the IID's water rights). If such reductions were to come into effect within the life of the 30-year Project, a significant impact would occur. If such reductions do occur, Mitigation Measure (MM) UTIL-1 would be implemented, requiring the Applicant to work with IID to ensure any reduction in water availability during the life of the Project can be managed. Therefore, with implementation of MM UTIL-1, impacts would remain less than significant.	Potentially Significant	UTIL-1: If the IID does not receive its annual 3.1 maf water apportionment according to the QSA obligations of Colorado River water during the Project's 30-year lifespan, the Applicant shall work with IID to ensure any reduction in water availability can be managed by the Project.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
Threshold d)	**Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**		
it is estimated that 90 percent of filter cakes would fall below California thresholds for soluble threshold limit concentration (STLC) and total threshold limit concentration (TTLC). The remaining 10 percent, or approximately 4,178 cy, would exceed these standards and would be trucked to the Copper Mountain Landfill located at 34853 County 12th Street in Wellton, Arizona, approximately 96 miles southeast of the Project site. This landfill has a design capacity for 2.5 million megagrams. Although the remaining landfill capacity is not available, the amount of solid waste sent to this facility would be minimal. If the filter cakes were to exceed Arizona's toxicity standards which is not expected to occur, the Applicant will arrange for hazardous materials to be trucked to Idaho or Nevada. As mentioned in Chapter 2: Project Description, approximately every three years the Project facilities will be shut down for about three weeks to complete a facility cleaning. This process would remove mineral scale from Project plant piping. The scale removed during this process has the potential to exceed STLC and TTLC standards for Arizona, in which case solid waste would be required to be trucked to Nevada. However, this is an extremely rare occurrence, and in the past 10 years only two truckloads have needed to be transported to Nevada. The implementation of the Proposed Project would not increase the amount of solid waste needing to go out of state.	Less than Significant	No Mitigation Required.	Less than Significant

Table ES-1: Summary of Significant Impacts and Mitigation Measures

Project Impacts	Level of Significance before Mitigation	Mitigation	Level of Significance After Mitigation
Therefore, solid waste facilities have adequate permitted capacity for solid waste materials generated by the Project. Impacts would be less than significant.			
Threshold e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			
Disposal of solid/hazardous wastes generated during Project construction and operations would be in compliance with local federal, State, and County regulations and disposed of at authorized facilities. Therefore, a less than significant impact would occur.	Less than Significant	No Mitigation Required.	Less than Significant

CHAPTER 1.0 – INTRODUCTION

The Proposed Project is the construction and operation of a geothermal power facility (HKP1) and commercial lithium hydroxide production plant (HKL1) within the Salton Sea geothermal field in Imperial County (County), California (Project). HKP1 involves the development of a geothermal power plant that will produce up to 49.9 megawatts (MW) net of geothermal power. HKL1 proposes to develop mineral extraction and processing facilities capable of producing lithium hydroxide, silica, bulk sulfide, and polymetallic products for commercial sale.

The Proposed Project would consist of the following activities:

- Construction and operation of a 49.9 MW geothermal power plant;
- Construction of well pads with geothermal production and injection wells;
- Construction of pipelines between HKP1 and HKL1 to facilitate the movement of brine between the facilities;
- Construction and operation of a mineral-extraction facility to extract lithium salt and chemically convert that lithium salt to battery-grade lithium hydroxide monohydrate, silica, polymetallic products, and possibly boron containing compounds from the geothermal brine;
- Construction and operation of minerals handling and packaging facilities;
- Construction of ingress and egress to the Project site from Davis Road;
- Paving of Davis Road from McDonald Road to Noffsinger Road (approximately 2 miles);
- Construction of a 230-kV gen-tie line and collocated power line (approximately 2 miles south and 0.3 miles east) ultimately deeding this gen-tie line and its appurtenances to the Imperial Irrigation District for operation; and
- Construction of shared administrative facilities, offices, repair facilities, shipping and receiving facilities, and other infrastructure components.

This section of the Draft Environmental Impact Report (EIR) will discuss the purpose of the Draft EIR, scope, content, and environmental review process. The Project is described in further detail in Chapter 2.0: Project Description.

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The Proposed Project requires discretionary approval of the County Environmental Evaluation Committee and Board of Supervisors and is subject to environmental review requirements in accordance with the California Environmental Quality Act (CEQA). All construction projects within the State of California are required to undergo environmental review to determine any potential environmental impacts associated with project implementation (Section 15021).

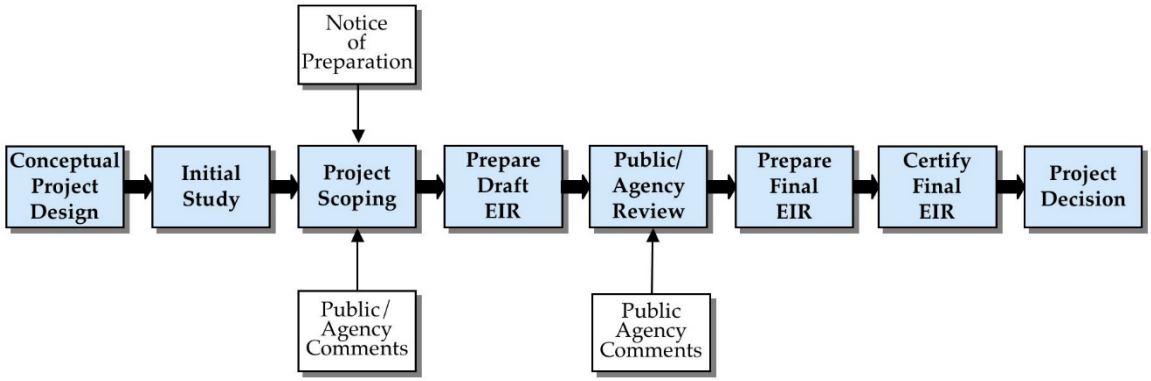
CEQA was enacted in 1970 by the California Legislature to disclose to decision-makers and the public the significant environmental effects of a proposed project and to identify possible ways to avoid or minimize

significant environmental effects of a project by requiring implementation of mitigation measures or recommending feasible alternatives. CEQA applies to all California agencies at all levels, including local, regional, and State governments, as well as boards, commissions, and special districts. As the Lead Agency for the Project, the County is required to conduct an environmental review to analyze any potential environmental effects associated with project implementation.

An EIR has been prepared to evaluate impacts of the Proposed Project. Section 15161 of the CEQA Guidelines states that a project EIR "examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation."

The Draft EIR is then circulated to the public and affected agencies for review and comment. One of the primary objectives of CEQA is to enhance public participation in the planning process. Community members are encouraged to participate in the environmental review process, request to be notified, monitor newspapers for formal announcements, and submit substantive comments at every possible opportunity afforded by the Lead Agency. The environmental review process provides ample opportunity for the public to participate through scoping, public notice, and public review of CEQA documents. A diagram illustrating the CEQA process is shown in Figure 1.0-1 below. Additionally, a Lead Agency is required to respond to public comments in Final EIRs and consider comments from the scoping process in the preparation of the Draft EIR.

Figure 1.0-1: The Environmental Review Process



1.2 ENVIRONMENTAL REVIEW PROCESS

1.2.1 Scoping Process

In compliance with Section 15201 of the State CEQA Guidelines, the County has taken steps to provide opportunities for public participation in the environmental process. An Initial Study (IS) and Notice of Preparation (NOP) were distributed on March 31, 2022, to State, regional, local government agencies, and interested parties for a 35-day public review period to solicit comments and to inform agencies and the public of the Project. The proposed Project was described, potential environmental effects associated with Project implementation were identified, and agencies and the public were invited to review and comment on the IS and NOP.

The County received comments from the following local and State Agencies:

- Air Pollution Control District
- California Department of Fish and Wildlife
- Native American Heritage Commission
- County Executive Offices
- Office of Agricultural Commissioner
- Imperial Irrigation District

The County also received comment letters from the following businesses and organizations:

- CalEnergy
- Comite Civico del Valle (two letters)
- Cyrq Energy
- Energy Source
- Leadership Counsel for Justice and Accountability

In addition, the County received a letter received from multiple agencies (Sierra Club, Audubon Society, Leadership Counsel for Justice and Accountability, Pacific Institute, Unite for Justice Inc., and Alianza Coachella Valley).

The County also received comment letters from six individuals. The IS, NOP, and received comments are contained in Appendix A of this Draft EIR. The purpose of the NOP was to formally convey to the public that the County was preparing a Draft EIR for the proposed Project and to solicit input regarding the scope and content of the environmental information to be included in this Draft EIR. Additionally, the Project was presented to the Environmental Evaluation Committee (EEC) and a scoping meeting was held, both on April 28, 2022.

Topics evaluated in this Draft EIR have been identified based on the IS prepared for the Project, the responses to the NOP, the review of the proposed Project by County staff, and the comments made during the EEC meeting. Specific comments regarding silica as a hazardous substance were noted during the EEC meeting, which are addressed in Section 4.8: Hazards and Hazardous Materials. The County determined through this initial review process that impacts related to the following environmental topics are potentially significant and require an assessment in this Draft EIR:

1. Aesthetics
2. Air Quality
3. Biological Resources
4. Cultural Resources
5. Energy
6. Geology and Soils
7. Greenhouse Gas Emissions

8. Hazards and Hazardous Materials
9. Hydrology and Water Quality
10. Noise
11. Transportation
12. Tribal Cultural Resources
13. Utilities and Service Systems

Mitigation measures to reduce impacts to a less than significant level are proposed whenever feasible. Table 1.0-1 contains this list of sections required under CEQA Guidelines, along with reference to the chapter where these items can be found.

Table 1.0-1: Required EIR Contents

Chapter Title (CEQA Guidelines)	Location
Table of Contents (Section 15122)	Table of Contents
Summary (Section 15123)	Executive Summary
Introduction (Section 15122)	Chapter 1
Project Description (Section 15124)	Chapter 2
Environmental Setting (Section 15125)	Chapter 3
Consideration and Discussion of Environmental Impacts (Section 15126)	Chapter 4
Mitigation Measures (Section 15126.4)	Chapters 4.1-4.13
Cumulative Impacts (Section 15130)	Chapters 4.1-4.13
Alternatives to the Proposed Project (Section 15126.6)	Chapter 5
Growth-inducing Impacts (Section 15126.2)	Chapter 6
Effects Found Not to Be Significant (Section 15128)	Chapter 6
Organizations and Persons Consulted (Section 15129)	Chapter 8
List of Preparers	Chapter 8
Acronyms/Abbreviations	Chapter 9

1.2.2 Review and Comment on the Draft Environmental Impact Report

The Draft EIR for the Project is being distributed directly to numerous agencies, organizations, and interested groups and persons for comment during the formal review period. The Draft EIR is also available for review at the following locations in the County:

- City of El Centro Public Library, 539 State Street, El Centro, California

This document is available for review online at the Imperial County Planning and Development Services Department (ICPDSD) website: http://www.icpds.com.

Interested individuals, organizations, responsible agencies, and other agencies can address written comments about the Draft EIR to:

David Black, Planner
Imperial County Planning & Development Services Department
801 Main Street
El Centro, CA 92243

Agency responses to the Draft EIR should include the name of a contact person within the commenting agency. Due to the time limits mandated by State law (CEQA Guidelines Section 15205[d]), comments must be sent to the County at the earliest possible date but not later than close of business on October 18, 2023, which is 50 days after publication of this notice.

1.3 ORGANIZATION OF THE DRAFT EIR

The Draft EIR is organized into the following chapters so the reader can easily obtain information about the Proposed Project and related environmental issues:

- Executive Summary – Presents a summary of the Proposed Project and alternatives, potential impacts and mitigation measures, and impact conclusions regarding growth inducement and cumulative impacts.
- Chapter 1: Introduction – Describes the purpose and use of the Draft EIR, provides a brief overview of the Proposed Project, and outlines the organization of the Draft EIR.
- Chapter 2: Project Description – Describes the Project location, Project details, and the County's overall objectives for the Project.
- Chapter 3: Environmental Setting – Describes the baseline environmental setting and existing physical conditions, including related projects in the area.
- Chapter 4: Environmental Analysis – Describes the existing conditions, or setting, before Project implementation; methods and assumptions used in impact analysis; thresholds of significance; impacts that would result from the Proposed Project; and applicable mitigation measures that would eliminate or reduce significant impacts for each environmental issue.
- Chapter 5: Alternatives Analysis – Evaluates the environmental effects of Project alternatives, including the No Project Alternative and Environmentally Superior Project Alternative.
- Chapter 6: Other CEQA Considerations – Includes a discussion of issues required by CEQA that are not covered in other chapters. This includes unavoidable adverse impacts, impacts found not to be significant, irreversible environmental changes, and growth-inducing impacts.
- Chapter 7: References – Identifies the documents and individuals consulted in preparing the Draft EIR.
- Chapter 8: Report Preparation – Lists the individuals involved in preparing the Draft EIR and organizations and persons consulted.
- Chapter 9: Acronyms/Abbreviations – Presents a list of the acronyms and abbreviations.

Appendices – Present data supporting the analysis or contents of this Draft EIR. The Appendices include the following:

- **APPENDIX A** – Initial Study and Environmental Analysis for the Hell's Kitchen PowerCo 1 and LithiumCo Project, March 2022, Chambers Group, Inc.; NOP; and NOP Comment Letters.

- **APPENDIX B** – DRAFT Air Quality Technical Report for the Hell's Kitchen Geothermal Power Plant and Lithium Production Plant, May 6, 2022, Panorama Environmental, Inc.
- **APPENDIX C** – Biological Resources Technical Report Hell's Kitchen PowerCo 1 and Hell's Kitchen LithiumCo 1 Projects, November 2021, Panorama Environmental, Inc.
- **APPENDIX D1** – Aquatic Resources Delineation Report Hell's Kitchen Geothermal Project Well Pad 4, November 2022, Great Ecology.
- **APPENDIX D1** – Aquatic Resources Delineation Report Hell's Kitchen Geothermal Project Stage 1, December 2022, Great Ecology.
- **APPENDIX E** – Cultural Resource Survey for the Hell's Kitchen PowerCo 1 and Hell's Kitchen LithiumCo 1 Projects Imperial County, California, October 22, 2021, Revised June 7, 2022, Tierra Environmental Services, Inc.
- **APPENDIX F** – Revised Geohazard Evaluation Report Hell's Kitchen PowerCo & Lithium PowerCo, LLC's Projects Section 10, 11, and 12; Township 11 North; Range 13 East Imperial County, California, July 26, 2022, Converse Consultants.
- **APPENDIX G** – Phase I ESA Report Proposed CTR Development Area NWC Davis Road and Alcott Road Calipatria, California, August 2021, GS Lyon.
- **APPENDIX H** – Conceptual Hydrology Study: Hell's Kitchen PowerCo 1 and LithiumCo 1 Project County of Imperial, California, June 7, 2022, Q3 Consulting.
- **APPENDIX I** – Conceptual Storm Water Quality Analysis: Hell's Kitchen PowerCo 1 and LithiumCo 1 Project County of Imperial, California, June 7, 2022, Q3 Consulting.
- **APPENDIX J** – Noise Assessment Hell's Kitchen Geothermal Project County of Imperial, CA, June 17, 2022, Ldn Consulting, Inc.
- **APPENDIX K** – Hell's Kitchen Geothermal Project VMT Analysis, December 3, 2021, DKS Associates.
- **APPENDIX L -** Assembly Bill (AB) 52 Tribal Consultation
- **APPENDIX M –** Water Supply Assessment

CHAPTER 2.0 – PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

Controlled Thermal Resources (US) Inc. via its subsidiary Hell's Kitchen Geothermal, LLC is proposing the Hell's Kitchen PowerCo 1 (HKP1), and Hell's Kitchen LithiumCo 1 LLC is proposing the Hell's Kitchen LithiumCo 1 (HKL1) in Imperial County, California. HKP1 involves the development of a geothermal power plant that will produce up to 49.9 megawatts (MW) net of geothermal green energy. HKL1 involves development of mineral extraction and processing facilities capable of producing lithium hydroxide, silica and polymetallic products, and possibly boron compounds, for commercial sale. HKP1 and HKL1 (together referred to as the Proposed Project) will be constructed by Hell's Kitchen PowerCo 1 LLC and Hell's Kitchen LithiumCo 1 LLC respectively, both subsidiaries of Controlled Thermal Resources (US) Inc. (CTR) and will have shared facilities. Hell's Kitchen Operating Services LLC, also a subsidiary of Controlled Thermal Resources (US) Inc. will operate and maintain these facilities.

2.2 PROJECT LOCATION

The Project is located within undeveloped land and a right-of-way (ROW) corridor for the gen-tie transmission line to the IID interconnect station near Hudson Ranch (HR1). The Project would be located within Sections 11 and 12, Township 11 South, Range 13 East in Imperial County near the eastern shore of the Salton Sea (Project site; Figure 2.0-1, Project Site Location). The Project is approximately 3.6 miles west of the town of Niland. A list of the parcels included in the Project are shown in Table 2.0-1: Project Assessor Parcel Numbers (APNs). The majority of the proposed HKP1 and HKL1 facilities are located immediately west of Davis Road, with administrative buildings and warehouses located east of Davis Road. The 230-kilovolt (kV) gen-tie line for HKP1 will run from Noffsinger Road approximately 2 miles south to McDonald Road and then will run approximately 0.3 miles east to Hudson Ranch. The gen-tie line would be located east of Davis Road and north of McDonald Road, within the IID's transmission ROW and within new ROW. Powering HK1 facilities would occur through a cable tray between HK1 And HKL1 facilities.. The layout of the Project is shown in the Project Site Plan (Figure 2.0-2, Project Site Plan).

Table 2.0-1: Project Assessor Parcel Numbers (APNs)

APN	Project Component	Zoning Designation
020-010-012	HKP1 and HKL1 Shared Facilities	S-1-G and S-2-G
020-010-013	HKP1 and HKL1 Shared Facilities	S-1-G
020-070-060	HKP1 and HKL1 Shared Facilities	S-1-G
020-010-042	Gen-Tie and Power Line	S-1-G
020-060-001	Gen-Tie and Power Line	S-1-G
020-060-002	Gen-Tie and Power Line	S-1-G
020-060-039	Gen-Tie and Power Line	S-1-G
020-060-040	Gen-Tie and Power Line	S-1-G
020-070-026	Gen-Tie and Power Line	S-1-G
020-070-025	Gen-Tie and Power Line	S-1-G
020-070-029	Gen-Tie and Power Line	S-1-G
020-070-055	Gen-Tie and Power Line	S-1-G

020-010-031	Gen-Tie and Power Line	S-1-G
020-010-032	Gen-Tie and Power Line	S-1-G
020-010-035	Gen-Tie and Power Line	M-2-G-PE
020-100-044	Gen-Tie and Power Line	M-2-G-PE

Notes: S-1-G (open space/geothermal overlay); S-2-G (open space/preservation/ geothermal overlay); M-2-G-PE (medium industrial/geothermal overlay)

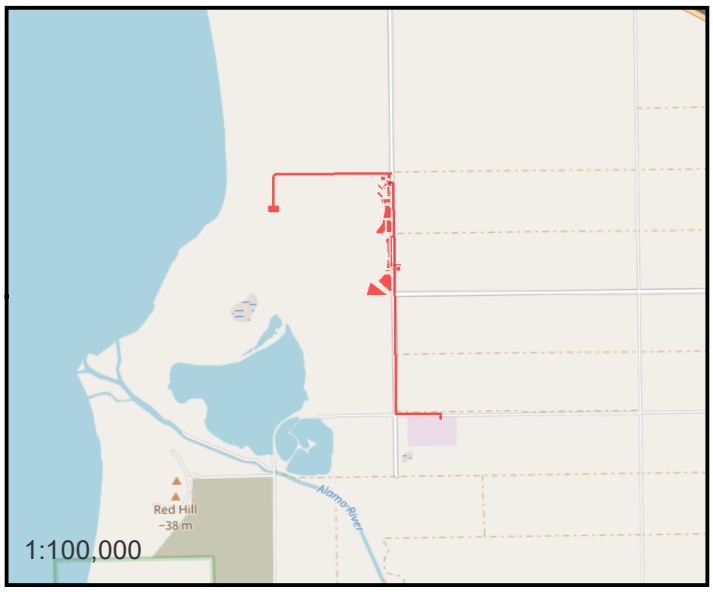
As shown in Table 2.0-1, the majority of the development area is zoned S-1-G (open space/geothermal overlay zone) with a portion zoned S-2-G (open space/preservation/geothermal overlay) and is entirely within the renewable energy/geothermal map overlay zone in the 2015 Renewable Energy and Transmission Element update to the County General Plan (Figure 2.0-3, Zoning Map). The gen-tie and power line ROW is zoned S-1-G and M-2-G-PE (medium industrial/geothermal overlay). The General Plan Land Use designation for the entire Project is Agriculture (County, 2007, Figure 2.0-4, Land Use Designation Map).

The Project will be accessed from Davis Road via new ingress/egress driveways. Project traffic will access the site from Highway 111 via McDonald Road and Davis Road. County road ingress/egress points will be constructed in conformance with Imperial County Public Works Department and Fire Department requirements. Road access will be restricted during construction, and appropriate traffic controls will be in place during construction of the Project. Following construction, Davis Road will be paved from McDonald Road to Noffsinger Road.

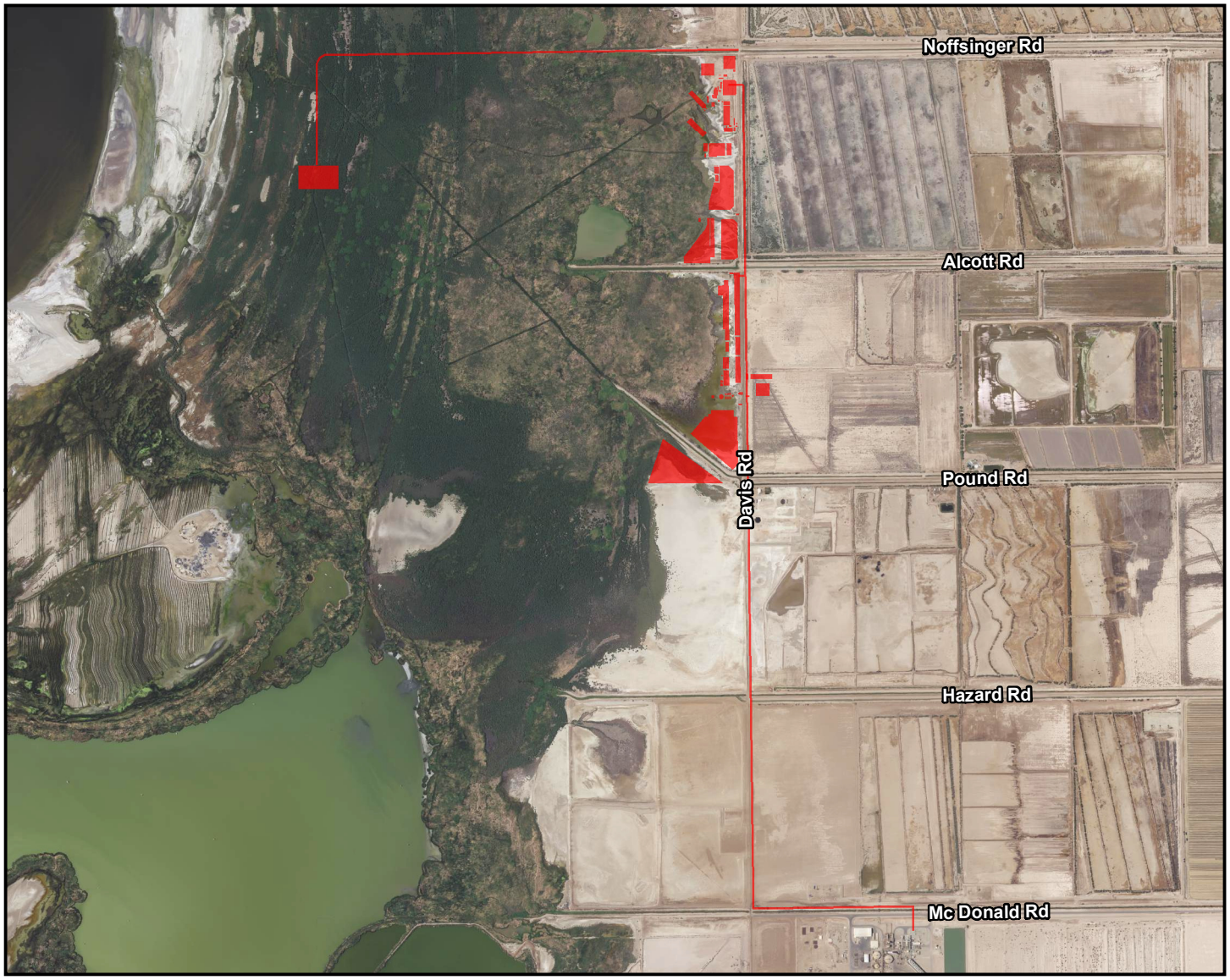
2.3 CURRENT USE OF THE PROJECT SITE AND SURROUNDING AREAS

The Project is located on vacant land that is generally undeveloped. On June 14, 2017, the County authorized Geothermal CUP #16-0001, which allowed construction of up to four well pads as well as drilling and maintenance of up to six separate geothermal exploratory wells on the Project site. A well pad, Well Pad 1, north of Alcott Road and west of Davis Road, and two geothermal wells were constructed on the site in 2021. Rough grading for Well Pad 3, south of Noffsinger Road and east of Davis Road began in November 2021. The remaining Project site is undeveloped.

Areas to the north and south of the Project site consist of undeveloped open space. Area to the west is open space followed by the Salton Sea. The State of California manages a wildlife management area, including waterfowl ponds to the east of the Project site.







Project Location

N

0 750 1,500 3,000

Feet

Figure 2.0-1
Hell's Kitchen Power
Project Location and Vicinity

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CHAMBERS GROUP



Figure 2.0-2
Hell's Kitchen Power
Project Site Plan

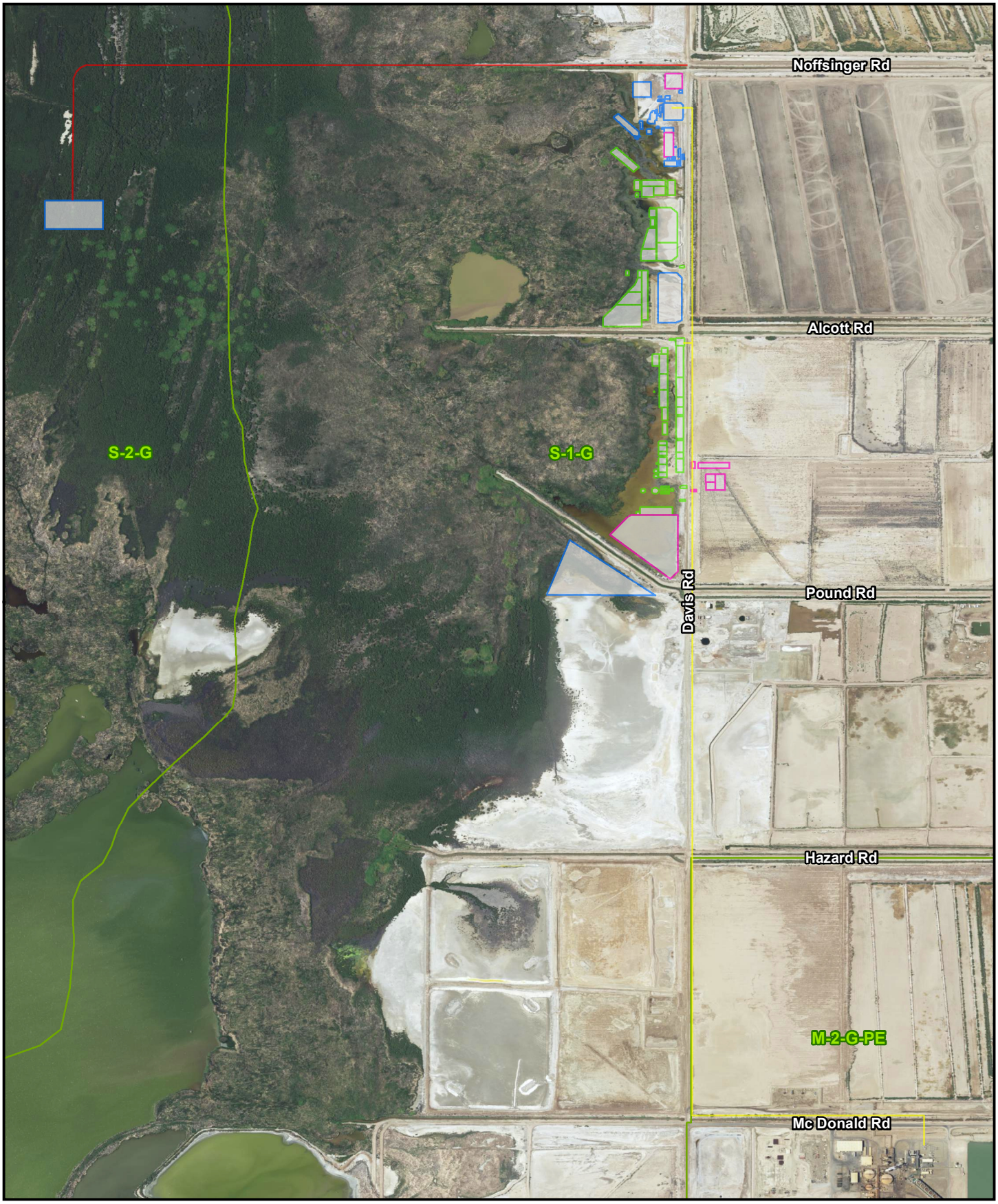
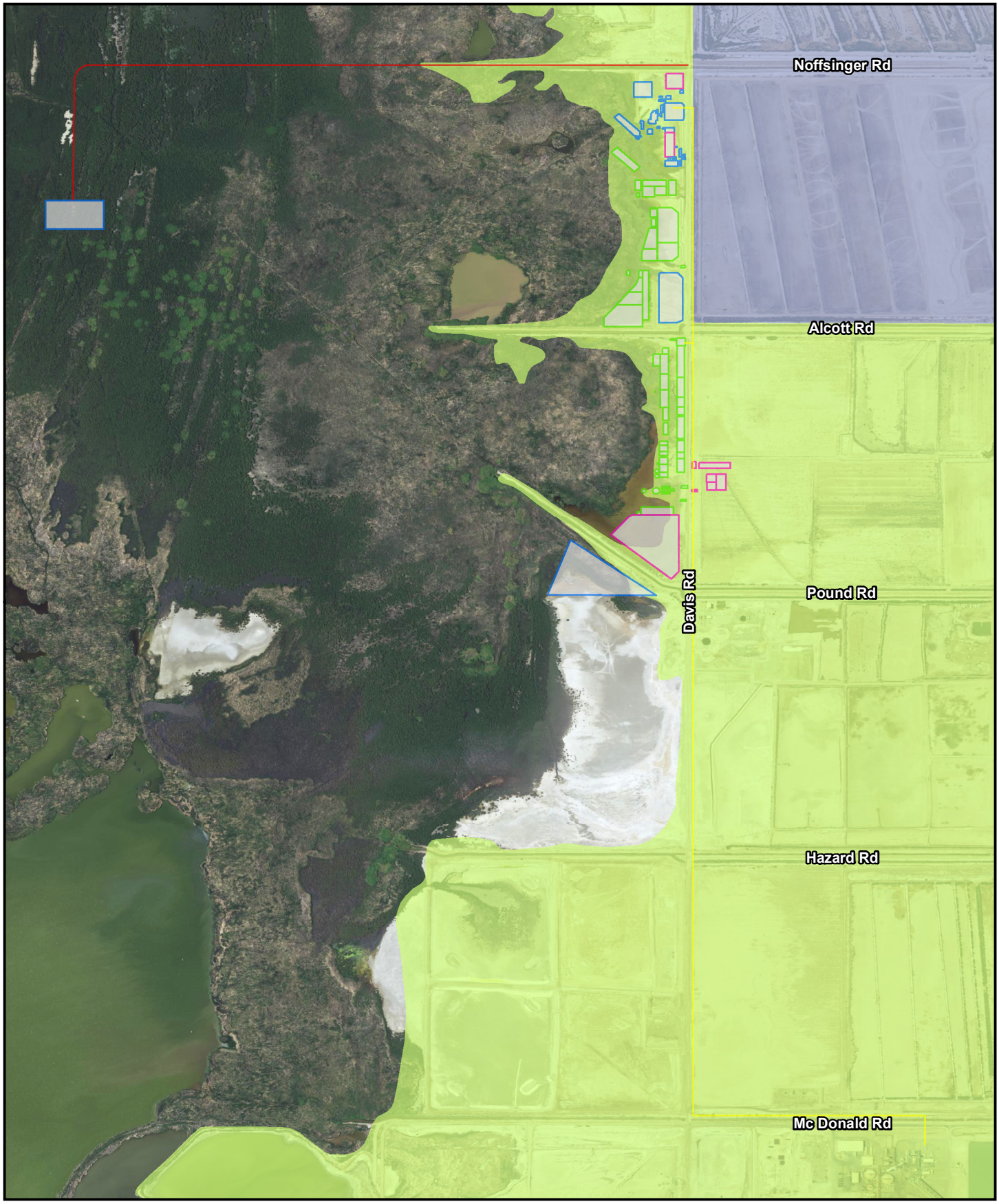


Figure 2.0-3
Hell's Kitchen Power
Zoning



Hell's Kitchen PowerCo 1 Facility
Hell's Kitchen LithiumCo 1 Facility
Shared PowerCo 1 and Lithium Co 1 Facility
Gen-tie/Powerline
S-Berm Extension Road

Land Use Designation

Agriculture
Government/Special Public

N

0 500 1,000 2,000

Feet

Figure 2.0-4
Hell's Kitchen Power
Land Use Designation

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CHAMBERS GROUP

2.4 PROJECT OBJECTIVES

The Proposed Project has the following objectives:

The HKP1 objectives include the following:

- To produce 49.9MW (net) of geothermal green energy from within CTR's geothermal lease area.
- To provide power to the Imperial Irrigation District and other potential off takers.
- To minimize and mitigate potential impacts to sensitive environmental resources while producing renewable energy and creating jobs.

The HKL1 objectives include the following:

- To provide a sustainable domestic source of lithium, a designated critical material identified by the U.S. Department of Energy.
- To extract and produce lithium hydroxide, silica, bulk sulfide, and polymetallic products for commercial sale from the geothermal brine within the Hell's Kitchen lease area
- To minimize the distance between the geothermal power plant and lithium extraction plant for production efficiency and to reduce the extent of pipeline required to convey brine and steam to and from the geothermal power facility to the mineral extraction plant, therefore minimizing the overall industrial footprint of the combined power and mineral operations
- To minimize and mitigate potential impacts to sensitive environmental resources within the Project area.

2.5 PROJECT SUMMARY

The Project will consist of the following activities:

- construction and operation of a 49.9-MW geothermal power plant;
- construction of well pads with geothermal production and injection wells;
- construction of pipelines between HKP1 and HKL1 to facilitate the movement of brine between the facilities;
- construction and operation of a mineral-extraction facility to extract lithium hydroxide, silica, and polymetallic products, and possibly boron compounds from the geothermal brine;
- construction and operation of minerals handling and packaging facilities;
- construction of ingress and egress to the Project site from Davis Road;
- paving of Davis Road from McDonald Road to Noffsinger Road (approximately 2 miles);
- construction and operation of a 230-kV gen-tie line (approximately 2 miles south and 0.3 miles east); and
- construction of shared administrative facilities, offices, repair facilities, shipping and receiving facilities, and other infrastructure components.

The development area for the Project would be approximately 68 acres. The Project site layout is illustrated in Figure 2.0-2.

2.5.1 Structures

HKP1 will include construction of the following structures:

- production and injection wells and well pads
- geothermal fluid production and injection pipelines
- a brine processing facility
- a brine pond
- 49.9-MW net geothermal turbine generator facility
- a cooling tower
- material and equipment storage
- a control building
- administrative and warehouse buildings
- a water storage pond and water storage tank
- an on-site substation
- a 230-kV gen-tie line to the IID interconnect station near Hudson Ranch

HKL1 will include construction of the following structures:

- geothermal pipelines to transfer brine from HKP1
- a cooling tower
- truck entrance security
- a cooling tower
- brine crystallizers, clarifiers, thickeners, and filter presses
- a lithium-recovery resin vessel and systems
- raw water filtration, fire-water storage, and reverse osmosis facilities
- electrical buildings to house electric power switchgear and electrical metering
- reagent storage and preparation buildings
- two motor-control centers
- lithium product handling and packaging buildings (that will house the filtration and drying equipment for the lithium products and bagging and palletizing of finished products)
- polymetallic product handling facilities
- 13.8kV power transmission cable from HKP1
- silica product handling facilities
- bulk boron containing product handling facilitiestwo lime silos
- hydrochloric acid offloading and storage tanks
- a reverse osmosis water treatment facility

The two lime silos will be up to 60 feet tall. The evaporator support structure will be up to 80 feet tall and the cooling towers up to 50 feet tall. The crystallizers will be 80 to 110 feet tall. The gantry crane will be up to 60 feet tall. The electrical power line and transmission structures will be up to 120 feet tall. All other buildings and structures will be single-story with a maximum height of 35 feet. The buildings will be an earth-tone color. The Project would require a variance for the increase in height above 35 feet.

2.6 HKP1 Facilities

2.6.1 Production and Injection Wells

The Project will use Well Pad 1 and may use a well pad adjacent and north of the Q Drain for geothermal fluid production and injection. The Project may also use Well Pad 3 and/or Well Pad 4 for geothermal fluid production or injection. Well Pad 1 was previously approved for geothermal exploration drilling and was constructed in 2021. The geothermal production wells will be drilled at Well Pad 1, and one or two

injection wells will also be drilled at Well Pad 1. The existing footprint of Well Pad 1 will be expanded during construction of the commercial facility by approximately 160 feet to the north to accommodate the wells required for commercial operation of the Project. Well Pad 4 and Well Pad 4 were previously approved by the County for geothermal exploration drilling but was not constructed. The Project will include a total of seven wells for production and injection, including one well for injection of aerated fluids. The two previously drilled geothermal exploration wells will be used as commercial production wells for the Project. All production and injection wells will be operated in accordance with California Geologic Energy Management Division (CalGEM) regulations.

2.6.2 Well-Site Production and Injection Equipment

Production and injection wellhead dimensions are not expected to exceed a height of 15 feet above the ground surface or 4 feet in diameter. The wellhead will consist of control valves, warmup bypass valves, and isolation valves. The wellheads will be insulated, and the insulation cladding will be supplied with an appropriate color to blend with the area and minimize visibility.

The injection wells will be located to avoid geothermal fluid interference with the production wells. Each injection well will be remotely monitored for pressure, temperature, and flow rate. Injection pumps located at the power plant site will pump the geothermal injection fluid through the injection pipeline system, providing sufficient pressure to inject the geothermal brine back into the geothermal reservoir. Limited electrical equipment is required at the injection well sites. A flow meter will be integrated into the injection pipeline equipment at the injection well pad and remotely operated from the control room. Overhead lighting will be constructed on the injection well pads. The injection well pad will be fenced.

The geothermal production and injection wells will be drilled from the production and injection well pads using steel, titanium or titanium alloy, nickel alloy, duplex stainless steel, or equivalent as appropriate to the final well completion depth.

2.6.3 Geothermal Pipeline Systems

Above-ground pipelines will be constructed to interconnect the production and injection wells with the power plant site facilities. The pipelines will be constructed at ground level on pipeline supports on drilled foundations approximately every 20 to 40 feet along the pipeline routes. The pipelines will use a cattleguard type crossing at the Q and R Drains to avoid impacts on the irrigation drains, and the crossing will be constructed in collaboration with IID. Pipeline construction will be conducted concurrently with construction of the power plant.

The production wellheads will be located on Well Pad 1, south of the power plant site. An above-ground pipeline will be constructed from the production wells to the brine and steam-handling facilities on the power plant site. The production pipelines will be constructed from alloy or alloy-lined pipe designed, constructed, tested, and inspected pursuant to current industry standards for high temperature, high-pressure piping. Above-ground geothermal fluid pipelines, approximately 30-inches in diameter, will be covered with approximately 2 inches of insulation and a protective metal sheath appropriately colored to blend with the area.

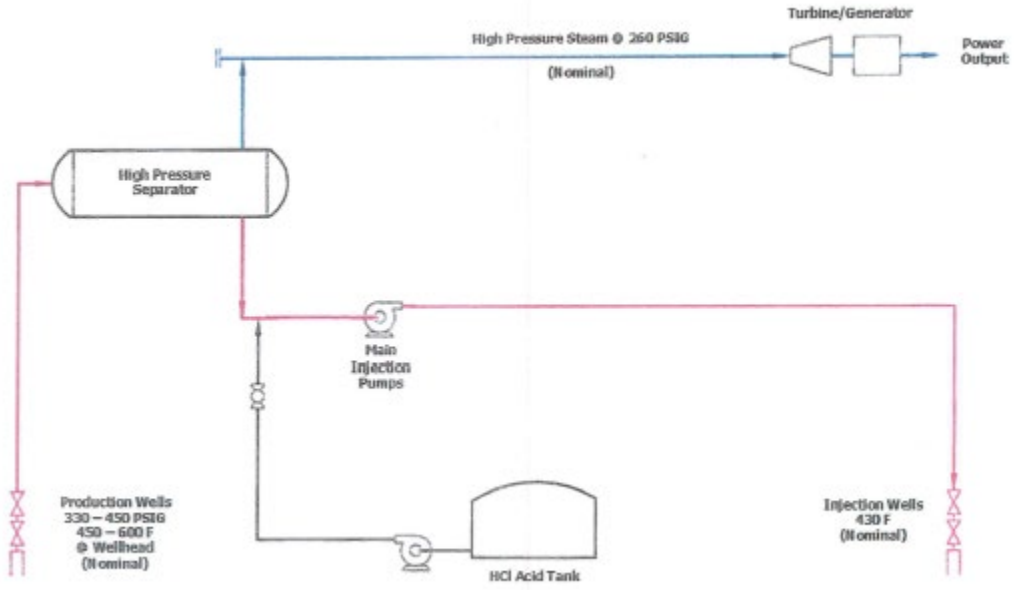
The brine injection pipeline will be either cement-lined carbon steel, alloy, or a combination of both. The brine injection pipeline will be approximately 24 inches in diameter and will be insulated then covered with a protective metal sheath appropriately colored to blend with the area.

2.6.4 Brine Processing Facility

The brine processing facility will prepare the geothermal fluid produced from the production wells for steam extraction. The geothermal fluid will be delivered through aboveground pipelines to the brine-processing facility. The spent brine will be injected back into the geothermal reservoir through injection wells (discussed below).

A pH-modification system will be installed should silica management be necessary to prevent scaling in either surface equipment or injection wellbores. The pH modification system will involve injection of dilute hydrochloric acid (HCl) into the brine stream exiting the high-pressure separator at a rate to establish a known bulk fluid pH value. The pH modification system consists of a concentrated acid storage tank, acid transfer pumps, a diluted acid storage tank, diluted acid injection pumps, and an injection nozzle to distribute the diluted acid into the brine injection pipeline. Concentrated HCl (approx. 32% by weight) will be delivered to the Project site by truck for storage. The concentrated acid will be mixed with service water to create a diluted acid solution (approx. 4% by weight). This diluted acid solution, should it be necessary for silica management, would then be injected into the brine pipeline between the high-pressure separator and the brine-injection pumps.

The brine processing facility would flow through the system as shown in the image below.



The expected brine composition is in Table 2.0-2 below.

Table 2.0-2: Expected Brine Composition

Mineral	Value (mg/L)
Ammonium, NH_4	250
Arsenic, As	10

Mineral	Value (mg/L)
Barium, Ba	250
Boron, B	350
Bromine, Br	100
Calcium, Ca	29,000
Cesium, C	15
Chloride, Cl	156,000
Cobalt, Co	<0.05
Copper, Cu	5
Iodide, I	10
Fluoride, F	25
Iron, Fe	1,600
Lead, Pb	100
Lithium, Li	250
Magnesium, Mg	50
Manganese, Mn	1,400
Potassium, K	17,000
Sodium, Na	54,000
Silica, SiO_2	350
Strontium, Sr	500
Sulphate, So_4	5
Zinc, Zn	500

2.6.5 Brine Pond

The brine pond will be cement-lined, with an underliner-leak detection system, and will allow for storage of brine during upset conditions and collection of brine during flow testing and plant start-up. The brine pond will be sized to accommodate two times the volume of the largest vessel and up to four hours of normal-brine-flow equivalent during system upset conditions plus two feet of freeboard. The brine pond will be constructed as a waste management unit (WMU) to meet Colorado River Regional Water Quality Control Board (CRRWQCB) surface-discharge requirements. Groundwater-monitoring wells will be constructed adjacent to the brine pond in conformance with CRRWQCB requirements.

2.6.6 Turbine Generator Facility

The Project will use flash-based power plant technology utilized in the Salton Sea geothermal field since 1982 to convert geothermal-based renewable steam energy into electricity. Steam from the high temperature geothermal fluid in the brine-handling facilities will be delivered to the turbine generator facility. The turbine generator facility will include a 49.9-MW (net) condensing turbine/generator set, a gas removal and emission abatement system, and a heat rejection system (i.e., condenser and cooling tower). The steam will be cleaned using a scrubber and demister before being admitted into the

condensing steam turbine. The turbine will be directly coupled to a totally enclosed water and air-cooled (TEWAC) synchronous-type generator. The turbine-generator unit will be fully equipped with all the necessary auxiliary systems for turbine control and speed protection, lubricating oil, gland sealing, generator excitation, and cooling. Facilities associated with the turbine generator facility include a control building, a service water storage tank, lube oil skid, and other ancillary facilities.

Two 3.9-MW diesel generator will be installed to provide black start1 capability.. An 800-kW emergency generator will also be installed to provide emergency backup for critical-instrument and equipment-control power. The diesel engines will meet California Air Resources Board (CARB) air pollutant emission limits. The generators are expected to operate fewer than 600 hours per year.

2.6.7 Heat Rejection and Noncondensable Gas Removal Systems

The heat rejection system will be comprised of a shell-and-tube type condenser, a counterflow cooling tower, and a noncondensable gas (NCG) removal system. The cooling tower, NCG removal system, and condenser design will be similar to those employed at other geothermal power plants at the Salton Sea. The cooling tower will be up to 40 feet tall. Steam from the turbine will be condensed in the condenser. The geothermal steam condensate from the condenser will be collected in an aeration tank and used as a source of makeup water for the cooling tower and or other water needs.. Gases that accumulate in the condenser will be evacuated by the NCG removal system. NCG will be pressurized and vented to a Regenerative thermal oxidizer hydrogen sulfide (H_2S) abatement system during normal plant operation.

During plant start-up or load rejection (i.e., plant trip offline), steam to the turbine will be diverted to a rock muffler for safe venting, which is currently the procedure at the existing geothermal power plants in the Salton Sea Known Geothermal Resource Area. During this time, H_2S and other NCGs will be released to the atmosphere.

A combination of best-available control technology, management practices, and process-monitoring equipment will be used to minimize air emissions from the power plant facilities. Permits to construct and operate the facility will be obtained from the Imperial County Air Pollution Control District (ICAPCD).

2.6.8 Hydrogen Sulfide Abatement System

H_2S gas is a naturally occurring compound found in Salton Sea geothermal brines. To minimize H_2S H_2S from being released to the atmosphere and to meet permitted requirements during routine operations, the project will employ proven abatement systems. The H_2S abatement system effectively oxidizes the gas to a sulfate ($SO4^{2-}$) that is highly soluble and then returns the sulfate product to injectate streams via the cooling tower blowdown process. HKP1 plans to utilize this technology, or alternatively the best available technology for H_2S abatement."

NCGs, including H_2S, are removed from the main condenser through a series of steam-powered air ejectors, vacuum pumps, and compressors. Once the gas stream is pressurized, it is sent to to the RTO, where the H_2S is oxidized at high temperature to produce sulfur dioxide, which is then scrubbed with sodium hydroxide to produce soluble sodium sulfate. The sulfate product is injected into the reservoir with cooling tower blowdown.

[1] Blackstart service is the capability of generating units to start without an outside electrical supply or the demonstrated ability of a generating unit to automatically remain operating at reduced levels when disconnected from the grid (FERC-NERC, 2018).

Additionally, condensate flowing from the main condenser is routed to a tank where oxygen (sparged air) is introduced along with oxidizing chemicals. This process oxidizes any remaining dissolved H_2S gas to soluble sulfate. The treated condensate is then introduced to the cooling tower basin as a source of makeup water. As stated above, the sulfate product is subsequently injected into the reservoir as cooling tower blowdown.

2.6.9 Substation and Electrical Power Transmission

The electricity from the geothermal power plant will be converted to 230-kilovolts (kV) in the onsite substation. The output of the turbine generator facility is connected through a generator breaker to a (13.8-kV to 230-kV) main step-up transformer in the facility substation. The transformer will be set on a concrete pad within an oil containment system. The transformer will include air-insulated switchgear. The high voltage side of the main step-up transformer will be connected to a new gen-tie line located within IID's transmission ROW to the IID interconnect station at HR1. The gen-tie line will be constructed as part of the power plant construction but turned over to IID for ownership and operation. The transmission line will be installed on steel structures that will support up to two 230-kV three-phase electrical circuits, including optical ground and static wire. The steel structures will consist of direct-bury steel poles approximately 120 feet tall and will span an average length of 800 feet.

2.7 HKL1 FACILITIES

2.7.1 Pipe Rack and Process Pipelines

A pipe rack will be constructed from the HKL1 Project's process area to the HKP1 site. A geothermal brine delivery pipeline from HKP1 will feed brine to the HKL1 Project's process area. Steam/steam-condensate pipelines will also be constructed on the pipe rack. After minerals processing, the depleted brine will be delivered to the HKP1 injection system for reinjection into the geothermal reservoir.

The geothermal brine delivery and return pipelines will be constructed with minimal usage of flanged connections to reduce the potential for pipeline leaks. Automatic valves will be integrated into the pipeline system that will close or divert the geothermal brine in the event of a pipeline issue to minimize the size of any potential spill. An Emergency Response Plan will be prepared and implemented should a fluid spill event occur.

2.7.2 Product Extraction Facilities

The lithium extraction areas will be constructed on concrete pads with a containment curb. The lithium extraction processing areas will consist of a series of interconnected tanks, pipelines, and control valves.

2.7.3 Security Fence and Landscaping

A security fence will be constructed around the Project site. The fence will be constructed to meet County standards for obscured fencing around processing areas.

2.7.4 Power Facilities

Power will be supplied to HKL1 from the HKP1 switchyard. A power cable will be routed from a HKP1 power distribution center on a cable tray to a power distribution center at HKL1 .. Up to six electrical-control buildings will be located on the site, and each will house pad-mounted transformers and

switchgears. An emergency standby diesel generator will provide emergency power supply in case of electrical outage.

2.8 HKP1 AND HKL1 SHARED FACILITIES AND DESIGN

2.8.1 Foundations

Buildings and equipment will be constructed on foundations consistent with the overall site plan. Deep foundations for all major equipment are expected to require subsurface improvements in the form of steel and or concrete pilings. Shallow foundations for buildings are not expecting to require piling supports.

2.8.2 Water Storage

A high-density polyethylene (HDPE)-lined freshwater pond will be constructed at the southern end of the Project site and just north of the Q Drain. The pond will store and provide fresh water for Project operations. The pond will be sized to provide sufficient storage capacity to meet Project demand during foreseeable periodic interruptions in IID canal water availability. A water storage tank will be located on site for fire water storage, and a 5-acre water storage pond for the facility to use would also be on-site.

2.8.3 Stormwater Retention

Stormwater retention infrastructure will be constructed along the western boundary of the site. A berm/levee will run along the western boundary of the site to contain any stormwater runoff and prevent stormwater run-on. Water accumulated in the stormwater retention basin will be allowed to evaporate or possibly used as a substitute for normal fresh water. The retention basin will be designed to meet State Water Resources Control Board requirements and will include an appropriate mosquito abatement per Imperial County guidelines.

The developed Project facility pad generally will be flat but will be designed to effectively drain to the stormwater retention basin. The stormwater drainage system will be size to accommodate 3 inches of precipitation in a 24-hour period (100-year storm event), and to comply with applicable local codes and standards. Buildings and equipment will be constructed to provide protection from a 100-year storm event. Spill containment areas and sumps subject to spills of miscible chemicals will drain to an enclosed oil/water separator and collected in a waste oil tank for off-site recycling. The site will be graded and constructed so that any geothermal fluid spills will be collected in sumps that drain to the brine pond rather than the stormwater retention basin.

2.8.4 Generation Tie Line and Power Facilities

The 230-kV gen-tie structures constructed for the HKP1 project will also provide power for the HKL1 Project. The gen-tie line will run from Noffsinger Road approximately 2 miles south to McDonald Road and then will run approximately 0.3 miles east to Hudson Ranch. The gen-tie line will be located east of Davis Road and north of McDonald Road within the IID's transmission ROW..

2.8.5 Parking and Site Access

Parking will be available in the administration and control building area. The Project will be accessed from Davis Road via new driveways. Davis Road will be upgraded with aggregate base during construction of

the HKP1 Project. Project traffic will access the site from Highway 111 via McDonald Road and Davis Road. A bridge, separate from the cattle guard, will be constructed across the R Drain to connect the northern and southern portions of the Project site. County road ingress/egress points will be constructed in conformance with Imperial County Public Works Department and Fire Department requirements. During construction of the Project, road access will be restricted, and appropriate traffic controls will be in place. Davis Road will be paved from McDonald Road to Noffsinger Road at the completion of HKL1 Project construction. All structures within the IID ROW, including the bridge over the R Drain, will require IID approval.

2.9 PROJECT COMPONENTS

The Project consists of construction and operation of the HKP1 and HKL1 facilities to develop and operate geothermal and mineral processing facilities.

2.9.1 Project Construction

Site Preparation

Prior to construction of the power plant facility, the limits of the power plant site impact area will be staked and flagged. All vegetation within the power plant site impact area will be cleared. Vegetation will be removed using a brush hog or functional equivalent. The removed vegetation will either be chipped on site for dust control, reused in landscaping, or composted. Sediment and erosion-control best management practices will be installed along the work areas as needed to protect water quality and control sedimentation and erosion during construction.

Shallow groundwater encountered in excavations (e.g., foundations, water storage pond) would be removed from the excavation via a submersible pump and would be either be applied as irrigation in upland areas via perforated pipe, discharged through a sediment filter bag, or pumped to a Baker Tank and removed from the site. The groundwater dewatering method would comply with all water quality standards. A Colorado River Regional Water Quality Control Board permit will be obtained prior to any groundwater discharge to land.

Approximately 400,000 cubic yards of engineered fill material will be imported and compacted within the Project site to construct the Project facilities. The geothermal power production facilities will be on a pad of compacted fill material averaging approximately 2 to 3 feet in elevation over existing grade. The Project will be constructed to an elevation above the Imperial County designated special flood hazard for lands near the Salton Sea and will have a berm extended to the outer perimeter of the site as part of the stormwater infrastructure described above.

Well Pad 1 will be extended by approximately 160 feet to the north. Well Pad 3, should it be constructed, will be approximately the same size as Well Pad 1 and located to the south of the S-Drain and west of Davis Road. The production and injection well pads and access roads will be constructed on imported fill and compacted to finished grade. Grading will occur at the administration and warehouse area east of Davis Road, to provide a flat space for construction of the proposed buildings and foundations. Limited grading is proposed for the gen-tie line. A flat, approximately 100 foot by 100 foot pad will be constructed at each transmission structure location, to support the cranes and heavy equipment that will be required to install the transmission structures.

Material staging and laydown will occur within the Project area after site preparation. The area between Well Pad 1 and HKP1 facilities west of Davis Road will be available for material staging and laydown during construction.

Construction Workforce and Schedule

The construction phase of the Project (power portion and lithium portion) is anticipated to last 24 months in total. CTR anticipates starting construction 4th quarter 2023, after all necessary permits and authorizations are obtained through 4th quarter 2025.Construction will generally be conducted Monday through Saturday from 7 a.m. to 6 p.m. over the 24-month construction period. Construction work will also occur during nighttime hours during periods of extreme heat in the summer.

Project construction is anticipated to span an approximately 24-month period. The HKP1 well drilling will be conducted during the construction period and will occur 24 hours a day, seven days a week until the targeted well depth is obtained for each well and all wells are complete. Well drilling is anticipated to last approximately 8 weeks at each well and will involve a workforce of approximately 12 to 20 people, depending upon the activity. An average of approximately 225 workers will be on site daily during construction, with a maximum of approximately 450 workers per day during peak construction. The power portion will be complete prior to the remainder of the Project, and it is anticipated to be complete in the 4th quarter of 2024. Construction will continue on the lithium portion with an anticipated completion in the 4th quarter og 2025.Trailers may be brought to the site to provide temporary worker housing and offices for the owner's representatives, construction management & staff, security, canteen facilities, and drilling staff who need to be on site 24 hours/day. The temporary housing will be located on site for the duration of the construction and drilling periods. Portable sanitary facilities will be housed on trailers, and sanitary waste from construction will be serviced regularly and removed from the site in compliance with all federal, State, and local regulations.
Construction Truck Trips

The HKP1 Project will require approximately 54,000 truck trips over the course of the project construction. The HKL1 Project is estimated to have an average of 25 trucks per day to and from the construction site, except during site grading, when about 250 trucks will travel to and from the Project construction site daily. Up to 500 workers will travel to the site per day at the peak of construction.

Construction Equipment

Below is a list of typical construction equipment types anticipated to be required for the Project:

- Off-highway trucks
- Rollers
- Crawler tractors
- Excavators
- Graders
- Water trucks
- Compactors
- Rubber-tired loaders
- Scrapers
- Cranes
- Generator sets
- Concrete pump
- Plate compactors
- Rough terrain forklifts
- Skid steer loaders
- Tractor/Loader/Backhoe
- Aerial lifts
- Welders
- Air compressors
- Pavers
- Paving equipment

- Personal lifts

Construction Water Supply Source and Requirements

Water will be used during construction for dust control and compaction. Water for dust control and compaction will be obtained from IID and transported to the site via truck or temporary pipeline. It is estimated that up to 240 acre-feet would be needed. Water will be applied for dust control to meet Imperial County dust control requirements.

Construction Power Supply Source

A new electrical drop from IID's distribution line will be installed at the Project site to provide temporary construction power. Alternatively, a generator may be used to provide construction power where a power line is not practical. Any generator use will be permitted with the Imperial County Air Pollution Control District (ICAPCD).

2.9.2 Project Operations

Routine operations and maintenance of the facility will include preventative maintenance and repairs of any damaged or otherwise inoperable equipment on an as-needed basis. The operation and maintenance staff will monitor the facility operations over the project life to ensure the Project is operating to meet design standards.

- The HKP1 facility will utilize geothermal brine to extract renewable electric energy which will be sold to IID, and other potential off-takers, through the gen-tie line and through an on-site low voltage line to the lithium facility. The HKL1 facility will utilize geothermal brine produced from the geothermal fluid management activities from the adjacent HKP1 power facility for the commercial production of lithium hydroxide, silica, and polymetallic products, and possibly boron compounds. The production processing steps may be altered over time as production methods and efficiencies evolve and new or revised product lines are developed at the facility. The process includes the following steps: brine cooling
- silica, polymetallic, and possibly boron compound production lithium and metals extraction
- extracted lithium
- processing of extracted lithium
- drying and packaging of lithium
- offsite product shipping

Each of the general processing steps is discussed further below. After processing of the geothermal brine, the depleted brine will be returned to HKP1 for injection at the wells, developed for HKP1..

Metal Recovery

Geothermal brine from the HKP1 will feed a vacuum-flash brine cooling trains sized for the full operating flow of approximately 5.9 million lb/hr. The cooled brine will be fed to the mineral extraction process. Silica, and polymetallic products, and possibly boron compounds will be extracted from the brine using proprietary technology. Silica, and polymetallic products, and possibly boron compounds will be filtered and shipped offsite in roll-off bins or other suitable Department of Transportation authorized

equipment. A lithium chloride (LiCl) product stream will be produced using a proprietary extraction process. The LiCl will be processed in the subsequent on-site lithium process steps to produce the required lithium hydroxide monohydrate. Lithium Production

The LiCl product stream will be concentrated and purified. The purified, concentrated LiCl will be transported via pipeline from the lithium purification/concentration operation to the lithium product production buildings. Proprietary technology will be used to convert the LiCl into a lithium hydroxide monohydrate (LiOH•H2O) product.

The LiOH•H2O product stream will be crystallized and transported to a lithium product-handling, production, and warehouse building, where the crystals will be separated from the lithium-rich process fluid in a filtration system. LiOH•H2O crystals will be dried and packaged in bulk bags. Packaging is expected to be into 20-kilogram (kg) bags or 1,000-kg super sacks.

Product Shipping to Off-site Markets

The HKL1 plant will produce multiple products for off-site shipment to market by truck. The average annual amount of product shipped out of the plant operating at 5,900,000 lb/hr brine flow capacity is estimated at approximately 6,300 lb/hr dry lithium product (LiOH•H2O), 1,600 lb/hr silica,110,000 lb/hr polymetallic products, and possibly 2,800 lb/hr boron compounds.. All products will be transported by freight truck on existing roadways to shipping distribution point(s).

Operational Workforce, Schedule, and Traffic

The HKP1 facility will require up to 22 full-time, on-site employees during operation. Operational staff will include operators, management and supervisors, maintenance technicians, and lab technicians. On a typical day, the operators will assume a two-shift, 24-hour workday, and all other personnel will assume a standard 8-hour workday. Approximately 22 worker trips, 3 vendor trips, and 1 haul-truck trip will take place during daily operations.

The HKL1 facility is expected to require up to 90 full-time, on-site employees during operation. Facility operations will continue 24 hours per day, 7-days per week. It is projected that up to 44 employees will be on site at any given time, with 28 day-staff employees and two rotating shifts of 16 additional employees overlapping the day staff and covering nights, weekends, and holidays. Approximately 113 trucks per day will travel in and out of the Project site during normal operations. Daily truck traffic includes up to 73 trucks for product shipping. All trucks used for internal product movement will be electric, pending availability of this type of equipment. Truck traffic will also include approximately 40 truck deliveries of reagent chemicals, cooling tower treatment chemicals, consumptive media, product-packaging materials, and fuel. Outgoing general waste generated on the site will be removed by truck as needed and is expected to require less than one truck per day.

Operational Water Supply and Requirements

The HKP1 will require up to approximately 400 acre-feet per year (AFY) of fresh water for normal operation, including supplemental cooling tower makeup and other plant uses when operating at full plant load. Average annual demand requirements will vary, depending on the capacity factor of the overall facility. It is anticipated that steam condensate will be utilized to offset fresh water requirements.

The primary source of fresh water for the facility is anticipated to be irrigation water made available under a supply contract and purchased through IID. Water will be obtained from the "Q," "R," or "S" lateral adjacent to the Project site. Water will be transferred to a water storage pond, with a capacity of approximately 18-acre feet, located adjacent to the Q Drain. The water would then be transferred to 100,000-gallon aboveground water storage tank via an aboveground fresh-water pipeline. Additional pipelines will be constructed to transport the water from the water storage tank to the power plant facility. The water will be used for steam wash water, purged water for pump seals, and the reverse osmosis (RO) potable water system, process wash water, and, at times, cooling water makeup. The project is designed to minimize reliance on external sources of water supply for process needs as well by using condensed steam from the geothermal steam condensate to the greatest extent practical.

A filtration-based or reverse osmosis potable water system will be used to process IID fresh water for the non-drinking potable water needs at the site. A Nontransient-Noncommunity Water System Permit will be obtained from the Imperial County Public Health Department (ICPHD) for the onsite potable water system. Bottled drinking water will be purchased for consumption.

The HKL1 facility will require approximately 6,100 AFY of water to be purchased from the IID for project cooling water makeup and additional process water. Approximately 3 AFY of the purchased water will be used for potable water purposes, including potable washbasin water, eyewash equipment water, water for showers and toilets in the administration and control buildings, and sink water in the sample laboratory.

Operational Energy Requirements

HKP1 would generate 49.9 MW of renewable energy of which 40 MW would be sold to IID and the remaining 9.9MW would be supplied to HKL1. HKL1 would require approximately 35 MW of power and have a peak power demand of 40 MW, which would be obtained from IID less the 9.9MW from HKP1. Overall, the power demand would be less than what is produced by HKP1. Additionally, HKP1 will require the use of generators for up to 600 hours per year for startups during black start situations and unscheduled plant outages.

Fire Protection and Safety

The fire protection system will consist of an underground fire main and surface distribution equipment, such as yard hydrants and hose houses, monitors around the perimeter of the cooling tower, automatic sprinklers for the turbine generator and auxiliary equipment, and a complete detection and alarm system. The firewater supply and pumping system will provide an adequate quantity of fire-fighting water. The systems will be designed in accordance with federal, State, and local fire codes, occupational health and safety regulations and other jurisdictional codes, requirements and standard practices.

Spent Fluid and Wastewater

Under normal operation, the spent brine will be pumped via the main injection system. Spent geothermal brine will be injected into the subsurface geothermal reservoir via the primary injection wells. Geothermal brine will be discharged into the bring pond during upset conditions or maintenance activities (start up and shut down). The fluids from the brine pond also will be injected into the subsurface geothermal reservoir via the dedicated aerated brine injection well. All subsurface fluid injection will conform with CalGEM requirements.

Wastewater including non-process wash water and sanitary waste, will be generated during operations. Sanitary drains will collect all sanitary waste and non-process wash water and discharge to an appropriately sized septic system. The septic system will be engineered and operated to meet Imperial County Environmental Health requirements.

Hazardous Materials and Waste

Hazardous Material Management

The Project will develop and implement a Hazardous Materials Business Plan (HMBP), in compliance with California Health and Safety Code, Division 20, Chapter 6.95, Sections 25500-25519 and California Code of Regulations, Title 19, Division 2, Chapter 4. The HMBP will be provided to the California Office of Emergency Services, the Imperial County Fire Department, and the Certified Unified Program Agency for Imperial County (the local California Department of Toxic Substances Control office), for review and approval before initial plant operation. The HMBP will include, at a minimum, procedures for:

- Hazardous materials handling, use and storage;
- Emergency response;
- Spill control and prevention;
- Employee training, and
- Reporting and record keeping.

Portable bins or other storage containers will be on-site for storage of maintenance lube oils, chemicals, paints, and other construction maintenance materials, as needed. Secondary containment will be provided in all petroleum hydrocarbon and hazardous material storage areas, and all brine processing areas. Safety showers and eyewash stations will be provided in or adjacent to chemical storage and use areas. Safety equipment will be provided for staff use, where required, during chemical containment and cleanup activities. All staff working with chemicals will be trained in proper handling and emergency response to chemical spills or accidental releases. Water hose connections will be provided near the chemical storage and feed areas to flush spills and leaks, and absorbent materials will be stored on site for spill cleanup.

The HKP1 facility may include transformer oil for transformer operation, lube oil for the turbine generator operation, diesel for generator fueling, and HCl (32% by weight). The transformer oil will be contained within the transformers; the lube oil will be stored on a skid. Diesel will be stored in a diesel storage tank with a capacity of approximately 3,000 gallons. Two fiber-reinforced epoxy HCl tanks, with capacities of approximately 20,000 and 75,000 gallons, will store the HCI for the acid modification process. The HCI tanks will be fitted with scrubbers. All chemicals will be stored outdoors on impervious surfaces in above-ground storage tanks with secondary containment. The secondary containment areas for the bulk storage tanks will not have drains. Any chemical spill occurring in these areas will be removed with portable equipment and re-used or disposed properly. Other chemicals will be stored and used in their delivery containers.

Hazardous materials that are expected to be used during construction of HKP1 and HKL1 will include:

- Adhesives
- Diesel fuel
- Hydraulic fluids

- Lubricants
- Oil
- Paint material
- Solvents
- Unleaded gasoline

Hazardous materials that are expected to be used during operation of HKP1 and HKL1 will include:

- Calcium oxide (lime)
- Sodium carbonate (soda ash)
- Diesel fuel
- Hydraulic fluid
- Hydrochloric acid (32% by weight)
- Sodium hydroxide
- Transformer Oil
- Unleaded gasoline

No feasible alternatives exist to avoid use of these materials for construction or operation of vehicles and equipment for construction and /or maintenance activities, or for painting and caulking buildings and equipment. Hydrochloric acid, calcium oxide, sodium hydroxide, and sodium sulfide will be required for the power generation and mineral extraction process. A polymetallic product will be produced for commercial sale. The polymetallic product will be stored in DOT authorized containers for shipping.

Hazardous Materials Transportation

Hazardous material carriers and hazardous waste transporters are required by law to adhere to applicable local, State, and federal regulations regarding proper truck signage; indicating the materials being transported; carrying a shipping/waste manifest of the types and concentrations of materials being transported; and other appropriate measures. Hazardous material carriers also are responsible for their loads with respect to reporting spills and initiating appropriate emergency responses to the releases of any transported hazardous materials, from the point of origin up to the destination of the hazardous material delivery.

HKP1 and HKL1 will communicate with the locally responsible emergency response agencies before shipment of any bulk hazardous materials to or from the Project site. Continuing coordination and communications with these agencies relevant to hazardous material shipments will be undertaken as required by the agencies. HKP1 and HKL1 will also develop an Emergency Action Plan for responding to spills or releases of hazardous substances by hazardous material carriers in the Project area. This plan will conform to all applicable federal, State, and local requirements for notifications, reporting, and emergency response of hazardous substance release incidents. The plan also will describe appropriate cleanup procedure of spilled substances and site reclamation, if required. In the unlikely event of a hazardous materials spill during transportation of materials to or from the plant site, HKP1 and HKL1 will cooperate with the responsible agencies and provide all available information and knowledge about the materials to facilitate the spill response cleanup and spill site remediation.

Solid Waste

Construction and operation of the facility will generate both nonhazardous and hazardous wastes as follows.

Nonhazardous Wastes

Solid waste from construction activities may include lumber, excess concrete, metal, glass scrap, empty nonhazardous containers, and waste generated by workers. Management of these wastes will be the responsibility of the construction contractor(s). Typical management practices required for nonhazardous waste management will include recycling when possible, proper storage of waste and debris to prevent wind dispersion, and weekly pickup and disposal of wastes to local Class III landfills.

The primary source of solid waste during operation will be office waste and other waste generated by workers. Nonhazardous waste will be collected in appropriate on-site storage receptacles designated for waste and recycling. Recyclable materials will be brought to a recycling center, and nonrecyclable waste will be removed and taken to a Class III landfill.

Hazardous Wastes

Hazardous wastes may be generated over the course of construction and/or operation from spills of hazardous materials, empty hazardous material containers, or spill cleanup wastes. Hazardous materials that are expected to be used during construction and/or operation include paints, oil and lubricants, solvents, and welding materials. Used oil will be recycled, and oil or heavy metal contaminated materials (e.g., filters) requiring disposal will be transported to an off-site waste disposal facility that is authorized to accept such wastes. Scale from pipe and equipment cleaning operations will be disposed in a similar manner.

All hazardous wastes generated during construction and operation will be handled and disposed in accordance with applicable laws, ordinances, regulations, and standards. Any hazardous wastes generated during construction will be collected in hazardous waste accumulation containers near the point of generation and moved daily to the contractor's 90- day hazardous waste storage area on site. Similarly, any hazardous wastes generated during operation and/or maintenance activities will be collected in hazardous waste accumulation containers near the point of generation and moved to the operations 90-day hazardous waste storage area on site. The accumulated wastes subsequently will be delivered to an authorized waste management facility, which may be as far as Yuma, Arizona. Hazardous wastes will be managed and disposed properly in a licensed Class I waste disposal facility that is authorized to accept the waste.

2.9.3 Project Decommissioning

The projected life of the Project is 50 years. At the end of operations, a Site Abandonment Plan will be prepared and implemented in conformance with Imperial County and CalGEM requirements, for consideration by the Planning Commission prior to Project approval. The Plan will describe the proposed equipment dismantling and site restoration program in conformance with the requirements of the respective landowners/lessors and regulatory requirements in effect at the time of abandonment and would be implemented at the end of Project operations.

The geothermal wells will be abandoned in conformance with the well abandonment requirements of CalGEM. Abandonment of a geothermal well involves plugging the well bore with clean drilling mud and cement sufficient to ensure that fluids will not move across into different aquifers. The wellhead (and any other equipment) will be removed, the casing cut off and capped below grade, and the well site reclaimed. Prior to building permit approval, HKP1 and HKL1 will provide the County with a bond, letter of credit, or other acceptable surety that guarantees restoration of the land at the Project site to its condition prior to development.

2.10 PROJECT DESIGN FEATURES INCORPORATED INTO THE PROPOSED PROJECT

This analysis was based on implementation of the following project design features that the project applicant has committed to implementing.

The Project applicant will implement the following features during construction of the Project:

- Air Quality Permitting: An application will be submitted to the ICAPCD for an Authority to Construct permit for construction activities and any operational equipment or emission sources requiring a permit. The application specifies a detailed list of control measures to reduce fugitive emissions from O&M activities, including watering of unpaved roads, vehicle speed limits, windbreaks, transport container covers, and cleaning and sweeping procedures. The project will comply with the ICAPCD permit conditions of approval to limit emissions from project activities.
- Well Flow Testing Program: Specific design features will be used, such as well test units to minimize the release of particulate matter and metals during well drilling and initial testing. The well flow testing program will include flow rate and duration limits.
- Emissions Mitigation: Consistent with the requirements of ICAPCD Policy 5, the project proponent shall pay an emission mitigation fee sufficient to offset the amount by which the project's NOx emissions exceed the 100 pounds per day threshold. ICAPCD allows a project to pay in-lieu impact fees using the most current Carl Moyer Cost Effective methodology to reduce excess NOx emissions. Under the ICAPCD program, the exact amount of the fee cannot be calculated until the time of construction when more precise data regarding the construction equipment types and hours of operation are known, allowing ICAPCD to calculate the fee. Prior to any earthmoving activity, the project proponent shall submit to the ICAPCD a complete list of all construction equipment to be utilized during the construction phase identifying make, model, year, horsepower, and estimated hours of usage.
- A Transportation Plan will be prepared for implementation during all phases of the project. The Transportation Plan will address methods for reducing construction worker traffic volumes and Project-related equipment and materials transport by implementing the following strategies: (1) provide a construction worker rideshare program; (2) schedule shift changes and deliveries to avoid conflict with peak-hour traffic patterns; (3) establish traffic controls for transport of facility hazardous and nonhazardous materials, components, main assembly cranes, and other large pieces of equipment; and (4) evaluate alternative transportation approaches depending on specific object sizes, weights, origin, destination, peak-hour traffic, and unique handling requirements.

The Project applicant will implement the following features during operation of the Project:

- Hydrogen Sulfide Abatement: The project will employ a proven industry standard hydrogen sulfide abatement system to minimize hydrogen sulfide emissions from both the vent gas and the

portion of condensate being used as cooling tower make-up. The abatement system will remove at least 95 percent of the H_2S in the noncondensable gases. In addition, particle emissions from the cooling towers will be minimized by using high-efficiency drift eliminators.

- Electric Truck Hauling: The HKL1 Project commits to using 100 percent electrical vehicles for the hauling of mineral products.
- Generators That Meet Pollutant Emission Limits: The proposed standby/"black start" diesel engine generator, the emergency diesel generators, and the emergency fire pump engines would each meet the applicable U.S. Environmental Protection Agency and CARB air pollutant emission limits. Each engine would be tested for fewer than 50 hours per year (at 100 percent load).
- Vehicle Charging Stations: The project will include charging stations for electric vehicles and electric trucks.
- Scrubbers: HCl storage tanks will include scrubbers to eliminate discharge of acid gas in the tank venting system.

2.11 REQUIRED PERMITS AND APPROVALS

As required by the CEQA Guidelines, this section provides, to the extent the information is known to the County, a list of permits and approvals to implement the Project and a list of agencies that will review this Draft EIR and use it in their decision-making process. The following lists County entitlements and permits that may be required for the Project prior to construction and operation:

Imperial County Planning Department is the lead agency for the Proposed Project. The following permits would be required from the lead agency:

- Imperial County Planning Department – Conditional Use Permit
- Imperial County Planning Department – Zoning Variance
- Imperial County Planning Department – Development Agreement (if required)
- Imperial County Building Department – Building and Grading Permits
- Imperial County Public Works Department – Encroachment Permit(s)

The Final EIR must be certified by the Planning Commission as to its adequacy in compliance with CEQA prior to any actions being taken on the Project. The analysis of this Draft EIR is intended to provide environmental review for the Project, in accordance with CEQA requirements.

2.11.1 Other Required Permits and Approvals

Other required permits and approvals may be necessary to approve and implement the Project as the County finds appropriate. Approvals include but are not limited to architectural plan and design; landscaping; lighting; transportation permits and approvals for driveways and routes; grading; hauling; and public utilities.

2.11.2 Responsible Agencies

A responsible agency includes all public agencies other than the lead agency that have discretionary approval power over a project. Due to the location of the Project, the California State Lands Commission would be a responsible agency.

2.11.3 Reviewing Agencies

Reviewing Agencies include those agencies that do not have discretionary powers but that may review the Draft EIR for adequacy and accuracy. Potential Reviewing Agencies include the following:

Federal Agencies:

- United States Fish and Wildlife (USFWS) – Incidental Take Permit (ITP; if needed)
- United State Army Corps of Engineers (USACE) – Individual Permit under Section 404 of the Clean Water Act

State Agencies:

- California Department of Transportation (Caltrans) – Encroachment Permit
- California Department of Fish and Wildlife (CDFW) – Lake or Streambed Alteration Agreement and Incidental Take Permit (if needed)
- California Department of Toxic Substances/Certified Unified Program Agency (CUPA) – Hazardous
- Materials / Environmental Protection Agency Approvals and Permits
- California Geologic Energy Management Division (CalGEM) – Permit(s) to drill

Regional Agencies:

- Regional Water Quality Control Board – Waste Discharge Requirement and 401 Water Quality Certification
- Imperial Irrigation District – Encroachment Permit
- Imperial County Air Pollution Control District – Permit to Construct and Permit to Operate; Use of Generators (if needed)
- Imperial County Public Health Department – Nontransient-Noncommunity Water System Permit
- Imperial County Building Department – Building and Grading Permits
- Imperial County Public Works Department – Encroachment Permit(s)
- Imperial County Fire Department and Office of Emergency Services

CHAPTER 3.0 – ENVIRONMENTAL SETTING

3.1 EXISTING LAND USE

The Project is located within undeveloped land owned by Imperial Irrigation District (IID) and a right-of-way (ROW) corridor for the gen-tie transmission line to the IID interconnect station near Hudson Ranch (HR1). The Project would be located within Sections 11 and 12, Township 11 North, Range 13 East in Imperial County near the eastern shore of the Salton Sea (Section 2.0 Project Description, Figure 2.0-1). The Project is approximately 3.6 miles west of the Town of Niland. A list of the parcels included in the Project are shown in Table 2.0-1: Project Assessor Parcel Numbers (APNs). The majority of the proposed Project facilities are located immediately west of Davis Road, with administrative buildings and warehouses located east of Davis Road. The 230-kilovolt (kV) gen-tie line for the Project will run from Noffsigner Road approximately 2 miles south to McDonald Road and then will run approximately 0.3 miles east to Hudson Ranch. The gen-tie line would be located on the east side of Davis Road and on the north side of McDonald Road, within the IID's transmission ROW and within a new ROW. The layout of the Project is shown in the Project Site Plan (Section 2.0 Project Description, Figure 2.0-2).

As shown in Section 2.0 Project Description, Table 2.0-1, the majority of the development area is zoned S-1-G (open space/geothermal overlay zone) with a portion zoned S-2-G (open space/preservation/geothermal overlay) and is entirely within the renewable energy/geothermal map overlay zone in the 2015 Renewable Energy and Transmission Element update to the County General Plan. The gen-tie transmission line ROW is zoned S-1-G and M-2-G-PE (medium industrial/geothermal overlay). The General Plan Land Use designation for the entire Project is Agriculture.

The Project will be accessed from Davis Road via new ingress/egress driveways. Project traffic will access the site from Highway 111 via McDonald Road, Davis Road, and Alcott Road. County road ingress/egress points will be constructed in conformance with Imperial County Public Works Department and Fire Department requirements. Road access will be restricted during construction, and appropriate traffic controls will be in place during construction of the Project. Following Project construction, Davis Road will be paved from McDonald Road to Noffsinger Road.

3.1.1 Existing Site Uses

The Project is located on vacant land that is undeveloped. On June 14, 2017 the County authorized Geothermal CUP #16-0001, which allowed construction of up to four well pads as well as drilling and maintenance of up to six separate geothermal exploratory wells on the Project site. Well Pad 1, north of Alcott Road and west of Davis Road, and two geothermal wells were constructed on the Project site in 2021. Rough grading for Well Pad 3, south of Noffsigner Road and east of Davis Road began in November 2021. The remaining Project site is undeveloped.

3.1.2 Surrounding Land Uses

Zoning designations of the surrounding properties include S-1-G, to the north, east, and south, M-2-G-PE to also the east, and S-2-G to the west. The properties bordering the Project site are designated for Agricultural land use to the north, east, and south, with Government/Special Public land use also to the east in the County's General Plan. No land use is to the west of the Project site as that area is the Salton Sea (County 2007, 2015a). The land surrounding the Project site is mainly undeveloped agricultural or vacant land Areas to the north and south of the Project site consist of undeveloped open space. Area to

the west is open space followed by the Salton Sea. The State of California manages a wildlife management area, including waterfowl ponds to the east of the Project site. The nearest development is a single-family home located approximately 0.50 miles to the east, and the nearest commercial development is Hudson Ranch, located approximately 1.1 miles south. The topography of the area is generally flat.

Fire protection and emergency medical services in the Project area are provided by the Imperial County Fire District. The closest fire station to the Project site is the Niland Station, approximately 4 miles northeast, or an approximately nine-minute drive. Police protection services in the area are provided by the Imperial County Sheriff's Department. The closest police station to the Project site is the Imperial County Sheriff's office in Niland, approximately 4 miles northeast, or an approximately 10-minute drive.

Utility services that serve the existing area are as follows:

- Water: Imperial Irrigation District
- Sewer: None, septic
- Electricity: Imperial Irrigation District
- Gas: None
- Telephone/Internet: AT&T and Beamspeed
- Waste: Allied Waste

3.1.3 Adopted Plans

General Plan

The County's General Plan was adopted in 1993. The General Plan outlines the goals, policies, and development regulations within the County. The 10 elements discussed in the General Plan are:

- Agricultural Element
- Circulation and Scenic Highways Element
- Conservation and Open Space Element
- Housing Element
- Land Use Element
- Noise Element
- Parks Element
- Renewable Energy and Transmission Element
- Seismic and Public Safety Element
- Water Element

All sections of the General Plan have been comprehensively updated since 1993. The Seismic and Public Safety Element and Water Element were updated in 1997; the Circulation and Scenic Highways Element and Parks Element in 2008; the Housing Element in 2022; the Agricultural Element, Land Use Element, Noise Element, and Renewable Energy and Transmission Element in 2015; and the Conservation and Open Space Element in 2016. In addition, the County's Zoning Map was updated in 2007, and the Zoning Code was updated in 2022. The Project land use category is Agriculture, according to the General Plan Land Use Element; however, a nonagricultural land use may be permitted within General Plan-designated agricultural land if the use does not conflict with agricultural operations and will not result in the premature elimination of agricultural operations (County 2015a).

3.2 RELATED PROJECTS

CEQA requires that an EIR contain an assessment of the cumulative impacts that could result from a project and other related projects. As defined in the CEQA Guidelines, "cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed. Through the evaluation of cumulative impacts, CEQA attempts to ensure that large-scale environmental impacts will not be ignored.

The analysis of cumulative effects "need not provide as great detail as is provided for the effects attributable to the project alone," but the discussion "shall reflect the severity of the impacts and their likelihood of occurrence." Where a Lead Agency concludes that the cumulative effects of a project, taken together with the impacts of past, present, and probable future projects, are significant, the Lead Agency then must determine whether the project's incremental contribution to such significant cumulative impact is "cumulatively considerable," and thus significant in and of itself.

The section additionally states, "when the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A Lead Agency shall identify facts and analysis supporting the Lead Agency's conclusion that the cumulative impact is less than significant"(State CEQA Guidelines sec 15130[a]).

This Draft EIR considers the effects of the Project in relation to the full development forecasted by General Plan and other related projects either proposed, approved, or under construction in the area. A total of five related projects within the County, illustrated in Figure 3.0-1, have been identified in relation to the Project based on their proximity to the Project site. Based on the timing of the NOP and in accordance with CEQA, these are projects which are considered reasonably foreseeable to be built in the near future. Table 3.0-1: Related Projects provides information on the land use, location, and size of these related projects. The list of related projects was used to assess cumulative conditions where appropriate.

Table 3.0-1: Related Projects

Project Name	Description	Approximate Distance from Project Site	Status
Hudson Ranch 1 (CUP 22-0020)	Geothermal Well on approximately 500 acre parcel (020-010-035)	0.58	Approved Not Built
VEGA 2 (CUP 20-0021)	Construction and operation of 240 MW solar and BESS on 1,472 acres (025-260-011, 025-010-006, and 025-270-023)	9.53	Pending Approval
VEGA 3 (CUP 20-0022)	Construction and operation of 60 MW solar and BESS on 240 acres (025-101-006)	10.72	Pending Approval
VEGA 5 (CUP-0023)	Construction and operation of 50 MW solar and BESS on 249.70 acres (025-260-019, 025-260-022)	9.04	Pending Approval
Transmission Lines for VEGA 2, 3, 5	Transmission Lines Coming through Niland Area	Unknown – approximately 9 miles	Pending Approval

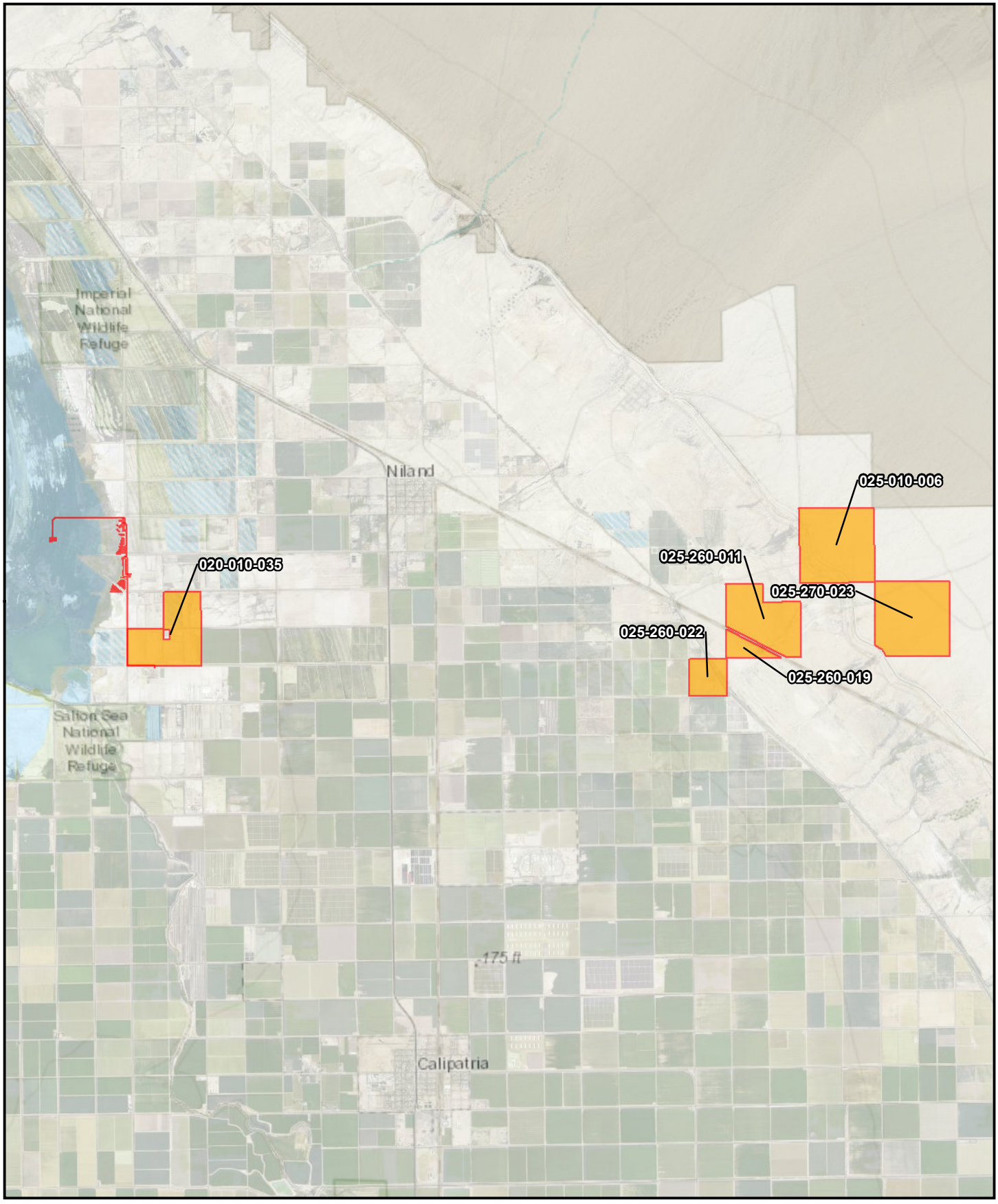


Figure 3.0-1
Hell's Kitchen Power
Related Projects

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CHAPTER 4.0 – ENVIRONMENTAL IMPACT ANALYSIS

ENVIRONMENTAL ISSUES ADDRESSED

An Initial Study was prepared for the Project in March 2022. Based on the findings of the Initial Study, it has been determined that a Draft EIR is required for the Project. The County used the Initial Study as well as agency and public input received during the public comment period (March 31 through May 13, 2022), to determine the final scope for this Draft EIR. Environmental issue areas are listed by the level of significance of their impacts below in Table 4.0-1: Environmental Issue Areas, as determined by the analysis provided in the Initial Study.

Table 4.0-1: Environmental Issue Areas

No Impact	Less Than Significant Impact	Potentially Significant Impact
Agriculture and Forest Resources	Land Use and Planning	Aesthetics
Mineral Resources	Population and Housing	Air Quality
Recreation	Public Services	Biological Resources
	Wildfire	Cultural Resources
		Energy
		Geology and Soils
		Greenhouse Gas Emissions
		Hazards and Hazardous Materials
		Hydrology and Water Quality
		Noise
		Transportation
		Tribal Cultural Resources
		Utilities and Service Systems

The purpose of this section of the Draft EIR is to further analyze those impacts previously determined to be potentially significant to inform decision-makers and the public of the type and magnitude of the changes to the existing environment that would result from the Project. The following sections provide detailed discussion of the environmental setting for each topic addressed in this Draft EIR, the analysis of the potential impacts of the Project, potential cumulative impacts, and measures to mitigate potential significant impacts to the fullest extent feasible.

Impacts found to be less than significant in the Initial Study are further discussed in Section 6.1: Effects Not Found to Be Significant, of this Draft EIR.

TERMINOLOGY USED IN THIS ANALYSIS

For each CEQA checklist question listed in the Draft EIR, a determination of the level of significance of the impact is provided (CEQA Guidelines Appendix G). Impacts are determined in the following categories:

- **No Impact.** A designation of *no impact* is given when no adverse changes in the environment are expected.
- **Less Than Significant.** A *less than significant impact* would cause no substantial adverse change in the environment.

- **Less Than Significant With Mitigation.** A *potentially significant but mitigable impact* would have a substantial adverse impact on the environment that could be reduced to a less than significant level with incorporation of mitigation measure(s).

- **Potentially Significant.** A *significant and unavoidable impact* would cause a substantial adverse effect on the environment and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

Please see Chapter 9.0: Acronyms and Abbreviations for a glossary of terms, definitions, and acronyms used in this Draft EIR.

4.1 AESTHETICS

This section provides a discussion of the existing visual and aesthetic resources on the Project site and in the surrounding area and evaluates the potential for changes in the visual character that could result from implementation of the Proposed Project. This section also evaluates the potential loss of existing visual resources, effects on public views, visual compatibility with existing uses, and light and glare impacts. Information presented in this section is based on photographs of the Project site, surveys and site visits, and the prepared visual simulations showing how development of the Project site would look from key vantage points around the area (Figure 4.1-1 through Figure 4.1-5)

4.1.1 Existing Environmental Setting

Regional Setting

Imperial County extends over 4,597 square miles between Riverside County to the north, Mexico to the south, San Diego County to the west, and Arizona to the east. According to the Conservation and Open Space Element (County 2016), the visual character within the County varies, including such natural scenic visual resources as deserts, sand dunes, mountains, and the Salton Sea. Many of the natural scenic resources are located on land under Bureau of Land Management (BLM) jurisdiction. Many areas with moderate to high value for maintenance of visual quality are mainly located on BLM lands, although private holdings under the County's jurisdiction may be available for conservation and open space designations (County 2016).

Various contributions to the scenic quality include the desert areas of Yuha, West Mesa, lower Borrego Valley, East Mesa, and Pilot Knob. Additionally, springtime blooms of the desert wildflowers contribute the to the desert scenic quality. The eastern foothills of Peninsular Range including In-Ko-Pah or Jacumba Mountains, Coyote Mountains, and Fish Creek Mountains, and southeast foothills of Santa Rosa-San Jacinto, Superstition Mountains and Superstition Hills, and Chocolate Mountains provide additional visual resources within the County (County 2016).

The Salton Sea is located in the northwestern portion of the County and extends into Riverside County, measuring 35 miles in length with a surface area of approximately 376 square miles. The Salton Sea has been sustained by agricultural drainage from the Imperial, Coachella, and Mexicali Valleys; rainfall; storm runoff from the surrounding mountains; and groundwater inflow.

Anza-Borrego Desert State Park is located on the eastern side of San Diego County, with portions extending east into Imperial County and north into Riverside County. The park features washes, wildflowers, palm groves, cacti, sweeping vistas, and many miles of hiking trails.

The Osborne Overlook offers scenic views of the Imperial Sand Dunes Recreation Area, North Algodones Dunes Wilderness, and surrounding area. The overlook is located among the largest and tallest dunes. The Juan Bautista de Anza Overlook provides a view of the Yuha Basin and surrounding landscape.

Project Site

The Project site is approximately 3.8 miles southwest of the community of Niland on three parcels privately owned by HR1 in Imperial County, California. The Project is located within the U.S. Geological Survey (USGS) Niland, California 7.5-minute topographic quadrangle. The Project site is vacant and undeveloped.

The Project site is located approximately 1.5 miles east of the Salton Sea coast, approximately 48 miles east of Anza-Borrego Desert State Park (Visitor Center), and approximately 30 miles northwest from the Imperial Sand Dunes and Osborne Overlook.

Areas to the north and south of the Project site consist of undeveloped open space. The area to the west is open space followed by the Salton Sea. The State of California oversees a wildlife management area, including waterfowl ponds to the east of the Project site. One residence is located approximately 0.5 mile east of the Project site along Pound Road. No other developed areas are present within the Project site outside of private property signs.

4.1.2 Regulatory Setting

Local

Imperial County General Plan

The Conservation and Open Space Element of the Imperial County General Plan provides detailed plans and measures for the preservation and management of biological and cultural resources, soils, minerals, energy, regional aesthetics, air quality, and open space (County 2016). It recognizes that natural resources must be maintained for their ecological value for the direct benefit to the public and to protect open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety. In addition, the purpose of this element is to promote the protection, maintenance, and use of the County's natural resources, with particular emphasis on scarce resources, and to prevent wasteful exploitation, destruction, and neglect of the State's natural resources. Table 4.2-1 analyzes the consistency of the Project with specific policies contained in the Imperial County General Plan associated with visual resources.

Table 4.2-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Conservation and Open Space Element		
Visual Resources Conservation		
Policy No. 4 - Develop planning programs to conserve and protect visual resources and scenic views from incompatible development and land uses. Program – Amend the Land Use Ordinance, and/or Community Area Plans, as applicable, to enact or revise ordinance standards to protect scenic resources. Adoption and implementation of scenic protection standards shall not interfere with	Consistent	Visual simulations have been prepared for the Project to compare and analyze the visual changes of the Proposed Project to the existing visual character at key viewpoints to the Project site, including the nearest highway. No significant visual changes are expected along Highway 111 due to its distance from the Project site. Visual changes would occur to areas along David Road; however, the construction and design of the Project would be consistent with other plants within the region. Furthermore, no designated scenic views or protected visual resources are nearby the Project site that would be impacted by the Proposed Project.

agricultural uses on private lands. Standards for land use permits, including industrial and processing uses, and subdivisions should include visual assessments by qualified experts; visually effective setbacks near highways and roadways; siting in unobtrusive locations; and standards for height, architectural design, landscaping, lighting, and signs. The standards should emphasize avoiding visual impacts through alternative locations and designs where feasible. Establish consistent Countywide Viewshed Protection Standards.		
Conservation of Environmental Resources for Future Generations – Conservation of Visual Resources		
Goal 5 - The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity. Objective 5.1 - Encourage the conservation and enhancement of the natural beauty of the desert and mountain landscape. Objective 5.2 - Utilize the Code Enforcement process to eliminate visually dilapidated buildings that impact the visual character of rural communities.	Consistent	Visual simulations were prepared to present the change of visual character of the Project site. The Proposed Project would be built on land permitted to construct renewable energy facilities with a CUP application. In addition, the Project would be constructed and designed to be visually consistent with other similar plants in the region. The Project is not located near any residential, commercial, or recreational areas where tourist and residential activities would be impacted.



Figure 4.1-1
Hell's Kitchen Power
Visual Simulations Viewpoint

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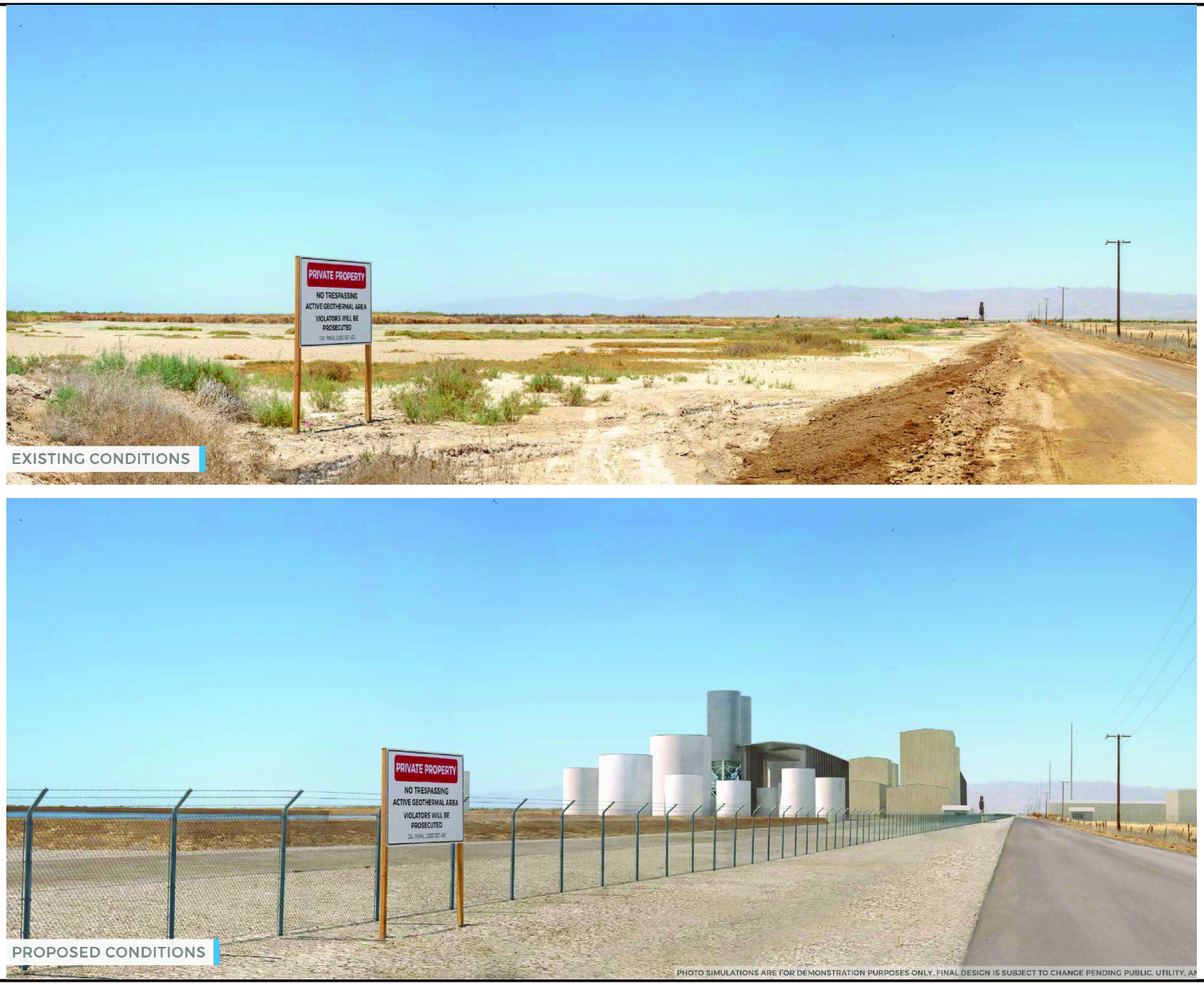


Figure 4.1-2
Hell's Kitchen Power
Viewpoint 1 Existing and Proposed

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Figure 4.1-3
Hell's Kitchen Power
Viewpoint 2 Existing and Proposed

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Figure 4.1-4
Hell's Kitchen Power
Viewpoint 3 Existing and Proposed

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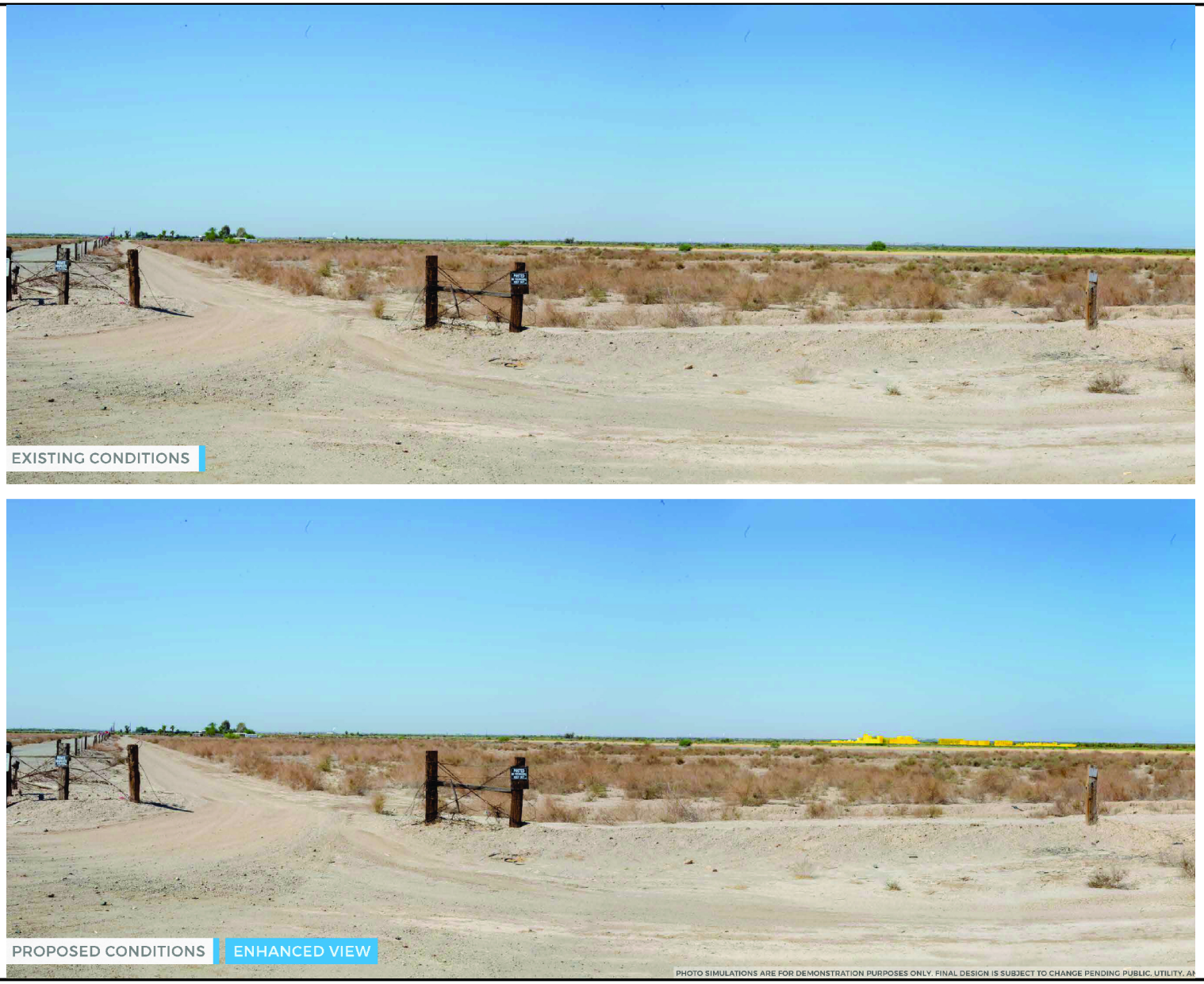


Figure 4.1-5
Hell's Kitchen Power
Viewpoint 3 Existing and Proposed (Enhanced)

Given both the presence of a scenic viewpoint and the proposed variances, a visual analysis was prepared to compare the existing and proposed views of the Project. Three key viewpoints were selected to prepare visual analysis. These viewpoints were located at Davis Road and Pound Road; Davis Road between Noffsinger Road and Alcott Road; and along Highway 111 (refer to Figure 4.1-1 through Figure 4.1-5).

Due to the distance of the Project site from the nearest scenic highway, the Proposed Project is not anticipated to have a substantial adverse effect on a scenic highway. Additionally, as shown in viewpoint 3 in Figure 4.1-4, the Proposed Project would not result in substantial adverse effect on a scenic highway because it would neither be located near a scenic highway nor would its presence interrupt the views seen along Highway 111.

Viewpoints 1 and 2 show that the Proposed Project would affect the existing viewshed by partially blocking the mountain ranges to the north of the Project, such as the Orocopia and Chocolate Mountains to the north/northwest. While the mountains within Imperial County provide visual character to the area, the Project site is not a designated scenic viewpoint and therefore, the presence of Project features would not be considered to have a substantial adverse effect on a scenic vista. Furthermore, the Sonny Bono Salton Sea Wildlife Refuge is located 4 miles southwest of the Project site. Due to its distance from the Project site, the construction and operation of the Proposed Project would not result in substantial adverse effect to its use.

Based on the proposed structures of the Project and proximity to scenic viewpoints and scenic highways, the Proposed Project would result in less than significant impacts.

Threshold c) **In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surrounding? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?**

The Project is located in a vacant, non-urbanized area characterized by agricultural and open space uses, near the Salton Sea. Public viewers of the Project site would be limited to workers at the Project site and limited passersby on nearby roads. There is one residence approximately 0.50 miles east of the site, however, there are no recreation areas in proximity of the Project site. Views of Project operations will be consistent with current views of the area, which include the nearby IID power plant and other power plants within the Salton Sea Known Geothermal Resource Area. The Project would require zoning variances for the structures above 35 feet including two lime silos up to 60 feet tall, the evaporator support structure up to 80 feet tall and the cooling towers up to 50 feet tall, the crystallizers which will be 80 to 110 feet tall and the electrical power line and transmission structures up to 120 feet tall.

As discussed in the previous section, a visual analysis was conducted to compare the existing and proposed views of the Project (Figure 4.1-2, Figure 4.1-3). Based on the renderings provided for viewpoints 1 and 2, the Proposed Project would change the existing visual character from vacant to developed with the presence of the proposed facilities and with the paving of the roadways which would bring commuters to the Project site. According to the General Plan's Conservation and Open Space Element, County areas for land managed by the BLM depict the values of the County's visual resources using their Visual Resource Inventory Process (VRI). Areas within the County with moderate to high value for maintenance of visual quality represent areas with opportunities of conservation and open space. According to the VRI maps, the Project site is in an area with no to low maintenance of visual quality.

Therefore, the construction and operation of the Proposed Project would not substantially degrade the existing visual character of the area. While the Project is not designated to contain high visual quality, it would be designed and constructed to be consistent with the existing power plants in the region so as to maintain visual consistency. Furthermore, the proposed uses of the site would be consistent with the permitted uses of the area as the land use ordinance by the County authorizes the development and operation of renewable energy projects with a CUP. Impacts therefore are less than significant.

4.1.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

Implementation of the Project in combination with other proposed, approved, and reasonably foreseeable projects in the region could have cumulative impacts on the existing views of the Project site should the area be fully developed. Future construction of the Proposed Project would be consistent with what is permitted on-site. The Project area is not designated as a scenic vista and not within the immediate vicinity of a State-designated or eligible scenic highways. Because the proposed uses would be consistent with the land uses, the Proposed Project would not result in substantial adverse impacts to aesthetics. Related projects would similarly undergo CEQA review, and determinations regarding the significance of impacts of the related projects on aesthetic resources would be made on a case-by-case basis. If necessary, the applicants of the related projects would be required to implement appropriate mitigation measures. Therefore, implementation of related projects and other anticipated growth in Imperial County would not combine with the Proposed Project to result in cumulatively considerable impacts on aesthetic resources.

4.1.7 Mitigation Measures

No mitigation measures would be required.

4.1.8 Level of Significance After Mitigation

Impacts related to aesthetics would be less than significant. No mitigation measures would be required.

4.2 AIR QUALITY

This section provides information on ambient air quality conditions in the vicinity of the Project site and identifies potential impacts to air quality as a result of the construction and operation of the Project. Information contained in this section is from the air quality modeling output prepared for the Project in the *Air Quality Technical Report for the Hell's Kitchen Geothermal Power Plant and Lithium Production Plant, County of Imperial*, dated May 6, 2022, prepared by RCH Group (Appendix B of this Environmental Impact Report EIR]).

4.2.1 Existing Environmental Setting

Regional Climate

The Project site is located within the central portion of Imperial County, which is part of the Salton Sea Air Basin (Air Basin). The Air Basin comprises the central portion of Riverside County and all of Imperial County. The Riverside County portion of the Air Basin is regulated by the South Coast Air Quality Management District (SCAQMD), and the Imperial County portion of the Air Basin is regulated by the Imperial County Air Pollution Control District (ICAPCD).

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographical features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with physical features of the landscape to determine their movement and dispersal and, consequently, their effect on air quality. The combination of topography and inversion layers generally prevents dispersion of air pollutants in the Air Basin. The following description of climate of Imperial County was obtained from *Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter less than 10 Microns in Diameter*, prepared by ICAPCD, October 23, 2018.

The climate of Imperial County is governed by the large-scale sinking and warming of air in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The high-pressure ridge blocks out most mid-latitude storms, except in the winter, when it is weakest and located farthest south. The coastal mountains prevent the intrusion of any cool, damp air found in California coastal areas. Because of the barrier and weakened storms, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall. The sun shines, on the average, more in Imperial County than anywhere else in the United States.

Winters are mild and dry with daily average temperatures ranging between 65 and 75 degrees Fahrenheit (°F). During winter months it is not uncommon to record maximum temperatures of up to 80 °F. Summers are extremely hot with daily average temperatures ranging between 104 and 115 °F. It is not uncommon to record maximum temperatures of 120 °F during summer months.

The flat terrain of the valley and the strong temperature differentials created by intense solar heating, produce moderate winds and deep thermal convection. The combination of subsiding air, protective mountains, and distance from the ocean all combine to severely limit precipitation. Rainfall is highly variable, with precipitation from a single heavy storm able to exceed the entire annual total during a later drought condition. The average annual rainfall is just over 3 inches, with most of it occurring in late summer or mid-winter.

Humidity is low throughout the year, ranging from an average of 28 percent in summer to 52 percent in winter. The large daily oscillation of temperature produces a corresponding large variation in the relative humidity. Nocturnal humidity rises to 50 to 60 percent but drops to about 10 percent during the day.

The wind in Imperial County follows two general patterns. Wind statistics indicate prevailing winds are from the west–northwest through southwest; a secondary flow maximum from the southeast is also evident. The prevailing winds from the west and northwest occur seasonally from fall through spring and are known to be from the Los Angeles area. Occasionally, Imperial County experiences periods of extremely high wind speeds. Wind speeds can exceed 31 miles per hour (mph), which occurs most frequently during the months of April and May. However, speeds of less than 6.8 mph account for more than half of the observed wind measurements.

Air Pollutants of Concern

Criteria Air Pollutants

Federal and State laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as criteria air pollutants and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), and most fine particulate matter (PM_{10}, $PM_{2.5}$), including lead (Pb) and fugitive dust, are primary air pollutants. Of these CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. VOC and NOx are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Act (42 U.S. Code [U.S.C.] Sec. 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (CalEPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

Cancer Risk

One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no safe level of exposure to carcinogens; that is, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people will contract cancer over their lifetime from all causes, including diet, genetic factors, and lifestyle choices.

Noncancerous Health Risks

Unlike for carcinogens, it is believed that for most noncarcinogens a threshold level of exposure to the compound exists below which it will not pose a health risk. The CalEPA and California Office of Environmental Health Hazard Assessment have developed reference exposure levels (RELs) for noncarcinogenic TACs that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancerous health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

Other Effects on Air Pollution

Just as humans are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants that can stunt their development or cause premature death.

Air pollution also results in numerous impacts to the human economy, including lost workdays due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

Monitored Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. The air quality at any location in the Air Basin is determined by the release of pollutants throughout the Air Basin as well as from air pollutants that travel from the coastal areas and Mexico to the Air Basin. The ICAPCD operates a network of monitoring stations throughout the County that continuously monitor ambient levels of criteria pollutants in compliance with federal monitoring regulations.

Because not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the Project site, have been used: Niland–English Road Monitoring Station (Niland Station) and Brawley–220 Main Street Monitoring Station (Brawley Station).

The Niland Station is located approximately 2.1 miles northeast of the Project site at 7711 English Road, Niland; and the Brawley Station is located approximately 17.4 miles south of the Project site at 220 Main Street, Brawley. It should be noted that due to the air monitoring stations' distances from the Proposed Project site, recorded air pollution levels at the air monitoring stations reflect with varying degrees of accuracy local air quality conditions at the Proposed Project site.

Table 4.2-1 presents the composite of pollutants monitored from 2018 through 2020.

Table 4.2-1: Ambient Air Quality Monitoring Summary

Air Pollutant	2018	2019	2020
Ozone (O_3)[a]			
Max 1 Hour (ppm)	0.060	0.060	0.054
Max 8 Hour (ppm)	0.055	0.054	0.045
Nitrogen Dioxide (NO_2) [b]			
Max 1 Hour (ppm)	0.034	0.041	0.045
Carbon Monoxide (CO)			
Max 1 Hour (ppm)	1.1	1.3	0.8
Max 8 Hour (ppm)	0.08	0.7	0.5
Particulate Matter (PM_{10})[a]			
Max Daily California Measurement (50 µg/m^3)	**331**	**155**	**239**
State Average (20 µg/m^3)	**45.8**	**32.6**	**35.8**
Particulate Matter ($PM_{2.5}$)[b]			
Max Daily National Measurement (35 µg/m^3)	22.4	21.4	28.5
State Average (12 µg/m^3)	8.70	7.94	9.80

Abbreviations:
> = exceed; ppm = parts per million; µg/m^3 = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standard NAAQS = National Ambient Air Quality
Bold = exceedance
[a] Measurement taken from Niland Mesa Station.
[b] Measurement taken from Brawley Station.
Source: http://www.arb.ca.gov/adam/

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. As detailed in ICAPCD Regulation VIII, sensitive receptors include but are not limited to residential areas, schools, daycare facilities, churches, hospitals, nursing facilities, and commercial and/or retail uses. No sensitive receptors are within two miles of the Proposed Project.

4.2.2 Regulatory Setting

The Proposed Project site lies within the County of Imperial, which is managed by the ICAPCD. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: CO, ozone (O_3), SO_2, NO_2, PM_{10}, $PM_{2.5}$, and Pb. The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Federal

The Clean Air Act, passed in 1970 and last amended in 1990, is the primary federal law that governs air quality. The Federal CAA delegates primary responsibility for clean air to the U.S. Environmental Protection Agency (USEPA). The USEPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. Under the act, the USEPA has established the NAAQS for six criteria air pollutants that are pervasive in urban environments and for

which state and national health-based ambient air quality standards have been established. Ozone, CO, NO2, SO2, Pb, and PM (Including both PM_{10}, and $PM_{2.5}$) are the six criteria air pollutants. Ozone is a secondary pollutant, nitrogen oxides (NOx) and volatile organic compounds (VOC) are of particular interest as they are precursors to O_3 formation. In addition, national standards exist for Pb. The NAAQS standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Areas are classified under the federal Clean Air Act as either "attainment" or "nonattainment" areas for each criteria pollutant, based on whether the NAAQS have been achieved or not. Attainment relative to the State standards is determined by the CARB. The Air Basin has been designated by the U.S. Environmental Protection Agency (USEPA) as a nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. Currently, the Air Basin is in attainment with the NAAQS for CO, SO_2, and NO_2. Table 4.2-2 presents the designations and classifications applicable to the Proposed Project area.

Table 4.2-2: Designations/Classifications for the Project Area

Pollutant	National Classification	California Standards[2]
Ozone (O_3) - 2008 Standard	Nonattainment (Moderate)	Nonattainment
Inhalable Particulate Matter (PM_{10})	Nonattainment (Serious)	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment (Moderate)	Attainment
Carbon monoxide (CO)	Attainment	Attainment
Nitrogen dioxide (NO_2)	Attainment	Attainment
Sulfur dioxide (SO_2)	Attainment	Attainment

Sources: https://ww3.arb.ca.gov/desig/adm/adm.htm; and
https://ww3.arb.ca.gov/planning/sip/planarea/imperial/staffreport121318.pdf

State

California Clean Air Act

The California Clean Air Act (CCAA) was adopted by CARB in 1988. The CCAA is responsible for meeting the state requirements of the Federal CAA and for establishing the CAAQS. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The CCAA, as amended in 1992, requires all air districts of the state to achieve and maintain the CAAQS by the earliest practical date.

The CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, area are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous 3 calendar years. the CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment.

California State Implementation Plan

The ICAPCD has addressed each of three nonattainment pollutants in separate State Implementation Plans (SIPs). For $O_3$the most current SIP is the *Imperial County 2017 State Implementation Plan for the*

2008 8-Hour Ozone Standard (2017 Ozone SIP)*,* prepared by ICAPCD, September 2017, which was prepared to detail measures to reduce O_3 precursors (i.e., reactive organic gases [ROGs] and NOx) within the County to meet the 2008 NAAQS for 8-hour O_3standard of 0.075 parts per million (ppm) by July 20, 2018. Although the Ozone 2017 SIP demonstrates that the County met the 8-hour O_3 standard of 0.075 ppm by the July 20, 2018, requirement, it should be noted that in 2015 the USEPA further strengthened its 8-hour O_3 standard to 0.070 ppm, which will require an updated SIP for the County to meet the new O_3 standard.

Because PM_{10} in the County has met the 24-hour NAAQS other than for exceptional events, including storms, as well as from substantial PM_{10} concentrations blowing into the County from Mexico, the most current PM_{10} plan is the *Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter Less than 10 Microns in Diameter* (2018 PM_{10} Plan)*,* prepared by ICAPCD and dated October 23, 2018. The 2018 PM_{10} Plan shows that the monitoring of PM_{10} in the County found that other than exceptional events, no violation of the 24-hour PM_{10} NAAQS of 150 micrograms per cubic meter ($\mu g/m^3$) occurred over the 2014 to 2016 time period. As such, the ICAPCD has requested the USEPA to redesignate the Air Basin to maintenance. The redesignation was anticipated to occur sometime in the year 2020.

For $PM_{2.5}$ the most current SIP is the *Imperial County 2018 Annual Particulate Matter less than 2.5 Microns in Diameter State Implementation Plan* (2018 $PM_{2.5}$ SIP)*,* prepared by ICAPCD and dated April 2018, that details measures to meet the 2012 NAAQS for annual $PM_{2.5}$ standard of 12 $\mu g/m^3$ by the end of 2021 for the portion of Imperial County (approximately from Brawley to Mexico border) that is designated nonattainment. The $PM_{2.5}$ Plan found that the only monitoring station in the County that has recorded an exceedance of $PM_{2.5}$ is the Calexico Monitoring Station and that the exceedance is likely caused by the transport of $PM_{2.5}$ across the border from Mexico. It is anticipated that the ICAPCD will submit a redesignation request for $PM_{2.5}$ in the near future.

Toxic Air Contaminants Regulation

TAC sources include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources. The TACs that are relevant to the implementation of the Project include DPM and airborne asbestos.

In August 1998, CARB identified DPM emissions from diesel-fueled engines as a TAC. In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan was to reduce diesel PM_{10} (inhalable particulate matter) emissions and the associated health risk by 75 percent in 2010 and by 85 percent by 2020. The plan identified 14 measures that target new and existing on-road vehicles (e.g., heavy duty trucks and buses, etc.), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps, etc.), and stationary engines (e.g., stand-by power generators, etc.).

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB 1807), the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no

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

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

Regional

Imperial County Air Pollution Control District

The ICAPCD is the agency responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain State and federal ambient air quality standards in the district. ICAPCD is responsible for regulating stationary sources of air emissions in Imperial County and is responsible for establishing stationary source permitting requirements and ensuring that new, modified, or relocated stationary sources do not create net emission increases. Stationary sources that have the potential to emit air pollutants into the ambient air are subject to the rules and regulations adopted by ICAPCD. Monitoring of ambient air quality in Imperial County began in 1976. Since that time, monitoring has been performed by ICAPCD, CARB, and private industry. Six monitoring sites are in Imperial County, from Niland to Calexico. The ICAPCD has developed the following plans to achieve attainment for air quality ambient standards.

- **2009 Imperial County Plan for PM_{10}.** Imperial Valley is classified as nonattainment for federal and state PM_{10} standards. As a result, ICAPCD was required to develop a PM_{10} Attainment Plan. The final plan was adopted by ICAPCD on August 11, 2009 (ICAPCD 2009).
- **2013 Imperial County Plan for 2006 24-hour $PM_{2.5}$ for Moderate Nonattainment Area**. USEPA designated Imperial County as nonattainment for the 2006 24-hr $PM_{2.5}$ standard, effective December 14, 2009. The 2013 $PM_{2.5}$ SIP demonstrates attainment of the 2006 $PM_{2.5}$ NAAQS "but-for" transport of international emissions from Mexicali, Mexico. The City of Calexico, California, shares a border with the City of Mexicali. Effective July 1, 2014, the City of Calexico was designated nonattainment, while the rest of the SSAB was designated attainment (ICAPCD 2014).
- **2017 Imperial County Plan for 2008 8-hour Ozone Standard**. Because of Imperial County's "moderate" nonattainment status for 2008 federal 8-hour O_3 standards, ICAPCD was required to develop an 8-hour Attainment Plan for O_3 (ICAPCD 2017). The plan includes control measures that are an integral part of how the ICAPCD currently controls the ROG and NO_x emissions within the O_3 nonattainment areas. The overall strategy includes programs and control measures which represent the implementation of reasonable available control technology (40 CFR 51.912) and the assurance that stationary sources maintain a net decrease in emissions.
- **2018 Imperial County Plan for PM_{10}.** Imperial Valley is classified as nonattainment for federal and State PM_{10} standards. The 2018 SIP maintained previously adopted fugitive dust control measures (Regulation VIII) that were approved in the Imperial County portion of the California SIP in 2013 (see above) (ICAPCD 2018a).

- **2018 Imperial County Plan for $PM_{2.5}$**. U.S. EPA designated Imperial County as nonattainment for the 2018 24-hr $PM_{2.5}$ standard. The 2018 $PM_{2.5}$ SIP concluded that the majority of the $PM_{2.5}$ emissions resulted from transport in nearby Mexico. Specifically, the SIP demonstrates attainment of the 2006 $PM_{2.5}$ NAAQS "but for" the transport of international emissions from Mexicali, Mexico. In accordance with the CCAA, the $PM_{2.5}$ SIP satisfies the attainment demonstration requirement satisfying the provisions of the CCAA (ICAPCD 2018b).

In addition to the above plans, the ICAPCD is working cooperatively with counterparts from Mexico to implement emissions reductions strategies and projects for air quality improvements at the border. The two countries strive to achieve these goals through local input from states, county governments, and citizens. Within the Mexicali and Imperial Valley areas, an air quality task force has been organized to address those issues unique to the border region known as the Mexicali/Imperial air shed. Membership includes representatives from federal, State, and local governments from both sides of the border, as well as representatives from academia, environmental organizations, and the general public. This group was created to promote regional efforts to improve the air quality monitoring network, emissions inventories, and air pollution transport modeling development, as well as the creation of programs and strategies to improve air quality.

Imperial County Air Pollution Control District

ICAPCD has the authority to adopt and enforce regulations dealing with controls for specific types of sources, emissions or hazardous air pollutants, and new source review. The ICAPCD rules and regulations are part of the SIP and are separately enforceable by the EPA.

Rule 106 – Abatement. The Board may, after notice and a hearing, issue, or provide for the issuance by the Hearing Board, of an order for abatement whenever the District finds that any person is in violation of the rules and regulations limiting the discharge of air contaminants into the atmosphere.

Rule 107 – Land Use. The purpose of this rule is to provide ICAPCD the duty to review and advise the appropriate planning authorities within the District on all new construction or changes in land use which the Air Pollution Control Officer believes could become a source of air pollution problems.

Rule 201 – Permits Required. The construction, installation, modification, replacement, and operation of any equipment that may emit or control air contaminants require ICAPCD permits.

Rule 207 – New and Modified Stationary Source Review. Establishes preconstruction review requirements for new and modified stationary sources to ensure the operations of equipment does not interfere with attainment or maintenance of ambient air quality standards.

Rule 208 – Permit to Operate. Gives ICAPCD authority to inspect and evaluate the facility to ensure the facility has been constructed or installed and will operate to comply with the provisions of the Authority to Construct permit and comply with all applicable laws, rules, standards, and guidelines.

Rule 310 – Operational Development Fee. Provides ICAPCD with a sound method for mitigating the emissions produced from the operation of new commercial and residential development projects throughout the County of Imperial and incorporated cities. All project proponents have the option to either provide off-site mitigation, pay the operational development fee, or do a combination of both. This rule will assist ICAPCD in attaining the state and federal ambient air quality standards for PM_{10} and O_3.

Rule 401 – Opacity of Emissions. Sets limits for release or discharge of emissions into the atmosphere, other than uncombined water vapor, that are dark or darker in shade as designated as No.1 on the Ringelmann Chart[1] or obscure an observer's view to a degree equal to or greater than smoke does as compared to No.1 on the Ringelmann Chart, for a period or aggregated period of more than three minutes in any hour.

Rule 403 – General Limitations on the Discharge of Air Contaminants. Rule 403 sets forth limitations on emissions of pollutants, including particulate matter, from individual sources.

Rule 407 – Nuisance. Rule 407 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Rule 801 – Construction and Earthmoving Activities. Rule 801 aims to reduce the amount of PM_{10} entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM_{10} emissions. This rule applies to any construction and other earthmoving activities, including, but not limited to, land clearing, excavation related to construction, land leveling, grading, cut and fill grading, erection or demolition of any structure, cutting and filling, trenching, loading or unloading of bulk materials, demolishing, drilling, adding to or removing bulk of materials from open storage piles, weed abatement through disking, back filling, travel on-site and travel on access roads to and from the site.

Regulation VIII – Fugitive Dust Rules. Regulation VIII sets forth rules regarding the control of fugitive dust, including fugitive dust from construction activities. The regulation requires implementation of fugitive dust control measures to reduce emissions from earthmoving, unpaved roads, handling of bulk materials, and control of track-out/carry-out dust from active construction sites. Best Available Control Measures to reduce fugitive dust during construction and earthmoving activities include but are not limited to:

- Phasing of work in order to minimize disturbed surface area
- Application of water or chemical stabilizers to disturbed soils
- Construction and maintenance of wind barriers
- Use of a track-out control device or wash down system at access points to paved roads

Compliance with Regulation VIII is mandatory for all construction sites, regardless of size; however, such compliance does not constitute mitigation under the reductions attributed to environmental impacts. In addition, compliance for a project requires (1) the development of a dust control plan for the construction and operational phase; and (2) notification to ICAPCD 10 days prior to the commencement of any construction activity. Furthermore, any use of engines or generators of 50 horsepower or greater may require a permit through ICAPCD.

4.2.3 Thresholds of Significance

To assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have an air quality impact if it would:

Threshold a) **Conflict with or obstruct implementation of the applicable air quality plan?**

Threshold b) **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?**

Threshold c) **Expose sensitive receptors to substantial pollutant concentrations?**

Threshold d) **Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?**

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.2.4 Methodology

The air quality impacts related to construction and daily operations were calculated through use of the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 ,and the operational TAC impacts were calculated through entering the TAC emissions calculated by the CalEEMod model into the USEPA AERMOD air dispersion model to calculate the TAC concentrations at the nearest sensitive receptors. The air quality modeling and air model printouts are provided in the Air Quality Analysis (Appendix B).

4.2.5 Project Impact Analysis

Threshold a) **Conflict with or obstruct implementation of the applicable air quality plan?**

The Proposed Project would conflict with the applicable air quality plans, which include the 2017 Ozone SIP, 2018 PM_{10} Plan, and 2018 $PM_{2.5}$ SIP that are described above in the air quality regulatory setting. The *CEQA Air Quality Handbook* (ICAPCD Handbook)*,* prepared by ICAPCD, December 12, 2017, details that for any project that emits less than the screening thresholds provided in Table 4.2-3 for construction and operations, the Project is compliant with the most current ozone and PM_{10} attainment plans and no further demonstration of compliance with these plans is required.

Table 4.2-3: ICAPCD Thresholds of Significance

	Pollutant Emissions (Pounds/Day)					
	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction	75	100	550	—	150	55
Operation	55	55	550	150	150	55

Source: ICAPCD, http://www.co.imperial.ca.us/AirPollution/PlanningDocs/CEQAHandbk.pdf.

The Proposed Project's construction and operational air emissions have been calculated in the Air Quality Analysis (Appendix B). Table 4.2-4 shows the maximum daily emissions for each year of construction activities for the Proposed Project with implementation of the Project Design Features shown above in Section 2.10 of the Project Description. Table 4.2-4 shows that construction activities for the Proposed Project will exceed the ICAPCD thresholds of significance.

Table 4.2-4: Construction-Related Criteria Pollutant Emissions (Unmitigated)

Construction Year	Pollutant Emissions in Pounds per Day					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2022	13.0	145	90	0.37	34.7	19.4
2023	34.0	258	249	0.78	51.6	26.7
2024	76.3	106	144	0.36	14.4	8.50
Significance Thresholds	**75**	**100**	**550**	**—**	**150**	**55**
Exceed thresholds?	No	**Yes**	No	**—**	No	No

Source: CalEEMod Version 2020.4.0.

The operational daily criteria pollutant emissions for the Proposed Project have been calculated with implementation of the Project Design Features shown in Section 2.10 of the Project Description, and the results are shown in Table 4.2-5 for the operational-related emissions and Table 4.2-6 for operations-related start up emissions.

Table 4.2-5: Operational-Related Criteria Pollutant Emissions

Emissions Sources	Pollutant Emissions in Pounds per Day					
	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Hell's Kitchen PowerCo1						
Employee vehicles	0.06	4.12	0.28	0.01	0.06	0.02
Haul trucks	<0.01	0.01	0.17	<0.01	0.03	0.01
Vendor vehicles	0.09	1.39	1.31	0.01	0.13	0.06
On-site equipment	0.63	22.8	1.56	<0.01	0.27	0.21
Area sources	2.57	0.01	<0.01	<0.01	<0.01	<0.01
Cooling towers	—	—	—	—	20.2	9.60
Standby/Black start diesel generator Testing (when operating)	3.37	46.1	8.87	6.51	0.53	0.53
Standby diesel generator testing	4.27	58.4	11.2	8.25	0.67	0.67
Standby fire pumps testing	0.42	5.73	1.10	0.81	0.07	0.07
Subtotal Hell's Kitchen PowerCo 1	**11.4**	**139**	**24.5**	**15.6**	**21.9**	**11.2**
Hell's Kitchen LithiumCo1						
Employee vehicles	0.23	16.9	1.13	0.05	0.24	0.08
Haul trucks	0.12	0.53	6.01	0.16	0.96	0.38
On-site equipment	0.14	1.43	1.33	<0.01	0.07	0.06
Area sources	14.0	0.06	<0.01	<0.01	<0.01	0.00
Cooling towers	—	—	—	—	25.2	12.0
Standby diesel generator testing	0.90	12.3	2.37	1.74	0.14	0.14
Rock muffler	6.70	—	—	—	—	—
Material transfer and packaging	—	—	—	—	0.78	0.27
Subtotal Hell's Kitchen LithiumCo 1	**22.1**	**31.2**	**10.8**	**1.95**	**27.4**	**12.9**

Grand total	**33.5**	**170**	**35.4**	**17.5**	**49.3**	**24.1**
ICAPCD significance thresholds	**55**	**550**	**55**	**150**	**150**	**55**
Exceed thresholds?	No	No	No	No	No	No

Source: CalEEMod Version 2020.4.2.

Table 4.2-6: Operational-Related Start Up Criteria Pollutant Emissions

Emissions Sources	Pollutant Emissions in pounds/day					
	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Standby/Black Start Diesel Engine Generator (when operating)	40.4	553	106	78.1	6.39	6.39
CEQA Significance Threshold	55	550	55	150	150	55
Exceeds CEQA Significance Threshold?	No	**Yes**	**Yes**	No	No	No
Rule 207, Section C.2.g Threshold?	137	137	137	137	137	137
Exceeds Rule 207, Section C.2.g threshold?	No	**Yes**	No	No	No	No

Source: CalEEMod Version 2020.4.0.

As shown above, both construction and operational emissions created from the Proposed Project would not be within their respective ICAPCD thresholds. According to the ICAPCD Handbook, projects that are within the ICAPCD thresholds are consistent with the regional air quality plans. Furthermore, the standard mitigation measures provided in the ICAPCD Handbook have been incorporated into the Project Description for the Proposed Project as Project Design Features (see Section 2.10), and the Proposed Project will be required to implement all of the ICAPCD Regulation VIII, fugitive dust control measures during construction and operation of the Proposed Project. Furthermore, any stationary sources of emissions operated on site will be required to adhere to ICAPCD Rule 207, New and Modified Stationary Source Review and Rule 201 that require permits to construct and operate stationary sources. The Proposed Project would have the potential to conflict with or obstruct implementation of the applicable air quality plans. However, the Project would implement mitigation measures AQ-1 and AQ-2 to reduce CO and NOx emissions. Table 4.2-7 shows that once mitigated, all criteria pollutants would be reduced to a level that is less than significant. Therefore, with implementation of the above mitigation measure, impacts to air quality plans would be reduced to a level less than significant.

Table 4.2-7: Construction-Related Criteria Pollutant Emissions (Mitigated)

Construction Year	Pollutant Emissions in pounds/day					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2022	3.88	79.0	108	0.37	17.4	6.88
2023	18.6	95.0	307	0.78	28.8	11.5
2024	70.8	49.3	175	0.36	11.5	3.85
Significance Thresholds	**75**	**100**	**550**	**—**	**150**	**55**
Exceed Thresholds?	No	No	No	—	No	No

Source: CalEEMod Version 2020.4.0.

Threshold b) **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?**

The Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or State ambient air quality standard.

The ICAPCD Handbook provides project emissions limits that are provided in Table 4.2-3 for both construction and operation of projects within the County. The ICAPCD Handbook details that if the air emissions created from a project are below the air emissions thresholds shown in Table 4.2-3, then the Proposed Project's air emissions would result in a less than significant impact, provided that all standard mitigation measures listed in the ICAPCD Handbook are implemented as well as all applicable ICAPCD rules controlling emissions are adhered to.

As shown in Table 4.2-4, construction activities for the Proposed Project will not exceed the ICAPCD thresholds of significance for construction. Also, as shown in Table 4.2-5, daily operations of the Proposed Project will not exceed the ICAPCD thresholds of significance for operations. Table 4.2-6 provides the start-up emissions for the Proposed Project, which would exceed CO and NOx emissions standards set by the ICAPCD.

The standard measures from the ICAPCD Handbook for both construction and operations have been incorporated into the Project Description as Project Design Features (see Section 2.10 of the Project Description). Furthermore, the Proposed Project would be required to implement all of the ICAPCD Regulation VIII, fugitive dust control measures during construction and operation of the Proposed Project. Furthermore, any stationary sources of emissions operated on site will be required to adhere to ICAPCD Rule 207, New and Modified Stationary Source Review and Rule 201 that require permits to construct and operate stationary sources. Therefore, the Proposed Project would result in a less than significant cumulatively considerable net increase of any criteria pollutant.

Table 4.2-8: Estimated CO Concentrations (µg/m^3) from Startup Operations

Criteria	1-Hour CO	8-Hour CO
Off-site receptor (Project)	718	480
Background concentration	1,495	889
Total concentration	2,213	1,369
CAAQS/NAAQS	23,000/40,000	10,000/10,000
Significant (Yes or No)?	No	No

During start-up conditions, air emissions of CO and NO_x associated with the HKP1 were estimated to exceed the CEQA significance thresholds and air emissions of CO associated with HKP1 were estimated to exceed the Rule 207, Section C.2.g thresholds. ICAPCD Rule 207 Section C.2 requires emissions offsets for sources with pollutant emissions that exceed 137 pounds per day. Pursuant Rule 207, Section C.2.g, the

Proposed Project has prepared a CO Air Quality Impact Analysis (Part F of Rule 207), which demonstrates that the HKP1 would not cause or contribute to a violation of the CO NAAQS/CAAQS. The 1-hour and 8-hour CO modeled concentration plus background concentrations are 2,213 and 1,369 micrograms per cubic meter ($\mu g/m^3$), respectively, which are well below the NAAQS/CAAQS. Therefore, the startup operations associated with the proposed standby/black-start diesel engine generator would have a less than significant impact on CO concentrations.

4.2.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

Cumulative impacts would exist when either direct air quality impacts or multiple construction projects occur within the same area simultaneously. If a project were to produce air quality emissions simultaneously to a nearby construction project, the addition of both project emissions to the environment could exceed significance thresholds. For this Project, the construction emissions were found to be less than significant. If a nearby project were to be under construction at the same time, that project would need to produce an additive amount of emissions close to the Project site such that emissions would exceed thresholds. No cumulatively considerable construction projects are within one mile of the site. Given this, a less than significant cumulative air quality impact would be expected during construction. The Proposed Project site is zoned medium industrial and open space, and the Project has been designed to be consistent with this zoning designation. The Project would generate less than significant direct and cumulative air quality impacts with mitigation incorporated. Given this, since the Proposed Project would not have any significant direct impacts and would not have any significant cumulative impacts, the Project would not conflict with either the County's Air Quality Management Plan or SIP.

4.2.7 Mitigation Measures

The following mitigation measures are proposed as part of threshold (a), to reduce air quality related impacts to a level less than significant. A fugitive dust plan would help control sources of PM during construction and operations. A combustion exhaust emissions control program would reduce the construction-related NO_x emissions. Full details regarding these mitigation measures are listed below:

MM-AQ-1 Prior to commencing construction, the Project proponent shall submit a Dust Control Plan to the Imperial County Air Pollution Control District (ICAPCD) for approval identifying all sources of PM_{10} and $PM_{2.5}$ emissions and associated mitigation measures during the construction and operational phases of the Project. The Project proponent shall submit a Construction Notification Form to the ICAPCD ten days prior to the commencement of any earthmoving activity. This plan would provide a detailed list of control measures to reduce fugitive emissions from construction and operational activities, including but not limited to watering of unpaved roads, vehicle speed limits, windbreaks, transport container covers, and cleaning and sweeping procedures. The Dust Control Plan submitted to the ICAPCD shall meet all applicable requirements for control of

fugitive dust emissions, including the following measures designed to achieve the no greater than 20-percent opacity performance standard for dust control:

- All disturbed areas, including bulk material storage, that is not being actively used shall be effectively stabilized; and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative groundcover. Bulk material is defined as earth, rock, silt, sediment, and other organic and/or inorganic material consisting of or containing PM with 5 percent or greater silt content.
- All on- and off-site unpaved roadway segments being used for 50 or more average vehicle trips per day shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by the use of restricting vehicle access, paving, chemical stabilizers, dust suppressants, and/or watering.
- All unpaved traffic areas one acre or more in size with 75 or more average vehicle trips per day shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- All track-out or carry-out, which includes bulk materials that adhere to the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto the pavement on paved public roads, shall be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road in an urban area.
- Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water or chemical stabilizers, or by sheltering or enclosing the operation and transfer line except, where such material or activity is exempted from stabilization by the rules of ICAPCD.
- Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.
- Fugitive dust generation during construction would be minimized by watering as needed to meet Imperial County standards for fugitive dust control. To further reduce fugitive dust emissions, vehicle traffic on unpaved roads would be kept below 15 miles per hour.
- During grading, the Project would be watering actively disturbed on-site areas at least three times a day as necessary to reduce fugitive dust emissions.
- Access to the site would be via Highway 111, McDonald Road, and Davis Road. All workers, vendors and haul trucks would be required to utilize these roadways.
- An agreement between County of Imperial Public Works and the applicant would be established requiring the applicant to improve a two-mile section of the unpaved Davis Road adjacent to the site by installing a 12- to 18-inch-thick engineered Class II base section. In addition, at the request of the

County, the applicant would utilize the improved section during construction and would wet the site continuously during construction activities. The road would be immediately paved after construction prior to operations of the plant to avoid damaging a new asphalt section.

- During construction, the Project would be required to maintain daily dust suppression at the two-mile section of Davis Road adjacent to the site using a water truck operating continuously while vehicles are using the road.
- The Project would provide wheel shakers at the exit(s) of the construction site to minimize dust being tracked off the Project site and onto the roadways.
- Operational on-road trips shall not operate on unpaved dirt roads.

MM-AQ-2 Prior to commencing construction, the Project proponent shall submit and commit to a Combustion Exhaust Emissions Control Program. This plan would provide a detailed list of control measures to minimize exhaust emissions during Project construction, including but not limited to fuel use, engine maintenance, and procedures:

- The Exhaust Emission Control Plan shall provide a detailed list of control measures to minimize exhaust emissions during Project construction, including but not limited to fuel use, engine maintenance, and procedures.
- The construction contractor shall be required to utilize construction equipment using diesel engines less than 50 horsepower with certified NO_x emissions rated as Tier 3 or better. All off-road diesel-powered equipment greater than 50 horsepower that is used on-site during construction of the Project shall meet USEPA Tier 4 offroad emission standards and Level 3 diesel particulate filters.
- When commercially available, fossil fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set).
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California Airborne Toxics Control Measure, Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Where access to alternative sources of power are available, portable diesel engines shall be prohibited. Haul truck shall be 2010 model year trucks or newer (a gross vehicle weight rating of at least 14,001 pounds), or best commercially available equipment, that meet the California Air Resources Board 2010 engine emissions standards at 0.01 g/horsepower-hour of particulate matter and 0.20 g/horsepower-hour of NO_x emissions or newer, cleaner trucks.

- The volatile organic compounds (VOC) architectural coating limits specify that the use paints and solvents with a VOC content of 100 grams per liter or less for interior and 150 grams per liter or less for exterior surfaces shall be required.

4.2.8 Level of Significance After Mitigation

With the implementation of Mitigation Measures AQ-1 and AQ-2, the Project would ensure potential impacts related to air quality would remain less than significant.

4.3 BIOLOGICAL RESOURCES

This section provides a background discussion of the regulatory framework, the affected environment, and impacts to biological resources. The regulatory framework discussion focuses on the federal, State, and local regulations that apply to plants, animals, and sensitive habitats. The affected environment discussion focuses on the topography and soils; general vegetation; general wildlife; sensitive biological resources; riparian habitat and sensitive natural communities; jurisdictional waters; and habitat connectivity and wildlife corridors. Information contained in this section is summarized from the Biological Resources Technical Report (Appendix C of this EIR) and aquatic resources delineation reports (Appendices D1 and D2 of this EIR) for the Hell's Kitchen PowerCo 1 and Hell's Kitchen LithiumCo 1 Projects, Imperial County, California.

4.3.1 Existing Environmental Setting

Regional Setting

An extensive range of vegetation communities have been identified in the County, including native and nonnative communities on which sensitive and common plant and wildlife species are dependent. Native communities include wetland and riparian habitats within fresh and saltwater systems and high and low elevation woodland and scrub habitats, some with saline and alkali soil conditions. Nonnative communities include agriculture, annual grasslands, and tamarisk or salt cedar stands.

A number of sensitive vegetation communities, identified by the California Department of Fish and Wildlife (CDFW) and others as rare and worthy of consideration in California, occur in Imperial County. Of the total 2,942,080 acres in the County, approximately 215,220 acres include sensitive habitats. Sensitive vegetation and habitats are a conservation priority for local, State, and federal regulatory agencies because they have limited distribution and support a variety of sensitive plants and wildlife.

Several areas in Imperial County have been designated as environmentally sensitive areas by various public agencies or entities. These include US Fish & Wildlife Service (USFWS)-designated critical habitat, USFWS National Wildlife Refuges, Bureau of Land Management (BLM), National Landscape Conservation System (NLCS) lands, BLM Desert Wildlife Management Areas (DWMAs) and Areas of Critical Environmental Concern (ACECs), wilderness and wildlife areas, State parks, and other protective designations by federal and State agencies in the County. Many of these areas have development restrictions or prohibitions to facilitate conservation of biological resources or other sensitive resources.

A number of species listed or candidates for listing as endangered or threatened under the Endangered Species Act or California Endangered Species Act or listed as rare under the California Native Plant Protection Act, have been recorded or potentially occur in Imperial County. Several California Species of Special Concern are of particular conservation focus within Imperial County including the burrowing owl and flat-tailed horned lizard. Approximately two-thirds of the burrowing owl population in California occurs in agricultural areas in the Imperial Valley. There are three regional populations of flat-tailed horned lizard in California; two of these (representing the majority of the range in the State) occur in Imperial County. These are on the west side of the Salton Sea/Imperial Valley and on the east side of the Imperial Valley; both populations extend south into Mexico.

Project Site

The Project development area consists of approximately 74 acres of potential development area within CTR's geothermal lease area (approximately 64 acres within the Stage 1 area and approximately 10 acres within the Well Pad 4 and S-Berm Road area) and a 200-foot-wide right-of-way (ROW) corridor for the 2-mile-long gen-tie and power line to the Imperial Irrigation District (IID) interconnect station at Hudson Ranch. The Project development area is located adjacent to and east of the Salton Sea within Imperial County, California, approximately 3.6 miles west from the town of Niland (Figure 2.0-1 Project Location and Vicinity). The Project is development area located within the U.S. Geological Survey (USGS) *Niland*, California 7.5-minute topographic quadrangle. The geothermal development area and lithium facilities are located within Sections 11 and 12 of Township 11 South, Range 13 East, San Bernardino Base Meridian, and the gen-tie/power line ROW corridor is located within Sections 12, 13, and 14. The majority of the proposed HKP1 and HKL1 facilities are located immediately west of Davis Road, with administrative buildings and warehouses located east of Davis Road. The 230-kilovolt (kv) gen-tie line for HKP1 will run from Noffsigner Road approximately 2 miles south to McDonald Road and then will run approximately 0.3 miles east to Hudson Ranch. The gen-tie line would be located east of Davis Road and north of McDonald Road, within the IID's transmission ROW and within new ROW. The power line to supply power to the HKL1 facilities would be collocated on the HKP1 transmission structures/poles. The layout of the Project is shown in the Project Site Plan (Figure 2.0-4).

Elevations in the Project development area range from 225 to 223 feet below mean sea level (bmsl). The topography drops off very gradually to the west and north with a high topographic area in the southern portion of the Project development area (223 feet bmsl). According to the results from the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey, the Project development area is located within the Imperial Valley Area, CA683 soil survey. Soils in the Project development area consist of fluvaquents saline, Imperial silty clay wet, and Imperial-Glenbar silty clay loams wet. Soil data is not available for a majority of the Well Pad 4 and S-Berm Road area. Fluvaquents saline is a hydric soil (USDA 2022).

The Project is located within the designated boundaries of the Desert Renewable Energy Conservation Plan. However, the Project is not located within or adjacent to an Area of Critical Environmental Concern (BLM 2023).

4.3.2 Regulatory Setting

Federal

Federal Endangered Species Act

The federal ESA protects federally listed threatened and endangered species and their habitats from unlawful take and ensures that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, "take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. USFWS regulations define harm to mean "an act which actually kills or injures wildlife" (50 CFR 17.3).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The prohibition applies to birds included in the respective international conventions between the U.S. and Great Britain, the U.S. and Mexico, the U.S. and Japan, and the U.S. and Russia. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA.

Bald and Golden Eagle Protection Act of 1940

The Bald Eagle Protection Act of 1940 protects bald eagle (Haliaeetus leucocephalus) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. 'Take' is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." 'Disturb' is defined as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (72 Federal Register [FR] 31132; 50 CFR 22.3). All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this Act.

Clean Water Act (Section 404 Permit)

The Clean Water Act establishes a program to regulate the discharge of dredge and fill material into waters of the U.S., including wetlands. Activities regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. Either an individual 404b permit or authorization to use an existing USACE Nationwide Permit will need to be obtained if any portion of the construction requires fill into a river, stream, or stream bed that has been determined to be a jurisdictional waterway.

State

California Endangered Species Act

Provisions of CESA protect State-listed threatened and endangered species. CDFW regulates activities that may result in "take" of individuals ("take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under California FGC. Additionally, California FGC contains lists of vertebrate species designated as "fully protected" (California FGC §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to state-listed species, CDFW has also produced a list of Species of Special Concern to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially such that threats to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under California FGC. Section 3503.5 states it is "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment.

California Fish and Game Code Section 1600 (as amended)

California Fish and Wildlife Code Section 1600 regulates activities that substantially divert or obstruct the natural flow of any river, stream, or lake or use materials from a streambed. This can include riparian habitat associated with watercourses.

California Fish and Game Codes 3503, 3503.5, and 3513

Under Sections 3503, 3503.5, and 3513 of the California FGC, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated by the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to FGC Section 3800 are prohibited. Additionally, the State further protects certain species of fish, mammals, amphibians and reptiles, birds, and mammals through CDFW's Fully Protected Animals which prohibits any take or possession of classified species.

Native Plant Protection Act (California Fish and Game Code Sections 1900-1913)

California's Native Plant Protection Act prohibits the taking, possessing, or sale within the State of any plant listed by CDFW as rare, threatened, or endangered. This allows CDFW to salvage listed plant species that would otherwise be destroyed.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, all projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The Project falls under the jurisdiction of the Colorado River RWQCB.

California Environmental Quality Act

Title 14 CCR 15380 requires the identification of endangered, rare, or threatened species or subspecies of animals or plants that may be impacted by a project. If any such species are found, appropriate measures should be identified to avoid, minimize, or mitigate the potential effects of projects.

Local

Imperial County General Plan

The Conservation and Open Space Element of the Imperial County General Plan provides detailed plans and measures for the preservation and management of biological and cultural resources, soils, minerals, energy, regional aesthetics, air quality, and open space (County 2016). The purpose of this element is to recognize that natural resources must be maintained for their ecological value for the direct benefit to the public and to protect open space for the preservation of natural resources, the managed production

of resources, outdoor recreation, and for public health and safety. In addition, the purpose of this element is to promote the protection, maintenance, and use of the County's natural resources with particular emphasis on scarce resources, and to prevent wasteful exploitation, destruction, and neglect of the state's natural resources. Table 4.3-1 analyzes the consistency of the Project with specific policies contained in the Imperial County General Plan associated with preservation of biological resources. An analysis of the consistency of the Project with these goals, is provided in Section 4.3.6.

Table 4.3-1: Imperial County General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Conservation and Open Space Element		
Open Space and Recreation Conservation		
Policy No. 2 – The County shall participate in conducting detailed investigations into the significance, location, extent, and condition of natural resources in the County.	Consistent	A biological assessment has been conducted at the Project site to evaluate the Project's potential impacts on biological resources. Burrowing owl (California Species of Special Concern) was identified within the survey area.
Program – Notify any agency responsible for protecting plant and wildlife before approving a project which would impact a rare, sensitive, or unique plant or wildlife habitat	Consistent	All necessary consultation and submittal of permit applications would be conducted with the applicable agencies, including CDFW, USFWS, and USACE, before any potential impact on the biological resources under their jurisdictions, including special status species or Waters of the U.S. Therefore, Project implementation would be consistent with this goal.
Conservation of Environmental Resources for Future Generations		
Goal 1 – Environmental resources shall be conserved for future generations by minimizing environmental impacts in all land use decisions and educating the public on their value.	Consistent	Project implementation would comply with all State and federal regulations protecting biological resources, which would include evaluation of resources on site and either avoiding or minimizing impacts on those resources to the extent feasible. Therefore, Project implementation would be consistent with this goal.
Objective 1.1 - Encourage uses and activities that are compatible with the fragile desert environment and foster conservation.	Consistent	Project implementation would not occur within any fragile desert habitats. Therefore, Project implementation would be consistent with this goal.
Objective 1.6 – Promote the conservation of ecological sites and preservation of cultural resource sites through scientific investigation and public education.	Consistent	A biological assessment has been conducted at the Project site to evaluate the Project's potential impacts on biological resources.

Objective 2.4 - Use the CEQA and NEPA process to identify, conserve and restore sensitive vegetation and wildlife resources.	Consistent	CEQA review and approval would occur during the planning stages of the Project, and no construction activities would occur until the CEQA process has been completed. Therefore, Project implementation would be consistent with this goal.
Objective 2.6 - Attempt to identify, reduce, and eliminate all forms of pollution; including air, noise, soil, and water.	Consistent	All necessary consultation and submittal of permit applications would be conducted with the applicable agencies, including CDFW, USFWS, and USACE, before any potential impact on the biological resources under their jurisdictions, including special status species or Waters of the U.S. Therefore, Project implementation would be consistent with this goal.

Habitat Conservation Plans

The Project development area is not within the coverage areas of any HCP, NCCP, or other approved local, regional, or State habitat conservation plan.

Jurisdictional Waters

USACE Jurisdictional Waters

In accordance with Section 404 of the Clean Water Act (CWA), USACE regulates the discharge of dredged or fill material into waters of the United States (WOUS). On April 21, 2020, the U.S. Environmental Protection Agency (EPA) and USACSE published the Navigable Waters Protection Rule in the Federal Register to finalize a revised definition of WOUS under the Clean Water Act (USEPA 2020). However, the USACE and EPA halted implementation of the NWPR in 2021 and are interpreting waters of the United States consistent with the pre-2015 regulatory definition until further notice.

Section 404 of the CWA regulates the discharge of dredged or fill material into WOUS. The CWA grants dual regulatory authority of Section 404 to the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Corps). The Corps is responsible for issuing and enforcing permits for activities in jurisdictional Waters in conjunction with prior permitting authorities in navigable Waters under the Rivers and Harbors Act of 1899. The EPA is responsible for providing oversight of the permit program. In this capacity, the EPA has developed guidelines for permit review (Section 404 [b][1] Guidelines) and has the authority to veto permits by designating certain sites as non-fill areas (Section 404[c] of the CWA). The EPA also has enforcement authority under Section 404.

The Corps generally extends its jurisdiction to all areas meeting the criteria for Waters of the United States. WOUS exclude isolated waters that are not hydrologically connected to navigable rivers and streams. Additionally, Corps jurisdiction over wetlands created by artificial means is decided on a case-by-case basis. The Corps generally does not assume jurisdiction over areas that are (1) artificially irrigated and would revert to upland habitat if the irrigation ceased; or (2) artificial lakes and ponds created by excavating and/or diking of dry land to collect and retain water, used exclusively for such purposes as

stock watering, irrigation, settling basins, or rice growing. Other areas that are not considered jurisdictional WOUS include waste treatment ponds, ponds formed by construction activities including borrow pits until abandoned, and ponds created for aesthetic reasons such as reflecting or ornamental ponds (33 CFR Part 328.3).

Wetlands and Wetland Parameters

According to the USACE Wetland Delineation Manual, wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE 2008).

The USACE published the 1987 Wetland Delineation Manual (USACE 1987) to guide its field personnel in determining jurisdictional wetland boundaries. This Corps published regional supplements to the wetland delineation manual, including the 2008 Arid West Regional supplement, which covers southern California and other portions of the southwest United States (USACE 2008). The 1987 Wetland Manual and the 2008 Arid West Supplement provide the legally accepted methodology for identification and delineation of USACE-jurisdictional wetlands in the Project development area.

Wetlands are delineated using three parameters: hydrophytic vegetation, wetland hydrology and hydric soils. According to USACE, indicators for all three parameters must normally be present to qualify as a wetland. Because there are situations in which one or more of the wetland parameters has been removed or altered due to recent natural events or human activities, the definition of a wetland includes the phrase "under normal circumstances", taking into consideration atypical situations and problem areas that may lack one or more of the three criteria, yet still may be considered wetlands (USACE 1987).

Non-Wetland Waters

The USACE also requires the delineation of non-wetland jurisdictional WOUS. These waters must have strong hydrology indicators, such as the presence of seasonal flows and an ordinary high watermark (OHWM). Areas delineated as non-wetland jurisdictional waters include rivers, streams, lakes, and other areas that lack wetland vegetation and characteristics, but hold water.

Traditionally Navigable Waters

The Salton Sea was determined to be a traditionally navigable water in Colvin v. United States (U.S. District Court 2001). The court determined that the Salton Sea is a "navigable water" and WOUS that supports interstate commerce through tourism.

CDFW Jurisdictional Waters

Under Sections 1600–1607 of the Fish and Game Code, CDFW regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats (e.g., riparian woodland) associated with watercourses. CDFW jurisdictional waters are delineated by the distances between the outer edges of riparian vegetation or at the tops of the banks of streams or lakes, whichever is wider. CDFW may also assert jurisdiction over modified or man-made waterways; such jurisdiction is generally based on the value of such features to support riparian or aquatic plant or animal species.

CDFW jurisdictional limits may also include artificial stock ponds and irrigation ditches constructed within uplands, and outer drip line limits of adjacent riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal status or its location beyond the defined bed, bank, or channel.

RWQCB Jurisdictional Waters

RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes waters of the State (WOS) as mandated by the federal CWA Section 401. On April 6, 2021, the State Water Resources Control Board adopted a resolution to confirm that the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State" is in effect as state policy for water quality control. WOS are defined in State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2021) to include any surface water or groundwater, including saline waters, within the boundaries of the state. Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have impacts to biological resources if it would:

Threshold a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

Threshold b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

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

Threshold d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Threshold e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Threshold f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.3.3 Methods

Report Terminology and Definitions

As multiple studies and delineations have been conducted for the Project over the last several years and the shapes and acreages of the study areas differ between reference reports to some degree, this section serves to clarify the definitions of "study area" and "development area" and the naming of the various Project areas.

The methods, results, Project impact analysis, cumulative impacts, and mitigation measures for plants and wildlife provided herein, are based on and consistent with Panorama Environmental's November 2021 Biological Resources Technical Report. The Biological Resources Technical Report defines the "Project study area" as approximately 141 acres and includes 65 acres of "potential development area" (Appendix C).

The methods, results, Project impact analysis, cumulative impacts, and mitigation measures for jurisdictional wetlands and waters provided herein, are based on and consistent with Great Ecology's November 2022 Wetland Delineation Report for the Hell's Kitchen Geothermal Project Well Pad 4 (Great Ecology 2022a), and Great Ecology's December 2022 Wetland Delineation Report for the Hell's Kitchen Geothermal Project Stage 1 (Great Ecology 2022b). The Well Pad 4 delineation report describes the "delineation area" for that portion of the Project, as approximately 12 acres. The Stage 1 delineation report describes the "delineation area" for that portion of the Project as approximately 101 acres. As such, a combined approximately 113 acres was delineated in 2022 which included the Well Pad 4 and Stage 1 areas and buffer (Appendices D and X).

The current Project development area includes approximately 10 acres of the 12 acres delineated by Great Ecology in the Well Pad 1 and S-Berm Road area in November 2022, and approximately 64 acres of the 101 acres delineated by Great Ecology in the Stage 1 area in December 2022. The combined approximately 74-acre Project development is depicted in Figure 4.3-1 and Figure 4.3-2. The current Project development area falls largely within the Project study area as shown in Appendix C, Figure 6.

Vegetation mapping was also updated during Great Ecology's 2022 delineation efforts. Figure 4.3-1: Vegetation Communities in the Project Development Area, depicts vegetation communities as mapped by Great Ecology in 2022. This vegetation mapping differs slightly from the vegetation mapping conducted by Panorama Environmental and as depicted in their 2021 Biological Resources Technical Report; however, it is the most up-to-date data and the best representation of current Project conditions and is constant with the 2022 aquatic resources delineation results. It should be noted that potentials for special status plant and wildlife species presented herein were determined based on the study area and vegetation communities presented in Panorama Environmental's 2021 Biological Resources Technical Report, and language regarding the areas and communities where special status species were observed or could potentially inhabit is constant with that report.

Summary of Project Studies

A reconnaissance biological survey was conducted by Panorama Environmental, Inc. in the Project study area west of Davis Road in spring 2021 and in the area east of Davis Road and north of Pound Road in October 2021. Focused species surveys were conducted in the Project study area to evaluate the presence of special status species. Aquatic resources surveys were conducted by Great Ecology within the 2022

delineation area; the Well Pad 4 and S-Berm Road areas were delineated in October 2022, and the Stage 1 area was delineated in November 2022.

The biological reconnaissance survey, focused species surveys, and aquatic resource surveys for the Project are summarized in the sections that follow.

Yuma Ridgway's Rail, California Black Rail, and Least Bittern

Staff from the USFWS's Sonny Bono Salton Sea National Wildlife Refuge conducted surveys for Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) and California black rail (*Laterallus jamaicensis coturniculus*) in the Project vicinity in spring 2014, 2017, 2018, and 2019 (USFWS 2021a). The biologists detected the bird species visually and by call. USFWS conducted surveys of the area two to three days in each season between March and May, and survey days were spaced approximately one month apart. USFWS staff also surveyed for least bittern (*Ixobrychus exilis*) during the spring of 2019. Surveys were conducted at eight survey points along the marshland surrounding IID's S, R, and Q Drains west of Davis Road during each year. The locations of the eight survey points are shown in Appendix C, Figure 5 Marshbird Survey Points).

Desert Pupfish

1991–2006 CDFW, IID, and USGS

Between 1991 and 2006, CDFW, IID, and the U.S. Geological Survey (USGS) conducted trapping surveys for desert pupfish (*Cyprinodon macularis*) in the IID drains of the south Salton Sea (CH2M HILL 2006). The drains that were surveyed by these organizations include IID's Q, R, and S Drains.

2018–2020 CDFW

Staff from CDFW Region 6 conducted trapping surveys for desert pupfish in IID's Q and S Drains in 2016, and in the Q, R, and S Drains in 2018, 2019, and 2020 (CDFW 2021a). Surveys were primarily conducted between late March and September, which coincided with periods of higher activity for the species because of warmer waters. Surveys for desert pupfish were conducted by a CDFW qualified biologists in accordance with CDFW survey protocols.

Burrowing Owl

2006–2008 Bloom Biological, Inc.

In April 2006, 2007, and 2008, biologists from Bloom Biological conducted a detailed survey for burrowing owl (Athene cunicularia) within a 500,000-acre study area for IID's draft Habitat Conservation Plan in the Imperial Valley, to estimate the relative abundance and distribution of the species (Bloom Biological, Inc. 2009). The surveys used a random sampling methodology and focused on IID's ROWs and service areas that parallel irrigation canals, drains, and ditches.

2011–2012 AECOM

In May 2011 and 2012, biologists from AECOM conducted additional surveys for burrowing owl in IID's Habitat Conservation Plan study area (AECOM 2012). Those surveys used the same methodology as those used by Bloom Biological between 2006 and 2008.

2017–2018 Barrett's Biological Surveys

In July 2017, biologists from Barrett's Biological Surveys conducted field surveys and monitoring for burrowing owl, to support geothermal seismic measurement activities in the marsh area west of the Q, R, and S Drains. In April 2018, biologists from Barrett's Biological Surveys conducted a habitat assessment field survey for burrowing owl, in accordance with the procedures described in CDFW's 2012 Staff Report on Burrowing Owl Mitigation (Barrett's Biological Surveys 2018). The 2018 burrowing owl habitat assessment area included the entirety of CTR's geothermal lease area and a 500-foot buffer (within which the Project development area is located).

Reconnaissance Biological Surveys

2016 TRC Solutions

On April 12, 2016, biologists from TRC Solutions, Inc. conducted a reconnaissance field survey for biological resources in CTR's geothermal lease area, within which the Project development area is located (TRC Solutions, Inc. 2016). The survey consisted of driving existing access roads and walking to accessible vantage points to view as much of the lease area and surrounding vicinity as practical.

2021 Panorama Environmental, Inc.

A reconnaissance biological survey was conducted by Panorama Environmental, Inc. in the Project study area west of Davis Road in spring 2021 and the portion of the study area east of Davis Road and north of Pound Road in October 2021 (Panorama Environmental, Inc. 2021a). The current Project development area falls largely within Panorama Environmental's 2021 Project study area.

Vegetation Communities Drone Imaging

In August 2020, CTR conducted a high-resolution (3-centimeter resolution) drone survey of the vegetation communities in CTR's geothermal lease area, within which the Project development area is located. A biologist from Panorama Environmental conducted a reconnaissance survey of the portion of the Project study area west of Davis Road and south of Pound Road in April and June 2021 and the area east of Davis Road in October 2021. The 2021 reconnaissance survey was used to define the vegetation communities in the Project study area. Vegetation communities in the Project study area were categorized in accordance with *A Manual of California Vegetation, Second Edition and Preliminary Descriptions of the Terrestrial Natural Communities of California* (Sawyer et al. 2009; Holland 1986).

In September 2021 Great Ecology captured aerial ortho-imagery within Project development area and vicinity using a drone and recorded at a resolution of four inches per pixel. Real-time kinematic (RTK) transects consisting of 20 survey shots at a spacing of 20 to 40 feet were used to accomplish field calibration of vertical accuracy. The resulting ortho-imagery used to classify landform types and vegetation provided coverage for the entire delineation area.

Jurisdictional Wetland Delineations

Several aquatic resource delineations were conducted in the Project vicinity between 2016 and 2022 by Merkel & Associates, the California Department of Water Resources (DWR), Panorama Environmental, and Great Ecology. All aquatic resource delineations were conducted according to the procedures outlined in the USACE Wetland Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of

Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). The jurisdictional delineation conducted by DWR in 2018 also used Delineating Playas in the Arid Southwest–A Literature Review (USACE 2001) as an additional reference. The dates and locations of these jurisdictional delineations are summarized below.

2016 – 2017 Merkel & Associates, Inc.

Merkel & Associates, Inc. conducted aquatic resource delineations on October 24 and November 1, 2016, and January 10, 2017. The biological study area of the Hell's Kitchen Geothermal Exploratory Wells Project, which included Well Pads 1 and 3 (Merkel & Associates, Inc., 2017).

2018 California Department of Water resources

California Department of Water resources conducted aquatic resource delineations within an approximately 527-acre study area for the Alcott Wetland Project, roughly bounded by Noffsinger Road to the north, Davis Road to the east, Pound Road to the south, and the Salton Sea shoreline to the west on July 17, 2018 (DWR 2018).

2021 Panorama Environmental, Inc.

Wetland delineation surveys were conducted by Panorama Environmental for the potential HKP1 and HKL1 development areas on March 5, May 14, and October 7, 2021, and for the right-of-way corridor on July 26, 2021, and October 7, 2021. Vegetation, soils, and hydrology data were recorded on a Wetland Determination Data Form at each data point. Data were collected using a Trimble GPS unit with accuracy of less than 1 meter. Photographs were taken at each data point to document the site conditions. (Panorama Environmental, Inc. 2021b).

2022 Great Ecology

The Well Pad 4 and S-Berm Road portions of the were surveyed by Great Ecology on October 19, 2022 (Great Ecology 2022a). The Stage 1 portion of the Project was surveyed by Great Ecology on November 11, 2022 (Great Ecology 2022b). Data points were recorded within the delineation areas to verify wetland/upland transition zones. Great Ecology recorded data point locations and wetland boundaries using a sub-meter accuracy Global Positioning System (GPS) unit, which were post-processed before incorporating onto delineation area maps. Aerial ortho-imagery was captured within the delineation areas using a drone in September 2021 and recorded at a resolution of four inches per pixel. Real-time kinematic (RTK) transects consisting of 20 survey shots at a spacing of 20 to 40 feet were used to accomplish field calibration of vertical accuracy. The resulting ortho-imagery used to classify landform types and vegetation provided coverage for the entire delineation area.

Literature Review

Prior to conducting the biological reconnaissance survey, Panorama Environmental queried several online databases to gather available data on sensitive biological resources within the Project study area and vicinity. Panorama Environmental conducted queries of the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS), and USFWS's Information for Planning and Consultation (IPaC) on February 17, 2021, for the nine U.S. Geological Survey 7.5-minute quadrangles centered around the Niland quadrangle. These databases contain records of reported occurrences of federally or State listed endangered or threatened species, California Species of Concern (SSC), and/or otherwise sensitive

species or habitats that may occur within or in the immediate vicinity of the Project study area. Species of known public interest in the Project study area were also reviewed. Panorama evaluated all special status plant and wildlife species that were present in the database queries for their potential to occur in the Project study area. Table 4.3-2 summarizes the biological resource queries that were conducted. The Biological Resources Technical Report for the Hell's Kitchen PowerCo 1 and Hell's Kitchen LithiumCo 1 Projects is included as Appendix C.

Table 4.3-2: Database Queries

Database Name	Managing Organization	Data Maintained in Database	Geographic Extent of Query	Date of Query
California Natural Diversity Database	California Department of Fish and Wildlife	Special status plant species Special status wildlife species Sensitive natural communities	Nine U.S. Geological Survey (USGS) 7.5-minute quadrangles centered on the Project study area	February 17, 2021
Inventory of Rare and Endangered Plants of California	California Native Plant Society	Special status plant species	Nine USGS 7.5-minute quadrangles centered on the Project study area	February 17, 2021
Information for Planning and Consultation	U.S. Fish and Wildlife Service	Special status plant Species Special status wildlife species Designated critical habitat	Nine USGS 7.5-minute quadrangles centered on the Project study area	February 17, 2021

Sources: (USFWS 2021b; CDFW 2021a; CNPS 2021)

Based on each species' known range and habitat requirements, as well as field survey results, the following criteria were used to determine the potential for each special status species to occur in the Project study area: Table 4.3-3 Criteria for Evaluating Sensitive Species Potential for Occurrence (PFO).

Table 4.3-3: Criteria for Evaluating Sensitive Species Potential for Occurrence (PFO)

PFO	CRITERIA
Presumed Absent	The species was not detected during protocol-level surveys, no suitable habitat is present in the Project study area, or the Project study area is outside the species' known range.
Low	Because of marginally suitable habitat in the Project study area combined with lack of past records and detection during surveys, the species is not anticipated to be present in the Project study area.
Moderate	Suitable habitat combined with CNDDB occurrences or other records in the Project region indicate that the species has a moderate potential to occur in the Project study area.
High	The species was not observed in the Project study area during past field surveys; however, high habitat quality combined with nearby CNDDB occurrences or other records indicate that the species has a high potential to occur in the Project study area.

PFO	CRITERIA
Present	The species was observed in the Project study area during field surveys.

* PFO: Potential for Occurrence

In addition, Panorama Environmental reviewed historical and currently available data pertaining to water resources, soils, vegetation, and wetlands within the Project study area. Panorama reviewed NRCS's Web Soil Survey (USDA 2021), USFWS's National Wetlands Inventory (USFWS 2021c), the Federal Emergency Management Agency's (FEMA) floodplain GIS (FEMA 2020), the National Oceanic and Atmospheric Administration's (NOAA) Regional Climate Centers data from Niland, California (NOAA 2021), and the previous delineation reports for the area and surroundings including Hell's Kitchen Exploratory Well Pad 1 (Merkel & Associates 2018), the Alcott Wetlands Project (Hamamoto 2018), Well Pad 4 (Panorama Environmental, Inc. 2017) and S-Berm Road and Minerals Test Project (Panorama Environmental, Inc. 2018).

Prior to conducting the 2022 aquatic resource surveys for the Hell's Kitchen PowerCo 1 and Hell's Kitchen LithiumCo 1 Projects Great Ecology reviewed USFWS NWI maps (USFWS 2022), USGS topographical maps, aerial imagery, and past aquatic resource delineation reports to identify potential wetlands or waters (Great Ecology 2022a and 2022b). Great Ecology's Wetland Delineation Report for Hell's Kitchen Geothermal Project Well Pad 4 is included as Appendix D1, and the Wetland Delineation Report for Hell's Kitchen Geothermal Project Stage 1 is included as Appendix D2.

Special Status Plants

For the purposes of the literature review, special status plant species include those identified on lists 1A, 1B, and 2 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California, which are considered rare, threatened, or endangered under the conditions of Section 15380 of the CEQA Guidelines. Database searches resulted in a list of nine federally and/or State listed threatened, endangered, or otherwise sensitive plant species that may potentially occur within the Project study area.

After the literature review and the biological reconnaissance survey were conducted, it was determined that eight of the nine these species are **absent** from the Project study area due to lack of suitable habitat. These eight species are listed below with their federal and/or State listing statuses and California Rare Plant Rank (CRPR).[1]

- chaparral sand-verbena (*Abronia villosa* var. *aurita*) – CRPR 1B.1
- Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*) - CRPR 2B.2
- Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*) – **FT, SE**, CRPR 1B.2
- gravel milk-vetch (*Astragalus sabulonum*) – CRPR 2B.2
- Munz's cholla (*Cylindropuntia munzii*) – CRPR 1B.3
- glandular ditaxis (*Ditaxis claryana*) – CRPR 2B.2
- Abram's spurge (*Euphorbia abramisiana*) --CRPR 2B.2

[1] California Rare Plant Rank (CRPR) / CNPS: Rare Plant Rank 1B designates plants that are rare, threatened or endangered in California and elsewhere. Rare Plant Rank 2B designated plants that are rare, threatened or endangered in California but more common elsewhere. Threat extensions: 1- Seriously endangered in California; 2- Fairly endangered in California; 3- Not very endangered in California.

- Orocopia sage (*Salvia greatae*) – CRPR 1B.3

One of the nine species, California sawgrass (*Cladium californicum*; CRPR 2B.2), was determined to have low potential to occur in the Project study area. Potentially suitable habitat was present; however, occurrences of this species have only been recorded along the northern shoreline of the Salton Sea and the nearest CNDDB occurrences were approximately 23 miles northwest of the Project study area.

Special Status Wildlife

For the purpose of the literature review, special status wildlife species include those federally designated as endangered (FE), threatened (FT), or candidate (FC) by the USFWS and protected under the federal Endangered Species Act (ESA) and/or those designated as State endangered (SE), threatened (ST), candidate (SC), Species of Special Concern (SSC), fully protected (FP), or watch list (WL) by the CDFW and protected under the California Endangered Species Act (CESA) or California Fish and Game Code (CFGC). Database searches resulted in a list of 57 federally and/or State listed threatened, endangered, or otherwise sensitive wildlife species that may potentially occur within the Project study area including 3 amphibians, 41 birds, 2 fishes, 7 mammals, and 4 reptiles.

After the literature review and biological reconnaissance survey were conducted, it was determined that 31 special status wildlife species are absent from the Project study area, 8 special status wildlife species have low potential to occur within the Project study area, 11 special status wildlife species have moderate potential to occur within the Project study area, 2 special status wildlife species have high potential to occur within the Project study area, and 5 special status wildlife species were observed within the Project study area during the biological reconnaissance survey. Factors used to determine potential for occurrence included range and habitat requirements, the quality of habitat and the location of prior CNDDB records of occurrence.

The following 31 special status wildlife species are considered **absent** from the Project study area due to lack of suitable habitat present in the Project study area:

- American badger (*Taxidea taxus*)- SSC
- American white pelican (*Pelecanus erythrorhynchos*) – SSC
- black skimmer (*Rynchops niger*) – SSC
- black storm-petral (*Hydrobates Melania*) – SSC
- black tern (*Chlidonias niger*) – SSC
- California least tern (*Sternula antillarum browni*) – **FE, SE, FP**
- California brown pelican (*Pelecanus occidentalis californicus*) – **FP**
- coastal whiptail (*Aspidoscelis tigris stejnegeri*) – SSC
- Colorado Desert fringe-toed lizard (*Uma notata*) – SSC
- Cooper's hawk (*Accipiter cooperi*) – WL
- Couch's spadefoot (*Scaphiopus couchii*) – SSC
- desert bighorn sheep (*Ovis canadensis nelson*) – **FP**
- desert tortoise (*Gopherus agassizii*)- **FT, ST**
- double-crested cormorant (*Phalacrocorax auratus*) – WL
- flat-tailed horned lizard (*Phrynosoma mcallii*) – SSC
- Gila woodpecker (*Melanerpes uropygialis*) – **SE**
- gray-headed junco (*Junco hyemalis caniceps*) – WL
- least Bell's vireo (*Vireo bellii pusillus*) – **FE, SE**

- Le Conte's thrasher (*Toxostoma lecontei*) – SSC
- lowland leopard frog (*Lithobates yavapaiensis*) – SSC
- osprey (*Pandion haliaetus*) – WL
- pallid bat (*Antrozous pallidus*)- SSC
- pocketed free-tailed bat (*Nyctinomops femorosaccus*) – SSC
- sharp-shinned hawk (*Accipiter striatus*) – WL
- razorback sucker (*Xyrauchen texanus*) – **FE, SE, FP**
- Sonoran Desert toad (*Incilius alvarius*) – SSC
- southwestern willow flycatcher (*Empidonax traillii extimus*)- **FE**, **SE**
- western mastiff bat (*Eumops perotis californicus*) - SSC
- western yellow bat (*Lasiurus xanthinus*) – SSC
- willow flycatcher (*Empidonax traillii*) – **SE**
- yellow-breasted chat (*Icteria virens*) – SSC

The following eight special status wildlife species have **low** potential to occur in the Project study area due to marginally suitable habitat in the Project study area combined with lack of past records and detection during surveys:

- black-tailed gnatcatcher (*Polioptila melanura*) – WL
- California gull (*Larus californicus*) – WL
- crissal thrasher (*Toxostoma crissale*) – SSC
- golden eagle (*Aquila chrysaetos*) – **FP**, WL
- laughing gull (*Leucophaeus atricilla*) – WL
- loggerhead shrike (*Lanius ludovicianus*) – SSC
- mountain plover (*Charadrius montanus*) – SSC
- long-billed curlew (*Numenius americanus*) – WL

The following 11 special status wildlife species have **moderate** potential to occur in the Project study area due to suitable habitat combined with CNDDB occurrences or other records in the Project region:

- American peregrine falcon (*Falco peregrinus anatum*) – WL
- gull-billed tern (*Gelochelidon nilotica*) – SSC
- large-billed savannah sparrow (*Passerculus sandwichensis rostratus*) – SSC
- merlin (*Falco columbarius*) – WL
- northern harrier (*Circus hudsonius*) – SSC
- short-eared owl (*Asio flammeus*) – SSC
- western snowy plover (interior population; *Charadrius nivosus nivosus*) – SSC
- white-tailed kite (*Elanus leucurus*) – **FP**
- yellow-headed blackbird (*Xanthocephalus xanthocephalus*) – SSC
- yellow warbler (*Setophaga petechia*) – SSC
- Yuma hispid cotton rat (*Sigmodon hispidus eremicus*) – SSC

The following two special status wildlife species were not observed in the Project study area during past field surveys; however, high habitat quality combined with nearby CNDDB occurrences or other records indicate that the species has a **high** potential to occur in the Project study area:

- burrowing owl (*Athene cunicularia*) – SSC
- wood stork (*Mycteria americana*) – SSC

The following five special status wildlife species were observed **present** in the Project study area during field surveys:

- California black rail (*Laterallus jamaicensis coturniculus*) – **ST, FP**
- least bittern (*Ixobrychus exilis*) – SSC
- white-faced ibis (*Plegadis chihi*) – WL
- Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) – **FE, ST, FP**
- desert pupfish (*Cyprinodon macularius*) – **FE, SE**

Jurisdictional Waters

Historical and currently available literature and data pertaining to water resources, soils, vegetation, and wetlands within the Project development area and vicinity were reviewed. Great Ecology reviewed the NRCS soil map (USDA 2022a), National Wetlands Inventory (USFWS 2022), FEMA floodplain GIS, climate data from Niland, California (USDA 2022b), and the previous delineation reports for the area and surroundings including Hell's Kitchen Exploratory Well Pad 1 (Merkel & Associates 2018), the Alcott Wetlands Project (Hamamoto 2018), Well Pad 4 (Panorama Environmental, Inc. 2017), S-Berm Road and Minerals Test Project (Panorama Environmental, Inc. 2018), and Hell's Kitchen PowerCo 1 and Hell's Kitchen LithiumCo 1 Projects Aquatic Resources Delineation Report (Panorama Environmental, Inc. 2021).

4.3.4 Results

A reconnaissance biological survey was conducted by Panorama Environmental within the Project study area west of Davis Road in spring 2021 and within the area east of Davis Road and north of Pound Road in October 2021. Focused species surveys were conducted in the Project study area as summarized in Section 4.3.4 to evaluate the presence of special status species (Section 4.3.4). Aquatic resources surveys were conducted by Great Ecology within the Project delineation area in 2022; the Well Pad 4 and S-Berm Road areas were delineated in October 2022, and the Stage 1 area was delineated in November 2022. Results of these survey efforts are discussed below.

Vegetation

Table 4.3-4 shows the acreages of the vegetation communities and land cover types in the Project development area, as mapped during field surveys conducted by Great Ecology in 2022.

Table 4.3-4: Vegetation Communities and Land Cover Types in the Project Development Area

Vegetation Community/Land Cover Type	Area in the Project Development Area (acres)	CDFW Sensitive Natural Community Status*
Alkaline Marsh	0.06	Not sensitive
Cattail Marshes	16.27	Not sensitive
Common and Giant Reed Marshes	0.01	Not sensitive
Developed/Disturbed	14.56	N/A
Fourwing Saltbush Scrub	0.04	Not sensitive
Iodine Bush Scrub	3.38	Sensitive
Irrigation Ditch	0.62	N/A
Playa	11.60	N/A
Salt Grass Flats	8.09	Not sensitive

Saltbush Scrub	1.04	Not sensitive
Tamarisk Thickets	7.26	Not sensitive
Water	11.16	N/A
Total	**74.08**	

*Source: (CDFW 2022)

Sensitive Vegetation Communities

Iodine Bush Scrub

Iodine Bush Scrub is a CDFW-designated sensitive natural community that was identified in the Project development area (which falls largely within the Project study area) during field surveys conducted by Panorama Environmental in 2021, and by Great Ecology in 2022 (CDFW 2022). The community is characterized by a dominance of iodine bush (*Allenrolfea occidentalis*), with associated annual and perennial vegetation such as shadscale (*Atriplex* sp.), saltgrass (*Distichlis spicata*), and bush seepweed (*Suaeda nigra*; Sawyer et al. 2009). This community is established in lowlands where water flows or collects for some portion of a typical year (Sawyer et al. 2009). Iodine Bush Scrub is present within 3.38 acres of the Project development area. The specific location where this vegetation community occurs in the Project development area is shown in Figure 4.3-1. No other sensitive natural communities as designated by CDFW or CNPS were identified during Panorama Environmental's or Great Ecology's field surveys.

Other Vegetation Communities

Other vegetation communities and land cover types that were identified in the Project study area included Alkaline Marsh, Cattail Marsh, Common and Giant Reed Marshes, Fourwing Saltbush Scrub, Salt Grass Flats, Saltbush Scrub, and Tamarisk Thickets classified according to *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009). Playa habitat was defined consistent with USACE technical guidance in Delineating Playas in the Arid Southwest (Brostoff et al. 2001). Other land uses in the Project study area include developed areas and open water in the form of irrigation channels, classified according to *Preliminary Descriptions of the Terrestrial Natural Communities of California*, because *A Manual of California Vegetation* does not include classifications for these land cover types (Holland 1986). These vegetation communities and land uses are shown in Figure 4.3-1 and are described in further detail below.

Alkaline Marsh

Alkaline Marsh wetland was observed in a depression near the west end of S-Berm access road where there is a shallow water table to support perennial wetlands. The alkaline wetland habitat within the S-Berm access road area was dominated by saltgrass and annual rabbitsfoot grass (*Polypogon monspeliensis*) with cattails and tamarisk observed along the margins of the alkaline wetland areas. Alkaline Marsh is present within 0.06 acre of the Project development area.

Cattail Marshes

Cattail Marshes occur within semi-permanently flooded freshwater or brackish marshes with silty or clayey soils. Narrowleaf cattail (*Typha angustifolia*), Southern cattail (*Typha domingensis*) or broadleaf cattail (*Typha latifolia*) is dominant or co-dominant in the herbaceous layer. Other species observed in the

cattail marsh habitat in the project vicinity include annual rabbitsfoot grass, salt marsh fleabane (*Pluchea odorata*), and annual salt marshaster (*Symphyotrichum subulatum*). Cattail Marshes occurs within the Project development area between the S and R Drains and south of the R Drain and small patches along the S-Berm access road in areas that are frequently flooded. Cattail Marshes is present within 16.27 acres of the Project development area.

Common and Giant Reed Marshes

Common and Giant Reed Marshes are found within riparian areas, along low-gradient streams and ditches and in semi-permanently flooded and slightly brackish marshes and impoundments (Sawyer et al. 2009). Giant reed (*Arundo donax*) or common reed (*Phragmites australis*) is dominant in the herbaceous layer with ragweed (*Ambrosia psilostachya*), yerba mansa (*Anemopsis californica*), saltgrass, Cooper's rush (*Juncus cooperi*), perennial pepperweed (*Lepidium latifolium*), Hardstem bulrush (*Schoenoplectus acutus*), chairmaker's bulrush (*Schoenoplectus americanus*), California bulrush (*Schoenoplectus californicus*), *Typha* species, and cocklebur (*Xanthium strumarium*; Sawyer et al. 2009). Common and Giant Reed Marshes occurs in a tiny match along the bank of R Drain where the norther and southern portions of the Stage 1 Project area connect. Common and Giant Reed Marshes is present within 0.01 acre of the Project development area.

Fourwing Saltbush Scrub

Fourwing Saltbush Scrub is found within playas, old beach and shores, lake deposits, dissected alluvial fans, rolling hills or channel beds. Soils are carbonate rich, alkaline, sandy, or sandy clay loams (Sawyer et al. 2009). Atriplex canescens is dominant or co-dominant in the shrub canopy with (white bursage (*Ambrosia dumosa*), burrobrush (*Ambrosia salsola*), spiny saltbush (*Atriplex confertifolia*), allscale saltbush (*Atriplex polycarpa*), green rabbitbrush (*Chrysothamnus viscidiflorus*), bladderpod (*Peritoma* arborea) , green ephedra (*Ephedra viridis*), hop sage (*Grayia spinosa*), creosote (*Larrea tridentata*), and bush seepweed (*Suaeda moquinii*; Sawyer et al. 2009). Fourwing Saltbush Scrub occurs in a small patch south of R Drain and west of Davis Road. Fourwing Saltbush Scrub is present within 0.04 acre of the Project development area.

Saltbush Scrub (Allscale Scrub)

Saltbush Scrub is found is washes, playa lake beds and shores, dissected alluvial fans, rolling hills, terraces, and edges of large, low gradient washes (Sawyer et al. 2009). Soils may be carbonate rich, alkaline, sandy, or sandy clay loams. Allscale saltbush is dominant in the shrub canopy with white bursage, burrobrush, fourwing saltbush (*Atriplex canescens*), red brome (*Bromus rubens*), smallseed sandmat (*Euphorbia polycarpa*), bladderpod, alkali goldenbush (*Isocoma acradenia*), and creosote. Saltbush Scrub occurs along the west and north edges of Well Pad 4. Saltbush Scrub is present within 1.04 acres of the Project development area.

Salt Grass Flats

Salt Grass Flats is found within coastal salt marshes, inland habitats such as playas, swales, and terraces along washes that may be intermittently flooded. Soils within this community are typically deep, alkaline or saline, and poorly drained. When the soil is dry, the surface usually has salt accumulations (Sawyer et al. 2009). Saltgrass, or Cooper's rush are dominant or co-dominant in the herbaceous layer (Sawyer et al.

2009). Salt Grass Flats occur in winding patches between Q and R Drains and R and S Drains, west of Davis Road. Salt Grass Flats is present within 8.09 acres of the Project development area.

Tamarisk Thickets

Tamarisk Thickets are found along arroyo margins, lake margins, ditches, washes, rivers, and other watercourses (Sawyer et al. 2009). Tamarisk species (*Tamarix* spp.) possess eco-physiological characteristics that make them remarkably formidable as invasive plants. They are long-lived shrubs or trees with extensive and deep root systems. They consume large quantities of water, possibly more than any other woody species in similar habitats, because they can obtain water at very low water potentials and have very high water-use efficiencies. They are highly tolerant of alkaline and saline habitats and can concentrate salts in their leaves (Sawyer et al. 2009). Saltcedar (*Tamarix ramosissima*) or another *Tamarix* species is dominant in the shrub canopy. Tamarisk Thickets occur in the Well Pad 4 and S-Berm access road areas, and in small patches north and south of R Drain and northeast of Q Drain. Tamarisk Thickets is present within 7.26 acres of the Project development area.

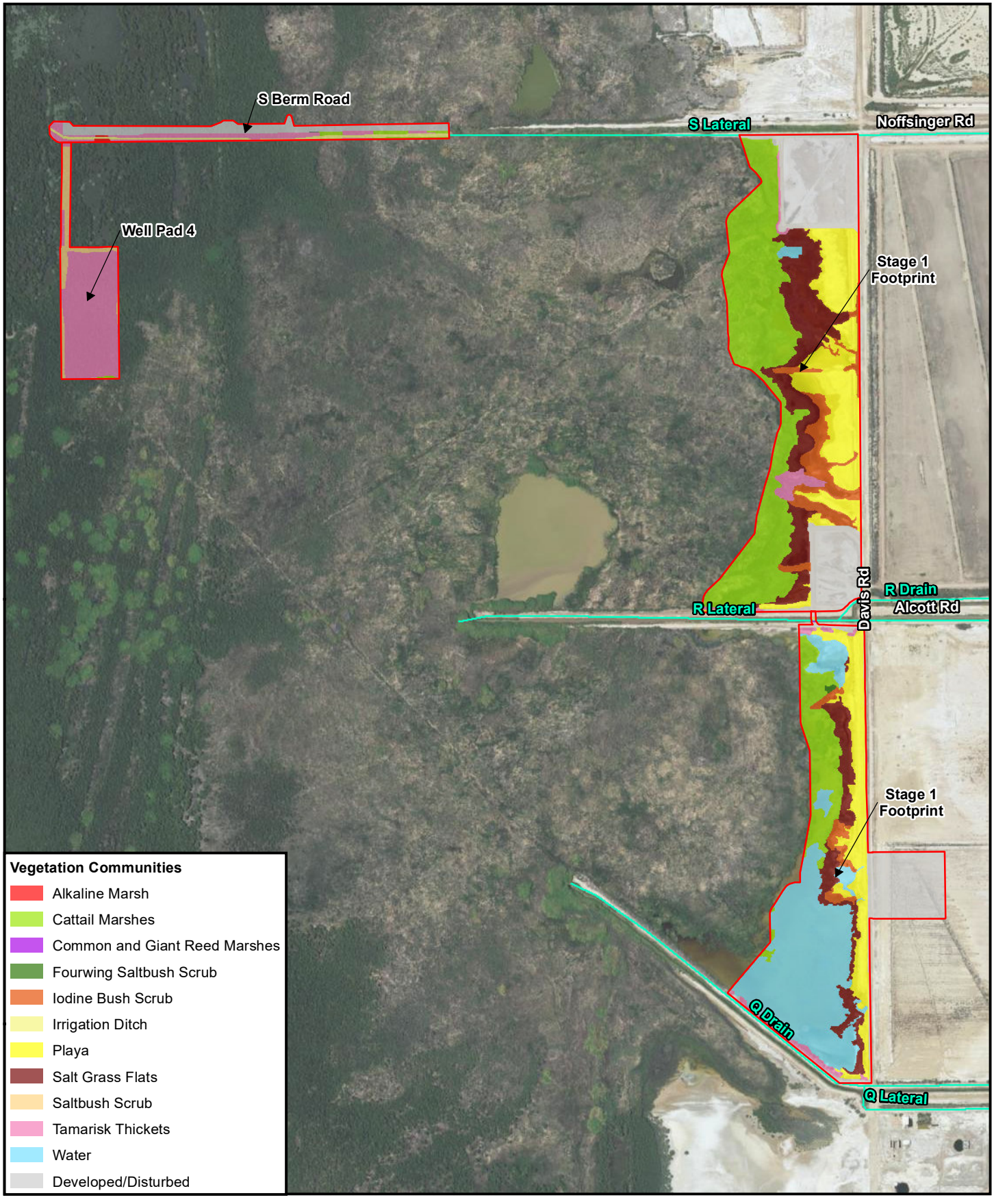


Figure 4.3-1
Hell's Kitchen PowerCo 1 and LithiumCo 1 Project
Vegetation Communities in the Project Development Area

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Print Date: 5/12/2023 11:15:23 AM Author: pcarlos

CHAMBERS GROUP

Playa

The playa occurs in areas that were recently inundated by the Salton Sea, but have become exposed by the receding sea and no vegetation has established in the area. Desert playa lacking vegetation was observed in the southeastern portion of the delineation area adjacent to Davis Road. Playa within the delineation area contains features consistent with descriptions in reference literature of desert playa habitat, including a barren landscape with salt crust and soil cracking (Brostoff et al. 2001). Playa occurs in winding patches between Q and S Drains just west of Davis Road. Playa is present within 11.60 acres of the Project development area.

Open Water (Holland Code 64100)

Open Water includes areas of ponded or contained water (e.g., lakes, rivers, oceans, and canals) that are devoid of vegetation. Open Water occurs in a small area south of S Drain and west of Davis Road, and between Q and R Drains west of Davis Road. The majority of the Open Water mapped in just north or Q Drain. Open Water is present within 11.16 acres of the Project development area.

Developed/Disturbed (Holland Code 12000)

Developed/Disturbed areas include maintained dirt roads (included portions of the S-Berm access Road), agricultural areas east of Davis Road between Alcott Road and Pound Road, and graded well pad areas just northwest of the intersection of Alcott Road and Davis Road, and just southwest of the intersection of Noffsinger Road and Davis Road. Developed/Disturbed areas are present within 14.56 acres of the Project development area.

Special Status Plants

Based on known habitat requirements and the results of the database queries, no special status plant species have suitable habitat in the Project study area. A full list of plant species that were evaluated can be found in Appendix C. No special status plant species were recorded during reconnaissance biological surveys of the Project study area.

Wildlife

Special Status Wildlife

Each species' habitat requirements were compared against the vegetation communities and land cover types present in the Project study area. The vegetated communities in the Project study area include riparian scrub, which primarily consists of non-native common reed, tamarisk, and cattails (*Typha* species) that may provide habitat to support special status species. Desert sink scrub also occurs in the Project development area (within the Project study area) but does not support special status species that occur in the Project vicinity. Of the 57 special status wildlife species identified in the database queries, it was determined that 18 of the species have a moderate or higher potential to occur in the Project study area, and 5 of the 18 species with moderate or higher potential to occur were observed present within the Project study area. Special status species that have a moderate or higher potential to occur in the Project study area are described below.

Short-Eared Owl (SSC) – Moderate

Short-eared owls are medium-sized owls that are active around dawn and dusk, when searching for small mammals. Short-eared owls are pale brown with streaks and spots on the wings and chest. Nesting short-eared owls require open country that supports concentrations of rodents and herbaceous cover sufficient to conceal their ground nests from predators. Suitable habitats may include salt- and freshwater marshes, irrigated alfalfa or grain fields, and ungrazed grasslands and old pastures. Short-eared owls are primarily crepuscular hunters (CDFW 2021b). The cattail marsh and riparian scrub habitat in the Project study area provide suitable habitat for short-eared owls.

Burrowing Owl (SSC) – High

The burrowing owl is a small, sandy colored owl with bright-yellow eyes. It lives underground in burrows dug by itself or taken over from a prairie dog, ground squirrel, or tortoise. The species is a year-long resident of open, dry grassland and desert habitats, and in grass, forb, and open-shrub stages of pinyon-juniper and ponderosa pine habitats. The species previously was common in appropriate habitats throughout the state, excluding the humid northwest coastal forests and high mountains, but population numbers have markedly reduced in recent decades because of habitat conversion and human disturbance.

The surveys for burrowing owl conducted by Bloom Biological and AECOM between 2006 and 2011 indicated that the species inhabits IID's ROWs and service areas in the Imperial Valley. The majority of species observations occurred within unsubmerged canals and drains, while a smaller percentage included farmland irrigation ditches and access roads or road banks. The survey results also indicated that the overall territory for the species in the Imperial Valley steadily declined over the years that the surveys were conducted. During the biological reconnaissance survey conducted by TRC Solutions in 2016, pellets, whitewash, and feathers from a burrowing owl were identified at a burrow on the edge of an access road along IID's Q Drain in the southeast corner of CTR's lease area. This location is adjacent to the current Project development area. No burrowing owl individuals were observed during the survey.

During the 2017 and 2018 surveys conducted by Barrett's Biological Surveys, no burrowing owl individuals or active burrows were found in CTR's geothermal development lease area or within a 500-foot buffer zone.

Habitat for burrowing owl in the Project study area is limited to the small areas of disturbed berms lining roads and irrigation drains, including the edges of McDonald Road, Davis Road, Pound Road, Alcott Road, and Noffsinger Road, as well as the edges of IID's O, P, Q, R, and S Drains. The salt pan, riparian scrub, desert sink scrub, and open water land cover types, which make up the majority of the land uses in the Project study area, do not provide suitable habitat for burrowing owl.

Western Snowy Plover[2] (SSC) – Moderate

The western snowy plover is a small wader in the plover bird family. It is about 6 inches long, with a thin dark bill, pale brown to gray upper parts, white or buff colored belly, and darker patches on its shoulders and head, with a white forehead. The species breeds in the southern and western United States and the

[2] The Pacific Coast population of the western snowy plover, defined as those individuals that nest adjacent to tidal waters of the Pacific Ocean, including all nesting birds on the mainland coast, peninsulas, offshore islands, adjacent bays, estuaries, and coastal rivers, is federally listed under the Endangered Species Act of 1973 as threatened (USFWS 2021d). The Project study area is outside the range of the Pacific Coast population of the species. The interior population of the species is listed by CDFW as a species of special concern (CDFW 2008).

Caribbean. The Pacific Coast population of the western snowy plover, defined as those individuals that nest adjacent to tidal waters of the Pacific Ocean, is federally listed under the ESA as threatened (USFWS 2021d). The Project study area is outside the range of the federally listed Pacific Coast population of the species.

The interior population of the western snowy plover is listed by CDFW as a species of special concern (CDFW 2008). In the interior of California, the species breeds on barren to sparsely vegetated flats, including salt pans, and along shores of alkaline and saline lakes, reservoirs, ponds, braided river channels, agricultural wastewater ponds, and salt evaporation ponds. Adults and broods typically forage near shallow water, sometimes up to two miles from their nests, and on dry flats. A moderate potential exists for this species to nest in the mostly unvegetated salt pan/salt flat land cover types in the Project study area and along the open water area.

Northern Harrier (SSC) – Moderate

The northern harrier is a raptor that breeds throughout North America. The species is most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. It breeds in freshwater and brackish marshes, lightly grazed meadows, old fields, tundra, dry upland prairies, drained marshlands, high-desert shrub steppe, and riverside woodlands across Canada and the northern United States. Western populations tend to breed in dry upland habitats, while northeastern and Midwestern populations tend to breed in wetlands. In winter, the species uses a range of habitats with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes. The riparian scrub and cattail marsh communities in the Project study area provide suitable foraging and nesting habitat for the species. Higher quality habitat for the species is present in the marsh vegetation communities west of the Project study area.

White-Tailed Kite (FP) – High

The white-tailed kite is a small to medium-sized raptor with narrow, pointed wings and a long tail. It is found in grasslands, open woodlands, savannas, marshes, and cultivated fields. The species has a small range in the United States but occurs throughout North and South America. It often is found along tree-lined river valleys with adjacent open areas but usually is not found in forests or clear-cuts within forests. A white-tailed kite was observed hunting over a pickleweed patch in the southeast corner of Section 11 during the reconnaissance survey conducted by TRC Solutions in 2016. The riparian scrub and cattail marsh communities in the Project study area provide suitable nesting and foraging habitat for the species.

Merlin (WL) – Moderate

The merlin is a small falcon found at high latitudes throughout the northern hemisphere. Adult males have slate-blue backs with finely streaked underparts; females and immature birds have brown backs; all have tails with narrow white bands. During most of the year, merlin inhabits open country, ranging from marshlands to deserts, but many breed in conifer and birch woods. In open country, eggs are laid in a scrape on the ground amid bushes, but in forested areas, the tree nests of crows, rooks, or magpies are used. Its diet consists mainly of smaller birds that it catches in midair. The riparian scrub communities in the Project study area provide potential foraging habitat for the species. While the riparian scrub communities consist primarily of non-native reed and tamarisk, native cattails do exist in this area and provide suitable habitat for nesting.

American Peregrine Falcon (FP) – Moderate

The American peregrine falcon, which once bred from Hudson Bay to the southern United States, formerly was an endangered species. The species now is the most widely distributed species of bird of prey, with breeding populations on every continent except Antarctica and many oceanic islands. Its prey includes ducks and a wide variety of songbirds and shorebirds. Peregrine inhabits rocky, open country near water, where birds are plentiful. The peregrine falcon usually nests in a mere scrape on a ledge high on a cliff, but a few populations use city skyscrapers or tree nests built by other bird species. The riparian scrub and Cattail Marshes communities in the Project study area provide suitable foraging habitat for the species.

Gull-Billed Tern (SSC) – Moderate

A medium-sized tern with broader wings and a thicker bill than most other terns, the gull-billed tern is found along the Atlantic and Gulf coasts of the United States and very southern California. The species breeds on gravelly or sandy beaches and winters in salt marshes, estuaries, lagoons, and plowed fields, and less frequently along rivers, around lakes, and in fresh-water marshes. Typical prey include fish, insects, lizards, aquatic animals, and occasionally chicks of other birds. The riparian scrub communities in the Project study area provide potential foraging habitat for the species. While the riparian scrub communities consist primarily of non-native reed and tamarisk, native cattails do exist in this area and provide suitable habitat for nesting. Higher quality habitat for the species is present in the marsh vegetation communities west of the Project study area.

Least Bittern (SSC) – High Potential in the Project study area, and Present in Survey Buffer Area

The least bittern is one of the smallest herons in the world, adapted for life in dense marshes. It inhabits fresh marshes and reedy ponds, including mostly freshwater marsh but also brackish marsh. Rather than wading in the shallows like most herons, the least bittern climbs about in cattails and reeds, clinging to the stems with its long toes. Its narrow body allows it to slip through dense, tangled vegetation with ease. Because of its habitat choice, it often goes unseen except when it flies, but its cooing and clucking call notes are heard frequently at dawn and dusk and sometimes at night. A maximum of six least bittern individuals were detected during 2019 surveys by USFWS. A maximum of three individuals were detected at the Alcott 1 survey point (approximately 827 feet from the Project study area), while one individual was detected each at the Noffsinger 1 (approximately 19 feet from the Project study area), Noffsinger 2 (approximately 16 feet from the Project study area), and Pound 1 survey points (approximately 576 feet from the Project study area). None of the past observations fall within the current Project development area as show in Figures 4.3-1 and 4.3-2. These survey results indicate that the species is present in the marshland west of Davis Road. While the riparian scrub communities consist primarily of non-native reed and tamarisk, native cattails do exist in this area and provide suitable habitat for foraging and nesting. Higher quality habitat for the species is present in the marsh vegetation communities west of the Project study area. The locations of the eight marsh bird survey points are shown in Appendix C, Figure 5 Marshbird Survey Points.

Black Rail (ST, FP) – High Potential in the Project study area, and Present in Survey Buffer Area

The black rail is a small, secretive shorebird that nests in marshes and wet meadows across North America, including riparian marshes, coastal prairies, saltmarshes, and impounded wetlands. All its habitats have stable shallow water, usually just 1.2 inches deep at most. On the Atlantic and Gulf coasts, black rail nests in the higher, drier parts of marshes, where tidal activity is least and where different types of grasses,

sedges, and rushes occur in mosaic-like patches. Key plant species in these habitats include saltmeadow hay, sand cordgrass, chairmaker's bulrush, saltgrass, needlerush species (genus *Juncus*), and various species of pickleweed (genus *Salicornia*).

Between two and seven black rail individuals were detected during each year that the species was surveyed. Eleven of these detections occurred at the Alcott 3 survey point on IID's R Drain west of Davis Road, with the six remaining detections at the nearby Alcott 2 and Pound 3 survey points. The Alcott 3 and Pound 3 survey locations fall within the current Project development area as show in Figures 4.3-1 and 4.3-2. These survey results indicate that the species regularly is present in the marshland west of Davis Road, particularly in the vicinity of IID's R Drain. While the riparian scrub communities consist primarily of non-native reed and tamarisk, native cattails do exist in this area and provide suitable habitat for foraging and nesting. Higher quality habitat for the species is present in the marsh vegetation communities west of the Project study area. The locations of the eight marsh bird survey points are shown in Appendix C, Figure 5 Marshbird Survey Points.

Wood Stork (SSC) – High

The wood stork is a large American wading bird in the stork family. It formerly was named the "wood ibis," although it is not an ibis. It is found in subtropical and tropical habitats in the Americas, including the Caribbean. Its habitat can vary, but it must have a tropical or subtropical climate with fluctuating water levels. Its nest is found in trees, especially mangroves, usually surrounded by water or over water. The wood stork nests colonially. The diet of the adult changes throughout the year; in the dry season, fish and insects are eaten, and frogs and crabs are added in the wet season.

The Project study area includes open water areas that provide suitable habitat for the wood stork. The Cattail Marshes areas within the Project study area and to the west also provide suitable nesting and foraging habitat.

Large-Billed Savannah Sparrow (SSC) – Moderate

The range-restricted "large-billed" savannah sparrow of Mexico barely enters the United States in southern California; it has a much heavier bill than other forms of the species. All subspecies show thin, crisp streaking on the underparts and usually have yellow in front of the eyes. The species breeds in open areas with low vegetation, including most of northern North America, from tundra to grassland, marsh, and farmland. Even in winter, it occurs on the ground or in low vegetation in open areas. The species feeds on seeds on or near the ground, alone or in small flocks. The riparian scrub and Cattail Marshes communities in the Project study area provide suitable nesting and foraging habitat for the species. Higher quality habitat for the species is present in the marsh vegetation west of the Project study area.

White-Faced Ibis (WL) – Present

The white-faced ibis is a wading bird that breeds colonially in marshes, usually nesting in bushes or low trees. Its breeding range extends from the western United States south through Mexico, as well as from southeastern Brazil and southeastern Bolivia south to central Argentina, and along the coast of central Chile. Its winter range extends from southern California and Louisiana south to include the rest of its breeding range. Multiple individuals were observed foraging in a shallow pond in the eastern portion of CTR's geothermal lease area during the reconnaissance survey conducted by TRC Solutions in 2016.

Yuma Ridgway's Rail (FE, ST, FP) – Present

The Yuma Ridgway's rail is one of the smaller subspecies of the Ridgway's rail, with adults standing at about 8 inches tall. Its coloring is light grey to dark brown on the upper body, with a tawny-orange breast and orange legs. The species consistently is found in freshwater marshes that are composed of cattail and bulrush. This emergent vegetation averages greater than 6 feet tall, and water depth tends to be around 3.5 inches deep. Rail numbers are related directly to habitat quality, and the species has a range that extends from Nevada, California, and Arizona to Baja California and Sonora, Mexico.

Yuma Ridgway rails were detected during each year that a survey was conducted by USFWS, at nearly every survey point. A maximum of 40 individuals were detected in 2014, 56 individuals in 2017, 74 individuals in 2018, and 41 individuals in 2019.

The exact number of individuals was difficult to determine because the secretive bird often is detected by its call, and a single bird may be detected multiple times from different survey points or on different dates. However, the survey results indicate that a healthy population of the species is inhabiting the marshland west of Davis Road.

While the riparian scrub communities consist primarily of non-native reed and tamarisk, native cattails do exist in this area and provide suitable habitat for foraging and nesting. Higher quality habitat for the species is present in the marsh vegetation communities west of the Project study area.

Yellow Warbler (SSC) – Moderate

The yellow is a New World warbler species and is the most widespread species in the diverse genus Setophaga, breeding in almost the whole of North America, the Caribbean, and down to northern South America. Its habitat includes bushes, swamp edges, streams, and gardens. The species breeds in a variety of habitats, including woods and thickets along edges of streams, lakes, swamps, and marshes, favoring willows, alders, and other moisture-loving plants. In winter, individuals migrate to the tropics, where they favor semi-open country, woodland edges, and towns. The riparian scrub and Cattail Marshes vegetation communities in the Project study area provide suitable foraging and nesting habitat for the species.

Yellow-Headed Blackbird (SSC) – Moderate

Yellow-headed blackbirds have a large head with a sharply pointed bill, a long tail, and a stout body. Males are black with yellow heads and chests, and white patches where their wings bend. Females and immature males are generally gray-brown with a duller yellow head. Yellowheaded blackbirds breed in marshes with tall emergent vegetation including cattails. Yellow-headed blackbirds prefer water depths of 0.5 to 4 feet. Breeding areas are often on the edges of water bodies such as lakes, reservoirs, or larger ponds (CDFW 2021b). The Cattail Marshes and riparian scrub vegetation communities within the development area provide marginally suitable breeding habitat, depending on the depth of adjacent open water areas, which tend to be shallower than desirable for the species.

Desert Pupfish (FE, SE) – Present

The desert pupfish is a small, robust fish, usually less than 3 inches in length. The lifespan is typically 1 year but can be as long as 3 years. During the breeding season, males turn bright blue with lemon-yellow tails. Females are tan to olive in color with irregular, darker vertical bars on their sides. In California, this species historically occurred in several springs, seeps, and slow-moving streams in the Salton Sink Basin,

as well as in backwaters and sloughs along the lower Colorado River. Desert pupfish now are relegated to remnants of their former habitats, which generally are too harsh for most introduced species to exist. Naturally occurring populations of desert pupfish have been extirpated in Arizona but still occur in the Salton Sink Basin of California, the Colorado River Delta, and Laguna Salada Basin in Mexico.

The results of trapping surveys for desert pupfish conducted by CDFW, IID, and USGS at IID's Q, R, and S Drains between 1991 and 2006 are summarized in Appendix C Table 5.

During more recent surveys conducted by CDFW between 2018 and 2020, one juvenile desert pupfish individual was trapped in the S Drain in 2019, and no individuals were trapped in the other drains (CDFW 2021c). The survey methodology used can determine presence of the species but cannot confirm their absence. Therefore, the survey findings confirm that the species is present within the S Drain, and do not confirm its presence or absence in the Q and R Drains. However, the findings indicate that if the species is present in the Q and R Drains, the population numbers are likely to be low. The most recent confirmed observation of desert pupfish in the Q Drain was in 1994, and in the R Drain was in 2002.

Yuma Hispid Cotton Rat (SSC) – Moderate

Cotton rats are rodents that are thick bodied, with a medium-length tail slightly shorter than the head and body. Their ears barely project above their fur, and their tail is sparsely haired. There are two subspecies of cotton rats along the Lower Colorado River (LCR); the Colorado River cotton rat (*Sigmodon arizonae plenus*) and the Yuma hispid cotton rat (*S. hispidus eremicus*). Yuma hispid cotton rats occur in grass/cattail (*Typha*) communities with a dense understory. Yuma hispid cotton rats may be expanding their population and range into agricultural lands (Lower Colorado River Multi-Species Conservation Program 2016). The cattail marsh areas within the Project study area and the riparian scrub vegetation communities provide potentially suitable habitat for Yuma hispid cotton rats. The riparian scrub vegetation community in most areas has brush vegetation that lacks the dense grasses or understory for Yuma hispid cotton rat; however, in some areas, cattails occur as a sub-dominant species and the common reed could provide adequate cover/density.

Wildlife Movement and Nursery Sites

Wildlife corridors are defined as areas that connect suitable habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features, such as canyon drainages, ridgelines, or areas with dense vegetation cover, can provide corridors for wildlife travel. Wildlife corridors are important to mobile species because they provide access for individuals to find shelter, mates, food, and water; allow the dispersal of individuals away from high-density population areas; and allow immigration and emigration of individuals to other populations. Wildlife corridors are considered sensitive by resource and conservation agencies. Impacts on wildlife corridors are analyzed under CEQA. The Project study area may serve as a corridor for movement of terrestrial species across similar wetland habitats to the north, along the Salton Sea shoreline. The Salton Sea also serves as a key rest stop for migrating avian species on the Pacific Flyway, a major north/south flyway for migratory birds extending from Alaska to Patagonia (USFWS 2021a). Migrating birds use the vegetated habitats in the Project vicinity, as well as the Salton Sea itself, as stopovers during their migrations south to wintering sites and north to breeding sites.

Wildlife nursery sites are habitats where juveniles of a species occur, that support a generally greater level of productivity per unit area than other juvenile habitats. These habitats are found in particular in marine

environments, and mangroves and seagrasses are examples of common nursery sites for marine species. The Project study area is adjacent to a developed roadway, contains a greater proportion of disturbed areas, and generally contains lower-quality habitat than the large, contiguous wetland areas to the west and along the Salton Sea shoreline. The Project study area does not support a greater level of productivity for any species and is not considered to be a wildlife nursery site.

Jurisdictional Wetlands and Waters

A general assessment of jurisdictional wetlands and waters regulated by the United States Army Corps of Engineers (USACE), California Regional Water Quality Control Board (RWQCB), and CDFW was conducted for the Project development area and vicinity. Pursuant to Section 404 of the Clean Water Act, USACE regulates the discharge of dredged and/or fill material into waters of the United States. The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (California Water Code, Division 7, §13000 et seq.). Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife. The assessment was conducted by reviewing USFWS NWI maps, USGS topographical maps, aerial imagery, and past aquatic resource delineation reports to identify potential wetlands or waters.

The Project development area and vicinity contain wetlands and riparian habitats that are potentially subject to and USACE, CDFW, and RWQCB jurisdiction. Aquatic resources that occur within the Project development area that are potentially subject to USACE jurisdiction include Palustrine Emergent Wetlands: Alkaline Marsh, Cattail Marshes, Common and Giant Reed Marshes, and Salt Grass Flats; Palustrine Scrub Shrub Wetlands: Iodine Bush Scrub, Fourwing Saltbush Scrub, Saltbush Scrub, and Tamarisk Thickets; and Palustrine Open Water(Figure 4.3-2).

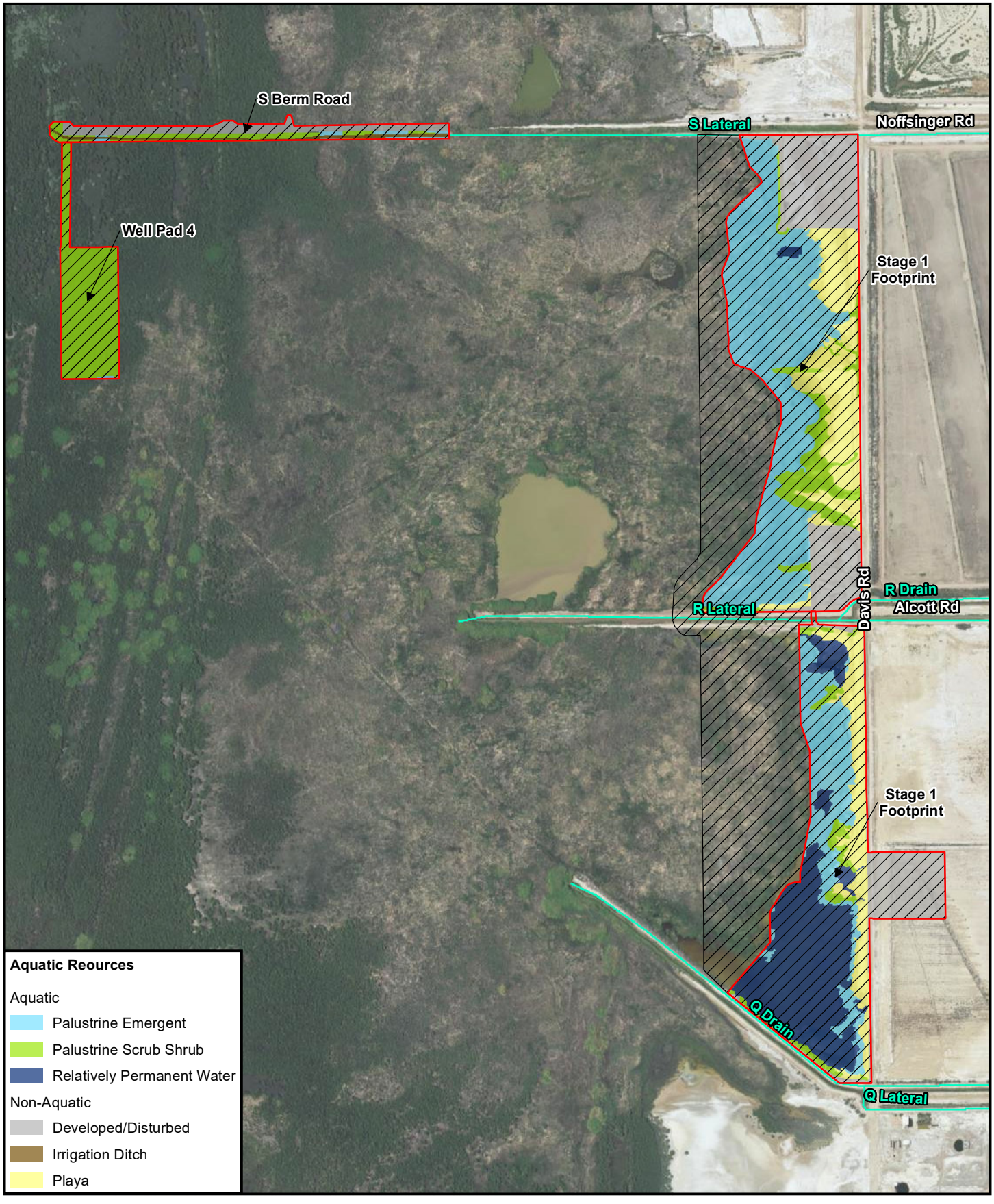


Figure 4.3-2
Hell's Kitchen PowerCo 1 and LithiumCo 1 Project
Aquatic Resources in the Project Development Area

Name: 21344 BIO Figure 4.3-2 Aquatic Resources in the Project Development Area.Mxd
Print Date: 5/12/2023 11:33:12 AM Author: pcarlos

CHAMBERS GROUP

Wetlands

Vegetation

Extremely low plant species diversity characterizes the Well Pad 4 and S-Berm Road delineation area with palustrine scrub-shrub dominating the area with small patches of freshwater emergent wetlands. The vegetation within the delineation area had been disturbed as of February 2022 as the result of vegetation clearing in portions of the delineation area. Tamarisk (facultative) is the dominate plant species throughout the Well Pad 4 and S-Berm Road delineation area. The tamarisk within the undisturbed portions of the delineation area ranges from approximately 8 to 12 feet tall and due to the density, does not allow for understory vegetation to establish. At the margins of undisturbed tamarisk stands, curly dock (*Rumex crispus;* facultative) co-dominates the understory along with the smaller individuals of tamarisk.

In the area where vegetation had been disturbed within Well Pad 4 and S-Berm Road delineation area, tamarisk-dominated features containing saltbush (*Atriplex lentiformis*: facultative upland) and curly dock were mapped as palustrine scrub-shrub. Tamarisk is relatively young and below 3 inches in diameter at breast height (DBH) due to the recent vegetation clearing and saltbush is present as an early successional species due to its capacity to perform exceedingly well in high sun conditions and seasonal dry periods inherent to the Salton Sea.

One area in the southeastern portion of the Well Pad 4 and S-Berm Road delineation area contained stands of southern cattail (facultative wetland) in the senescent stage and were therefore mapped as palustrine emergent wetlands.

Extremely low plant species diversity characterizes the Stage 1delineation area, with two distinct vegetation communities present: palustrine scrub-shrub and freshwater emergent wetlands, which are expected in a soft playa desert ecosystem. Iodine bush (facultative wet) dominated features, sometimes containing a saltgrass (facultative) understory, were mapped as palustrine scrub-shrub. Iodine bush typically occurred along the eastern wetland/upland boundary, adjacent to intermittent open waters. Some areas within the southeastern portion of the delineation area contained stands of dead and/or stressed iodine bush likely due to lack of hydrology or extremely saline soil conditions. Areas containing dead iodine bush were not delineated as wetlands due to the lack of living hydrophytic vegetation and primary wetland hydrology indicators.

Southern cattail (obligate) dominated features within the Stage 1 delineation area were mapped as palustrine emergent wetlands and included some dense stands of giant reed (obligate) and saltgrass interspersed throughout. Southern cattail and giant reed dominated communities were confined to areas adjacent to intermittent open water and areas with intermittent shallow standing water. Saltgrass dominated communities were confined to the edges of intermittent open water on the southeastern portion of the delineation area.

Tamarisk was present throughout the delineation area, sometimes in areas of slightly higher elevation (several inches to feet) than palustrine emergent wetland communities. However, hummock features were common in areas dominated by tamarisk and standing water was occasionally present between hummocks. Most tamarisk within the delineation area is relatively young and below three inches in diameter at breast height (DBH) and were therefore mapped as palustrine scrub-shrub wetlands.

Soils

Soils within the Well Pad 4 and S-Berm Road delineation area showed distinct or prominent redoximorphic features, which varied depending on the vegetation community in the areas sampled. Soils within the cattail community typically contained clay loam soils with redox depressions. Soils within tamarisk-dominated communities most often contained redox features present at concentrations of 30 to 50 percent, predominantly in the form of soft masses within the matrix, meeting the hydric soil indicator for redox depressions. Soils textures were predominately clay loam with some layers of sandy clay, silt clay loam, and loamy sand present.

The determining characteristic differentiating wetland and upland points in the delineation of the Stage 1 area was the presence of soil indicators, specifically redox concentrations and depletion matrixes. Upland points superficially appeared similar to wetland points before soil excavation. Soils within the Stage 1 delineation area showed faint, distinct, or prominent redoximorphic features, which varied depending on the vegetation community in the areas sampled. In playa wetland fringes, seasonal and annual weather variation can result in inconsistent soil indicators, especially for relatively young wetlands in which soil conditions are not as well developed (USACE 2008). Sampling was conducted in the dry season, but the soil indicators used can be expected to be observable year-round in seasonal wetlands. Hydric soils were identified by the presence of redox concentrations along pore linings and occurring as soft masses or as depletion matrixes. Great Ecology used the 2022 Pocket Guide to Hydric Soil Field Indicators to confirm indicators occurred at depths, thicknesses, and percentages consistent with hydric soil qualifiers. Soil textures in wetland areas were predominantly characterized by clay loam and silty clay loam. Soils in upland points were predominantly characterized by sandy loam and clay loam. Most sample areas were minimally saturated or completely unsaturated (with the exception of W1, see Appendix D2), despite recent downpours and the presence of saturated soils along roads and areas adjacent to the delineation area. Cattails and saltgrass in sample areas were mostly senesced and more resilient species such as iodine bush and saltgrass still had green leaves.

A pH probe was used to confirm alkaline water and soil conditions common in areas adjacent to the Salton Sea. Open water had an average pH of 9.2, groundwater within soil pits had an average pH of 7.8, and irrigation water had an average pH of 8.5. Solutions with deionized water and soil from test pits were tested to determine if soils throughout the delineation area could be categorized as alkaline. Solutions of deionized water and soil from test pits had an average pH of 8.1 and indicated alkaline conditions. The formation of redoximorphic features is dependent on the ability of iron and manganese to "readily enter into solution as reduction occurs and then precipitates in the form of redox concentrations as the soil becomes oxidized" (USACE 2008). These reactions typically do readily take place in moderately to very strongly alkaline soils; therefore, alkaline soils are typically considered naturally problematic. Although soils throughout the delineation area were categorized as alkaline, redoximorphic features were observed in several wetland areas during field surveys and indicated that desert playa soils, which are typically more alkaline, occur throughout the delineation area. However, soil saturation from nearby drain discharge may have contributed to anaerobic conditions that promoted the development of redoximorphic features in some areas.

Hydrology

Primary indicators of wetland hydrology observed within the Well Pad 4 and S-Berm Road delineation areas were surface soil cracks, salt crust, and oxidized rhizospheres along living roots. Secondary hydrology indicators observed were confirmation of the FAC-Neutral Test. Although there may be enough

lateral percolation occurring from the drains to sustain wetlands within the delineation area, soil pits from the delineation did not reveal the presence of a water table or observations of soil saturation within an acceptable depth to be considered indicative of wetland hydrology.

Water was present in the Stage 1 delineation area as intermittent to permanent features, with most features showing visible saturation only part of the year. Primary indicators of wetland hydrology observed include hydrogen sulfide odor, oxidized rhizospheres along living roots, salt crust, inundation visible on aerial imagery, and drift deposits. Secondary hydrology indicators observed included confirmation of the FAC-Neutral Test, along with drainage patterns (B10), saturation visible on aerial imagery. Although there may be enough lateral percolation occurring from the ditches to sustain wetlands within the delineation area, soil pits did not reveal the presence of a water table or spatially uniform observations of soil saturation within an acceptable depth to be considered indicative of wetland hydrology.

Waters

Three irrigation return flow drains (Q, R, and S) surround and, until recently, discharged directly into the delineation area. Historically, specific areas surrounding these drains exceeded field capacity and were permanently to intermittently flooded. The S-Drain transects the northern boundary of the delineation area along the developed S-Berm Road. The OHWM was delineated for the S-Drain based on transition in soil color, change in vegetation cover and change in vegetation species type.

Great Ecology mapped approximately 2,176.34 linear feet (0.62 acres) of irrigation drain, primarily withing the S-Berm Road area, classified as riverine, lower perennial, unconsolidated bottom, within the Project development area. Approximately 11.16 acres of open waters were mapped in the form of small depressional ponds within the Project development area area and are classified as permanent-to-intermittent palustrine open water.

Desert Playa

Desert playa lacking vegetation was observed in the eastern portion of the delineation area adjacent to Davis Road. Playa within the delineation area contains features consistent with descriptions in reference literature of desert playa habitat, including a barren landscape with salt crust and soil cracking (Brostoff et al. 2001). The presence of salt crusts can be attributed to the shallow topography and high rates of evaporation in this region and is not considered to be a valid wetland indicator. A dense clay aquitard was also identified in one soil pit location during the spring 2022 delineation. The presence of this aquitard likely contributes to the strong levels of depletion in the top layer of the soils due to the extensive anaerobic conditions inherent to a perched water table. Approximately 11.60 acres of playa were mapped in the Project development area.

Aquatic resources within the Project development area are summarized below in Table 4.3-5.

Table 4.3-5: Aquatic Resources and Within the Project Development Area

Water Resource Type	Cowardin Type	Community	Acres
Wetlands	Palustrine Emergent	Alkaline Marsh	0.06
		Cattail Marshes	16.27
		Common and Giant Reed Marshes	0.01
		Saltgrass Flats	8.09
		Subtotal	24.42
	Palustrine Scrub Shrub	Fourwing Saltbush Scrub	0.04
		Iodine Bush Scrub	3.38
		Saltbush scrub	1.04
		Tamarisk Thickets	7.26
		Subtotal	11.72
Waters	Palustrine Open Water	Permanent & Intermittent Water	11.16
		Subtotal	11.16
	Riverine Lower Perennial	Irrigation Ditch	0.62
		Subtotal	0.62
		Total Aquatic Resources	**47.92**
Non-Aquatic	None	Playa	11.60
		Developed/Disturbed	14.56
		Subtotal	26.16
		Total Non-Aquatic Resources	**26.16**
		Total Development Area	**74.08**

Potentially jurisdictional aquatic resources within the Project development area include 47.30 acres under USACE jurisdiction, 47.92 acres under CDFW jurisdiction, and 47.92 acres under RWQCB jurisdiction. These acreages are summarized in Table 4.3-6.

Table 4.3-6: Potentially Jurisdictional Resources in the Project Development Area

Water Resource Type	Cowardin Type	Acres	Jurisdiction		
			USACE	CDFW	RWQCB
Wetlands	Palustrine Emergent	24.42	x	x	x
	Palustrine Scrub Shrub	11.72	x	x	x
	Palustrine Open Water	11.16	x	x	x
Waters	Riverine Lower Perennial	0.62		x	x
	Total Jurisdictional Acres		**47.30**	**47.92**	**47.92**

4.3.5 Project Impact Analysis

Threshold a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

Special Status Plants

Based on known habitat requirements and the results of the database queries described in Section 4.3.4, eight of the nine special status species analyzed have no suitable habitat in the Project study area. One of the nine species, California sawgrass (CRPR 2B.2), was determined to have low potential to occur in the Project study area. Potentially suitable habitat for California sawgrass was present; however, occurrences of this species have only been recorded along the northern shoreline of the Salton Sea and the nearest CNDDB occurrences were approximately 23 miles northwest of the Project study area. All plant species that were evaluated are listed in Section 4.3.4 and are described in detail in Appendix A of the Biological Resources Technical Report (Panorama Environmental, Inc. 2021a). No special status plant species were recorded during reconnaissance biological surveys of the Project study area. Special status plant species were not observed during any Project survey and are not anticipated to occur in the Project study area. As such, no adverse effects to special status plant species will occur.

Special Status Wildlife

Burrowing Owl

As discussed in Section 4.3.4, habitat for burrowing owl in the Project study area is limited to the small areas of disturbed berms lining roads and irrigation drains (estimated to total less than 3 acres). Other habitats within the Project study area do not provide suitable habitat for burrowing owl. If burrowing owl individuals were to occur in the small areas lining the roads and irrigation drains that provide suitable habitat for the species, Project construction at these locations could potentially affect the species. Recommended mitigation for burrowing owl including preconstruction surveys to define the locations of any active burrows in the Project vicinity and avoidance procedures for active nests would reduce impacts on burrowing owl to a less than significant level.

With the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-14, and BIO-16 outlined in Section 4.3.8, no substantial adverse effects to burrowing owl will occur.

Western Snowy Plover

The salt pan/salt flat in the Project study area provides suitable habitat for the interior population of western snowy plover, a State-listed species of special concern. If the species is found to occur within the salt pan cover types in the Project study area, construction activities at these locations could potentially affect the species. Without mitigation, potential impacts on the species from Project activities may include injury or mortality, or destruction of nests from use of vehicles and heavy equipment for grading and other construction activities. If construction activities occur within the salt pan in the Project study area between February 1 and August 31, these activities would have the potential to adversely affect snowy plover nests, if an active nest is present on the site.

In order to avoid impacts on snowy plover nests, ground disturbing construction activities would occur outside nesting bird season or preconstruction avoidance surveys would be conducted before the start of any ground-disturbing construction activities within salt pan during the nesting season, and protective buffers would be implemented for any nests discovered, until the nests are determined to no longer be active. Implementation of this avoidance strategy would reduce the impact on western snowy plover from Project construction to less than significant.

With the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, and BIO-16 outlined in Section 4.3.8, no substantial adverse effects to western snowy plover will occur.

Marsh Birds

As discussed in Section 4.3.4, the Project study area provides suitable habitat for Yuma Ridgway's rail, black rail, least bittern, wood stork, white-faced ibis, and other marsh birds which rely on native marsh vegetation communities for nesting and molting. While the riparian scrub communities consist primarily of non-native reed and tamarisk, native cattails do exist in this area and may provide suitable habitat for foraging and nesting for marsh bird species.

If Project construction involves any vegetation removal within cattail marsh or riparian scrub between February 1 and August 31, these activities would have the potential to adversely affect nesting marsh birds if an active nest is present within the vegetation, which would be a potentially significant impact. If special status marsh birds are detected within or within 500 feet of work areas during surveys, avoidance and minimization measures for potential impacts to nesting special status marsh birds would include: 1) timing vegetation removal activities within 500 feet of suitable habitat to occur outside of the nesting season and impacts within habitat to occur outside of the molting season, and 2) employing a qualified biologist to be on site throughout the duration of construction activities. The biologist would have the authority to halt construction activities if special status species are observed in the work area. The Project would avoid capturing or killing of special status marsh bird species through monitoring and avoidance procedures.

If any nests of special status marsh birds were to occur in the riparian scrub communities within the Project development area or within the native marshland within 500 feet of the Project, the noise from the construction could potentially result in nest abandonment, and the impact would be potentially significant. The operational noise would be continuous and would not be expected to cause nest abandonment because birds in the vicinity of the Project would be accustomed to the on-going noise. CTR would install noise barriers to provide a buffer for any construction activities that occur within 500 feet of the native marshlands west of the current Project development area during the marsh bird nesting season (February 1 through August 31). Noise barriers could include a wall of hay bales, or another equivalent continuous, sound-absorbing physical barrier placed between the noise-emitting activity and the native marshland vegetation.

With the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-9, BIO-10, BIO-11, BIO-12, BIO-13, and BIO-16 outlined in Section 4.3.8, potential direct and indirect impacts to nesting marsh birds due to the Project and indirect impacts on nesting marsh birds from construction noise would be reduced to less than significant.

Other Migratory Birds

The Project study area includes cattail marsh and riparian scrub (common reed– tamarisk series), a vegetation community composed primarily of non-native tamarisk and common reed. The cattail marsh and riparian scrub vegetation community has the potential to provide nesting habitat for other resident and migratory birds species. Active bird nests (i.e., nests that contain eggs or young) are protected under the MBTA and Fish and Game Code (USFWS 2004; CDFW 2007). The bird nesting season generally occurs between February 1 and August 31 each year, the period when trees and vegetation may have the potential to contain an active bird nest.

If Project construction involves any vegetation removal within riparian scrub between February 1 and August 31, these activities would have the potential to adversely affect nesting birds, if an active bird nest is present within the vegetation, which would be a potentially significant impact. Avoidance and minimization measures for potential impacts to nesting birds would include ensuring vegetation removal occurs outside nesting bird season, conducting preconstruction surveys for nesting birds prior to any vegetation removal during the nesting bird season, and implementing protective buffers for any nests discovered until the nests are determined to no longer be active.

Operation of the proposed Project includes use of a gen-tie and power line that could cause avian electrocution or collisions. The electrical lines will be designed in accordance with the Avian Power Line Interaction Committee (APLIC) guidelines and will have avian markers to reduce the risk of electrocution and collision. Because the transmission lines will be designed in accordance with APLIC guidelines, the impact on migratory birds during facility operation would be less than significant.

With the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-15, BIO-16, and BIO-17 outlined in Section 4.3.8, potential direct and indirect impacts to nesting birds due to the Project and associated gen-tie and power lines would be reduced to less than significant.

Fish

Project construction would involve installation of a new pipeline and bridge crossing IID's R Drain and gen-tie line crossing IID R, Q, and P Drains, which provide aquatic habitat for desert pupfish, which is protected under the CESA and ESA. The bridge and pipeline crossing the R Drain and gen-tie lines would span the IID drains. The S Berm access road has been designed using sheet piles to avoid any impacts within the drain waters and avoid associated potential impacts on desert pupfish.

The open water area adjacent to the Q Drain could provide suitable habitat for desert pupfish. Construction within the open water area could result in "take" of desert pupfish. A CDFW incidental take permit and USFWS authorization for take of desert pupfish would be required prior to construction in any areas containing suitable habitat for desert pupfish. The CDFW and USFWS take permits will include requirements for avoidance and mitigation of impacts on desert pupfish, including restrictions on the timing of construction activities, approaches to dewatering to avoid or minimize species take, and requirements for habitat compensation to support the species. The impact on desert pupfish would be less than significant due to compliance with the CDFW and USFWS incidental take permits and authorizations.

Project operation would not involve any activities that may directly or indirectly harm fish species. The Project has been designed to avoid discharge to any surface water resources. All drainage from the Project site would be contained within the stormwater retention basins and no stormwater runoff would flow to

areas that contain habitat for desert pupfish; therefore, no impact of desert pupfish would occur during operation.

In addition to obtaining CDFW and USFWS incidental take permits and authorizations, the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-6, BIO-7, and BIO-8 outlined in Section 4.3.8, will ensure direct and indirect impacts to desert pupfish would be reduced to less than significant.

Mammals

The Project includes removal of cattails and other vegetation that provide breeding habitat for Yuma hispid cotton rat. Yuma hispid cotton rat could be impacted by construction activities if the species were to occur in the construction area at the time of construction. In addition, construction activities include excavation of trenches and steep walled foundations where cotton rat could become trapped. Because a qualified biologist would be on site to observe all vegetation removal activities and could relocate Yuma hispid cotton rat out of harm's way if one were observed in the area, the impact from vegetation removal activities would be less than significant. In addition, because open trenches will be covered to avoid cotton rats from becoming trapped and a biologist will observe open excavations daily, the impact of open excavations on cotton rats will be less than significant.

With the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, and BIO-18 outlined in Section 4.3.8, direct and indirect impacts to Yuma hispid cotton rat would be reduced to less than significant.

Threshold b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

As discussed in Section 4.3.4, the Project development area contains approximately 3.38 acres of Iodine Bush Scrub, a CDFW-designated sensitive natural community. Any ground disturbance, vegetation removal, or permanent land use conversion from Project activities within this vegetation community would be a potentially significant impact. The habitat mitigation plan developed for the Project should incorporate in kind compensatory mitigation for desert sink scrub habitats. With appropriate mitigation of desert sink scrub habitat, the impact from construction and operation of the Project on the sensitive natural community would be less than significant.

The Project study area contains wetlands and riparian habitats that are potentially subject to RWQCB, CDFW, and USACE jurisdiction. The removal of vegetation and discharge of fill to these wetland and riparian resources from temporary construction activities, or permanent conversion to a developed land use during operation of the proposed Project, could be a significant impact. Hell's Kitchen PowerCo 1 LLC and Hell's Kitchen LithiumCo 1 LLC will obtain all required USACE, CDFW, and RWQCB permits for impacts to wetlands and riparian areas prior to construction in any jurisdictional wetland or riparian area. The agencies permit processes requires compensatory mitigation for impacts to jurisdictional water resources. Because the Project will comply with all permit requirements, including development of compensatory wetland and riparian mitigation, the impacts on wetlands and riparian areas would be less than significant. Further details on the proposed wetland mitigation plan can be found in Section 4.3.8, Mitigation Measure BIO-19.

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

The removal of sensitive vegetation communities and discharge of fill to these wetland and riparian resources from temporary construction activities, and permanent conversion to a developed land use during operation of the proposed Project, could be a significant impact. To prevent significant impacts to the nearby wetland and riparian habitat due to increased runoff from the Project site during operations, a stormwater retention basin will be developed on site. HKP1 and HKL1 will obtain all required USACE, CDFW, and RWQCB permits for impacts to wetlands and riparian areas prior to construction in any jurisdictional wetland or riparian area. The Project site is north of IID canals and agricultural drains that flow into these wetlands and the Salton Sea; however, to prevent offsite impacts to nearby wetlands resulting from stormwater runoff during construction the Project would be required to obtain coverage under a Construction General Permit to comply with National Pollutant Discharge Elimination System (NPDES) requirements. Compliance with the Construction General Permit would require the development and implementation of a Stormwater Pollution Prevent Plan (SWPPP) and associated Best Management Practices (BMPs). These BMPs will include measures that would be implemented to prevent discharges into adjacent wetland and riparian habitat from the Project site during construction activities. However, the impacts from the Project construction and operation on wetlands and riparian areas are potentially significant.

The implementation of Mitigation Measure BIO-19 outlined in Section 4.3.8 would reduce impacts to less than significant.

Threshold d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Project construction would occur within a relatively small area of comparatively low habitat quality along the roadside adjacent to the large, contiguous wetlands to the east. Following construction completion, vegetated areas and unvegetated open space would be converted permanently to developed land uses. The conversion of these vegetated and unvegetated open space areas would not result in a noteworthy loss of habitat compared to the large contiguous wetlands and open space areas to the north, west, and east, and would not impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their movement or reproduction. The Project impacts are collocated adjacent to Davis Road, IID's existing power line, and other infrastructure. As discussed in Section 4.3.4, the Project study area does not contain any wildlife nursery sites. The impact would be less than significant.

Threshold e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Table 4.3-1 shows the goals, objectives, policies, and programs of Imperial County's General Plan as related to preservation of biological resources, along with an analysis of the consistency of the Project with these goals.

In accordance with the consistency analysis provided in Table 4.3-1, the proposed Project is not anticipated to conflict with the Imperial County General Plan. There are no other local policies or ordinances protecting biological resources that apply to the proposed Project. Therefore, construction

and operation of the proposed Project is anticipated to have a less-than-significant impact with respect to conflicting with any local policies or ordinances protecting biological resources. However, the Imperial County Board of Supervisors provides the ultimate determination regarding the proposed Project's consistency with the Imperial County General Plan.

Threshold f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

As discussed under Section 4.3.2, the Project study area is not located within the coverage area of any adopted HCPs, NCCPs, or other approved local, regional, or state habitat conservation plan. Therefore, construction and operation of the proposed Project is anticipated to have no impact with respect to conflicting with such a plan.

4.3.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the Project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

Implementation of the Project in combination with other proposed, approved, and reasonably foreseeable projects in the region could have cumulative impacts on the special status species including burrowing owl, western snowy plover, marsh birds [Yuma Ridgway's rail, black rail, least bittern, wood stork, white-faced ibis, and others], and other migratory birds; desert pupfish; Yuma hispid cotton rat; sensitive vegetation communities including desert sink scrub and riparian habitat; and wetlands. However, impacts associated with these special status species, sensitive vegetation communities, and wetlands would be reduced to less than significant with implementation of Mitigation Measures BIO-1 through BIO-19. Related projects would similarly undergo CEQA review, and determinations regarding the significance of impacts of the related projects on biological resources would be made on a case-by-case basis. If necessary, the applicants of the related projects would be required to implement appropriate mitigation measures. Therefore, implementation of related projects and other anticipated growth in Imperial County would not combine with the proposed Project to result in cumulatively considerable impacts on biological resources.

4.3.7 Mitigation Measures

The following measures are recommended to avoid or minimize impacts on biological resources. All impacts on biological resources would be less than significant with implementation of these recommended measures.

General Environmental Protection Measures

BIO-1. Designated Biologist:

The Applicant shall retain the services of a Qualified Biologist. The Qualified Biologist will be employed during construction and all vegetation removal and ground-disturbing activities. The Qualified Biologist will document compliance with the projects mitigation measures and permits. The Qualified Biologist will

have the authority to halt any Project activities that are in violation of the terms and conditions of the Project biological opinion(s) or incidental take permit, as appropriate.

BIO-2. Biological Monitors: Biological monitor(s) will be employed to assist the Designated Biologist in conducting preconstruction surveys and monitoring ground disturbance, grading, construction, decommissioning, and restoration activities. The biological monitor(s) will have sufficient education and field experience to understand resident wildlife species biology. To avoid and minimize effects to biological resources, the biological monitor(s) will assist the Designated Biologist with the following:

- Conduct inspections for listed species during ground-disturbing construction activities and document that habitat within the construction zone is not occupied by Yuma Ridgway's rail or desert pupfish.
- Document compliance with all conservation measures, including but not limited to monitoring for presence of listed species; halting construction activity in the area if an individual listed species is found; and checking the staking/flagging of all disturbance areas to be sure that they are intact and that all construction activities are being kept within the staked/flagged limits. If a Yuma Ridgway's rail or desert pupfish is found within a work area, the Biological Monitor(s) will immediately notify the Designated Biologist, who will determine measures to be taken to ensure that the individual is not harmed, such as temporarily halting construction.

BIO-3. Worker Environmental Awareness Program Training: A Worker Environmental Awareness Program will be implemented for construction crews prior to the commencement of Project activities. Training materials and briefings will include, but not be limited to, discussion of the federal and State statutes protecting threatened and endangered species, the consequence of noncompliance with these statutes, identification of values of wildlife and natural plant communities, hazardous substance spill prevention and containment measures, and review of all required conservation measures.

BIO-4. Flagging of Work Area Limits: All areas to be disturbed by the Project will be flagged prior to construction. All disturbance will be confined to these flagged areas, and all employees will be instructed that their activities must be confined to locations within the flagged areas.

BIO-5. Power Wash Equipment: All equipment used during construction of the Project will be required to be power washed prior to arrival at the Project site to prevent the transportation and establishment of noxious weeds in the area.

BIO-6. Sediment and Erosion Control: The Project proponent will acquire the appropriate Clean Water Act regulatory permits, prepare a Stormwater Pollution and Prevention Plan (SWPPP), and implement BMPs prior to construction and site restoration. The SWPPP will identify specific actions and BMPs relating to the prevention of stormwater pollution from Project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP reflects localized surface hydrological conditions and will be reviewed by the USFWS prior to commencement of work. A SWPPP will be a condition of the contract with each contractor selected to build and decommission the Project. The SWPPP(s) at a minimum will incorporate soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching), dewatering and/or flow diversion practices, sediment control practices (temporary sediment basins, fiber rolls), temporary and post-construction onsite and offsite runoff controls, and special considerations and BMPs for water crossings, wetlands, and drainages. The SWPPP will be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and that represent the best

available technology that is economically achievable. Emphasis for BMPs is placed on controlling discharges of oxygen-depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. Performance and effectiveness of these BMPs are determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (inadvertent petroleum release) is required to determine adequacy of the measure.

BIO-7. Solid Waste Management: Solid waste will be properly contained in designated collection areas on site and regularly disposed of.

Desert Pupfish Measures

BIO-8. Desert Pupfish Protection and Relocation Plan: A desert pupfish protection and relocation plan will be prepared prior to construction activities in any suitable habitat for desert pupfish. Its implementation will ensure construction in the drain mouths and channels will be conducted with minimal effects on desert pupfish. The plan will provide the following:

- Avoidance of construction activities within suitable habitat for desert pupfish during the desert pupfish spawning season (April to October).
- Protocols for preconstruction surveys to assess species presence and spawning within or immediately adjacent to work areas (i.e., areas with ponded water).
- Protocols for capture (e.g., trapping for construction) and transport methods that will minimize handling and stress as well as exposure to heat, low dissolve oxygen, and crowding.
- Identification of locations for release of captured desert pupfish.

Yuma Ridgway's Rail Measures, Black Rail, and Other Marsh Bird Measures

BIO-9. Construction Timing: Construction activities within habitat for Yuma Ridgway's rail (i.e., cattail marsh) will be scheduled to avoid the nesting and molting flightless season (i.e., February 15 – September 15). Pile driving activities adjacent to Yuma Ridgway's rail habitat will avoid Yuma Ridgway's rail nesting season.

BIO-10. Pre-Construction Surveys and Construction Monitoring for Yuma Ridgway's Rail and Black Rail: Pre-construction surveys for Yuma Ridgway's rail and black rail and construction monitoring will be conducted within all Project development areas within suitable habitat and a 500-foot buffer from suitable habitat. In the event that Yuma Ridgway's rail(s) or black rail(s) are detected within the work area (the area of active equipment use), all construction activities in the area will halt and the USFWS and CDFW will 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. The USFWS and CDFW will also be notified if any Yuma Ridgway's rail are detected within 500 feet of the construction area. Project activities may proceed with caution in this buffer area under the direction of the Designated Biologist.

BIO-11. Reduced Vehicle Speed Adjacent to Rail Habitat: Vehicle speeds will be reduced to 15 miles per hour (mph) on access roads adjacent to Yuma Ridgway's rail habitat. These areas will be appropriately signed to identify the speed limit.

BIO-12. Noise Attenuation: The following noise attenuation measures will be implemented to minimize noise impacts on Yuma Ridgway's rail during the nesting season:

- At least 30 days prior to activities within 500 feet of Yuma Ridgway's rail habitat, the Applicant will conduct a noise study to evaluate the maximum predicted noise level within rail habitat.
- If the maximum predicted noise is less than 60 A-weighted decibel scale (dBA) equivalent continuous sound level (Leq), no additional measures are required.
- If the maximum predicted noise level exceeds 60 dBA Leq in rail habitat, noise attenuation measures such as noise walls or hay bales will be installed between the noise source and the suitable habitat. Noise monitors will be installed at the edge of the nearest Yuma Ridgway's rail habitat to assess the noise levels and verify that attenuation measures are successful. If necessary, additional noise reduction measures will be implemented to reduce the noise level to below 60 dBA at the edge of occupied habitat.

BIO-13. Habitat Conservation: To offset the loss of Yuma Ridgway's rail habitat, the Project proponent will preserve, create, or enhance habitat near the Project site for Yuma Ridgway's rail. The Project proponent will provide funding for construction and long-term management of the created habitat and will provide financial assurance for the construction of the wetland habitat in the form of performance bonds, escrow accounts, casualty insurance, or letters of credit. The performance bond, escrow account, casualty insurance, or letter of credit shall be of sufficient value to cover all construction, monitoring and reporting costs until the habitat is fully established. The financial assurance shall be in place prior to ground disturbance. Long-term management funding will be provided sufficient to cover, at a minimum, the management costs related to procurement of water from IID, weed control, levee and control structure maintenance, and control structure repair or replacement. The Applicant will prepare a detailed Habitat Enhancement Mitigation and Mitigation Monitoring Plan for review and approval by the USFWS, Corps, and CDFW prior to Project construction. Habitat creation activities will be conducted outside of the bird breeding season (February 15 – September 15) to avoid potential noise impacts on Yuma Ridgway's rail.

Burrowing Owl Measure

BIO-14. Burrowing Owl. A pre-construction survey will be conducted for burrowing owls. The survey will be conducted during peak activity period (one hour before to two hours after sunrise or two hours before to one hour after sunset) no more than 14 days prior to the start of construction and within 500 feet surrounding the construction area. If owls are located during the pre-construction survey between February 1 and August 31 (nesting season), a buffer area will be established according to the guidelines in the 2012 Staff Report. A modified buffer reduction may be used with CDFW concurrence. If burrowing owls are located during the nonbreeding season, owls may be passively relocated in coordination with CDFW, by a qualified biologist according to the procedures outlined in the 2012 Staff Report on Burrowing Owl Mitigation. If burrowing owls are found on site during pre-construction surveys, the Project proponent shall contact CDFW to prepare a plan of action for buffers or passive relocation.

Nesting and Migratory Bird Measures

BIO-15. Lighting. Except as necessary for safety or security purposes, no lighting shall be allowed to impact wetland or riparian habitats.

BIO-16. Nesting Bird Plan. A Nesting Bird Plan will be prepared that defines procedures for avoidance of nesting birds during Project construction. The Project will be scheduled to start construction activities outside the nesting season (February 1 through August 31), to the extent feasible. In the event that construction has to start during the nesting season, a qualified biologist will conduct surveys of the Project

development area no more than 72 hours before any ground disturbance. If an active nest is observed in the Project development area, the qualified biologist will employ appropriate procedures for nest avoidance, and construction activities will not begin in the area of the active nest until all nesting activities have ceased and the young have fledged the nest.

BIO-17. Bird Flight Diverters. Bird flight diverters will be installed on any new transmission and power lines serving the Project, to limit bird mortality associated with introducing new transmission lines in bird flyways. Flight diverters make transmission lines more visible to birds. The transmission and power lines will be designed to meet Avian Power Line Interaction Committee (APLIC) guidelines.

Mammal Mitigation Measure

BIO-18. Excavation Areas. Any open trench or excavated area shall be securely covered anytime Project activities within the excavated/trenched rea have ceased. The designated biologist shall oversee the covering of all excavated, steep-walled holes or trenches by placing plywood or other barrier materials such that animals are unable to enter and become entrapped. The use of temporary fencing around the perimeter or trenches or holes may be an acceptable minimization measure, if deemed appropriate by the biological monitor. Before holes or trenches are filled, the Biological Monitors shall thoroughly inspect the areas for trapped animals. If any worker discovers that any animal has become trapped, they shall halt Project-related activities and notify the biological monitor immediately.

Wetlands and Riparian Areas

BIO-19. Wetland and Riparian Area Restoration/Compensation. The Project will provide restoration/compensation for all unavoidable impacts on areas under the jurisdiction of USACE, RWQCB, and CDFW. Impacts on jurisdictional areas will be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible, the Project applicant will provide the necessary mitigation required as part of wetland permitting, by creation, restoration, or preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional areas. The Mitigation ratio will be 1:1 or as approved by the permitting agencies. The proposed Mitigation Plan area is located in Section 35 approximately 2 miles north of the HKP1 and HKL1 Projects at the corner of Beach Road and Access Road. The proposed mitigation area will total 159.61 acres; approximately 152 acres will be created native wetland/open water habitat and approximately 7 acres will be enhanced native upland habitat. Proposed native wetland communities include Willow Scrub Shrub, Cattail Bullrush Marsh and Desert Riparian Woodlands. Proposed upland communities include Sonoran Desert Scrub/Alkali Sink.

4.3.8 Level of Significance After Mitigation

With the implementation of Mitigation Measures BIO-1 through BIO-19, the Project would reduce potential impacts to biological resources to a less than significant level.

4.4 CULTURAL RESOURCES

This section describes the cultural resources at the Project site and general vicinity. Cultural resources include prehistoric and historic archaeological sites, archaeological districts, historic buildings and structures, and isolated occurrences of artifacts.

Information used in preparing this section and in evaluating potential impacts on cultural resources was derived from the Cultural Resource Survey prepared by Tierra Environmental Services, Inc. (Tierra) in June 2022. This document is contained in Appendix E of this EIR. Due to the confidential nature of the location of cultural resources, information regarding locations of these resources has been removed and is not included in the appendix.

4.4.1 Existing Environmental Setting

Existing Conditions

The Project area is relatively flat and is located in what was once the lakebed of the prehistoric Lake Cahuilla. Lake Cahuilla was a resource that had profound effects on the prehistoric people who lived in the Project area and groups in the surrounding region, lasting until the 1500s. It supplied the southern Coachella Valley and northern Imperial Valley with not only water but other lacustrine resources such as freshwater mussels, waterfowl, and fish. The Project area consists of flat, undeveloped areas and, in some areas, wetland habitat ranging in elevation between 229 and 219 feet below mean sea level (bmsl). There are three soils series (Fluvaquent, Imperial, and Imperial-Glenbar) within the Project area, all of which are found in basin floors between 230 feet above mean sea level and 200 feet bmsl. The three soils are derived of mixed parent materials with depths in excess of 80 inches to a restrictive feature, indicating depositional conditions.

Cultural Setting

Prehistory of the Project site is broken down into the Paleoindian period, Early Archaic period, Late Prehistoric period, and Ethnohistoric period. The earliest well-documented prehistoric sites in Southern California belong to the Paleoindian period, which has locally been termed the San Dieguito complex/tradition. The Paleoindian period is thought to have occurred between 9,000 (or earlier) and 8,000 years ago in this region. The Early Archaic period is differentiated from the earlier Paleoindian period by a shift to a more generalized economy and an increased focus on use of grinding and seed processing technology. Native Americans during the Archaic period had a generalized economic focus on hunting and gathering. In many parts of North America, Native Americans chose to replace this economy with others based on horticulture and agriculture. Around 2,000 Before Present (B.P.), during the Late Prehistoric period, Takic-speaking people from the Great Basin region began migrating into Southern California. The Late Prehistoric period in this portion of Imperial County is recognized archaeologically by smaller projectile points, the replacement of flexed inhumations with cremation, the introduction of ceramics, and an emphasis on inland plant food collection and processing, especially acorns and mesquite. The Ethnohistoric period refers to a brief period when Native American culture was initially being affected by Euroamerican culture; historical records on Native American activities during this time are limited.

The Kamia, or Desert Kumeyaay, occupied the Project area during the Late Prehistoric period. The Kamia are a subgroup of the Yuman family of the Hokan stock and, therefore, are closely related linguistically to the Mohave, Quechan, Maricopa, Paipai, Cocopa, and Kiliwa. The extreme diversity of Cahuilla territory

reflected the range of environmental habitats in inland Southern California. Topographically, their territory ranged from the New River and Alamo River sloughs to San Felipe Creek in the north to the Algodones Dunes in the east. Ecological habitats included the full range of mountains, valleys, passes, foothills, and desert area.

The extent to which the Kamia/Kumeyaay practiced agriculture at the time of European contact has not been established. Agriculture, which had been well established among the Colorado River groups at the time of Western influence, had diffused into the Imperial Valley and was practiced by all of the Kamia lineages. Lawton and Bean (1868) have suggested that certain Cahuilla groups cultivated corn, beans, squash and melons, like the neighboring Colorado River tribes.

Group size and the degree of social interaction varied over the course of an annual cycle. The basic unit of production was the family, which was capable of great self-sufficiency, but Kamia/Kumeyaay families, like other hunter-gatherers, moved in and out of extended family camps or villages opportunistically as problems or opportunities arose. Thus, whereas single families occasionally exploited low-density, dispersed resources on their own, camps or villages of several families formed at other times, particularly when key resources (such as water) were highly localized. Important plant foods exploited from the Kamia's diverse habitat included mesquite, screw beans, pinyon nuts, and various cacti. Important but less utilized plants included various seeds, wild fruits and berries, tubers, roots, and greens. Women were instrumental in the collection and preparation of vegetal foods.

When the Spanish colonists began to settle California, the Kamia were on the margins of the mission system. They retained more of their culture due to their distance from mission influence. Kamia culture and society remained stable during the period of missionization on the coast. It was not until the American period that the Kamia were heavily displaced. The introduction of European diseases greatly reduced the native population of Southern California and further disrupted the way of life of the native inhabitants.

Prior Research

Archival data has been provided by Hell's Kitchen Geothermal, LLC, from the previous 2017 cultural studies of the Project area conducted by ASM Affiliates, Inc. The records search was conducted by the South Coastal Information Center (SCIC) at San Diego State University to identify any previously recorded cultural resources within the Project area and to determine the types of resources that might occur in the Project area. In addition to the two studies conducted by ASM Affiliates, Inc., the records search indicated that 17 cultural resource investigations have taken place within a half-mile radius of the Project area. The entire Project area has been previously surveyed.

4.4.2 Applicable Regulations

State

Assembly Bill 4239

Assembly Bill (AB) 4239 established the Native American Heritage Commission (NAHC) as the primary government agency responsible for identifying and cataloging Native American cultural resources. The bill authorized the NAHC to act to prevent damage to and ensure Native American access to sacred sites and authorized the NAHC to prepare an inventory of Native American sacred sites located on public lands.

Public Resources Code 5097.97

Public Resources Code (PRC) 5097.97 states:

No public agency and no private party using or occupying public property or operating on public property under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require.

Public Resources Code 5097.98 (b) and (e)

PRC 5097.98 (b) and (e) require a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the NAHC-identified Most Likely Descendants (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location not subject to further disturbance.

California Health and Safety Code 7050.5

California Health and Safety Code (HSC) 7050.5 makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.

Local

Imperial County General Plan

The Conservation and Open Space Element of the General Plan includes goals, objectives, and policies for the protection of cultural resources and scientific sites that emphasize identification, documentation, and protection of cultural resources. Table 4.4-1 provides a consistency analysis of the applicable Imperial County General Plan policies relevant to cultural resources as they relate to the Project. While this EIR analyzes the Project's consistency with the General Plan pursuant to State California Environmental Quality Act (CEQA) Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

Table 4.4-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Conservation and Open Space Element		
Conservation of Environmental Resources for Future Generations		
Goal 1 – Environmental resources shall be conserved for future generations by minimizing	Consistent	A Cultural Resources Survey Report was prepared for the Project by Tierra on June 7, 2022. The analysis examined the Project site for potential resources of cultural

Table 4.4-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Conservation and Open Space Element		
environmental impacts in all land use decisions and educating the public on their value.		significance. The survey and accompanied report determined that resources may be uncovered during Project construction. The Project would, where feasible, avoid significant resources, or be redesigned to ensure resources are protected or preserved through various means. Mitigation measures would be implemented to ensure that construction would not result in a significant impact and that any resources discovered would be assessed by a qualified archaeologist who would determine the treatment of the resource. Therefore, the Project is consistent with this objective.
Preservation of Cultural Resources		
Goal 3 – Preserve the spiritual and cultural heritage of the diverse communities of Imperial County.	Consistent	A Cultural Resources Survey Report was prepared for the Project by Tierra on June 7, 2022. Archival research resulted in previously prepared studies of the area along with previously recorded resources within the search radius. A pedestrian survey and Tribal Consultation were conducted to identify the site conditions and to determine if the Project site contains any tribal cultural resources. Refer to Section 4.12: Tribal Cultural Resources for further discussion. The Project is consistent with this objective.
Objective 3.1 – Protect and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.	Consistent	See above responses.
Objective 3.3 – Engage all local Native American Tribes in the protection of tribal cultural resources, including prehistoric trails and burial sites.	Consistent	A previous Native American contact program was conducted in 2017 and again in 2021. Additionally, as discussed in Section 4.12: Tribal Cultural Resources, the County also conducted AB 52 consultations with the Quechan Indian Tribe and the Torres-Martinez Indian Tribe to identify any concerns they may have regarding the Project. Thus, the Project is consistent with this objective.

4.4.3 Thresholds of Significance

To assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have impacts to cultural resources if it would:

Threshold a) **Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?**

Threshold b) **Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?**

Threshold c) **Disturb any human remains, including those interred outside of formal cemeteries?**

4.4.4 Methodology

Tierra conducted a Phase I archaeological investigation on the approximately 68 acres of land proposed for development of the Hell's Kitchen PowerCo 1 (HKP1) and Hell's Kitchen LithiumCo 1 (HKL1) Project area. Cultural resource work was conducted in accordance with CEQA and its respective implementing regulations and guidelines. The records search resulted in 19 cultural studies that, taken together, indicate the entire Project area has been previously surveyed. Four previously recorded resources were identified in the search radius, with only one of the resources, a historic-era isolated bottle base (HK-I-1), having been identified within the Project area.

Native American Heritage Commission

A previous Native American contact program was conducted for the Cultural Resource Study for the Hell's Kitchen Exploratory Well Project by ASM Affiliates in 2017. In October 2016, ASM Affiliates, Inc. reached out to the Native American Heritage Commission (NAHC) and was provided contact information for 36 Native American individuals, who were also contacted. Two tribes responded at the time. The Agua Caliente Band of Cahuilla Indians responded that the Project area is beyond their Traditional Use Area and opted to defer to Tribes more proximally located to the Project area. The Morongo Band of Mission Indians expressed concern for the Project and requested monitoring by a Cahuilla representative during construction activities.

Tierra has initiated an updated Native American Contact Program for the current effort. The NAHC was contacted via email on April 12, 2021. The NAHC responded in kind on April 27, 2021 with positive results for the Sacred Lands File search of the vicinity and suggested that all tribal individuals supplied by the NAHC be contacted, especially the Torres-Martinez Desert Cahuilla, regarding further information of the positive search results. Letters were sent to all contacts supplied thereafter. To date, no responses have been received from the tribal individuals contacted in April 2021. Any comments received will be documented in this report and supplied to the County. See Appendix E for details on the Native American Contact Program.

Survey Methods

The pedestrian survey was conducted on April 1 and October 11, 2021, by Ms. Hillary Murphy and Mr. Andres Berdeja of Tierra. The pedestrian survey was conducted by intensive survey in 10- to 15-meter interval transects. Part of the Project area was located within wetlands. In these locations, transects running parallel to the waterline were conducted. A windshield survey was conducted for small portions of the southern segment right-of-way (ROW) where the new ROW is being secured for the gen-tie line along the existing dirt/paved roads that were noticeably highly disturbed and near the road. The cultural survey was conducted to adequately identify cultural resources within the Project area.

Resources identified during the survey were assigned consecutive temporary numbers (e.g., TES-HK-001) in the field. Furthermore, temporary numbers may contain an "H" suffix, used to denote historic period

resources (e.g., TES-HK-001H) or, in the case of a resource representative of both historic and prehistoric periods, the suffix "/H" was added (e.g., TES-HK-001/H).

Resources identified as isolates received an "i" to indicate isolated finds. Per industry standards, historic artifacts or features were recorded in feet and inches, and prehistoric resources were recorded using the metric system. All resources assigned with a temporary number will be given permanent trinomials or primary numbers by the SCIC. No ground-disturbing activities or artifact collections were undertaken during the course of this study.

Regulatory Framework

For the purposes of this report, the term "cultural resources" describe any expression of human activity on the landscape whether past or present. Within the cultural resources framework are resource types including but not limited to, prehistoric archaeological sites, historical archeological sites, districts, historical buildings and structures, ethnographic sites, traditional cultural properties, and isolated artifacts and features. Each of these resources may be evaluated for its potential significance, and if determined eligible to the California Register, is designated as "historic property."

This archaeological investigation was conducted in compliance with CEQA requirements pertaining to the determination of whether the Proposed Project may have an effect on significant cultural resources (PRC 21083.2 and California Code of Regulations 15064.5). According to CEQA, an impact is considered significant if it would disrupt or adversely affect a prehistoric or historic-era archaeological site or a property of historic or cultural significance to a community, ethnic or social group. The State CEQA Guidelines define a significant historical resource as a resource listed or eligible for listing on the California Register of Historic Resources (CRHR) (PRC 5024.1). A historical resource may be eligible for inclusion in the CRHR if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or is likely to yield, information important in prehistory or history. Significant cultural resources may be avoided by the Proposed Project through a redesign of the Project or construction planning, or protected and preserved through various means. If avoidance or protection of a significant cultural resource is not possible, mitigation measures shall be required as set forth in {TV 21083.2 (c-1). A nonsignificant cultural resource need not be given any further consideration (PRC 21083.2 [h]).

4.4.5 Project Impact Analysis

Threshold a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

The record searches and pedestrian survey resulted in the confirmation and identification of previous cultural studies prepared for the Project area. Four previously recorded resources were identified with only one resource being identified in the Project area (a historic-era isolated bottle base (HK-I-1). Other

disturbances observed during the survey include vehicular tracks and modern refuse (tires, plastic, metal fragments etc.). The gen-tie right-of-way portion of the Project site consisted of minimal vegetation, signage, multiple cinderblock structures, historic structure (TES-HK-001H), field of telephone poles, and a geothermal pit to the north of the gen-tie line. The cinderblock structures appear to be modern additions. The structure currently associated with the geothermal pit is not present and appear to be a more modern addition.

The intensive pedestrian survey resulted in identification of a newly recorded resources which consists of a remnant of a historic-era house dating back to 1953(TES-HK-001H). The structure is comprised of adobe brick. However, the structure has been altered over the years. The structure no longer contains walls, windows, doors, and room, and shows evidence of damage, graffiti, and other modern effects such as furniture and refuse. Based on the condition of the structure, there is not enough original structure remaining to understand the original appearance of the structure. Standard DPR site records have been completed for this resource and are waiting permanent designation from the information center. Its severely dilapidated condition does not allow for the structure to meet the criteria needed for listing on the CRHR and is not known to be affiliated with anyone of significance or contribute to local cultural heritage or yield additional information to local history. Therefore, the Proposed Project would not result in significant impact to a historical resource. Impacts would be less than significant.

Threshold b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

An archaeological investigation was conducted for the Project to determine if there are any impacts that would occur that would disrupt or adversely affect a prehistoric or historic-era archaeological site to a community, ethnic or social group. The investigation resulted in resources being found within the Project area. However, because of the conditions of these resources, these have not been determined to be significantly impacted by the Proposed Project. However, given the largely undeveloped nature of the Project site with no previous development, there remains potential that the Project's ground disturbing activity would impact undiscovered resources. These resources could include but not limited to lithic materials, faunal, pottery, ceramics, building materials, or glassware. Therefore, mitigation measure CUL-1 through CUL-5 would be implemented to ensure that impacts would be less than significant.

Threshold c) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Construction of the Proposed Project would involve grading, which may have the potential to uncover unknown human remains. However, if human remains are encountered during the proposed work, no further excavation or disturbance may occur near the find until the County coroner has been contacted. HSC 7050.5 states (a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code. (b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains area discovered has determined that the remains are not subject to the provisions of Section 27481. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or to his or her authorized representative, notifying the coroner of the discovery if recognition of human remains. (c) If the coroner determines that the remains are not subject

to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Compliance with these regulations would ensure impacts to human remains resulting from the Project would be less than significant.

4.4.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

As with the Proposed Project, ground-disturbing activities associated with cumulative projects would have the potential to uncover previously unknown archaeological resources and human remains. The Proposed Project, in combination with cumulative development, could contribute to the loss of undeveloped land, which could potentially contain cultural resources. Determinations regarding the significance of impacts of the related projects on cultural resources would be made on a case-by-case basis and, if necessary, the applicants of the related projects would be required to implement appropriate mitigation measures. All foreseeable projects may contribute to cumulative effects for cultural and paleontological resources because all are likely to involve ground-disturbing activities to some extent during construction. As discussed in the previous section, no designated historic resources would result in significant impact. However, while for further archaeological work was deemed to not be required, and the results of the Native American Contact Program received no responses regarding the Project, the potential of finding buried resources is low, but the possibility exists. Therefore, mitigation measures shall be implemented to reduce potential impacts associated with unanticipated discoveries. Additionally, future projects with potentially significant impacts to cultural resources would be required to comply with federal, State, and local regulations and ordinances protecting cultural resources by implementing similar project-specific mitigation during construction. Therefore, the Proposed Project would have a less than cumulatively considerable impacts on cultural resources.

4.4.7 Mitigation Measures

CUL-1 The Applicant shall retain the services of a Qualified Archaeologist, meeting the Secretary of the Interior Standards or County standards, whichever is greater, and require that all initial ground-disturbing work be monitored by archaeological specialist (monitor) proficient in artifact and feature identification in monitoring contexts. The Consultant (Qualified Archaeologist and/or monitor) shall be present at the Project construction phase kickoff meeting.

CUL-2 Prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project site, the Consultant shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the Lead Contractor and all subcontractors shall make their personnel available. A tribal monitor shall be provided an opportunity to attend the preconstruction briefing, if requested. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to archaeological resources and maintain environmental

compliance. This WEAP training will educate the monitor(s) of construction procedures to avoid construction-related injury or harm. This training may be performed periodically, such as for new personnel coming on to the Project as needed.

CUL-3 The Contractor shall provide the Consultant with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours will be provided to the Consultant of commencement of any initial ground-disturbing activities such as vegetation grubbing or clearing, grading, trenching, or mass excavation.

A monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the Qualified Archaeologist, shall observe initial ground-disturbing activities and, as they proceed, adjust the number of monitors as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The Consultant and the Lead Contractor and subcontractors shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance to provide appropriate oversight.

CUL-4 In the event of the discovery of previously unidentified archaeological materials, the Contractor shall immediately cease all work activities within an area of no less than 100 feet of the discovery. After cessation of excavation, the Contractor shall immediately contact the County. Except in the case of cultural items that fall within the scope of the Native American Grave Protection and Repatriation Act (NAGPRA), California Health and Safety Code 7050.5, CEQA 15064.5, or California Public Resources Code 5097.98, the discovery of any cultural resource within the Project area shall not be grounds for a Project-wide "stop work" notice or otherwise interfere with the Project's continuation except as set forth in this paragraph. Additionally, all consulting Native American Tribal groups that requested notification of any unanticipated discovery of archaeological resources on the Project shall be notified appropriately. If a discovery results in the identification of cultural items that fall within the scope of NAGPRA, the Contractor shall immediately cease all work activities within an area of no less than 100 feet (30 meters) of the discovery. In the event of an unanticipated discovery of archaeological materials during construction, the Applicant-retained Qualified Professional Archaeologist shall be contacted to evaluate the significance of the materials prior to resuming any construction-related activities near the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and it cannot be avoided, the Applicant shall implement an archaeological data recovery program.

CUL-5 At the completion of all ground-disturbing activities, the Consultant shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds as well as providing follow-up reports of any finds to the SCCIC, as required.

In the event unanticipated, buried prehistoric archaeological resources (lithic material, faunal, pottery, etc.) or historical archaeological resources (ceramics, building materials,

glassware, etc.) are unearthed during construction or any ground disturbing activities within the Project area, additional resource treatments would become necessary. Once a potential resource has been identified, all work within 100 feet must be halted until the find can be assessed by a qualified archaeologist.

4.4.8 Level of Significance After Mitigation

With the implementation of mitigation measures CUL-1 through CUL-5, the Project would ensure potential impacts related to cultural resources would remain less than significant.

4.5 ENERGY

This section of the Draft Environmental Impact Report (EIR) describes the source and consumption of energy resources associated with the Project. This section provides further information on applicable regulation, policies, and potential impacts of the Project. The energy consumption modeling output is included in this EIR as Appendix H.

4.5.1 Background

According to the California Environmental Quality Act (CEQA) Guidelines, the goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

- Decreasing overall per capita energy consumption
- Decreasing reliance on fossil fuels such as coal, natural gas and oil
- Increasing reliance on renewable energy sources

Energy conservation implies that a Project's cost effectiveness be reviewed not only in dollars but also in terms of energy requirements. For many Projects, cost effectiveness may be determined more by energy efficiency than by initial dollar costs. A lead agency may consider the extent to which an energy source serving the Project has already undergone environmental review that adequately analyzed and mitigated the effects of energy production.

A geothermal brine delivery pipeline from HKP1 will feed brine to the HKL1 Project's process area. Steam and steam condensate pipelines will also be constructed on the pipe rack. After minerals processing, the depleted brine will be delivered to the HKP1 injection system for reinjection into the geothermal reservoir. It should be noted that due to the sporadic nature of many renewable energy sources, lithium batteries are becoming an integral component of the electrical grid within the State. As such, implementation of the Project would help the State meet its goals for reducing reliance on fossil fuels and increasing use, production, and reliance on alternative renewable energy sources, such as the generation by HKP1 of renewable baseload electric energy and the production of critical materials for electric batteries such as lithium compounds.

4.5.2 Regulatory Setting

Federal

Public Utility Regulatory Policies Act of 1978

The Public Utility Regulatory Policies Act of 1978 (PURPA) was passed in response to the unstable energy climate of the late 1970s. PURPA sought to promote conservation of electric energy. Additionally, PURPA created a new class of nonutility generators (small power producers) from which, along with qualified co-generators, utilities are required to buy power. PURPA was in part intended to augment electric utility generation with more efficiently produced electricity and to provide equitable rates to electric consumers. PURPA expanded participation of nonutility generators in the electricity market and requires utilities to buy whatever power is produced by QFs (usually cogeneration or renewable energy) at avoided cost (avoided costs are the incremental savings associated with not having to produce additional units of electricity). Utilities want these provisions repealed; critics argue that it will decrease competition and

impede development of the renewable energy industry. The Fuel Use Act of 1978 (repealed in 1987) also helped QFs become established. Under this act, utilities were not allowed to use natural gas to fuel new generating technologies; but QFs, which by definition were not utilities, were able to take advantage of abundant natural gas and abundant new technologies (such as combined-cycle). The technologies lowered the financial threshold for entrance into the electricity generation business as well as shortened the lead time for constructing new plants.

Energy Policy Act of 2005

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 into law. This comprehensive energy legislation contains several electricity-related provisions that aim to:

- Help ensure that consumers receive electricity over a dependable, modern infrastructure
- Remove outdated obstacles to investment in electricity transmission lines
- Make electric reliability standards mandatory instead of optional; and,
- Give federal officials the authority to site new power lines in Department of Energy-designated national corridors in certain limited circumstances

State

Energy conservation management in the State was initiated by the 1974 Warren-Alquist State Energy Resources Conservation and Development Act that created the California Energy Resource Conservation and Development Commission (now the California Energy Commission [CEC]), which was originally tasked with certifying new electric generating plants based on the need for the plant and the suitability of the site of the plant. In 1976, the act was expanded to include new restrictions on nuclear generating plants, which effectively resulted in a moratorium on any new nuclear generating plants in the State. The following details specific regulations adopted by the State to reduce the consumption of energy.

California Code of Regulations Title 20

On November 3, 1976, the CEC adopted the Regulations for Appliance Efficiency Standards Relating to Refrigerators, Refrigerator-Freezers, and Freezers and Air Conditioners, which were the first energy-efficiency standards for appliances. The appliance efficiency regulations have been updated several times by the Commission; and the most current version is the 2016 Appliance Efficiency Regulations, adopted January 2017, which now includes almost all types of appliances and lamps that use electricity and natural gas as well as plumbing fixtures. The authority for the CEC to control the energy efficiency of appliances is detailed in CCR, Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609.

California Code of Regulations Title 24, Part 6

The CEC is also responsible for implementing CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24), first established in 1978 in response to a legislative mandate to reduce California's energy consumption. In 2008 the State set an energy-use reduction goal of zero-net-energy use of all new homes by 2020, and the CEC was mandated to meet this goal through revisions to the Title 24, Part 6 regulations.

The Title 24 standards are updated on a three-year schedule, and since 2008 the standards have been incrementally moving to the 2020 goal of the zero-net-energy use. On, January 1, 2020, the 2019 standards went into effect. These standards have been designed so that the average new home built in California will now use zero-net-energy and nonresidential buildings will use about 30 percent less energy than the 2016 standards due mainly to lighting upgrades. The 2019 standards also encourage the use of battery storage and heat pump water heaters and require more widespread use of LED lighting as well as improve the building's thermal envelope through high-performance attics, walls, and windows. The 2019 standards also require improvements to ventilation systems by requiring highly efficient air filters to trap hazardous air particulates as well as requiring improvements to kitchen ventilation systems.

California Code of Regulations Title 24, Part 11

CCR Title 24, Part 11: California Green Building Standards (Title 24) was developed in response to continued efforts to reduce greenhouse gas (GHG) emissions associated with energy consumption. The California Green Building Standards Code (CALGreen) is updated every three years. The current version is the 2019 CALGreen Code, which became effective on January 1, 2020.

The CALGreen Code contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides design options, thereby allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water-efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, stormwater management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduced energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the current 2019 CALGreen Code over the previous 2016 CALGreen Code Code include aligning building code engineering requirements with the national standards, including anchorage requirements for solar panels, providing design requirements for buildings in tsunami zones, increasing Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increasing electric vehicle charging requirements in parking areas, and setting minimum requirements for use of shade trees.

Senate Bill 100

Senate Bill (SB) 100 was adopted after September 2018 and requires that 100 percent of retail sales of electricity be generated from renewable or zero-carbon emission sources of electricity by December 1, 2045. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2. However, the interim renewable energy thresholds from the prior bills of 44 percent by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, remain in effect.

Executive Order B-48-18 and Assembly Bill 2127

Governor Gavin Newsom issued Executive Order (EO) B-48-18 on January 26, 2018, ordering all State entities to work with the private sector to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025. Currently in California, approximately 1,500,000 electric zero emission vehicles are operating1 , which represents approximately 1.6 percent of the 24 million vehicles total currently operating in the State. Implementation of EO B-48-18 would result in approximately 20 percent of all vehicles in California be zero emission electric vehicles. AB 2127 was codified into statute on September 13, 2018, and requires that the CEC work with the CARB to prepare biannual assessments of the Statewide electric vehicle charging infrastructure needed to support the levels of zero emission vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030**.**

Assembly Bill 1109

AB 1109, also known as the Lighting Efficiency and Toxics Reduction Act, was adopted October 2007 and prohibits the manufacturing of lights after January 1, 2010, that contain levels of hazardous substances prohibited by the European Union pursuant to its Restriction of Hazardous Substances Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce lighting electrical consumption by at least (1) 50 percent from 2007 levels for indoor residential lighting and (2) 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018. AB 1109 would reduce GHG emissions by reducing the amount of electricity required to be generated by fossil fuels in California.

Assembly Bill 1493

AB 1493 (also known as the Pavley Bill after its author, Fran Pavley) was enacted on July 22, 2002, and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. In 2004, CARB approved the Pavley I regulations limiting the amount of GHGs that could be released from new passenger automobiles that were being phased in between model years 2009 through 2016. These regulations were intended reduce GHG emissions by 30 percent from 2002 levels by 2016. In June 2009, the U.S. Environmental Protection Agency (USEPA) granted California the authority to implement GHG emission reduction standards for light-duty vehicles; in September 2009, amendments to the Pavley I regulations were adopted by CARB, and implementation started in 2009.

The second set of regulations, Pavley II, was developed in 2010 and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the LEV III (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen and increase the infrastructure for fueling hydrogen vehicles. In 2009, the USEPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks, and sport utility vehicles; these GHG emissions standards are currently being implemented nationwide. However, USEPA has performed a midterm evaluation of the longer-term standards for model years 2022 through 2025. Based on the findings of this midterm evaluation, the USEPA has proposed to amend the corporate average fuel economy (café) and GHG emissions standards for light vehicles for model years 2021 through 2026. The USEPA's proposed amendments do not include any extension of the legal waiver granted to California by the 1970 Clean Air Act, which has allowed the State to set tighter standards for vehicle pipe

emissions than the USEPA standards. On September 20, 2019, California filed suit over the USEPA decision to revoke California's legal waiver; that suit has been joined by 22 other states.

Local

Relevant Imperial County General Plan policies related to energy are provided below. Table 4.5-1 discusses the Project's consistency with the County's General Plan policies. While this EIR analyzes the Project's consistency with the General Plan pursuant to CEQA Guidelines Section 151250, the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

Table 4.5-1: General Plan Consistency

General Plan Polices	Consistency with General Plan	Analysis
Renewable Energy and Transmission Element		
Goal 1 – Support the safe and orderly development of renewable energy while providing for the protection of environmental resources.	Consistent	The Project provides protection to environmental resources while helping to produce renewable energy.
Objective 1.2 – Lessen impacts of site and design production facilities on agricultural, natural, and cultural resources.	Consistent	This EIR has analyzed the potential impacts related to these subjects.
Objective 1.3 – Require the use of directional geothermal drilling and "islands" when technically advisable in irrigated agricultural soils and sensitive or unique biological areas.	Consistent	The Project will drill multiple wells from individual well pads ('islands') to conserve farmland and sensitive areas.
Objective 1.4 – Analyze potential impacts on agricultural, natural, and cultural resources, as appropriate.	Consistent	This EIR has analyzed the potential impacts related to these subjects.
Objective 1.5 – Require appropriate mitigation and monitoring for environmental issues associated with developing renewable energy facilities.	Consistent	The Project provides a mitigation monitoring program.
Objective 1.6 – Encourage the efficient use of water resources required in the operation of renewable energy generation facilities.	Consistent	The Project is designed to meet Title 24 Part 11 requirements that require implementation of water-efficiency measures.
Objective 1.7 – Assure that development of renewable energy facilities and transmission lines comply with Imperial County Air Pollution Control District's (ICAPCD) regulations and mitigation measures.	Consistent	The Project will be required to obtain all required air permits from the ICAPCD and to adhere to all the ICAPCD rules and regulations.
Goal 2 – Encourage development of electrical transmission lines along routes which minimize potential environmental effects.	Consistent	Any required improvements or extensions of existing IID electrical transmission lines will occur adjacent to existing routes.
Objective 2.1 – To the extent practicable, maximize utilization of IID's transmission capacity in existing easements or rights-of-way. Encourage the location of all major transmission lines within designated corridors, easements, and rights-of-way.	Consistent	Any required improvements or extensions of IID electrical transmission lines will occur within existing easements or rights-of-way.

Table 4.5-1: General Plan Consistency

General Plan Polices	Consistency with General Plan	Analysis
Objective 2.2 – Where practicable and cost-effective, design transmission lines to minimize impacts on agricultural, natural, and cultural resources, urban areas, military operation areas, and recreational activities.	Consistent	Any required improvements or extensions of IID electrical transmission lines will occur within existing easements or rights-of-way.
Goal 3 – Support development of renewable energy resources that will contribute to and enhance the economic vitality of Imperial County.	Consistent	The Project will provide additional employment opportunities as well as contribute to the tax base of the County, which will enhance the economic vitality of the County.
Objective 3.2 – Encourage the continued development of the mineral extraction/production industry for job development using geothermal brines from the existing and future geothermal flash power plants.	Consistent	The Project implements this objective. HKL1 proposes to develop mineral extraction and processing facilities capable of producing lithium hydroxide, silica, polymetallic, and possibly boron products for commercial sale.
Objective 3.3 – Encourage the development of services and industries associated with renewable energy facilities.	Consistent	The Project implements this objective by developing the 49.9-MW geothermal power plant.
Objective 3.4 – Assure that revenues Projected from proposed renewable energy facility developments are sufficient to offset operational costs to the County from that particular development.	Consistent	The Project would generate more revenue and energy for the County than any costs incurred by the County.
Objective 3.5 – Encourage employment of County residents by the renewable energy industries wherever and whenever possible.	Consistent	The Project will provide additional employment opportunities to residents in the County (112 full-time positions).
Objective 3.7 – Evaluate environmental justice issues associated with job creation and displacement when considering the approval of renewable energy Projects.	Consistent	No sensitive receptors are within two miles of the Project site. No impacts to disadvantaged communities would occur from implementation, and no Health Risk Assessment is required.
Goal 4 – Support development of renewable energy resources that will contribute to the restoration efforts of the Salton Sea.	Consistent	The Project is being designed to minimize impacts to Salton Sea restoration areas.
Objective 4.1 – Prioritize the Salton Sea exposed seabed (playa) for renewable energy Development.	Consistent	The Project will be in the Salton Sea exposed seabed area.
Objective 4.4 – Encourage the development of renewable energy facilities that will contribute to the reduction or elimination of airborne pollutants created by exposure of the seabed of the Salton Sea as it recedes.	Consistent	The Project will be in the Salton Sea exposed seabed area and will be required to provide adequate landscaping and hardscaping to minimize airborne pollutants.
Objective 4.3 – Develop mitigation measures and monitoring programs to minimize impacts to avian species and other species that may be affected by	Consistent	This EIR has analyzed the biological impacts, including impacts to avian species.

Table 4.5-1: General Plan Consistency

General Plan Polices	Consistency with General Plan	Analysis
renewable energy facilities constructed near the Salton Sea.		
Goal 5 – Encourage development of innovative renewable energy technologies that will diversify Imperial County's energy portfolio.	Consistent	The Project will produce lithium hydroxide, silica, polymetallic, and possibly boron products that are utilized in the production of batteries as well as other commercial uses that will diversify the County's energy portfolio.
Objective 5.1 – Support the implementation of pilot Projects intended to test or demonstrate new and innovative renewable energy production technologies.	Consistent	Although the Project is for full production and is not a pilot project, it will demonstrate new and innovative renewable energy production technologies.
Goal 6 – Support development of renewable energy while providing for the protection of military aviation and operations.	Consistent	The Project will be designed to meet all aviation requirements.
Goal 7 – Actively minimize the potential for land subsidence to occur as a result of renewable energy operations.	Consistent	The Project will be designed to minimize land subsidence, by actively monitoring volumes of produced and injected fluids. .
Objective 7.1 – Require that all renewable energy facilities, where deemed appropriate, include design features that will prevent subsidence and other surface conditions from impacting existing land uses.	Consistent	The Project will be designed to minimize land subsidence, and will routinely conduct subsidence monitoring as required by Imperial County..
Objective 7.2 – For geothermal energy development facilities, establish injection standards consistent with the requirements of the California Division of the Geological Energy Management Division (CalGEM). Request a CalGEM subsidence review, if necessary, for consideration prior to setting injection standards.	Consistent	The Project will meet all CalGEM requirements for handling of the geothermal brine.
Objective 7.10 – Require operators of geothermal facilities to establish a notification system to warn or notify surrounding residents of the accidental release of potentially harmful emissions as part of an emergency response plan.	Consistent	The Project will be required to establish a system to notify nearby residents of the accidental release of potentially harmful emissions.

4.5.3 Thresholds of Significance

To assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have an energy impact if it would:

Threshold a) **Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

Threshold b) **Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

4.5.4 Project Impact Analysis

Threshold a) **Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

The Project would impact energy resources during construction and operation. Energy resources that would potentially be impacted include electricity and petroleum-based fuel supplies and distribution systems. This analysis includes a discussion of the potential energy impacts of the Project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. A general definition of each of these energy resources is provided below.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. In 2019, IID, which provides electricity to the Project area, provided 3,322 gigawatt-hours (GWh) of electricity (CEC 2019).

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the State has been working on developing strategies to reduce petroleum use. Over the last decade California has implemented several policies, rules, and regulations to improve vehicle efficiency; increase the development and use of alternative fuels; reduce air pollutants and GHG emissions from the transportation sector; and reduce vehicle miles traveled. Accordingly, petroleum-based fuel consumption in California has declined. According to the CEC, in 2017, 83 million gallons of gasoline and 12 million gallons of diesel was sold in Imperial County (CEC 2018).

The following section calculates the potential energy consumption associated with the construction and operations of the Project and provides a determination whether any energy utilized by the Project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy

The Project would consume energy resources during construction in three general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the Project site; construction worker travel to and from the Project site; and delivery and haul truck trips (e.g., hauling demolition material to offsite reuse and disposal facilities)

2. Electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power
3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes; and of manufactured or processed materials, such as lumber and glass

Construction-Related Electricity

During construction, the Project would consume electricity to construct the new structures and infrastructure. Electricity would be supplied to the Project site by IID and would be obtained from the existing electrical lines near the Project site. The use of electricity from existing power lines rather than temporary diesel- or gasoline-powered generators would minimize impacts on fuel consumption. Electricity consumed during Project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities include electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and, such electricity demand would be temporary and nominal and would cease upon the completion of construction. Overall, construction activities associated with the Project would require limited electricity consumption and would not be expected to have an adverse impact on available electricity supplies and infrastructure. Therefore, the use of electricity during Project construction would not be wasteful, inefficient, or unnecessary.

Given that power lines currently exist near the Project site, it is anticipated that only nominal improvements would be required to IID distribution lines and equipment with development of the Project. Compliance with the County's guidelines and requirements would ensure that the Project fulfills its responsibilities relative to infrastructure installation, coordinates any electrical infrastructure removals or relocations, and limits any impacts associated with construction of the Project. Construction of the Project's electrical infrastructure is not anticipated to adversely affect the electrical infrastructure serving the4.5-9urroundding uses or utility system capacity.

Construction-Related Petroleum Fuel Use

Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction, which would be utilized by off-road equipment operating on the Project site, on-road automobiles transporting workers to and from the Project site, and on-road trucks transporting equipment and supplies to the Project site.

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions provided in Appendix H, which found that the off-road equipment utilized during construction of the Project would consume 636,310 gallons of diesel fuel. The on-road fuel consumption during construction was calculated through use of the construction vehicle trip assumptions and fuel use assumptions provided in Appendix H, which found that the on-road trips generated from construction of the Project would consume 8,554,787 gallons of fuel. As such, the combined fuel used from off-road construction equipment and on-road construction trips for the Project would result in the consumption of 9,191,096 gallons of diesel fuel.

Construction activities associated with the Project would be required to adhere to all State and Imperial County Air Pollution Control District regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. Construction activities for the Project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. In addition, the operation of the Project would result in a net increase of 147,732,2kilowatt-hours (kWh) per year.

Impacts regarding transportation energy would be less than significant. Development of the Project would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the Project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete; therefore, it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Operational Energy

These numbers are confusing, and unclear what the point is. HKP1 will generate about 416,000 MW-hr/yr (assuming 50 MW at 95% availability), while HKL1 will consume about 276,000 MW-hr/yr, producing a surplus of 140,000 MW-hr/yr of renewable electric power (assumed to be "green" power avoiding the electrical grid); which results in an even greater reduction of GHG emissions.

The Project would comply with all federal, State, and County requirements related to the consumption of electricity, including CCR Title 24, Part 6, Building Energy Efficiency Standards and CCR Title 24, Part 11, the CALGreen Code. The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the project, including enhanced insulation and use of energy-efficient lighting and appliances as well as requiring a variety of other energy efficiency measures to be incorporated into all the proposed structures.

Operations-Related Electricity

The ongoing operation of HKP1 and HKL1 would require the use of energy resources for multiple purposes including, but not limited to, operation of pumps and other electro-mechanical industrial equipment, heating/ventilating and air conditioning (HVAC), refrigeration, lighting, appliances, and electronics. Operation of HKP1 and HKL1 would result of the net generation of renewable electricity at the project site. HKL1 will have an average demand of 35 MW and peak power demand of up to 40 MW during operation. HKL1 would consume approximately 276,000,000 kWh per year of electricity (assuming 90 percent availability; assumed to be 'brown' power via the electrical grid). However, HKP1 would generate approximately 416,000,000 kWh per year of (renewable) electricity (assuming 95 percent availability); assumed to be 'green' power avoiding the electrical grid. Therefore, there will be a surplus of renewable electrical generation of approximately 140,000,000 kWh per year of electricity, which results in a net reduction of GHG emissions (see Section 11).

HKL1 may receive power from either HKP1 or IID. The electrical generation of the HKP1 will likely be greater than the electrical demand of the HKL1. Importantly, HKL1 will not operate if HKP1 is not operating due to maintenance or outage. The air quality analysis conservatively assumes that the electrical demand of the HKL1 would be provided by the electrical grid ('brown' power) instead of being provided by the HKP1 ("green" power). Nevertheless, under this conservative condition, operation of HKP1 and the HKL1

would have a net generation of 140,000,000 kWh per year of (renewable) electricity generation. Operations-Related Transportation Energy

Operation of the Project would result in increased consumption of petroleum-based fuels related to vehicular travel to and from the Project site. Operations related to fuel consumption were calculated using information related to the estimated number of employees, their estimated vehicle miles traveled per day, and the number of operational days per year. Based on these assumptions, the Project would consume 25,217,394 gallons of transportation fuel per year (diesel and gasoline).

Additionally, the Project would comply with all federal, State, and County requirements related to the consumption of transportation energy, including CCR Title 24, Part 11, the CALGreen Code, which requires all new parking lots to provide preferred parking for clean air vehicles. Therefore, it is anticipated the Project will be designed and built to minimize transportation energy through the promotion of the use of electric-powered vehicles and that existing and planned capacity and supplies of transportation fuels would be sufficient to support the Project's demand. Thus, impacts regarding transportation energy supply and infrastructure capacity would be less than significant, and no mitigation measures would be required.

Threshold b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The applicable Renewable Energy and Transmission Element for the Project is included in the County's General Plan. The Proposed Project's consistency with the applicable energy-related policies in the Renewable Energy and Transmission Element of the General Plan are shown in Table 4.5-1.

4.5.5 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "A cumulative impact consists of an impact which is created as a result of the combination of the Project evaluated in the EIR together with other Projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

The geographic scope of cumulative energy impacts associated with the Project comprises the IID service area. Average electricity consumption within the County is below the regional average of consumption and is in decline due to stricter policies for building codes and energy conservation practices. The Project, in combination with cumulative projects, would have less than significant impacts within the service area of IID.

4.5.6 Mitigation Measures

No mitigation measures are required, as all Project impacts regarding energy are less than significant.

4.5.7 Level of Significance After Mitigation

No mitigation measures are required; thus, impacts related to energy would remain less than significant.

4.6 GEOLOGY AND SOILS

This section addresses the potential for the Proposed Project to impact geologic and soil conditions on the Project site. More specifically, this section evaluates impacts associated with the Project that may potentially affect public health and safety or degrade the environment. Issues analyzed in this section include the potential paleontological sensitivity of the Project site, as well as geologic and seismic hazards such as earthquakes, expansion, landform alteration, erosion, and liquefaction that could occur with implementation of the Project.

A Geohazard Evaluation Report was prepared for the Project by Converse Consultants on August 17, 2022. The purpose of the report was to utilize existing geologic maps, reports, and databases to characterize the Project's surface and subsurface conditions and to identify any geologic hazards that may impact Project development. This is included in Appendix F of this Environmental Impact Report (EIR).

4.6.1 Existing Environmental Setting

Regional Setting

The Project area is located within the southern portion of the Salton Trough in the central portion of the Colorado Desert Geomorphic Province of Southern California. The Colorado Desert is bounded on the north by the Transverse Ranges, on the west by the Peninsular Ranges, on the south by the Sonoran Desert, and on the east by the Chocolate Mountains. This province is a seismically active region characterized by alluviated basins, elevated erosional surfaces, and northwest-trending mountain ranges bounded by northwest-trending strike-slip faults. The Salton Trough is a sunken desert basin with surface elevations lower than 275 feet below sea level. It is situated between active branches of the San Jacinto and San Andreas Fault Zones. Sediment deposited in the basin from marine, nonmarine, and lacustrine sources exceeds 15,000 feet in depth. The Proposed Project area is underlain by Holocene and late Pleistocene age lake deposits consisting of unconsolidated sand, silt, and clay. Results of the site reconnaissance indicated few stockpiles and berms, which may indicate the presence of undocumented fill. Current and historical high groundwater levels within the Project area are not known with certainty but are anticipated at depths ranging from 6 to 12 feet below ground surface. Several test pits were excavated (by others) where groundwater was recorded within a foot of the surface. The shallow groundwater was attributed to agriculture runoff. Thus, groundwater depth within the site may vary between 1 and 12 feet. It should be noted that the groundwater levels could vary depending upon the seasonal precipitation and possible groundwater pumping activity in the project area vicinity. Shallow perched groundwater may be present locally, particularly following precipitation.

Project Site Characteristics

Faulting

Surface rupture is an offset of the ground surface when fault rupture extends to the Earth's surface. Normal and reverse (collectively called dip-slip) faulting surface ruptures feature vertical offsets, while strike-slip faulting produces lateral offsets. Many earthquake surface ruptures are combinations of both. Surface rupture represents a primary or direct potential hazard to structures built on an active fault zone.

No portion of the Project area is located within a State of California Fault Zone, with the nearest being 11.7 miles northwest (San Jacinto Fault Zone). The closest regional known fault capable of seismic activity

is Elmore Ranch, located approximately 4.2 miles from the Project site. Because the Project is in a highly seismic region that regularly experiences episode of surface rupture, the potential for surface rupture resulting from the movement of nearby or distant faults is high.

Dynamic Settlement (Liquefaction and Dry Seismic Settlement)

One of the seismic hazards most likely to impact the Project site is strong ground shaking during an earthquake. Ground shaking from seismic events could reach the Project site if certain seismic factors (e.g., Richter magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surficial deposits or bedrock, degree of consolidation of surficial deposits, etc.) occur nearby.

Liquefaction occurs when granular soil below the water table is subjected to vibratory motions, such as those produced by earthquakes. With strong ground shaking, an increase in pore water pressure develops because the soil tends to reduce in volume. If the increase in pore water pressure is sufficient to reduce the vertical effective stress (suspending the soil particles in water), the soil strength decreases, and the soil behaves as a liquid (similar to quicksand). Liquefaction can produce excessive settlement, ground rupture, lateral spreading, or failure of shallow bearing foundations. Four conditions are generally required for liquefaction to occur: (1) the soil must be saturated (relatively shallow groundwater), (2) the soil must be loosely packed (low to medium relative density), (3) the soil must be relatively cohesionless (not clayey), and (4) ground shaking of sufficient intensity must occur to function as a trigger mechanism.

The Project area is within an area that is currently unevaluated by the State of California for liquefaction. Based on the expected presence of shallow groundwater and the nature of subsurface soils, the potential for liquefaction in the Project area is considered high. Site-specific liquefaction and dynamic settlement should be evaluated with data from the soil borings during the geotechnical investigation phase.

Landslides

Landslides occur when slopes become unstable and collapse. Landslides are typically caused by natural factors such as fractured or weak bedrock, heavy rainfall, erosion, earthquake activity, and fire, but also by human alteration of topography and water content. Due to the relatively flat nature of the of the Project site, the risk of land sliding is considered remote.

Lateral Spreading

Seismically-induced lateral spreading involves primarily lateral movement of earth materials over underlying materials that are liquefied due to ground shaking. It differs from slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. Due to the high potential of liquefaction, the potential of lateral spreading is considered high. Site-specific potential for lateral spreading should be evaluated with data from the soil borings during the geotechnical investigation phase.

Subsidence

Land subsidence is a gradual caving or sinking of an area of land that can occur as a result of either tectonic deformations (e.g., earthquakes) or anthropogenic causes, such as mining or groundwater extraction. According to the Imperial County Seismic and Public Safety Element, subsidence from earthquakes and

other activities, including geothermal resources development, can disrupt drainage systems and cause localized flooding.

Tsunamis

Tsunamis are large waves generated in open bodies of water by fault displacement or major ground movement. Due to the inland location and elevation of the site, tsunamis are not considered to be a risk.

Seiches

Seiches are large waves generated by enclosed bodies of water in response to ground shaking. Due to its proximity to the Salton Sea, the Project area has a potential for seiching.

Earthquake-Induced Flooding

Dams or other water-retaining structures may fail as a result of large earthquakes. The Project site is not located within a designated dam inundation area; thus, the risk of earthquake-induced flooding is low.

Soils

Expansive soils are characterized by their potential "shrink-swell" behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the process of wetting and drying. Clay minerals such as smectite, bentonite, montmorillonite, beidellite, vermiculite, and others are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near-surface soils, the higher the potential for significant expansion. The greatest effects occur when moisture content changes significantly or repeatedly. Expansions of 10 percent or more in volume are not uncommon. This change in volume can exert enough force on a building or other structure to cause cracked foundations, floors, and basement walls. Damage to structures can also occur when movement in the foundation is significant. Structural damage typically occurs over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Based on the anticipated soil types of the Project area, expansive soils may be present.

4.6.2 Regulatory Setting

Federal

Federal Earthquake Hazards Reduction Act

This act is also cited as the National Earthquake Hazards Reduction Program Reauthorization Act of 2018. The purpose of this act is to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. Loss of life, injury, destruction of property, and economic and social disruption can be substantially reduced through the development and implementation of earthquake hazard reduction measures. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRPA). This program was significantly amended in November 2020 by the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives. The NEHRPA designates FEMA as the lead agency of the program and assigns it several

planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey (USGS).

International Building Code

Published by the International Code Council, the scope of this code covers major aspects of construction and design of structures and buildings, except for detached one- and two-family dwellings and townhouses not more than three stories in height. The International Building Code (IBC) contains provisions for structural engineering design. Published every three years (most recently in 2021) by the International Code Council, the IBC addresses the design and installation of structures and building systems through requirements emphasizing performance. The IBC includes codes governing structural strength (including seismic loads and wind loads) as well as fire- and life-safety provisions covering accessibility, egress, occupancy, and roofs.

State

Alquist-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or, prior to January 1, 1994, Special Studies Zones) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected city, county, and State agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures for human occupancy.

Before a project can be permitted for construction, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. An evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault.

Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act of 1990 (7.8 Public Resources Code [PRC] 2690-2699.6) directs the Department of Conservation, California Geological Survey to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of this Act is to reduce the threat to public safety and minimize the loss of life and property by identifying and mitigating these seismic hazards. The Seismic Hazard Zone maps identify where a site investigation is required, and the site investigation determines whether structural design or modification of the Project site is necessary for safer development. The Seismic Hazards Mapping Act requires site-specific geotechnical investigations identifying the seismic hazard and formulating mitigation measures, when needed, prior to permitting most developments designed for human occupancy within the Zones of Required Investigation.

California Building Code (2019)

Development within California is required at a minimum to adhere to the provisions of the Uniform Building Code (UBC). The UBC establishes minimum standards related to development, seismic design, building siting, and grading. The purpose of the UBC is to provide minimum standards to preserve public peace, health, and safety by regulating the design, construction, quality of materials, certain equipment, location, grading, use, occupancy, and maintenance of all buildings and structures. UBC standards address foundation design, shear wall strength, and other structural related conditions. The most recently adopted building code is the 2022 California Building Code (CBC), which applies to projects filing for building permits on or after January 1, 2023.

Public Resources Code, Chapter 1.7, Sections 5097.5

Several sections of the California PRC protect paleontological resources. Section 5097.5 prohibits the "knowing and willful" excavation, removal, destruction, injury, and defacement of any paleontological feature on state lands (broadly defined as lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission.

Local

County of Imperial Grading Ordinance

The Purpose of Title 9, the Land Use Ordinance for the County of Imperial, is to provide comprehensive land use regulations for all unincorporated areas of the County. These regulations are adopted to promote and protect the public health, safety, and general welfare through the orderly regulation of land uses throughout the unincorporated areas of the County. Title 9 Division 15 (Geological Hazards) of the County Land Use Ordinance has established procedures and standards for development within earthquake fault zones. Per County regulations, the construction of buildings intended for human occupancy which are located across the trace of an active fault are prohibited. An exception exists when such buildings located near the fault or within a designated Special Studies Zone are demonstrated through a geotechnical analysis and report not to expose a person to undue hazard created by the construction.

County of Imperial General Plan

Relevant Imperial County General Plan policies related to geology, soils, and seismicity are provided below. Table 4.6-1 discusses the Project's consistency with the County's General Plan policies. While this EIR analyzes the Project's consistency with the General Plan pursuant to CEQA Guidelines Section 151250, the Imperial County Board of Supervisors ultimately determines consistency with the General Plan. The Imperial County General Plan does not specify any goals or objectives for paleontological resources. However, paleontological resources are a subcategory of cultural resources, which are analyzed in Section 4.4 of this EIR.

Table 4.6-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Seismic and Public Safety Element		
Land Use Planning and Public Safety		
Objective 1.1 – Ensure that data on geological hazards is incorporated into the land use review process, and future development process.	Consistent	The Geohazard Evaluation Report identified geologic hazards that may impact Project development. The report recommends conducting a geotechnical investigation to properly identify the soil conditions and to identify appropriate design considerations for construction of the Project. The Project site is not located within published geohazard areas other than high seismic ground motions, subsidence, lateral spreading, and liquefaction risks. The Project would be designed in accordance with the California Building Code; and appropriate mitigation measures (GEO-1, GEO-2) have been incorporated into this EIR to address potential geologic or seismic hazards. The Project is consistent with this objective.
Objective 1.4 – Require, where possessing the authority, that avoidable seismic risks be avoided; and that measures, commensurate with risks, be taken to reduce injury, loss of life, destruction of property, and disruption of service.	Consistent	See response for Objective 1.1.
Objective 1.7 – Require developers to provide information related to geologic and seismic hazards when siting a proposed project.	Consistent	See response for Objective 1.1.
Emergency Preparedness		
Objective 2.8 – Prevent and reduce death, injuries, property damage, and economic and social dislocation resulting from natural hazards including flooding, land subsidence, earthquakes, other geologic phenomena, levee or dam failure, urban and wildland fires and building collapse by appropriate planning and emergency measures.	Consistent	See response for Objective 1.1.
Seismic/Geologic Hazards		
Policy 4 – Ensure that no structure for human occupancy, other than one-story wood frame structures, shall be permitted within fifty feet of an active fault trace as designated on maps compiled by the State Geologist under the Alquist-Priolo Geologist Hazards Zone Act.	Consistent	The Project site is not located within 50 feet of an active fault. Therefore, the Project is consistent with this policy.

4.6.3 Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have impacts to geology and soils if it would:

Threshold a) **i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

iv) Landslides?

Threshold b) **Result in substantial soil erosion or the loss of topsoil?**

Threshold c) **Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

Threshold d) **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?**

Threshold e) **Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

Threshold f) **Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?**

Please refer to Section 6.1: Effects Found Not to Be Significant for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.6.4 Methodology

Geologic Investigation

The purpose of the report was to utilize existing geologic maps, reports, and databases to characterize the Project's surface conditions, subsurface conditions, and identify any geologic hazards that may impact Project development. The investigation included the following tasks:

- Field reconnaissance of the proposed project area;
- Review of geologic and seismic hazard maps;
- Review of aerial photographs;
- Review of groundwater data resources;
- Review of faulting, seismicity, and other sources of readily available published and unpublished geologic and geotechnical documents pertinent to the Project area; and

4.6.5 Compiled relevant geological and geotechnical data to present findings and conclusions in final preliminary report. Project Impact Analysis

Threshold a) **i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

Threshold a) **ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?**

As discussed above, no portion of the Project area is located within a fault zone. However, given the Project's location, which is within a seismically active region, the potential exists for ground shaking and surface rupture to occur.

The CBC requires that a site-specific ground motion hazard analysis be performed in accordance with American Society of Civil Engineers (ASCE) 7-16 Section 11.4.8 for structures. The parameters were determined and provided in the Geohazard Evaluation Report. General earthwork considerations pertaining to the Project include remedial grading/over excavation, excavatability, and fill materials. Design considerations would take into account expansion potential, collapse potential, and corrosivity. The Geohazard Evaluation Report notes that based on the preliminary site plans, no conditions on the Project site would preclude development of the Proposed Project, provided that Mitigation Measures GEO-1 and GEO-2 would be implemented. Therefore, the Proposed Project would be less than significant and is considered feasible from a geotechnical standpoint.

Threshold a) **iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?**

As discussed, based on the presence of shallow groundwater and the nature of subsurface soils, the potential for liquefaction is high. As such, site-specific liquefaction and dynamic settlement shall be evaluated with data obtained through the soils borings during the Project's geotechnical investigation

phase. Implementation of Mitigation Measures GEO-1 and GEO-2, in addition to compliance with the CBC, would result in less than significant impacts.

Threshold c) **Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

Threshold d) **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?**

Based on the Project's topography and relatively flat nature of the Project site, the risk of landslides is considered remote. However, unstable soils could result in subsidence, expansive soil, liquefaction and lateral spreading. Therefore, site-specific potential for these instabilities shall be evaluated with data from the soil borings during the geotechnical investigation phase. Implementation of Mitigation Measures GEO-1 and GEO-2, as well as the considerations provided in the Geohazard Evaluation Report, would ensure that construction of the Proposed Project would not result in significant impacts due to subsidence, expansive soil, liquefaction and lateral spreading.. Impacts would be less than significant with mitigation incorporated.

Threshold e) **Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

The Proposed Project would include a septic system that would be constructed to handle wastewater generated during Project operation. The Geohazard Evaluation Report notes that based on the anticipated soil types, Project site soils are expected to be moderately to severely corrosive to ferrous metals in contact. Therefore, the Proposed Project's soils shall be evaluated with data from the soil borings during the geotechnical investigation phase and will include consultation with a corrosion engineer to identify the appropriate protective measures based on the soils samples. Therefore, impacts would be less than significant with mitigation measures GEO-1 and GEO-2 incorporated.

Threshold f) **Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?**

Based on information in the Geohazards Evaluation Report, sensitive Late Pleistocene- to Holocene-age Lake Cahuilla Beds exist within the Proposed Project area, and subsurface ground-disturbing activities have the potential to impact sensitive paleontological resources. Therefore, Mitigation Measures PALEO-1 through PALEO-5 would be implemented to reduce impacts to a less than significant level.

4.6.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

Geology and Soils

The geographic scope for the cumulative geology and soils setting is the Imperial Valley portion of the Salton Trough Physiographic Province of Southern California. A list of large-scale proposed, approved, and reasonably foreseeable renewable energy projects is identified in Table 3.0-1: Related Projects of Section 3.0: Environmental Setting. None of these projects are adjacent to or in close proximity to the Project. In general, geology and soils impacts are site-specific and limited to the boundaries of each individual project rather than cumulative in nature.

As discussed above, the Project is susceptible to geologic hazards such as ground shaking, lateral spreading, liquefaction and expansive soils. Implementation of Mitigation Measures GEO-1 and GEO-2 would reduce the Project's exposure to damage resulting from these hazards to less than significant levels. Furthermore, ground shaking, liquefaction, subsidence, and lateral spreading impacts are site specific and would not combine with similar impacts of large scale proposed, approved, and reasonably foreseeable renewable energy projects identified in Table 3.0-1 in Section 3.0. The Project would have a less than cumulatively considerable contribution to ground shaking and expansive soil impacts and would result in a less than cumulatively considerable impact.

Paleontological Resources

The geographic scope of the cumulative setting for paleontological resources includes Lake Cahuilla, which encompasses the entire Imperial Valley. Due to the abundance of invertebrate and vertebrate fossils discovered in the Lake Cahuilla Beds, this formation has a high paleontological potential. Cumulative development occurring within the boundaries of Lake Cahuilla has the potential to destroy or otherwise impact paleontological resources. Excavation activities associated with the Project, in conjunction with other large-scale proposed, approved, and reasonably foreseeable renewable energy projects in the region, could contribute to the progressive loss of fossil remains. While the potential for paleontological resources beneath the Project area is unknown, this does not negate the presence of such resources given the underlying Lake Cahuilla Beds. If present, paleontological resources beneath the Project area, as well as within the boundaries of the cumulative projects listed in Table 3.0-1 in Section 3.0, could be impacted during construction.

A cumulative impact would occur if the Project, in combination with other cumulative projects, would damage or destroy paleontological resources. However, with the implementation of Mitigation Measures PALEO-1 through PALEO-5, the Project would have a less than cumulatively considerable contribution to impacts to paleontological resources during construction. Likewise, other projects in the cumulative setting would be required to comply with existing regulations and undergo CEQA review to ensure that any paleontological impacts are appropriately evaluated and, if necessary, mitigated on a project-by-project basis. Therefore, through compliance with regulatory requirements and standard conditions of approval, cumulative impacts to paleontological resources during construction would be considered less than cumulatively considerable.

4.6.7 Mitigation Measures

To minimize potential impacts to geology and soils, the following mitigation measures should be implemented:

GEO-1: A complete geotechnical engineering investigation shall be completed, with a Final Geotechnical Report to be prepared prior to submittal of a grading permit. The Final Geotechnical Report shall be prepared by a qualified consultant and be submitted to the County for review and approval. The investigation will include soil test borings; specific and detailed recommendations; soil and sediment analysis; detailed analysis and design standards; geotechnical design criteria; and detailed design recommendations.

GEO-2: All grading operations and construction shall be conducted in conformance with the recommendations included in the Geohazard Evaluation Report prepared on August 17, 2022, and Final Geotechnical Report on the Project site. Design, grading, and construction shall be performed in accordance with the recommendations of the project geotechnical consultant and corrosion engineer, subject to review by the County, prior to commencement of grading activities.

PALEO-1: The Applicant shall retain the services of a Qualified Paleontologist and require that all initial ground-disturbing work be monitored by someone trained in fossil identification in monitoring contexts. The Qualified Paleontologist shall prepare a Paleontological Resource Mitigation Plan to be implemented during ground-disturbing activity for the proposed Project. This program should outline the procedures for paleontological monitoring, including extent and duration; protocols for salvage and preparation of fossils; and the requirements for a final mitigation and monitoring report. The Qualified Paleontologist and a paleontological monitor shall be present at the Project construction-phase kickoff meeting.

PALEO-2: Prior to commencing construction activities and, thus, prior to any ground disturbance in the Proposed Project site, the Qualified Paleontologist and paleontological monitor shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the start of the Project construction work phase, for which the Applicant, or their designated Contractor, and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to paleontological resources and maintain environmental compliance, and it shall be performed periodically for new personnel coming on to the Project as needed.

PALEO-3: The Applicant, or their designated Contractor, shall provide the Qualified Paleontologist with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours will be provided to the consultant prior to the commencement of any initial ground-disturbing activities, such as vegetation grubbing or clearing, grading, trenching, or mass excavation.

As detailed in the schedule provided, a paleontological monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the Qualified Paleontologist, shall observe initial ground-disturbing activities and, as they proceed, make adjustments to the number of monitors as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The Qualified Paleontologist, paleontological monitor, and the Applicant, or their designated Contractor, and subcontractors shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance to provide appropriate oversight.

PALEO-4: If paleontological resources are discovered, construction shall be halted within 50 feet of any paleontological finds and shall not resume until the Qualified Paleontologist can determine the significance of the find and/or the find has been fully investigated, documented, and cleared.

PALEO-5: At the completion of all ground-disturbing activities, the Qualified Paleontologist shall prepare a Paleontological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all paleontological finds and shall provide follow-up reports of any finds to the preferred paleontological repository, as required.

4.6.8 Level of Significance After Mitigation

With the implementation of Mitigation Measures GEO-1, GEO-2, and PALEO-1 through PALEO-5, the Project would ensure potential impacts related to geology and soils would remain less than significant.

4.7 GREENHOUSE GAS EMISSIONS

This section provides information on potential impacts from the greenhouse gas (GHG) emissions generated either directly or indirectly by the Project. This section also addresses the potential of the Project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Information contained in this section is from the GHG modeling parameter and output prepared for the Project in the *Air Quality Technical Report for the Hell's Kitchen Geothermal Power Plant and Lithium Production Plant,* dated May 6, 2022, prepared by RCH Group (Appendix B). This analysis follows the Imperial County Air Pollution Control District (ICAPCD) recommendations for preparing a GHG emissions analysis under the California Environmental Quality Act (CEQA).

4.7.1 Background Information

Climate change is a recorded change in the Earth's average weather measured by variables such as wind patterns, storms, precipitation, and temperature. Global temperatures are moderated by naturally occurring atmospheric gases—GHGs—including water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Historical records show that global temperature changes have occurred naturally in the past, such as during previous ice ages. However, it has been shown that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere. The years 2016 and 2020 are tied for the Earth's warmest year since recordkeeping began in 1880, and 16 of the 17 warmest years in the instrumental record occurred since 2001. The average global temperature has risen more than 2.0 °F (1.2 °C) since 1880 (NASA 2021).

The global atmospheric concentration of CO_2 has increased from a preindustrial (roughly 1750) value of about 280 parts per million (ppm) to a monthly mean value of 414 ppm in December 2020 (NOAA 2021). According to the Global Greenhouse Emissions Data website (USEPA 2014), the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use.

According to Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018, prepared by USEPA, April 13, 2020, in 2018 total U.S. GHG emissions were 6,676.6 million metric tons of CO_2 equivalent ($MMTCO_2e$) emissions. Total U.S. emissions have increased by 3.7 percent between 1990 and 2018, which is down from a high of 15.2 percent above 1990 levels in 2007. Emissions increased by 2.9 percent or 188.4 $MMTCO_2e$ between 2017 and 2018. The recent increase in GHG emissions was largely driven by an increase in CO_2 emissions from fossil fuel combustion, the result of multiple factors, including greater heating and cooling needs due to a colder winter and hotter summer in 2018 compared to 2017.

According to the California Air Resources Board (CARB), the State of California created 425 $MMTCO_2e$ in 2018 (CARB 2020). The breakdown of California GHG emissions by sector consists of 39.9 percent from transportation, 21.0 percent from industrial, 14.8 percent from electricity generation, 7.7 percent from agriculture, 6.1 percent from residential buildings, and 3.7 percent from commercial buildings. In 2018, GHG emissions were 0.8 $MMTCO_2e$ higher than 2017 levels and are 6 $MMTCO_2e$ below the 2020 GHG limit of 431 $MMTCO_2e$ established by Assembly Bill (AB) 32.

4.7.2 Greenhouse Gases

GHGs are global pollutants and, therefore, are unlike criteria air pollutants such as ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants (TACs), which are pollutants of regional and local

concern (see Section 4.2: Air Quality, of this EIR). While pollutants with localized air quality effects have relatively short atmospheric lifetimes (generally on the order of a few days), GHGs have relatively long atmospheric lifetimes, ranging from one year to several thousand years. Long atmospheric lifetimes allow GHGs to disperse around the globe. Therefore, GHG effects are global, as opposed to the local and/or regional air quality effects of criteria air pollutant and TAC emissions.

California AB 32 defines greenhouse gases as any of the following compounds: CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code [HSC] Section 38505[g]). CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity. The following provides a description of each of the listed GHGs.

Water Vapor. Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher, leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere.

Carbon Dioxide. The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s, each of these activities has increased in scale and distribution. Prior to the industrial revolution, concentrations were fairly stable at 280 ppm. The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent compared to pre-industrial levels. Left unchecked, the IPCC projects that concentration of CO_2 in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least 2 °C or 3.6 °F (Appendix B of this Environmental Impact Report [EIR]).

Methane. CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs, such as CO_2, N_2O, and chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production. Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is also commonly used as an aerosol spray propellant.

Chlorofluorocarbons. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken, and in 1989 the European Community agreed to ban CFCs by 2000; subsequent treaties banned CFCs

worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons. HFCs are synthetic chemicals that are used as a substitute for CFCs and man-made for applications such as automobile air conditioners and refrigerants. Out of all the GHGs, HFCs are one of three groups with the highest global warming potential (GWP). The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were of HFC-23. The use of HFC-134a is increasing due to its utilization as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt.

Perfluorocarbons. PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest GWP of any gas evaluated; 23,900 times that of CO_2. Atmospheric concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols. Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

GHGs have varying GWP. The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310. Table 4.6-1 presents the GWP and atmospheric lifetimes of common GHGs.

Table 4.7-1: Global Warming Potentials, Atmospheric Lifetimes, and Abundances of GHGs

Gas	Atmospheric Lifetime (year)[a]	Global Warming Potential (100-Year Horizon)[b]	Atmospheric Abundance
Carbon dioxide (CO_2)	50–200	1	379 ppm
Methane (CH_4)	9–15	25	1,774 ppb
HFC-152a	1.4	124	3.9 ppt
Nitrous oxide (N_2O)	114	298	319 ppb
HFC-134a	14	1,430	35 ppt
PFC: tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
HFC-23	270	14,800	18 ppt
PFC: hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:
[a] Defined as the half-life of the gas.
[b] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2020.4.0),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppb = parts per billion; ppm = parts per million; ppt = parts per trillion,
Source: CAPCOA, 2021

Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses. The sources of GHG emissions, GWP, and atmospheric lifetime of GHGs are all important variables to be considered in the process of calculating CO_2e for discretionary land use projects that require a climate change analysis.

4.7.3 Regulatory Setting

The regulatory setting related to global climate change is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

Federal

The USEPA is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane and other non-CO_2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. USEPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act. The findings state:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF_6), into the atmosphere, threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding**: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings did not impose any requirements on industry or other entities; however, since 2009 the USEPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the USEPA. On September 13, 2013, the USEPA Administrator signed 40 CFR Part 60, which limits emissions from new sources to 1,100 pounds of CO_2 per megawatt hour (MWh) for fossil-fuel-fired utility boilers and 1,000 pounds of CO_2 per MWh for large natural gas-fired combustion units.

On August 3, 2015, the USEPA announced the Clean Power Plan—emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil-fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23, 2015). On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan due to a legal challenge from 29 states; and, in April 2017, the Supreme Court put the case on a 60-day hold and directed both sides to make arguments for whether it should keep the case on hold indefinitely or close it and remand the issue to the USEPA. On October 11, 2017, the USEPA issued a formal proposal to repeal the Clean Power Plan; however, the repeal of the Plan will require following the same rule-making system used to create regulations and will likely result in court challenges.

Corporate Average Fuel Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and USEPA jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

As such, fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, resulting in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type (USEPA 2011). In 2012, the USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA 2016).

State

CARB has the primary responsibility for implementing state policy to address global climate change; however, State regulations related to global climate change affect a variety of State agencies. CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both the federal and State air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid),

and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan (Scoping Plan) that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Scoping Plan had a range of GHG reduction actions that included direct regulations; alternative compliance mechanisms; monetary and nonmonetary incentives; voluntary actions; and market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan, which identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017, CARB adopted California's 2017 Climate Change Scoping Plan (CARB 2017), which provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. In addition, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

Executive Order N-79-20

On September 23, 2020, Governor Gavin Newsom issued Executive Order (EO) N-79-20, which requires all new passenger cars and trucks and commercial drayage trucks sold in California to be zero emissions by the year 2035 and all medium-heavy-duty vehicles (commercial trucks) sold in the state to be zero emissions by 2045 for all operations where feasible. EO N-79-20 also requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible, by 2035.

Title 24, Part 6, Energy Efficiency Standards

California Code of Regulations (CCR) Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions; and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

Title 24 standards are updated on a three-year schedule, and the most current 2019 standards went into effect on January 1, 2020. The Title 24 standards now require that the average new home built in California use zero-net energy and nonresidential buildings use about 30 percent less energy than the 2016 standards due mainly to lighting upgrades. The 2019 standards also encourage the use of battery storage and heat pump water heaters and require the more widespread use of LED lighting as well as improve a building's thermal envelope through high performance attics, walls, and windows. The 2019 standards also require improvements to ventilation systems by requiring highly efficient air filters to trap hazardous air particulates as well as improvements to kitchen ventilation systems.

Title 24, Part 11, California Green Building Standards

CCR Title 24, Part 11: California Green Building Standards (Title 24) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The most current

version is the 2019 CALGreen Code, which became effective on January 1, 2020, and replaced the 2016 CALGreen Code.

The CALGreen Code contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options that allow the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking; carpool, vanpool, and electric vehicle spaces; light and glare reduction; grading and paving; energy-efficient appliances; renewable energy; graywater systems; water-efficient plumbing fixtures; recycling and recycled materials; pollutant controls (including moisture control and indoor air quality); acoustical controls; storm water management; building design; insulation; flooring; and framing among others. Implementation of the CALGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2019 CALGreen Code over the prior 2016 CALGreen Code include an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provide design requirements for buildings in tsunami zones, increase the minimum efficiency reporting value for air filters from 8 to 13, increase electric vehicle charging requirements in parking areas, and set minimum requirements for use of shade trees.

Renewable Portfolio Standards

The State of California requires that utility providers provide renewable energy to their customers. Senate Bill (SB) 100 was adopted September 2018 and requires that by December 1, 2045, 100 percent of retail sales of electricity be generated from renewable or zero-carbon emission sources of electricity. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2. SB 100 codified the interim renewable energy thresholds from the prior Bills of: 33 percent by 2020; 40 percent by December 31, 2024; 45 percent by December 31, 2027; and 50 percent by December 31, 2030.

Executive Order B-30-15, Senate Bill 32 & Assembly Bill 197 (Statewide Year 2030 GHG Targets)

California EO B-30-15 (April 29, 2015) set an interim Statewide emission target to reduce GHG emissions to 40 percent below 1990 levels by 2030 and directed State agencies with jurisdiction over GHG emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels. Specifically, the EO directed CARB to update the Scoping Plan to express this 2030 target in metric tons. Assembly Bill 197 (AB 197) (September 8, 2016) and SB 32 (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in EO B-30-15. AB 197 also requires additional GHG emissions reporting to CARB from stationary sources and requires CARB to provide sources of GHG emissions on its website that is broken down to subcounty levels. AB 197 requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15 and Senate Bill X7-7, Water Conservation Measures

The Water Conservation Act of 2009 set an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. The State was required to make incremental progress toward this goal by reducing per capita water use by at least 10 percent by December 31, 2015. This is an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.

The Department of Water Resources adopted a regulation on February 16, 2011, that set forth criteria and methods for exclusion of industrial process water from the calculation of gross water use for purposes of urban water management planning. The regulation applied to all urban retail water suppliers required to submit an Urban Water Management Plan, as set forth in the Water Code, Division 6, Part 2.6, Sections 10617 and 10620.

On April 1, 2015, Governor Jerry Brown issued Executive Order B-29-15, which directed the State Water Resources Control Board (SWRCB) to impose restrictions to achieve a Statewide 25 percent reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought-tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The ordinance also required installation of more efficient irrigation systems, promoted usage of greywater and on-site stormwater capture, limited the turf planted in new residential landscapes to 25 percent of the total area. and restricted turf from being planted in median strips or in parkways unless the parkway is next to a parking strip where a flat surface is required to enter and exit vehicles. EO B-29-15 and SB X7-7 would reduce GHG emissions associated with the energy used to transport and filter water.

Senate Bill 97 and Amendments to the California Environmental Quality Act Guidelines

SB 97 directed the California Natural Resources Agency (CNRA) to adopt amendments to the CEQA Guidelines that require evaluation of GHG emissions or the effects of GHG emissions by January 1, 2010. The CNRA has done so, and the amendments to the CEQA Guidelines, in a new Section 15064.4, entitled Determining the Significance of Impacts from Greenhouse Gas Emissions, provide that:

a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project.

b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment.

    1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

    2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

    3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public

> agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions.

The amendments also add a new Section 15126.4(c), Mitigation Measures Related to Greenhouse Gas Emissions. Generally, this State CEQA Guidelines section requires lead agencies to consider feasible means—supported by substantial evidence and subject to monitoring or reporting—of mitigating the significant effects of GHG emissions. Potential measures to mitigate the significant effects of GHG emissions are identified, including those outlined in Appendix F, Energy Conservation, of the State CEQA Guidelines.

Senate Bill 375

SB 375 was adopted September 2008 to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organization (MPO) within the state. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years; in June 2017, CARB released its *Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Target*, which provided recommended GHG emissions reduction targets for the Southern California Association of Governments (SCAG) of 8 percent by 2020 and 21 percent by 2035.

The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted by SCAG April 7, 2016, provides a 2020 GHG emission reduction target of 8 percent and a 2035 GHG emission reduction target of 18 percent. SCAG will need to develop additional strategies in its next revision of the RTP/SCS in order to meet CARB's new 21-percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS. However, new provisions of CEQA incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS and categorized as "transit priority projects."

Assembly Bill 32, The California Global Warming Solutions Act of 2006

The California Legislature adopted the public policy position that global warming is "a serious threat to the economic well-being, public health, natural resources, and the environment of California" (HSC Section 38501). Further, the State Legislature has determined the following:

> [T]he potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra Nevada snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health-related problems.

The State Legislature also states:

> Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the State (California Health and Safety Code, Section 38501).

These public policy statements became law with the enactment of AB 32, the California Global Warming Solutions Act of 2006, signed by Governor Arnold Schwarzenegger in September 2006. AB 32 is now codified as HSC Sections 38500 through 38599.

AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was to be accomplished through an enforceable statewide cap on GHG emissions to be phased in starting in 2012. AB 32 directed CARB to establish this statewide cap based on 1990 GHG emissions levels, to disclose how it arrived at the cap, to institute a schedule to meet the emissions cap, and to develop tracking, reporting, and enforcement mechanisms. Emissions reductions under AB 32 were to include carbon sequestration projects and best management practices that are technologically feasible and cost effective. As of the date of this Draft EIR, CARB has not promulgated GHG emissions or reporting standards that are directly applicable to the Project.

Executive Order S-3-05

On June 1, 2005, Governor Schwarzenegger signed EO S-3-05, which proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce snowpack in the Sierra Nevada Mountains, could further exacerbate California's air quality problems, and could potentially cause a rise in sea levels. In an effort to avoid or reduce the impacts of climate change, EO S-3-05 called for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. It should be noted that the 80 percent below 1990 levels by 2050 is currently an aspirational goal by EO S-3-05 but has not yet been codified into law.

Assembly Bill 1493, Clean Car Standards

AB 1493, adopted September 2002, also known as Pavley I, requires the development and adoption of regulations to achieve the maximum feasible reduction of GHGs emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State. Although setting emissions standards on automobiles is solely the responsibility of the USEPA, the federal Clean Air Act allows California to set State-specific emission standards on automobiles if the State first obtains a waiver from the USEPA. The USEPA granted California that waiver on July 1, 2009. The emission standards became increasingly more stringent through the 2016 model year. California also committed to further strengthening these standards beginning in 2017 to obtain a 45-percent GHG reduction from 2020 model year vehicles (CARB 2009).

The second set of regulations, Pavley II, was developed in 2010 and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as LEV III (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the USEPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks, and sport

utility vehicles, and these GHG emissions standards are currently being implemented nationwide. However, USEPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025; and, based on the findings of this midterm evaluation, the USEPA has proposed to amend the CAFE and GHG emissions standards for light vehicles for model years 2021 through 2026. The USEPA's proposed amendments do not include any extension of the legal waiver granted to California by the 1970 Clean Air Act, which has allowed the State to set tighter standards for vehicle pipe emissions than the USEPA standards.

Local – Imperial County Air Pollution Control District

The ICAPCD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. ICAPCD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. The ICAPCD has not established formal quantitative or qualitative GHG emissions thresholds through a public rulemaking process. However, the ICAPCD has adopted the federal Prevention of Significant Deterioration (PSD) and Title V GHG air permitting requirements by reference for stationary sources in Regulation IX in Rules 900 and 903, which are described below.

ICAPCD Rule 900

ICAPCD Rule 900 provides procedures for issuing permits to operate for industrial projects that are subject to Title V of the federal Clean Air Act Amendments of 1990 (Major Sources) of emissions, which is defined as a source that exceeds 100 tons per year of any regulated pollutant, including GHG emissions.

ICAPCD Rule 903

ICAPCD Rule 903 applies to any stationary source that would have the potential to emit hazardous air pollutants (HAPs). Rule 903 provides a de minimis emissions level of 20,000 $MTCO_2e$ per year, where if a stationary source produces less emissions than the de minimis emissions levels, the source is exempt from the Rule 903 recordkeeping and reporting requirements.

Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have greenhouse gas impacts if it would:

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

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

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. Quantify greenhouse gas emissions resulting from a project; and/or
2. Rely on a qualitative analysis or performance-based standards.

A lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

4.7.4 Methodology

The GHG emissions related to construction and annual operations for both the Proposed Project and operational scenario were calculated through use of the CalEEMod Version 2020.4.0. The GHG emissions modeling and CalEEMod printouts are provided in the GHG Analysis (Appendix B).

4.7.5 Project Impact Analysis

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

The Proposed Project may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Implementation of the Proposed Project is anticipated to generate GHG emissions from construction and operational activities, which have been analyzed separately below.

Project-Related Construction Emissions

Construction activities for the Proposed Project were calculated to occur over a three-year time frame that would occur over portions of the years 2022, 2023, and 2024. Although the Project has missed the start of the original construction commencement date, this analysis includes a worst-case scenario given that technologies and emissions are anticipated with future years. The CalEEMod model calculated that grading and construction of the Project will produce approximately 10,307 metric tons of CO_2e ($MTCO_2e$). It should also be noted that a direct comparison of construction GHG emissions with long-term thresholds would not be appropriate since construction emissions are short term in nature and would cease upon completion of construction. Other air districts, including the SCAQMD, recommend that GHG emissions from construction activities be amortized over 20 years when construction emissions are compared to operational-related GHG emissions thresholds. Given this, the annual construction emission for the

Proposed Project is 515 $MTCO_2e$ per year, as shown in Table 4.7-2. It should be noted that no thresholds of significance are provided for construction-related GHG emissions; however, the 20-year amortized construction-related GHG emissions have been accounted for in the operational emissions analysis discussed below.

Table 4.7-2: Proposed Project Construction-Related GHG Emissions

Construction Year	GHG Emissions (Metric Tons/Year)
	CO_2e
2022	868
2023	6,940
2024	2,499
Total	**10,307**
Yearly Average Construction Emissions (Averaged over 20 years)	**515**

Source: RCH Group, 2022 (see Appendix B)

Project-Related Operational Emissions

GHG emissions created from the operation of the Proposed Project are shown in Table 4.7-3.

Table 4.7-3: Proposed Project Operations-Related GHG Emissions

Emissions Sources	GHG Emissions (Metric Tons/Year)
	CO_2e
Hell's Kitchen PowerCo1	
Employee vehicles	202
Haul trucks	5
Vendor vehicles	7
Onsite equipment	66
Area sources	<1
Energy sources (avoided)	-37,103
Cooling towers	—
Standby/Black start diesel generator testing	106
Standby diesel generator testing	134
Standby fire pumps testing	13
Standby/black start diesel generator operation	1,270
Subtotal Hell's Kitchen PowerCo 1	**-35,300**
Hell's Kitchen LithiumCo1	
Employee Vehicles	826

Emissions Sources	GHG Emissions (Metric Tons/Year)
	CO_2e
Haul Trucks	170
Onsite Equipment	63
Area Sources	<1
Cooling Towers	—
Standby diesel generator testing	28
Rock muffler	—
Material transfer and packaging	—
Subtotal Hell's Kitchen LithiumCo 1	**24,865**
Grand total	**-10,435**

Source: RCH Group, 2022 (see Appendix B)

The GHG emissions shown in Table 4.7-3 are based on the proposed design detailed in the Project Description as well as IID's adherence to the State's Renewable Portfolio Standards (RPS) that require 60 percent of electricity provided by IID to be from zero-carbon emissions sources by the year 2030. Table 4.7-3 shows that the operational GHG emissions do not exceed either the USEPA's 25,000 $MTCO_2e$ emissions threshold or ICAPCD Rule 903 – 20,000 $MTCO_2e$ emissions threshold, where exceedance of either threshold would require the Project to perform additional GHG emissions recordkeeping and reporting. Therefore, the Project would offset greenhouse gas emissions. and a less than significant impact would occur.

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

The Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As detailed above, neither the ICAPCD nor the County of Imperial has adopted a climate action plan; as such, the only applicable plan for reducing GHGs is the CARB's 2017 Climate Change Scoping Plan, which is discussed below.

Consistency with CARB's 2017 Scoping Plan

The Project's consistency with the list of feasible mitigation measures for individual projects provided in the CARB's 2017 Scoping Plan is shown in Table 4.7-4.

Table 4.7-4: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Construction	
Enforce idling time restrictions for construction vehicles	**Consistent.** The Project Applicant will require that all off-road equipment utilized on the Project site be registered with CARB and adhere to CARB's idling limitation rules.
Require construction vehicles to operate with the highest tier engines commercially available	**Consistent.** The Project Applicant has committed to Project Design Features (PDFs) that require all off-road

Table 4.7-4: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
	equipment greater than 50 horsepower to utilize Tier 4 equipment, when commercially available.
Divert and recycle construction and demolition waste, and use locally sourced building materials with a high recycled material content to the greatest extent feasible.	**Consistent.** The Project Applicant will require all contractors to adhere to the Title 24 Part 11 requirements that require diversion of a minimum of 65 percent of construction waste from landfills.
Minimize tree removal, and mitigate indirect GHG emissions increases that occur due to vegetation removal, loss of sequestration, and soil disturbance.	**Consistent.** Various vegetation communities are present on the Project site; however, implementation of the Project would result in landscaping that would minimize vegetation loss to the Project site.
Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators.	**Consistent.** The Project site currently does not have electrical service, but the Project would create a new power source to power the mineral extraction activities. Any excess power would be sold off.
Increase use of electric and renewable fuel powered construction equipment and require renewable diesel fuel where commercially available.	**Consistent.** The Project Applicant has committed to PDFs that encourage the use of alternative-fueled construction equipment.
Require diesel equipment fleets to be lower emitting than any current emission standard.	**Consistent.** The Project Applicant has committed to PDFs that encourage the use of alternative-fueled, lower emitting construction equipment.
Operation	
Comply with lead agency's standards for mitigating transportation impacts under SB 743	**Consistent.** The Project Applicant has committed to PDFs that require charging stations for electric vehicles and providing onsite eating opportunities, which conform with the goals of SB 743. Additionally, the Project would utilize electric trucks, when appropriately available, for material movement for the transportation of mining materials.
Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals.	**Consistent.** The Proposed Project will be required to meet the Title 24 Part 11 requirements with regard to onsite electric vehicle parking and charging stations.
Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate.	**Consistent.** The Project Applicant will review the parking provided to determine if reducing the number of parking spaces provided is possible.
Dedicate on-site parking for shared vehicles.	**Consistent.** The Proposed Project will be required to meet the Title 24 Part 11 requirements with regard to dedicated spaces for carpools and clean air vehicles.
Provide adequate, safe, convenient, and secure on-site bicycle parking storage in multi-family residential projects and in non-residential projects.	**Consistent.** Since there is very limited housing and no commercial uses located within bike riding distance of the Project site, the Project Applicant has committed to PDFs that require providing charging stations for electric vehicles.
Provide on- and off-site safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable bicycle and/or pedestrian master plan.	**Inconsistent.** The Proposed Project will not include pedestrian and bicycle pathways on site that connect to the offsite roads, due to the distance from the nearest community centers located in Niland.

Table 4.7-4: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Require on-site renewable energy generation.	**Consistent.** The Proposed Project will be designed to meet Title 24 part 6 requirements that any industrial structure constructed be designed to be solar ready, which requires that all roofs be designed to structurally support solar PV panels as well as the installation of conduit from the main panel to the roof for future PV connections. However, it should be noted that the Project would generate renewable energy that would offset Project operations.
Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces for renovations over a certain size developments.	**Not applicable.** The Proposed Project would not include any wood-burning fireplaces.
Require cool roofs and "cool parking" that promotes cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing.	**Consistent.** The Proposed Project will be designed to meet the CALGreen building requirements that require installation of cool roofs and cool asphalt for parking.
Require solar-ready roofs	**Consistent.** The Proposed Project will be designed to meet the CALGreen building requirements that require all new nonresidential structures to be designed with solar-ready roofs.
Require organic collection in new developments	**Consistent.** The Project Applicant will not include any landscaping as part of the Project, and no organic waste collection would be provided as part of the Project.
Require low-water landscaping in new developments. Require water efficient landscape maintenance to conserve water and reduce landscape waste.	**Consistent.** No landscaping is proposed as part of the Project; thus, no increase demand for water for landscaping.
Achieve Zero Net Energy performance building standards prior to dates required by the Energy Code.	**Consistent.** All structures would be designed to exceed Title 24 Part 6 building energy efficiency standards. Additionally, the Project would generate renewable energy in excess of what the Project operations would require.
Encourage new construction including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program, LEED rating system, or Living Building Challenge.	**Not applicable.** The Project would not include any municipal buildings.
Require the design of bike lanes to connect to the regional bicycle network.	**Inconsistent.** The Proposed Project would not include onsite bikeways that connect to the offsite roads. No bikeways are located adjacent to the site, with the nearest Class II bikeway on Highway 111 and located 3.5 miles east of the Project site.
Expand urban forestry and green infrastructure in new land development.	**Consistent.** 10% of the developed Project site will be landscaped per County requirements..
Require preferential parking spaces for park and ride to incentive carpooling.	**Consistent.** The Proposed Project would be designed to meet the Title 24 Part 11 requirements that require dedicated spaces for carpools and clean air vehicles.

Table 4.7-4: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Require a transportation management plan for specific plans which establishes a numeric target for non-SOV travel and overall vehicle-miles traveled (VMT).	**Consistent.** A VMT analysis was completed for the Project, which found that the Project VMT impacts were less than significant.
Develop a rideshare program targeting commuters to major employment centers.	**Not Applicable.** The Proposed Project would not be considered a major employment center.
Require the design of bus stops/shelters/express lanes in new development to promote the usage of mass-transit.	**Not Applicable.** Currently no bus service is provided in the Project vicinity, nor is any bus service planned for the Project vicinity.
Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available.	**Not Applicable.** No residential backyards would be a part of the Proposed Project.
Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment	**Not Applicable.** No residential homes would be a part of the Proposed Project.
Require the design of the electric outlets and/or wiring in new residential unit garages to promote electric vehicle usage.	**Not Applicable.** No residential homes would be a part of the Proposed Project.
Require electric vehicle charging station and signage for non-residential developments.	**Consistent.** The Proposed Project will be designed to meet the Title 24 Part 11 requirements that require the installation electric vehicle charging stations.
Provide electric outlets to promote the use of electric landscape equipment to the extent feasible on parks and public/quasi-public lands.	**Consistent.** The Proposed Project will be designed to meet the CALGreen building requirements that require installation of outdoor outlets on nonresidential structures.
Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering.	**Not Applicable.** No residential homes would be a part of the Proposed Project.
Require the installation of energy conservation appliances such as on-demand tank-less water heaters and whole-house fans.	**Not Applicable.** These energy conservation appliances are for residential uses and would not operate efficiently in industrial buildings.
Require each residential and commercial building equip buildings with energy efficient AC units and heating systems with programmable thermostats/timers.	**Consistent.** The Proposed Project will be designed to meet the CALGreen building requirements that require installation of programmable thermostats.
Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use.	**Not Applicable.** The Proposed Project consists of an industrial project, which is neither a residential nor a commercial use.
Require each residential and commercial building to utilize low flow water fixtures such as low flow toilets and faucets.	**Consistent.** The Proposed Project will be designed to meet the CALGreen building requirements that require installation of low-flow water fixtures.
Require the use of energy-efficient lighting for all street, parking, and area lighting	**Consistent.** The Proposed Project will be designed to meet the CALGreen building requirements that require installation of energy-efficient lighting.
Require the landscaping design for parking lots to utilize tree cover and compost/mulch.	**Consistent.** All parking lots will be designed to meet County standards and will include landscaping.

Table 4.7-4: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Incorporate water retention in the design of parking lots and landscaping, including using compost/mulch.	**Consistent.** All parking lots and other improvements included in the Proposed Project will be required to meet the water-retention requirements detailed in the WQMP.
Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions.	**Not Applicable.** The GHG emissions calculations for the Proposed Project that are provided above did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.
Require the project to purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district.	**Not Applicable.** The GHG emissions calculations for the Proposed Project that are provided above did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.
Encourage the applicant to consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its off-site mitigation measure for GHG emissions and that will facilitate the State's efforts in achieving the GHG emission reduction goal.	**Not Applicable.** The GHG emissions calculations for the Proposed Project that are provided above did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.

Source: CARB 2017
Notes: CAPCOA: California Air Pollution Control Officers Association; GHG: greenhouse gas; LEED: Leadership in Energy and Environmental Design; PV: photovoltaic; VMT: Vehicle Miles Traveled; WQMP: Water Quality Management Plan

As shown in Table 4.7-4, with implementation of the Project Design Features committed to by the Project applicant and Statewide regulatory requirements including the CALGreen building standards, the Proposed Project would be consistent with all feasible mitigation measure for individual projects provided in the CARB's 2017 Scoping Plan. Therefore, implementation of the Proposed Project would not conflict with any applicable plan that reduces GHG emissions. Impacts would be less than significant.

4.7.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

The California Air Pollution Control Officers Association's (CAPCOA's) *CEQA and Climate Change Report* states, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective" (CAPCOA 2008). Because the magnitude of global GHG emissions is extremely large compared with the emissions of typical development projects, it is accepted as very unlikely that any individual development project would have GHG emissions of a magnitude to directly impact global climate change. As detailed above, the GHG emissions created from the Proposed

Project would not exceed either the USEPA's 25,000-$MTCO_2e$ emissions threshold or ICAPCD Rule 903 – 20,000 $MTCO_2e$ emissions threshold and would be consistent with all applicable plans for reducing GHG emissions. Additionally, the Project would provide a net benefit and help reduce overall GHG emissions. Cumulative impacts would be less than significant.

4.7.7 Mitigation Measures

No mitigation measures would be required.

4.7.8 Level of Significance After Mitigation

Impacts related to GHGs would be less than significant. No mitigation measures would be required.

4.8 HAZARDS AND HAZARDOUS MATERIALS

This section discusses the potential hazards and hazardous materials impacts that would occur in association with implementation of the Proposed Project. The discussion focuses on hazardous materials and hazards requiring remediation or mechanisms to prevent accidental release. Measures are identified to reduce or avoid adverse impacts anticipated from construction, operation, and decommissioning of the Project.

Information contained in this section is summarized from the *Phase I ESA Report Proposed CTR Development Area NWC Davis Road and Alcott Road Calipatria, California* (Phase 1 ESA [Environmental Site Assessment]), prepared by GS Lyon Consultants, Inc. (GS Lyon) in August 2021, included as Appendix G of this EIR. Phase I ESAs are location dependent and describe the existing potential hazards on a site. Therefore, the contents of the Phase I ESA are applicable to the Proposed Project.

4.8.1 Existing Environmental Setting

Regional Setting

The Project is located in the unincorporated portion of Imperial County (County), which is in the southeasternmost portion of the State of California. The County encompasses an approximately 4,597-square-mile area and is bordered by Riverside County to the north, the State of Arizona on the east, Mexico to the south, and San Diego County to the west.

According to the County's General Plan, contributors to the potential for a hazardous material accident to occur in Imperial County include the agricultural economy, proliferation of fuel tanks and transmission facilities, the intricate canal system, and the confluence of major surface arteries and rail systems. The potential for an accident is increased in regions near roadways that are frequently used for transporting hazardous material and in regions with agricultural or industrial facilities that use, store, handle, or dispose of hazardous material (County 1997a).

Project Site

The Project site is located 6 miles northwest of Calipatria. The Project site is located on Assessor's Parcels 020-010-012 and 020-010-013, on the west side of David Road between Pound and Noffsinger Roads. The properties, approximately 640 acres in total, consists of vacant land, with the Hell's Kitchen geothermal well pad located on the eastern boundary of the Project site at the northwest corner of Davis and Alcott Roads. The generation interconnect (gen-tie) route transits three parcels along the east side of Davis Road and the north side of McDonald Road.

Review of aerial photographs from 1937 and 1949 show the Project site as being vacant land with natural washes and earthen canal laterals, as well as field roads at boundaries and across the middle of the site. The 1976, 1984, 1992, 1996, 2002, 2006, 2009, 2012 and 2016 aerial photographs are similar, with the Salton Sea shoreline moving in and out within the subject property, creating wetlands and inland ponds during years that the shoreline receded. Adjacent and nearby properties show previous agricultural fields and an abandoned warm-water spa and dry-ice plant southeast of the Project site at the southeast corner of Davis Road and Pound Road. Old carbon dioxide wells are visible in these photographs. The wells have been abandoned and are visible currently as mud pots, pools, and dried craters. A former State 2-14 geothermal test facility was located about 230 feet west of Davis Road (Appendix G).

Federal and State Database Review

Various hazardous materials sites were reviewed as part of the Phase I ESA to determine whether any government-regulated properties with known environmental conditions and potential environmental concerns are located near the Project site.

The primary reason for defining potentially hazardous sites is to protect health and safety and to minimize the public's exposure to hazardous materials during Project construction and waste handling. Exposure can occur during normal use, handling, storage, transportation, and disposal of hazardous materials. Exposure may also occur due to hazardous compounds existing in the environment, such as fuels in underground storage tanks, pipelines, or areas where chemicals have leaked into the soil or groundwater. If encountered, contaminated soil may qualify as hazardous waste, thus requiring handling and disposal according to local, State, and federal regulations. EnviroStor, which is administered by the Department of Toxic Substances Control (DTSC), provides existing information on permits and corrective action at hazardous waste facilities, as well as site cleanup projects. GeoTracker is a geographic information system (GIS) maintained by the California State Water Resources Control Board (SWRCB) that provides online access to environmental data. GeoTracker tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Site information from the Spills, Leaks, Investigations, and Cleanups (SLIC) Program is also included in GeoTracker. A review of EnviroStor and GeoTracker found no reported cases or risk sites within one-half mile of the Project.

The U.S. Environmental Protection Agency's (USEPA) Superfund Sites National Priorities List provides geographic information, such as locations of federal Superfund sites and other hazardous materials sites. Review of the maps indicate that no designated Superfund or hazardous material sites are within one mile of the Project site (USEPA 2023).

According to the California Department of Conservation Geologic Energy Management Division's (CalGEM) Well Finder database, no oil or gas wells are located on the Project site.

The California Environmental Protection Agency (CalEPA) Regulated Site Portal is a website that combines data about environmentally regulated sites and facilities in California into a single, searchable database and interactive map. The portal was created to provide a more holistic view of regulated activities statewide. The portal combines information from the following databases: Division of Occupational Safety and Health (DOSH), better known as Cal/OSHA; California Environmental Reporting System; California Integrated Water Quality System; USEPA's Air Emission Inventory System; EnviroStor; GeoTracker; Stormwater Multiple Application and Report Tracking System; Solid Waste Information System; and Toxics Release Inventory. Results of the query show one risk site listed (Hell's Kitchen Exploratory Well 1 for a Storm Water Application and Report Tracking System); and two risk sites are listed for Hudson Ranch 1, the location where the gen-tie line ends.

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. CalEPA and other State agencies set the standards for their programs while local governments implement the standards—these local implementing agencies are called Certified Unified Program Agencies (CUPA). CUPA records were reached and indicated that records are filed per address; with no known address associated with the subject property, no records were found.

Sanborn Fire Insurance Maps are large-scale maps depicting the commercial, industrial, and residential sections of various cities across the United States. Given that the primary use of the fire insurance maps, which were published in the 19th and 20th centuries, was to assess the buildings that were being insured, the existence and location of fuel storage tanks, flammable or other potentially toxic substances, and the nature of businesses are often shown on these maps. Due to the rural, undeveloped nature of the Project area for the years the insurance maps were available, no maps are available for the subject property.

Sensitive Receptors

Sensitive receptors that may be susceptible to health and safety impacts resulting from the construction and operation of renewable energy facilities generally include on-site workers and the young and elderly sectors of the population.

The Town of Niland is approximately 3.6 miles east of the Project site. The nearest residence is approximately 0.5 mile east of the Project site, along Pound Road. The closest school is the Grace Smith Elementary School, which is located approximately 3.6 miles to the east.

Phase I ESA Report

As previously mentioned, a Phase I ESA for the HR1 Facility was prepared (Appendix G).The footprint of the existing CTR facility, located at 409 West McDonald Road, encompasses some of the Project site and the land directly adjacent to the Project site, as it relates to the potential gen-tie alignment.

The purpose of the Phase I ESA is to identify, to the extent feasible, recognized environmental conditions (RECs) associated with past and present activities on the subject property or in the immediate subject property vicinity in general conformance to ASTM Standard E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, that may affect future uses of the subject property. The term "REC" includes hazardous substances and petroleum products even under conditions that might be in compliance with laws. The term is not intended to include de minimis conditions, which refers to a condition that generally does not present a threat to human health and/or the environment and that generally would not be subject to an enforcement action if brought to the attention of appropriate governmental agencies (Appendix G).

The Phase I ESA included results of a site reconnaissance to identify current conditions of the Project site parcels and adjoining properties; a review of various readily available federal, State, and local government agency records; and review of available historical site and site vicinity information.

Site Observations

Hazardous Substances and Petroleum Products

No operations that use, treat, store, dispose of, or generate hazardous materials or petroleum products were observed on the subject property.

Storage Tanks

No obvious visual evidence indicating the current presence of underground storage tanks (i.e., vent pipes, fill ports, etc.) was noted.

No obvious visual evidence indicating the historical presence of aboveground storage tanks (i.e., secondary containments, concrete saddles, etc.) was observed.

Odors

No obvious strong, pungent, or noxious odors were noted during the site reconnaissance.

Pools of Liquid

The only pools of liquid observed during the site reconnaissance were the wetlands/ponds and mud pots.

Drums and Containers

No observation of drums or storage containers on the subject property.

Unidentified Substance Containers

No observed open or damaged containers containing unidentified substances at the subject property.

Suspect Polychlorinated Biphenyl (PCB) Containing Equipment

No potential PCB-containing equipment, such as electrical transformers, capacitors, and hydraulic equipment, were observed during the site reconnaissance on the subject property or immediate vicinity.

Interior Observations

The subject property is vacant and has no structures. No heating/cooling conduits, stains or corrosion, or drains and sumps were found.

Exterior Observations

Pits, Ponds, and Lagoons

The subject property does not contain any man-made fire-ponds, lagoons or pits. Geological features such as a mud pot associated with the geothermal activity of the region was observed in the southeast corner of the subject property. Stained Soils or Pavement

No evidence of significantly stained soil or pavement was noted on the subject property.

Stressed Vegetation

No evidence of stressed vegetation attributed to potential contamination was noted on the subject property other than areas that had salt crust along the old Salton Sea shoreline along the east side of the subject property.

Solid Waste

No dumpsters or solid waste containers exist on the subject property. There were small quantities of shoreline debris along the west side of Davis Road within the north side of the subject property.

Wastewater

No wastewater is found on the subject property other than stormwater that flows into the wetlands/ponds on the west side of the parcels.

Wells

No evidence of wells (dry wells, drinking water, observation wells, groundwater monitoring wells, irrigation wells) was noted on the subject property. Abandoned carbon dioxide wells and geothermal exploratory wells were noted on the subject property and gen-tie route.

Septic Systems

Septic systems may be present on the subject property (gen-tie route) at the old dry-ice facility. The presence of a septic system associated with the dry-ice and spa buildings is anticipated, but their usage for residential-commercial operations only requires no further investigation.

Non-Scope Issues

Asbestos-Containing Building Materials

There is a potential for asbestos-containing materials existing at the north 10-acre parcel of the gen-tie route, where the abandoned dry-ice facility and warm-water spa are, due to the age of the building.

The Phase I ESA did not include interior reconnaissance of the abandoned buildings; however, if building demolition is required for site redevelopment, an asbestos inspection is recommended.

Lead-Based Paint

The potential exists for lead-based paint at the north end of the gen-tie route where the abandoned warm-water spa and dry-ice structures are located.

The Phase I ESA did not include evaluation for lead-based paints within the abandoned buildings; however, if building demolition is proposed as part of the redevelopment of the property construction debris should be analyzed and discarded appropriately based on the results. No further investigation is recommended.

Radon

Radon gas is not believed to present a hazard on site because the property is located in Zone 3 of the EPA Radon Zone Map. This zone is characterized on average as having less than 2 picocuries per liter in basement air. Proposed redevelopment is also projected to have slab on grade infrastructure and therefore there is no potential for vapor intrusion. No further action is warranted. *Wetlands*

Wetlands are located within one mile of the subject property and consist of duck habitat ponds (for recreational hunting) and the Salton Sea, a migratory bird flyaway. Refer to Section 4.3: Biological Resources for further discussion.

Agricultural Use

Based on review of environmental records, historical documents, and property conditions, no agricultural uses occur on the Project site, but it contains agricultural tailwater runoff from the IID's drains that flow into the Salton Sea and the subject property. Pesticides may be present in near-surface soils in limited concentrations. The concentrations of these pesticides found on other Imperial Valley agricultural sites are typically less than 25% of the current regulatory threshold limits and, at those levels, are not considered a significant environmental hazard.

4.8.2 Regulatory Setting

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) grants authority to the USEPA to control hazardous waste from start to finish. This covers the production, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of nonhazardous solid waste. The 1986 amendments to the RCRA enabled the USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Hazardous Materials Transport Regulations

The U.S. Department of Transportation (USDOT) regulates transportation of hazardous materials between states. The USDOT Federal Railroad Administration enforces the hazardous materials regulations, which are promulgated by the Pipeline and Hazardous Materials Safety Administration for rail transportation. These regulations include requirements that railroads and other transporters of hazardous materials, as well as shippers, have and adhere to security plans and also train employees involved in offering, accepting, or transporting hazardous materials on both safety and security matters. Additionally, the Federal Hazardous Materials Transportation Law is enforced by the USDOT's Federal Highway Administration with the purpose of protecting risks to life, property, and the environment resulting from the transportation of hazardous materials.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) is a program created to implement the Clean Water Act. The SWRCB and the nine regional water boards administer NPDES to regulate and monitor discharged waters and to ensure they meet water quality standards.

Occupational Safety and Health Act (OSHA)

Congress passed the Occupational Safety and Health Act (OSHA) to ensure safe and healthful working conditions for workers. OSHA assists states with ensuring these conditions and provides research, information, education, and training in the field of occupational safety and health. The Project would be subject to OSHA requirements during construction, operation, and maintenance.

State

Title 22 of the California Code of Regulations

Hazardous Materials Defined

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency or if it has characteristics defined as hazardous by such an agency. According to Title 22, Section 66260.10 of the CCR, a hazardous material is defined as:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or, (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

Chemical and physical properties that cause a substance to be considered hazardous include the properties of toxicity, ignitability, corrosivity, and reactivity (Title 22, Sections 66261.20 through 66261.24). Factors that influence the health effects of exposure to hazardous materials include dosage, frequency, the exposure pathway, and individual susceptibility. The Proposed Project would require use of small amounts of hazardous materials (such as diesel fuel, oil, and grease for heavy equipment) during construction, operation, and reclamation.

California Environmental Protection Agency

CalEPA and the SWRCB establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable State and local laws include the following:

- Public Safety/Fire Regulation/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Small quantities of hazardous materials will be used and stored on-site for miscellaneous, general maintenance activities that would be subject to State and local laws.

California/Occupational Safety and Health Act (OSHA)

Cal/OSHA protects workers from health and safety hazards on the job in almost every workplace in California through its research and standards, enforcement, and consultation programs.

Hazardous Materials Management Plans

In January 1996, CalEPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, underground storage

tanks, aboveground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency—the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction.

State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment.

Hazardous Materials Disclosure Program

The Hazardous Materials Disclosure Program is found within the provisions of the California Health and Safety Code, Division 20, Chapter 6.95, Article 1. CUPAs are required to implement this Hazardous Materials Disclosure Program by reporting and disclosing the storage, use, or handling of hazardous materials on a site as a strategic measure to minimize loss of life and property. In addition, Hazardous Materials Business Plans must be submitted by all businesses that handle more than a threshold quantity of hazardous materials.

California Accidental Release Prevention Program

The California Accidental Release Prevention Program (CalARP) is found within the provisions of the California Health and Safety Code, Division 2, Chapter 4.5. CalARP is implemented at the local level by CUPAs as a strategy to minimize the accidental releases of stationary substances that can cause harm to the general public and the environment. Businesses are required to develop risk management plans if more than a threshold quantity of regulated substances is handled.

California Hazardous Materials Release Response Plans and Inventory Law

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires hazardous materials business plans to be prepared and inventories of hazardous materials to be disclosed. A business plan includes an inventory of the hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee safety and emergency response training (Health and Safety Code, Division 20, Chapter 6.95, Article 1.).

Department of Toxic Substances Control

The DTSC has primary regulatory responsibility for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law. Enforcement is delegated to local jurisdictions that enter into agreements with the DTSC.

California's Secretary of Environmental Protection established a unified hazardous waste and hazardous materials management regulatory program as required by Health and Safety Code Chapter 6.11. The Unified Program consolidates, coordinates, and makes consistent portions of the following six existing programs:

- Hazardous waste generations and hazardous waste on-site treatment
- Underground storage tanks
- Hazardous Material Release Response Plans and Inventories

- California Accidental Release Prevention Program
- Aboveground storage tanks (spill control and countermeasure plan only)
- Uniform Fire Code Hazardous Material Management Plans and Inventories

The statute requires all counties to apply to the CalEPA Secretary for the certification of a local CUPA. Qualified cities are also permitted to apply for certification. The local CUPA is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements within the county. Most CUPAs have been established as a function of a local environmental health or fire department.

The Office of the State Fire Marshal participates in all levels of the CUPA program including regulatory oversight, CUPA certifications, evaluations of the approved CUPAs, training, and education. The DTSC serves as the CUPA in Imperial County.

Small quantities of hazardous materials will be transported to and from the Project area and used and stored on-site for miscellaneous general operations and maintenance activities.

Government Code Section 65962.5 (Cortese List)

The provisions of Government Code Section 65962.5 are commonly referred to as the Cortese List. The Cortese List is a planning document used by State and local agencies to provide information about hazardous materials release sites. Government Code Section 65962.5 requires CalEPA to develop an updated Cortese List annually, at minimum. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

California Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Response to hazardous material incidents is one part of this plan. The plan is managed by the Governor's Office of Emergency Services, which coordinates the responses of other agencies, including CalEPA, the California Highway Patrol (CHP) and the RWQCB.

Local

County of Imperial General Plan

Both natural and man-made hazards are addressed in the County of Imperial General Plan. The Seismic and Public Safety Element also contains a set of goals and objectives for land use planning and safety, emergency preparedness, and the control of hazardous materials. The goals and objectives, together with the implementation programs and policies, provide direction for development. Table 4.8-1 analyzes the consistency of the Project with specific policies contained in the Imperial County General Plan associated with biological resources.

Table 4.8-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Conservation and Open Space Element		
Seismic and Public Safety Element		
Goal 1 – Include public health and safety considerations in land use planning.	Consistent	The Project includes health and safety measures such as lighting of the facility, fire suppression, and secondary containment that would be utilized in the event of accidental releases of hazardous and acutely hazardous materials.
Goal 2 – Minimize potential hazards to public health, safety, and welfare, and prevent the loss of life and damage to health and property resulting from both natural and human-related causes.	Consistent	See above response.
Objective 2.5 – Minimize injury, loss of life, and damage to property by implementing all state codes where applicable.	Consistent	The Project would comply with California Occupational Safety and Health Administration (Cal/OSHA) regulations and standards. These requirements address numerous worker safety issues including emergency action/ evacuation, personal protective equipment, first aid, bloodborne pathogens, cranes and hoists, vehicle/traffic, and chemical exposures.
Goal 3 – Protect the public from exposure to hazardous materials and wastes.	Consistent	During construction of the Project, environmental monitoring and regular routine visual inspections of the development site would be performed in conjunction with County of Imperial Building Inspection. During operations, job hazard analyses would be prepared to identify any additional hazards associated with a job or task prior to performance. This would provide an opportunity to evaluate whether additional measures must be taken to minimize impacts from potential hazards. In addition, the Project would comply with Cal/OSHA regulations and standards. These requirements address numerous worker safety issues, including emergency action and evacuation; personal protective equipment; first aid; blood-borne pathogens; cranes and hoists; vehicles and traffic; and chemical exposures.
Objective 3.1 – Discourage the transporting of hazardous materials/waste near or through residential areas and critical facilities.	Consistent	The Project is located within an area of the County that is not close to any residences or critical facilities such as a hospital or fire station or school. An Emergency Response Plan (ERP) and Hazardous Materials Business Plan (HMBP) would be prepared and implemented. The ERP and HMBP would identify proper hazardous materials handling, use, and storage; emergency response; spill control and prevention; employee training; and reporting and recordkeeping. The ERP and HMBP would help limit risks associated with exposure to hazardous materials,

Table 4.8-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Conservation and Open Space Element		
Seismic and Public Safety Element		
		with special consideration given to the residential and critical facilities in the area.
Objective 3.2 – Minimize the possibility of hazardous materials/waste spills.	Consistent	See above response for Goal 3 and Objective 3.1.
Objective 3.4 – Adopt and implement ordinances, policies, and guidelines that assure the safety of County ground and surface waters from toxic or hazardous materials and wastes.	Consistent	The Project would preserve ground- and surface water quality from hazardous materials and wastes during construction, operation, and decommissioning activities. The Project would protect water quality during construction through compliance with the NPDES General Construction Permit, Stormwater Pollution Prevention Plan, which would incorporate the requirements referenced in the State Regulatory Framework and best management practices (BMPs). The Project would be designed to include site design, source control, and treatment-control BMPs. The use of these BMPs would result in a decreased potential for stormwater pollution. It is anticipated that Project decommissioning activities would be subject to similar, or more stringent ground and surface water regulations than those currently required.

4.8.3 Thresholds of Significance

To assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have an impact on hazards and hazardous materials if it would:

Threshold a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

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

Threshold c) **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

Threshold d) **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?**

Threshold e) **Located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area?**

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

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

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.8.4 Methodology

The analysis of hazardous materials evaluates materials potentially existing on the Project site and those that would be used as part of Project construction, operations, and maintenance. Potential existing hazards were assessed based on information contained in the Phase I ESA Report (Appendix G).

As noted earlier, he purpose of the Phase I ESA was to identify, to the extent feasible, RECs associated with past and present activities on the subject property or in the immediate vicinity in general conformance to ASTM Standard E1527-13 that may affect future uses of the subject property. The assessment included reconnaissance of the Project site and adjacent properties, review of user-provided information, interviews with persons with significant knowledge of the subject property, review of a regulatory database report provided by a third-party vendor, and review of readily available historical sources, including but not limited to aerial photographs, fire insurance maps, property tax files, recorded land title records, and topographical maps.

4.8.5 Project Impact Analysis

Threshold a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Hazardous materials that are expected to be used during construction and operation may include the following:

- Adhesives
- Calcium oxide
- Diesel fuel
- Hydraulic fluids
- Hydrochloric acid (32% by weight)
- Lubricants
- Manganese
- Oil
- Paint material
- Sodium hydroxide
- Sodium sulfide
- Solvents
- Transformer oil
- Unleaded gasoline

Hazardous material carriers and hazardous waste transporters are required to adhere to applicable local, State, and federal regulations regarding proper truck signage; indicating the materials being transported; carrying a shipping/waste manifest of the types and concentrations of materials being transported; and other appropriate measures. Hazardous material carriers also are responsible, from the point of origin up to the destination of the hazardous material delivery, for ensuring secure transport of their loads,

reporting spills, and initiating appropriate emergency response to releases of any transported hazardous materials. It should be noted that hydrocholric acid, sodium hydroxide, and sodium sulfide are highly reactive atmospheric vapors; however, they would be used in de minimus quantities and would be containerized to prevent fire.

Construction of the Project would require the limited transport and temporary use of materials deemed to be hazardous, including unleaded gasoline, diesel fuel, oil, lubricants (i.e., motor oil, transmission fluid, and hydraulic fluid), solvents, adhesives, and paint materials. The mineral extraction process would not generate any waste but would result in products, beyond lithium compounds, that would be sold. The geothermal plant and its mineral processing would generate waste oil, aerosol cans, filters, etc. during plant overhaul and would generate general waste and solid scale. It is anticipated that no more than 25 tons per year of nonhazardous waste and approximately 10 tons of hazardous waste would be generated; said waste would be shipped out of state for processing and disposal. Refer to Section 4.13: Utilities and Service Systems for additional discussion on waste handling.

Project operations would create new sources of particulate matter from drying, transfer, and packing lithium products; operation of the cooling tower; and maintenance, testing, and emergency operations of the diesel-engine generators. Some products may contain hazardous material that would be transported for sale, and waste would be transported to an approved hazardous waste landfill. The hazardous materials used during construction and operation of the Project would be handled, stored, and disposed in accordance with the manufacturer's standards and local, State, and federal regulations.

To prevent accidental release of hazardous materials, spill containment areas and sumps subject to spills of immiscible chemicals would be drained to a dilution water tank. Any oil contamination spills would be collected with absorbent pads and disposed of as required by law. All staff working with chemicals would be trained in proper handling and emergency response to chemical spills or accidental releases.

An ERP and HMBP would be prepared and implemented to identify proper hazardous materials handling, use, and storage, emergency response, spill control and prevention, employee training; and reporting and record keeping. This would help limit risks associated with exposure to hazardous materials, with special consideration of the residential and critical facilities in the area.

During construction and operations of the Project, hazardous materials would be transported to and from the Project site. Traffic barriers would protect piping and tanks on the site from potential traffic hazards. The Project Applicant would be required to follow all applicable federal, State, and local laws and regulations. Further, transportation would be subject to licensing and inspection by the CHP. With adherence to the regulatory measures and requirements for hazardous materials, impacts would be less than significant.

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

A REC refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. As noted earlier, the term includes hazardous substances and petroleum products even under conditions that might be in compliance with laws. The term is not intended to include de minimis

conditions. A de minimis condition is a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis conditions are not recognized environmental conditions or controlled recognized environmental conditions.

The Phase I ESA revealed evidence of several RECs in connection with the Project site, as detailed below:

- The potential exists for evaporite deposits located around the abandoned carbon dioxide wells and active mud pot containing potential hazardous substances. The chemical characteristics of the deposits is unknown.
- Former exploratory geothermal Imperial 1-13 well site is located approximately .5 mile southeast of the subject property. Geothermal fluids resulting from drilling operations in the area are known to contain hazardous metals. The well has been plugged and abandoned; however, the site may contain residual wastes at the well location or at the test well containment basin that has since been backfilled.
- Former State 2-14 geothermal testing facility located west of David Road and within the gen-tie route. Residual pieces of scrap metal and pond liner have been found on the former site. The records for cleanup and backfill of the test facility and basins are not complete; therefore, the site may contain additional residual wastes at the test facility location.
- Two active geothermal wells pads (HR1 Production Pad #1 and #2) with a total of three wells (13-1, 13-2, 13-3) are present at the south end of the gen-tie route. The drilling operations generate hazardous brine; therefore, these areas may contain residual wastes at the active well locations.

The Phase I ESA has revealed de minimis conditions or environmental concerns in connection with the subject property with the potential for asbestos- and/or lead-containing materials existing near the gen-tie route. This is possible due to the age of the abandoned warm-water spa and dry-ice facility structures.

Based on the assessment conducted at the Project site, further investigations may be required if the areas containing RECs cannot be avoided by future development. Therefore, for the Project to not have a significant impact to the public and environment, the Project shall comply with local, State and federal guidelines and to the Mitigation Measures HAZ-1 and HAZ-2 to ensure the any accidental releases would be mitigated to a less than significant impact.

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

The Seismic and Public Safety Element of the County General Plan states that the potential for a major fire in the unincorporated areas of the County is generally low (County 1993). According to the California Department of Forestry and Fire Protection's (CAL FIRE) Fire Hazard Severity Zone Viewer, no very high, high, or moderate fire hazard severity zones in the local or State responsibility areas are within 30 miles of the Project site (CAL FIRE 2022). Additionally, the Project will include fire suppression systems designed in accordance with federal, State, and local fire codes; occupational health and safety regulations; and other jurisdictional codes, requirements, and standard practices. Included in the fire suppression system is a 100,000 gallon aboveground water tank to be installed on-site that would as the primary water supply for the joint fire suppression system. In addition, during construction, the Project site and access road would be cleared of all vegetation, and cleared areas would be maintained throughout construction. Fire extinguishers would be available around the construction site as well.

During operations, a brush control program would be prepared and implemented on those portions of the Project site that will not be developed. The Imperial County Fire District would be consulted to review and approve all proposed fire equipment, apparatus, and related fire prevention plans. Due to compliance with the measures identified above, and the distance from an identified area of high fire harzard risk, the Project would result in a less than significant impact associated with wildfires.

4.8.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

The geographic scope of the cumulative setting for hazards and hazardous materials is a one-mile radius from the geographical center point of the Project site. One mile is the standard ASTM standard search distance for hazardous materials. This geographic scope encompasses an area larger than the Project area and provides a reasonable context wherein cumulative projects near the Proposed Project could affect hazards and hazardous materials. Based on Table 3.0-1: Related Projects in Chapter 3.0: Environmental Setting, no other projects from the cumulative projects list are within the geographic scope.

The Project would involve the storage, use, disposal, and transport of hazardous materials in various quantities during construction and operations. Accidental release of hazardous materials can be mitigated to less than significant levels through compliance with various federal, State, and local laws, regulations, and policies regarding transport, storage, and use of hazardous materials. Therefore, the Project's contribution to cumulative hazardous materials impacts is considered less than cumulatively considerable.

4.8.7 Mitigation Measures

MM HAZ-1: To avoid health risks to construction workers, the Applicant shall require the contractor to prepare and implement a site Health and Safety Plan (HSP) if areas containing hazardous materials are to be disturbed. This plan will outline measures that will be employed to protect construction workers and the public from exposure to hazardous materials during construction activities. This plan shall be prepared prior to any ground-disturbing activities and shall be reviewed and approved by the Project Applicant. Workers shall review and sign the site HSP prior to proceeding with the assigned work.

MM HAZ-2: For any gen-tie structures or other areas of project ground disturbance that are close to a REC, a Phase 2 limited soil sampling shall be conducted to determine if there are any hazardous materials present on-site. The soil sampling shall be conducted during final design and prior to construction. Soil sampling will determine the California Human Health Screening Levels (CHHSL) of the testing protocol (CAM 17 metals, a list of 17 metals found typically in hazardous materials and mining sites). The CHHSLs are a list of 54 hazardous chemicals in soil or soil gas that the California Environmental Protection Agency (CalEPA) considers to be below thresholds for risks to human health. The Imperial County Public Health Department, Division of Environmental Health (DEH) shall review the soil sampling results. If the results are above the CHHSLs, then the DEH would refer

the project to the California Department of Toxic Substances Control for proper soil handling and removal procedures.

4.8.8 Level of Significance After Mitigation

After implementation of Mitigation Measures HAZ-1 and HAZ-2, impacts related to hazards and hazardous materials would be less than significant.

4.9 HYDROLOGY AND WATER QUALITY

This section discusses the potential hydrological and water quality impacts that would occur in association with implementation of the proposed Hell's Kitchen Power Co 1 and Lithium Co 1 Project. This analysis describes the regional hydrologic setting, existing hydrology/drainage (on-site and off-site), and existing flood hazards in the Project area. Water quality is also described in terms of groundwater beneath the Project area and surface waters in the region and the Imperial Valley. Information contained in this section is from the Conceptual Hydrology Study prepared by Q3 Consulting and the Conceptual Storm Water Quality Analysis prepared by Q3 Consulting, included in Appendix H and Appendix I of this Draft Environmental Impact Report (EIR), respectively.

4.9.1 Existing Environmental Setting

Regional Setting

Imperial Valley, located in the Northern Sonoran Desert, has an arid desert climate characterized by hot, dry summers and mild winters. Clear and sunny conditions typically prevail, and frost is rare. The region receives 85 to 90 percent of possible sunshine each year, the highest in the United States. Winter temperatures are mild, rarely dropping below 32°F, but summer temperatures are very hot, with more than 100 days over 100°F each year. The remainder of the year has a relatively mild climate with temperatures averaging in the mid-70s.

Rainfall contributes around 50,000 acre-feet (AF) of effective agricultural water per inch of rain. Most rainfall occurs from November through March; however, summer storms can be significant in some years. The 30-year, 1990 to 2019, average annual air temperature was 73.6°F; and average rainfall was 2.59 inches. During this period, average annual rainfall has fluctuated, and the 10-year average temperatures have slightly increased over the 30-year average.

The Imperial Valley is bounded on the north by the south shore of the Salton Sea, on the south by the All-American Canal (AAC), on the east by the East Highline Canal, and on the west by the Westside Main Canal. The existence of most surface waters in the area is dependent primarily on the inflow of irrigation water from the Colorado River via the AAC.

The Imperial Valley lies entirely within the State's Colorado River Hydrologic Region (IWF 2012). The shallow aquifers beneath the Imperial Valley are affected by the inflow of Colorado River waters, the rate of evaporation, the depth of the agricultural tile drains beneath farmlands, and seepage from drains and rivers. The Colorado River is probably the most important source of recharge into shallow groundwater aquifers; approximately 10 percent is percolated to underlying aquifers. Canals, such as the AAC and the East Highline, contribute to recharge because they are unlined; they are sometimes up to 200 feet wide; the AAC flows across many miles of sandy terrain; and the water surface of the canals is higher than the general groundwater levels (County 1997b).

Groundwater basins within the Imperial Region include portions of the Coyote Wells Valley Basin, Borrego Valley Basin, Ocotillo-Clark Valley Basin, West Salton Sea Basin, Ogilby Valley Basin, and all of the Imperial Valley Basin, East Salton Basin, and East Amos Valley Basin, for a total of approximately 2,800 square miles (IWF 2012). The major surface water body within the region is the Salton Sea, and drainage is to the Salton Sea via the New River and Alamo River, a few direct-to-sea drains, and various washes.

Project Site

The Project is located in the Frontal Salton Sea Hydrologic Area, in the Imperial Hydrologic Unit (#1810020413). The Imperial Hydrologic Unit consists of the majority of the Imperial Valley, encompassing over 1.3 million acres of land. The watershed covers the southeast drainage area of the Salton Sea and includes vast acreages of agricultural land; towns, including Frink, Niland, Pope, and Camp Dunlap; and a large network of IID-operated canals and drains. The watershed is atypical of most watersheds in California in that it currently and historically has been shaped by man-made forces. The watershed's primary watercourses, the Alamo River and the New River, flow northwesterly, from the Mexican border toward their final destination, the Salton Sea. The Salton Sea, a 376-square-mile closed inland lake, was created in 1905 through a routing mistake and subsequent flood on the Colorado River. The sea has been fed primarily by agricultural runoff and from the New and Alamo Rivers ever since.

The IID has constructed a network of canals and drains that are located along portions of the perimeter of the Project. The canals convey water to customers, and the drains collect and convey agricultural and stormwater runoff (surface and subsurface). The Project site is served by canals that are on and adjacent to it. Except during extreme events, discharges from the site are not anticipated because all on-site stormwater runoff will be fully retained. Emergency overflows from the retention basins will discharge to the Salton Sea, just outside of the limits of the 100-year floodplain as mapped by the Federal Emergency Management Agency.

IID facilities, including the adjacent P drain, Q drain and R laterals, do not accept flows from the Project site. Existing graded berms prevent run-on from discharging into the IID facilities. These Drains discharge to the Salton Sea approximately one and one-half miles west of the Project. Pending findings during final engineering, the Project concept intends to retain the full 5 inches of stormwater runoff required by the Environmental Health Services (EHS) Department of the County of Imperial. During extreme storm events (rarer than the 100- year event), emergency overflows from the proposed on-site drainage swales could eventually reach the IID facilities.

4.9.2 Regulatory Setting

Federal

Clean Water Act

The U.S. Environmental Protection Agency (USEPA) is the lead federal agency responsible for managing water quality. The Clean Water Act (CWA) of 1972 is the primary federal law that governs and authorizes the USEPA and the states to implement activities to control water quality. The various elements of the CWA that address water quality and that are applicable to the Project are discussed below.

Under federal law, the USEPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires the USEPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality

standards must protect the most sensitive use. The USEPA is the federal agency with primary authority for implementing regulations adopted under the CWA. The USEPA has delegated to the State of California the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), described below.

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain a water quality certification from the State Water Resources Control Board (SWRCB) in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate.

CWA Section 402 establishes the National Pollution Discharge Elimination System (NPDES) permit program to control point source discharges from industrial, municipal, and other facilities if their discharges go directly to surface waters. The 1987 amendments to the CWA created a new section of the CWA devoted to regulating stormwater or nonpoint source discharges (Section 402[p]). The USEPA has granted California primacy in administering and enforcing the provisions of the CWA and the NPDES program through the SWRCB. The SWRCB is responsible for issuing both general and individual permits for discharges from certain activities. At the local and regional levels, general and individual permits are administered by Regional Water Quality Control Boards (RWQCBs).

Clean Water Act Section 303(d) Impaired Waters List

Section 303(d) of the CWA requires states to develop lists of water bodies that will not attain water quality standards after implementation of minimum required levels of treatment by point-source dischargers. Section 303(d) requires states to develop a total maximum daily load (TMDL) for each of the listed pollutants and water bodies. A TMDL is the amount of loading that the water body can receive and still be in compliance with applicable water quality objectives and applied beneficial uses. TMDLs can also act as a planning framework for reducing loadings of a specific pollutant from various sources to achieve compliance with water quality objectives. TMDLs prepared by the state must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. The TMDL must also include an analysis that shows links between loading reductions and the attainment of water quality objectives.

NPDES General Industrial and Construction Permits

The NPDES General Industrial Permit requirements apply to the discharge of stormwater associated with industrial sites. The permit requires implementation of management measures that will achieve the performance standard of the best available technology economically achievable and best conventional pollutant control technology. Under the statute, operators of new facilities must implement industrial best management practices (BMPs) in the project's Storm Water Pollution Prevention Plan (SWPPP) and perform monitoring of stormwater discharges and unauthorized non-stormwater discharges.

Construction activities are regulated under the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit), (Order 2009-0009-DWQ as amended by Order 2010-0014-DWQ and Order 2021-0006-DWQ), which cover stormwater runoff requirements for projects where the total amount of ground disturbance during construction exceeds one acre. Coverage under a General Construction Permit requires the preparation and implementation of a

SWPPP and submittal of a Notice of Intent (NOI) to comply with the General Construction Permit. The SWPPP includes a description of BMPs to minimize the discharge of pollutants from the sites during construction. Typical BMPs include temporary soil stabilization measures (e.g., mulching and seeding); storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or stormwater; and, using filtering mechanisms at drop inlets to prevent contaminants from entering storm drains. Typical postconstruction management practices include street sweeping and cleaning stormwater drain inlet structures. The NOI includes site-specific information and the certification of compliance with the terms of the General Construction Permit.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, also known as the California Water Code (CWC), is California's statutory authority for the protection of water quality. Under this Act, the State must adopt water quality policies, plans, and objectives that protect the waters of the State. The Act sets forth the obligations of the SWRCB and RWQCBs pertaining to the adoption of Water Quality Control Plans and establishment of water quality objectives. Unlike the CWA, which regulates only surface water, the Porter-Cologne Act regulates both surface water and groundwater.

Regional Water Quality Control Board

The RWQCBs serve as the frontline for State and federal water pollution control efforts. It is composed of nine control boards, each including seven members. Regional boundaries are based on watersheds; and water quality requirements are based on the unique differences in climate, topography, geology, and hydrology for each watershed. Each RWQCB makes critical water quality decisions for its region, including setting standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions. The Project site is located in Region 7, the Colorado River Region.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), passed in September 2014, is a comprehensive three-bill package that provides a framework for the sustainable management of groundwater supplies by local authorities. The SGMA requires the formation of local groundwater sustainability agencies (GSAs) to assess local water basin conditions and adopt locally based management plans. Local GSAs were required to be formed by June 30, 2017. The SGMA provides 20 years for GSAs to implement plans and achieve long-term groundwater sustainability and protect existing surface water and groundwater rights. The SGMA provides local GSAs the authority to (1) require registration of groundwater wells; (2) measure and manage extractions; (3) require reports and assess fees; and (4) request revisions of basin boundaries, including establishing new subbasins. Furthermore, under the SGMA, GSAs responsible for high- and medium-priority basins were required adopt groundwater sustainability plans within 5 to 7 years of 2015, depending on whether the basin is in critical overdraft. The California Department of Water Resources (DWR) has designated the Imperial Valley Basin, which the County overlies, as very low priority and not in critical overdraft (DWR 2021)

Regional and Local

Colorado River Regional Water Quality Control Board

The Colorado River Basin RWQCB has adopted the Water Quality Control Plan for the Colorado River Basin in accordance with criteria contained in the CWA, Porter-Cologne Act, and other pertinent State and federal rules and regulations. The intent of the Basin Plan is to provide definitive guidelines and give direction to the scope of Colorado River Basin RWQCB activities that will optimize the beneficial uses of the waters of the State within the Colorado River Basin by preserving and protecting the quality of these waters. The intended beneficial use of water determines the water quality objectives. For example, the quality requirements for irrigation water are different from those of drinking water. The Colorado River Basin RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements for appropriate persons and groups; these can include individuals, communities, or businesses whose waste discharges may affect water quality. These requirements can be either State Waste Discharge Requirements for discharge to land, or federally delegated NPDES permits for discharges to surface water. Discharges are required to meet water quality objectives and protect beneficial uses.

Water Quality Control Plan for the Colorado River Basin

The Water Quality Control Plan for the Colorado River Basin (or Basin Plan) prepared by the Colorado River RWQCB (Region 7) identifies beneficial uses of surface waters within the Colorado River Basin region, establishes quantitative and qualitative water quality objectives for protection of beneficial uses, and establishes policies to guide the implementation of these water quality objectives. Water bodies that have beneficial uses that may be affected by construction activity and post-construction activity include the Imperial Valley Drains (includes the Wistaria Drain and Greeson Wash), New River, and the Salton Sea.

Imperial Integrated Water Resources Management Plan

The Imperial Integrated Regional Water Management Plan (IRWMP) serves as the governing document for regional water planning to meet present and future water resource needs and demands by addressing such issues as additional water supply options, demand management and determination, and prioritization of uses and classes of service provided. In November 2012, the Imperial County Board of Supervisors approved the Imperial IRWMP, and the City of Imperial City Council and the IID Board of Directors approved it in December 2012. Approval by these three stakeholders meets the basic requirement of the DWR for an IRWMP. Through the IRWMP process, IID presented the regional stakeholders with options in the event long-term water supply augmentation is needed, such as water storage and banking, recycling of municipal wastewater, and desalination of brackish water.

County of Imperial Land Use Ordinance, Title 9

The County's Ordinance Code provides specific direction for the protection of water resources. Applicable ordinance requirements are contained in Division 10, Building, Sewer and Grading Regulations, and summarized below.

Chapter 10 – Grading Regulations. Section 91010.02 of the Ordinance Code outlines conditions required for issuance of a Grading Permit. These specific conditions include:

1. If the proposed grading, excavation, or earthwork construction is of irrigatable land, said grading will not cause said land to be unfit for agricultural use.

2. The depth of the grading, excavation, or earthwork construction will not preclude the use of drain tiles in irrigated lands.

3. The grading, excavation, or earthwork construction will not extend below the water table of the immediate area.

4. Where the transition between the grading plane and adjacent ground has a slope less than the ratio of 1.5 feet on the horizontal plane to 1 foot on the vertical plane, the plans and specifications will provide for adequate safety precautions.

Imperial Irrigation District

The IID is an irrigation district organized under the California Irrigation District Law, codified in Section 20500 et seq. of the CWC. Critical functions of IID include diversion and delivery of Colorado River water to the Imperial Valley; operation and maintenance of the drainage canals and facilities, including those in the Project area; and generation and distribution of electricity. Several policy documents govern IID operations and are summarized below:

- The Law of the River and historical Colorado River decisions, agreements, and contracts;
- The Quantification Settlement Agreement and Transfer Agreements;
- The Definite Plan, now referred to as the Systems Conservation Plan, which defines the rigorous agricultural water conservation practices being implemented by growers and IID to meet the Quantification Settlement Agreement commitments;
- The Equitable Distribution Plan, which defines how IID will prevent overruns and stay within the cap on the Colorado River water rights; and,
- Existing IID standards and guidelines for evaluation of new development and define IID's role as a responsible agency and wholesaler of water.

During the development of the Imperial IRWMP, IID has adopted an Interim Water Supply Policy (IWSP) for Non-Agricultural Projects from which water supplies can be contracted to serve new developments within IID's water service area. For applications processed under the IWSP, applicants shall be required to pay a processing fee and, after IID board approval of the corresponding agreement, will be required to pay a reservation fee(s) and annual water supply development fees.

Imperial County General Plan

The Water Element and the Conservation and Open Space Element of the General Plan contain goals, objectives, policies, and programs to ensure water resources are preserved and protected. Table 4.9-1 identifies the General Plan goals, objectives, policies, and programs for water quality and flood hazards that are relevant to the Project and summarizes the Project's consistency with the General Plan. While this EIR analyzes the Project's consistency with the General Plan pursuant to CEQA Guidelines Section

15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

Table 4.9-1 analyzes the consistency of the Project with specific policies contained in the Imperial County General Plan associated with hydrology and water quality.

Table 4.9-1: General Plan Consistency

General Plan Policies	Consistency With General Plan	Analysis
Conservation and Open Space Element		
Goal 1 – Environmental resources shall be conserved for future generations by minimizing environmental impacts in all land use decisions and educating the public on their value.	Consistent	The Project would implement pre- and postconstruction BMPs discussed in Appendix I to maintain water quality over the 50-year life of the Project.
Goal 6 – The County will conserve, protect, and enhance water resources in the County.	Consistent	The Project would protect water quality during construction through compliance with Imperial County design and detention requirements and the NPDES General Construction Permit, as well as preparation and implementation of a Project-specific SWPPP, which will incorporate the requirements referenced in the State Regulatory Framework, design features, and BMPs.
Objective 6.3 – Protect and improve water quality and quantity for all water bodies in Imperial County.	Consistent	The Project would protect water quality during construction through compliance with the NPDES General Construction Permit, SWPPP, and BMPs. The Project will be designed to include site-design, source-control, and treatment-control BMPs. The use of these BMPs would ensure stormwater pollution impacts would not be significant.
Program – Structural development normally shall be prohibited in the designated floodways. Only structures which comply with specific development standards should be permitted in the floodplain	Consistent	The Project does not contain a residential component, nor would it place housing or other structures within a 100-year flood hazard area.
Water Element		
Policy – Adoption and implementation of ordinances, policies, and guidelines which assure the safety of County ground and surface waters from toxic or hazardous materials and/or wastes.	Consistent	The Project would preserve ground- and surface water quality from hazardous materials and wastes during construction and operation activities. The Project would protect water quality during construction through compliance with the NPDES General Construction Permit; SWPPP, which will incorporate the requirements referenced in the State Regulatory Framework; and BMPs. The Project will be designed to include site-design, source-control, and treatment-control BMPs. The use of these BMPs would result in a decreased potential for stormwater

Table 4.9-1: General Plan Consistency

General Plan Policies	Consistency With General Plan	Analysis
		pollution. It is anticipated that Project decommissioning activities would be subject to similar or more stringent ground and surface water regulations than those currently required.
Program – The County of Imperial shall make every reasonable effort to limit or preclude the contamination or degradation of all groundwater and surface water resources in the County.	Consistent	The Project would preserve ground and surface water quality from hazardous materials and wastes during construction, operation, and decommissioning activities. The Proposed Project would protect water quality during construction through compliance with the NPDES General Construction Permit; SWPPP, which will incorporate the requirements referenced in the State Regulatory Framework; and BMPs. The Project will be designed to include site-design, source-control, and treatment-control BMPs. The use of these BMPs would ensure stormwater pollution impacts would not be significant. It is anticipated that Project decommissioning activities would be subject to similar or more stringent ground and surface water regulations than those currently required.
Program – All development proposals brought before the County of Imperial shall be reviewed for potential adverse effects on water quality and quantity and shall be required to implement appropriate mitigation measures for any significant impacts.	Consistent	See response above.

4.9.3 Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have hydrology and water quality impacts if it would:

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

Threshold b) **Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

Threshold c) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

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

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

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

iv) impede or redirect flood flows?

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

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

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.9.4 Methodology

Q3 prepared a Conceptual Hydrology Study and Conceptual Storm Water Quality Analysis for the Project in April 2022. The Conceptual Hydrology Study utilized the County's guidelines to evaluate a 100-year rainfall event on site. The Conceptual Storm Water Quality Analysis evaluated existing waters and impairments, the Colorado River Basin's Water Quality Control Plan, and the Project to evaluate if water quality impacts would occur. These reports are included in Appendix H and Appendix I of this Draft EIR, respectively.

4.9.5 Project Impact Analysis

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

Construction

Construction of the Proposed Project includes site preparation, foundation construction, construction of well pads, erection of major equipment and structures, installation of electrical systems, control systems, and startup/testing. In addition, the construction of transmission lines, utility pole pads, conductors, and associated structures will be required. Poor management of construction materials can lead to the possible exposure of potential contaminants to precipitation. When this occurs, these visible and/or nonvisible constituents become entrained in stormwater runoff. Left unintercepted or uncontrolled, the polluted runoff would otherwise freely sheet-flow from the Project to the IID Imperial Valley drains and could result in the accumulation of these pollutants in the receiving waters, which is considered a potentially significant impact. With the implementation of Mitigation Measure HWQ-1, impacts on surface water quality attributable to the Project would be reduced to a less than significant level.

During construction, the construction contractor of the Project would be required to implement various BMPs as part of MM HWQ-1 to comply with water quality standards and waste discharge requirements. Prior to the start of construction, the Applicant filed an NOI with the SWRCB to comply with the General NPDES Construction Permit and prepare a SWPPP. This plan would address pollutant source reduction and provide measures and controls necessary to mitigate potential pollutant sources during construction and operation to the maximum extent possible. With the implementation of Mitigation Measure HWQ-1, impacts on surface water quality as attributable to the Proposed Project would be reduced to a less than significant level through the inclusion of focused BMPs for the protection of surface water resources. Monitoring and contingency response measures would be included to verify compliance with water quality objectives for all surface waters crossed during construction. In addition, given that site decommissioning would result in similar activities as identified for construction, these impacts could also occur in the future during site-restoration activities.

These BMPs include but are not limited to erosion controls, sediment controls, tracking controls, non-stormwater management, materials and waste management, and good housekeeping practices. Erosion-control BMPs would be implemented to minimize soil-disturbing activities during the wet season and help prevent soil particles from detaching and being transported in stormwater runoff. Sediment-control BMPs would help intercept and filter out soil particles that have been detached and transported by the force of water. Sediment-control BMPs that could be included as part of the construction phase are silt fencing, check dams, gravel bag berms, and fiber rolls. Tracking-control BMPs would reduce tracking of sediments from construction vehicles. Materials and waste-management BMPs would be used for collecting, handling, storing, and disposing of wastes generated during construction of the Project to prevent the release of waste materials into stormwater discharges. A temporary barrier around stockpiles would be installed and a cover provided during the rainy season. Spill cleanup procedures and kits would be made readily available near hazardous materials and waste. A full list of construction-associated BMP practices is provided in Appendix I.

Operations

As runoff flows over developed surfaces, water can entrain a variety of potential pollutants, including but not limited to oil and grease, pesticides, trace metals, and nutrients. These pollutants can become suspended in runoff and carried to receiving waters. These effects are commonly referred to as non-point source water quality impacts.

Long-term operation of the HKP1 and HKL1 facilities pose a limited threat to surface water quality after the completion of construction. The Project would be subject to the County's grading regulations as specified in Section 91010.02 of the Ordinance Code. However, because the Project site is located in unincorporated Imperial County and not subject to a Municipal Separate Storm Sewer System (MS4) or NPDES General Industrial Permit, no regulatory mechanism exists to address postconstruction water quality concerns. Based on this consideration, the Proposed Project has the potential to result in both direct and indirect water quality impacts that could be significant. Implementation of Mitigation Measure HWQ-2 would require the Project to incorporate postconstruction BMPs into the Project's drainage plan. The Proposed Project will be designed to include site-design, source-control, and treatment-control BMPs as described below. The use of these BMPs would result in a decrease potential for stormwater pollution.

Site-Design BMPs. The Project will be designed to include site-design BMPs, which reduce runoff, prevent stormwater pollution associated with the Project, and conserve natural areas on-site. Table 4.9-2 lists the various site-design BMPs.

Table 4.9-2: Anticipated Project Site-Design Measures

Design Concept	Description
Stream setbacks and buffers	A perimeter berm will be incorporated to prevent off-site run-on and runoff from leaving the Project.
Soil quality improvement and maintenance	Where feasible, drainage swale with amended soil will be implemented along the north-south access road and the western boundary of the Project.
Rooftop and impervious area disconnection	Retention pond will collect all on-site stormwater runoff, including the 100-year 24-hour storm event, up to 5 inches, to meet the criteria from the EHS Department.
Vegetated swales	Where feasible, drainage swale with amended soil will be implemented along the north–south access road and the western boundary of the Project.
Rain barrels and cisterns	Retention pond will collect all on-site stormwater runoff up to 5 inches, including the 100-year, 24-hour storm event, to meet the criteria from the EHS Department.
Stream setbacks and buffers	A perimeter berm will be incorporated to prevent off-site run-on and runoff from leaving the Project.

As a regulated Project, the proposed Project will implement source control measures. These source control measures are listed in Table 4.9-3 below.

Table 4.9-3: Anticipated Source Control Measures

Source Control Measure	Project Implementation
Accidental spills or leaks	The Project will require the preparation and the implementation of a Hazardous Materials Business Plan (HMBP) in accordance with federal, State, or local requirements. Safety equipment will be provided for staff use if required during chemical containment and cleanup activities. All staff working with chemicals will be trained in proper handling and emergency response to chemical spills or accidental releases. Water hose connections will be provided near the chemical storage and feed areas, to flush spills and leaks, and absorbent materials will be stored on-site for spill cleanup.
Interior floor drains	All interior flood drains will be diverted to the brine pond.
Parking/storage areas and maintenance	All vehicles will be serviced off-site whenever possible. Any servicing performed on-site must be conducted in an area isolated from storm drain inlets or drainage ditch inlets. The area must be bermed and precluded from run-on. Any spillage must be fully contained and captured and disposed of per County of Imperial Hazardous Waste requirements.
Indoor and structural pest control	If any pesticides are required on-site, the need for pesticide use in the Project design will be reduced by:

Table 4.9-3: Anticipated Source Control Measures

Source Control Measure	Project Implementation
Landscape/outdoor pesticide use	• Keeping pests out of buildings using barriers, screens, and caulking • Physical pest elimination techniques, such as squashing, trapping, washing, or pruning out pests • Relying on natural enemies to eat pests • Proper use of pesticides as a last line of defense
Industrial processes	The Project will require the preparation and the implementation of a Hazardous Materials Business Plan (HMBP) in accordance with federal, State, or local requirements.
Outdoor storage of equipment or materials	Where feasible, outdoor storage will be covered and surrounded by a secondary containment area.
Vehicle and equipment cleaning	All vehicles will be serviced off-site whenever possible. Any servicing performed on-site must be conducted in an area isolated from storm drain inlets or drainage ditch inlets. The area must be bermed and precluded from run-on. Any spillage must be fully contained and captured and disposed of per County of Imperial Hazardous Waste requirements.
Vehicle and equipment repair and maintenance	
Fuel dispensing areas	
Loading docks	Material handling will be conducted in a manner as to prevent any stormwater pollution.
Fire sprinkler test water	Fire sprinkler water will be disposed of to the brine pond.
Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources	All wash water, waste-drilling mud, and drill cuttings will be stored in the lined containment basin. Upon completion of drilling activities, mud and associated drilling liquids will be allowed to evaporate. The solids will be tested for pH, oil and grease, and metals. The solids will be removed and disposed in a waste disposal facility authorized by the Regional Board to receive and dispose these materials.
Unauthorized non-stormwater discharges	Illegal dumping educational materials as well as spill response materials will be provided to employees.
Building and grounds maintenance	Materials will be disposed of in accordance with Imperial County Hazardous Material Management guidelines, and will be sent to appropriate disposal facilities. Under no circumstances shall any waste or hazardous materials be stored outside without secondary containment.

Due to the size of the Project, Postconstruction Standards from the Phase II Small MS4 Permit will be applied to the Project. The proposed Project will implement site-design BMPs, source-control measures, low-impact development (LID) BMPs, and hydromodification-management BMPs to meet the permit criteria. The Project owner will maintain all on-site site-design BMPs, source-control measures,

postconstruction BMPs, and retention basins during the lifetime of the Project. A full list of postconstruction BMPs is provided in Appendix I. With implementation of Mitigation Measures HWQ-1 and HWQ-2 impacts to water quality standards and waste discharge requirements would be less than significant.

4.9.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the Project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

As mentioned above, the Proposed Project would not violate any water quality standards or degrade surface or groundwater quality and therefore would not cumulatively contribute to decreases in water quality. With the implementation of legally required SWRCB, RWQCB, and County policies, plans and ordinances governing land use activities that may degrade or contribute to the violation of water quality standards along with the mitigation measures, the Proposed Project, in combination with approved, proposed, and other reasonably foreseeable projects (Table 3.0-1, Chapter 3.0) in the Imperial watershed and Imperial Valley groundwater basin would not contribute to the cumulative effects of degradation of water quality. Impacts would be less than cumulatively considerable.

4.9.7 Mitigation Measures

Implementation of the following would reduce impacts to less than significant.

HWQ-1 **Prepare SWPPP and Implement BMPs Prior to Construction and Site Restoration.** The Project applicant or its contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) specific to the Project and be responsible for securing coverage under the State Water Resources Control Board's National Pollution Discharge Elimination System stormwater permit for general construction activity (Order 2009-0009-DWQ). The SWPPP shall identify specific actions and best management practices (BMPs) related to the prevention of stormwater pollution from Project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by the appropriate agency prior to commencement of work and shall be made conditions of the contract with the contractor selected to build and decommission the Project. The SWPPP shall incorporate control measures in the following categories:

- Soil stabilization and erosion control practices
- Sediment control practices
- Temporary and postconstruction on- and off-site runoff controls
- Special considerations and BMPs for water crossings and drainages
- Monitoring protocols for discharge(s) and receiving waters, with emphasis place on the following water quality objectives: dissolved oxygen, floating material, oil and grease, potential of hydrogen (pH), and turbidity

- Waste management, handling, and disposal control practices
- Corrective action and spill contingency measures
- Agency and responsible party contact information
- Training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP

The SWPPP shall be prepared by a Qualified SWPPP Practitioner and/or Qualified SWPPP Developer, with BMPs selected to achieve maximum pollutant removal and representative of the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen-depleting substances; floating material; oil and grease; acidic or caustic substances or compounds; and turbidity. BMPs for soil-stabilization, erosion-control, and sediment-control practices will also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (inadvertent petroleum release) is required to determine adequacy of the measure.

HWQ-2 **Incorporate Postconstruction Runoff BMPs into Project Drainage Plan.** The Project Drainage Plan shall adhere to the County's Engineering Guidelines Manual, IID Draft Hydrology Manual or other recognized source with approval by the County Engineer to control and manage the on- and off-site discharge of stormwater to existing drainage systems. Infiltration basins will be integrated into the Drainage Plan to the maximum extent practical. The Drainage Plan shall provide both short and long-term drainage solutions to ensure the proper sequencing of drainage facilities and management of runoff generated from Project-related impervious surfaces as necessary.

4.9.8 Level of Significance After Mitigation

With the implementation of Mitigation Measure HWQ-1, impacts on surface water quality as attributable to the Project would be reduced to a less than significant level through the inclusion of focused BMPs for the protection of surface water resources. Monitoring and contingency response measures would be included to verify compliance with water quality objectives for all surface waters crossed during construction.

With the implementation of Mitigation Measure HWQ-2, potential water quality impacts resulting from postconstruction discharges during operation for the Project would be reduced to a less than significant level. Implementation of Mitigation Measure HWQ-2 would require the Project to incorporate postconstruction BMPs into the Project's drainage plan. The use of these BMPs would result in a decrease potential for stormwater pollution.

4.10 NOISE

This section provides information on ambient noise conditions in the vicinity of the Project and identifies potential impacts with noise as a result of the construction and operation of the Project. The Noise Assessment prepared by Ldn Consulting, Inc. in June 2022 is included in this Draft EIR as Appendix J.

The Project (Hell's Kitchen PowerCo 1 [HKP1] and Hell's Kitchen LithiumCo 1[HKL1]) involves the development of a geothermal power plant that will produce up to 49.9 megawatts (MW) net of geothermal power. HKL1 involves development of mineral extraction and processing facilities capable of producing lithium hydroxide, silica, bulk sulfide, and polymetallic products for commercial sale. HKP1 and HKL1 (together referred to as the Project) will be constructed and operated by Hell's Kitchen PowerCo 1 LLC and Hell's Kitchen LithiumCo 1 LLC respectively, both subsidiaries of Controlled Thermal Resources (CTR) and will have shared facilities.

4.10.1 Noise Terminology

Noise Fundamentals

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs, and when the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels; the unit of measurement is known as a decibel (dB). However, the sounds heard by humans typically consist not of a single frequency but of a broadband of frequencies having different sound pressure levels. To evaluate all the frequencies of the sound, an A-weighting is applied that reflects how the human ear responds to the different sound levels at different frequencies. The A-weighted sound level adequately describes the instantaneous noise, whereas the continuous equivalent sound level, measured as Leq, represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

The U.S. Environmental Protection Agency (USEPA) has compiled data regarding the noise-generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from 60 dBA to more than 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 75 dBA measured at 50 feet from the noise source to the receptor would be reduced to 69 dBA at 100 feet from the source to the receptor and reduced to 63 dBA at 200 feet from the source. The most effective noise reduction methods consist of controlling the noise at the source, blocking the noise transmission with barriers, or relocating the receiver. Any or all these methods may be required to reduce noise levels to an acceptable level.

4.10.2 Existing Environmental Setting

Regional Setting

The Project is in the County of Imperial (County), which is situated in the southeasternmost portion of the State of California. The County encompasses an approximately 4,597-square-mile area and is bordered by Riverside County to the north, Arizona on the east, Mexico to the south, and San Diego County to the west. Principal noise sources in Imperial County are transportation (aircraft, railway lines, and motor

vehicles), industrial (rail-switching yards, utilities, and manufacturing facilities), and agricultural operations. Existing industrial sources, including geothermal and manufacturing plants, are generally located away from concentrations of sensitive receptors in the County.

Land uses in the Imperial Valley around the Salton Sea and the Salton Sea Known Geothermal Resource Area (KGRA) reflect the development trends of the County with respect to existing agricultural uses and development of renewable energy projects. In recent years, a number of solar and geothermal energy projects have been proposed for development in the County. Approximately 12 percent (347,941 acres) of the land area in County of Imperial has been designated by the U.S. Geological Survey as a KGRA. The County of Imperial has several KGRAs.

Project Site

HKP1 and HKL1 are located approximately 3.6 miles west of the community of Niland, adjacent to Davis Road, south of Noffsinger Road, and north of Pound Road, near the eastern shore of the Salton Sea. A Project vicinity map and location map are shown in Figure 2.0-1 in Chapter 2.0: Project Description. Both facilities are located within CTR's lease area from the Imperial Irrigation District (IID) and on lands owned by CTR. The gen-tie line will be located on the east of Davis Road and north of McDonald Road within IID's transmission line right-of-way (ROW) and partially within the new ROW. The Project is located within Sections 11 and 12 of Township 11 South, Range 13 East, as shown on the Niland USGS 7.5' quadrangles, San Bernardino Base Meridian.

Existing Noise Levels

The Project is surrounded by existing agricultural land uses, and the nearest urban area is the community of Niland located over 3 miles to the east. The Hudson Ranch Power Plant is located over 1 mile to the south. The nearest sensitive receiver is located 0.5 miles east along Pound Road.

In July 2011, noise levels were measured at the Sonny Bono National Wildlife Refuge, the southeast corner of the town of Niland, McDonald Road west of State Route 111, and on State Route 111 east of the Project site to obtain a baseline ambient noise level as referenced in the Hudson Ranch Power II and Simbol Calipatria II Final EIR Noise Study (Hudson Ranch Power II and Simbol Calipatria II Final EIR, 2012). According to the Final EIR, all noise level measurements were taken for a period of 15 minutes between Wednesday, July 6, for daytime and Thursday, July 7, for nighttime. The report calculated the day-night average sound level (Ldn) in dBA as shown in Table 4.10-1.

Table 4.10-1: Ambient Noise Levels

Ambient Noise Measurement	Ambient Noise Measurement Location	Time of Measurement	Noise Level (L_{dn}, dBA)
ANL-1	Sonny Bono NWR	04:08–04:23 21:03–21:18	48.5
ANL-2	State Route 111	04:47–05:02 19:03–19:18	68.1
ANL-3	Niland, CA	05:43–05:58 21:08–20:23	76.5
ANL-4	McDonald Road	05:14–05:29 19:30–19:46	58.2

Source: (Hudson Ranch Power II and Simbol Calipatria II Final EIR, 2012)	

4.10.3 Regulatory Setting

The Project would be constructed in the County of Imperial, within the state of California. The following subsections present a summary of noise-related regulatory requirements for the Project.

Federal

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The USDOT assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the Project is not under the jurisdiction of the FTA, the FTA is the only agency that has defined what constitutes a significant noise impact from implementing a project. Table 4.10-2 provides the thresholds utilized by the FTA for permanent noise level increase at the project level. As shown in the table below, the allowable cumulative noise level increase created from a project would range from 0 to 7 dBA based on the existing (ambient) noise levels in the Project vicinity. The justification for the sliding scale is that people already exposed to high levels of noise should be expected to tolerate only a small increase in the amount of noise in their community. In contrast, if the existing noise levels are quite low, it is reasonable to allow a greater change in the community noise for the equivalent difference in annoyance.

Table 4.10-2: FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2006.

State

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds, noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Code Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California as follows: 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Local

The Noise Element of the Imperial County General Plan provides the applicable noise standards for the Project. The Noise Element also contains plans and policies to protect the public from noise intrusion. Table 4.10-3 identifies applicable General Plan policies, goals, and objectives applicable to the Projects' consistency with the General Plan Noise Element.

Table 4.10-3: Consistency with County General Plan

Goals, Objectives, and Polices	Consistency with General Plan	Analysis
Noise Element		
Goal 1 – Provide an acceptable noise environment for existing and future residents in County of Imperial.	Consistent	The Project would provide an acceptable noise environment for future residents in the County. The nearest sensitive receiver is 0.5 miles away from the project site Thus, the Project is consistent with this goal.
Objective 1.3 – Control noise at the source where feasible.	Consistent	The noise analysis performed for the Project determined that it would not result in excessive noise levels. County-specified noise control Measures would be implemented as needed. The Project is consistent with this objective.
Objective 1.4 – Coordinate with airport operators to ensure operations are in conformance with approved Airport Land Use Compatibility Plans.	Consistent	The Project is not located within the planning area of any Airport Land Use Compatibility Plans and is, thus, consistent with this objective. The nearest airport is Cliff Hatfield Memorial Airport which is over 8 miles southeast of the Project site.
Objective 2.2 – Provide acoustical analysis guidelines which minimize the burden on project proponents and project reviewers.	Consistent	The noise analysis performed for the Project follows all County guidelines and is therefore consistent with this objective.

Table 4.10-3: Consistency with County General Plan

Goals, Objectives, and Polices	Consistency with General Plan	Analysis
Objective 2.3 – Work with project proponents to utilize site planning, architectural design, construction, and noise barriers to reduce noise impacts as projects as proposed.	Consistent	The noise analysis performed for the Project determined that it would not result in excessive noise levels. Therefore, no noise attenuation barriers are required, the Project is consistent with this objective.
Policy 1 – Acoustical Analysis of Proposed Projects. The County shall require the analysis of proposed discretionary projects which may be impacted by excessive noise levels.	Consistent	A noise analysis for this project was performed by Ldn Consulting. The noise study found that the Project would not result in excessive noise levels. Therefore, the Project is consistent with this policy.
Policy 2 – Noise/Land Use compatibility. When acoustical analysis of a proposed project is required, the County shall identify and evaluate potential noise/land use conflicts that could result from the implementation of the Project.	Consistent	A noise analysis was performed for the Project which determined that the Project would not result in land use conflicts. Therefore, the Project is consistent with this policy.
Policy 4 – Interior Noise Environment. Where acoustical analysis of a proposed project is required, the County shall identify and evaluate projects to ensure compliance to the California (Title 24) interior noise standards and additional requirement of this Element. Prior to the issuance of a building permit, an acoustical analysis, or equivalent documentation, must be submitted that demonstrates compliance with the standard for all buildings to be in an area of exterior noise level greater than 60 dB CNEL. No formal analysis may be required if the standard can be achieved by the minimum noise reduction indicated in Table 10 of the General Plan Noise Element.	Consistent	The noise analysis performed for the Project follows all County guidelines and is therefore consistent with this policy.
Policy 5 – New Noise Generating Projects. The County shall identify and evaluate projects which have the potential to generate noise in excess of the Property Line Noise Limits. An acoustical analysis must be submitted which demonstrates the Project's compliance.	Consistent	The noise analysis performed by Ldn Consulting would be submitted to the County as part of this EIR and is therefore consistent with this policy.

Noise Impact Zone

A noise impact zone is an area that is likely to be exposed to significant noise. The County of Imperial defines a Noise Impact Zone as an area that may be exposed to noise greater than 60 dB CNEL or 75 dB Leq. The purpose of the noise impact zone is to define areas and properties where an acoustical analysis of a proposed project is required to demonstrate project compliance with land use compatibility

requirements and other applicable environmental noise standards. The County of Imperial Noise Element defines any property meeting one of the following criteria as being in a noise impact zone:

- Within the noise impact zone distances to classified roadways, as indicated in Table 4.10-4;
- Within 1,000 feet of the boundary of any railroad switching yard;
- Within the existing or projected 60-dB CNEL contour of any airport, as shown in the County of Imperial Airport Land Use Compatibility Plan (ALUCP) or an approved airport master plan which supersedes the ALUCP. Note: Land use compatibility analysis, which may include an acoustical analysis, is required for projects proposed within the "airport vicinity" of each airport, as defined on the Compatibility Maps shown in the ALUCP. This may encompass a much larger area than the 60-dB CNEL contour; and,
- Within one-quarter mile (1,320 feet) of existing farmland that is in an agricultural zone.

Table 4.10-4: Roadway Noise Impact Zones

Roadway Classification	Distance From Centerline (feet)
Interstate Highway	1,500
State Highway or Prime Arterial	1,100
Major Arterial	750
Secondary Arterial	450
Minor Collector	150

Source: General Plan County of Imperial

Construction Noise Standards

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

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

Noise Ordinance

The standards prescribed in the County Noise Element also establish that operation of construction equipment shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m.

Saturday, unless the County Planning and Development Services Director authorizes otherwise. No commercial construction operations are permitted on Sunday or holidays.

Property Line Standards

The property line noise limits listed in Table 4.10-5 apply to noise generation from one property to an adjacent property. The standards imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. These standards do not apply to construction noise. These standards are intended to be enforced through the County's code enforcement program on the basis of complaints received from persons impacted by excessive noise. It must be acknowledged that a noise nuisance may occur even though an objective measurement with a sound level meter is not available. In such cases, the County may act to restrict disturbing, excessive, or offensive noise that causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

Table 4.10-5: Property Line Noise Limits

Zone	Time	Applicable Limit One-Hour Average Sound Level (DB)
Residential Zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-Residential Zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial Zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75

Source: General Plan County of Imperial

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

New Noise-Generating Projects

The County shall identify and evaluate projects that have the potential to generate noise in excess of the property line noise limits specified in Table 4.10-5. An acoustical analysis must be submitted that demonstrates the projects' compliance with the property line noise limits and/or required mitigation measures to reduce noise to acceptable levels. Mitigation may include a greater property line setback than required by the Land Use Ordinance, use of solid building walls without openings, noise-attenuation walls and/or landscaped earth berms, alternative construction materials or design, alternative traffic patterns, or other noise-reduction techniques.

Agricultural Noise/Right to Farm Ordinance

In recognition of the role of agriculture in the County, the Board of Supervisors has adopted a Right to Farm Ordinance (No. 1031). This ordinance requires a disclosure to owners and purchasers of property that is near agricultural lands or operations or included in an area zoned for agricultural purposes. The

disclosure advises persons that discomfort and inconvenience from machinery and aircraft noise resulting from conforming and accepted agricultural operations are a normal and necessary aspect of living in the agricultural areas of the County.

If any residential or other noise-sensitive land use is proposed within one-quarter mile (1,320 feet) of existing farmland that is in an agricultural zone, such proposed project shall be required to prepare an acoustical analysis to evaluate potential noise impacts from farm operations on the proposed project. This may include an analysis of impact of operating farm machinery or trucks hauling farm products on public roads.

County of Imperial Land Use Ordinance Drilling Standards Applicable to Geothermal Projects

The County of Imperial Land Use Ordinance includes general drilling standards specific to geothermal projects (Division 17). This ordinance requires the implementation of County-specified noise control measures, including:

1. The drilling operator shall limit drilling noise to a sound level equivalent to CNEL 60 dBA as measured at the nearest human receptor location outside the parcel boundary. This level may be exceeded by 10 percent if the noise is intermittent and during daylight hours (Land Use Ordinance 91702.01[B]).

2. Diesel equipment used for drilling within 300 feet of any residence shall have hospital-type mufflers. Well-venting and testing at these wells shall be accompanied by the use of an effective muffling device or silencer (Land Use Ordinance 91702.01[D]).

3. Heavy truck traffic, well site preparation, pipe stacking, and hydroblasting (used for descaling operations) shall be limited to the hours between 7:00 a.m. and 7:00 p.m. for any wells within 300 feet of any residence. Exceptions may be made where soundproofing is provided or during summer hours to minimize effects of heat with notice to the planning director and approval thereof (Land Use Ordinance 91702.01[I and M]).

4. Impulse noises such as sudden steam venting shall be controlled by discharge through a muffler or other sound-attenuating system, as appropriate (Land Use Ordinance 91702.01[O]).

5. Drilling may be on a 24-hour basis provided the standards above are met (Land Use Ordinance 91702.01[S])).

4.10.4 Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have a noise impact if it would:

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

Threshold b) **Result in generation of excessive groundborne vibration or groundborne noise levels?**

Threshold c) **For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public us airport, expose people residing or working in the project area to excessive noise levels?**

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.10.5 Project Impact Analysis

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

The proposed Project involves the development of a geothermal power plant that will produce up to 49.9 megawatts (MW) net of geothermal power. HKL1 involves development of mineral extraction and processing facilities capable of producing lithium hydroxide, silica, polymetallic product, and possibly boron product for commercial sale. HKP1 and HKL1 (together referred to as the Project) will be constructed and operated by Hell's Kitchen PowerCo 1 LLC and Hell's Kitchen LithiumCo 1 LLC respectively, both subsidiaries of Controlled Thermal Resources (CTR) and will have shared facilities.

Onsite Noise Impacts

Construction Noise Impacts

Noise levels resulting from proposed construction activities were obtained from CTR's equipment lists and process descriptions, reports prepared by the FTA and the FHWA, satellite imagery from the site, and field data from files.

On-site noise-generating activities associated with the Hell's Kitchen Geothermal Project would include short-term construction noise, mechanical equipment noise related to geothermal drilling, installation and testing of flash power plant equipment, and associated vehicles. Well-testing and construction of the proposed power plant and interconnection line would involve the short-term use of heavy equipment. Estimations made based on the proposed equipment list result in composite noise from well pad grading of 85 dBA Leq (h) at 50 feet and 83 dBA Leq (h) for drill rig assembly, well drilling, and testing. It is expected that well drilling average noise would be 85 dBA at 50 feet.

Major noise sources during construction of the Project would include the diesel engines on the construction equipment, operation of the drilling rig, and noise associated with the movement of pipes and casing. Construction of the power plant is anticipated to last a total of 10 months and construction of the lithium plant is anticipated to last a total of 23 months. Construction noise is usually made up of intermittent noise peaks and continuous lower levels of noise from equipment cycling through use. Noise levels associated with individual pieces of equipment can generally range between 70 and 90 dBA (FTA, 2018). Based on the proposed construction equipment list and industry-wide noise reference levels, the estimated maximum composite construction noise level for the Project is 93 dBA at a distance of 50 feet

from the building, mechanical, and electrical work sites (EMA, 2012a) (FHA, 2006). Additionally, noise from trucks, commuter vehicles, and other on-road equipment, which would mainly be along streets and access roads, would produce peak levels of approximately 88 dBA at 50 feet from the source (FTA, 2018).

During a typical day, equipment would not be operated continuously at peak levels. While the average on-site noise levels could exceed the 75 dBA Leq construction noise standard established by the County for General Industrial Zones, noise would attenuate to levels below the threshold with increasing distance until it reaches the nearest sensitive receptors. To abate noise pollution, the Applicant would install mufflers on engine-driven equipment during both construction and development operations. Additionally, the Applicant would implement an exhaust emissions control program during Project construction that would include but not limited to engine maintenance, as well as procedures to minimize emissions that would assist in reducing noise. Generally, exhaust emission control programs include the minimization of unnecessary vehicle and equipment idling time either by shutting equipment off when not in use or reducing idling time. Therefore, it is anticipated that construction noise would be reduced from the estimated peak levels.

Most of the Project construction would be located within the northern half of the Project site approximately 0.75 miles or more away from the nearest residential noise receptor along Pound Road. However, portions of the site construction would be as close as 0.5 miles. Therefore, to be conservative, construction noise levels were calculated at 0.5 miles from the nearest noise-sensitive residential land use. As shown in Table 4.10-6, construction noise levels would attenuate from 93 dBA at 50 feet from the source to 58 dBA at the closest residential receptor due to geometric spreading of sound energy. Therefore, all calculated noise levels would fall within the normally acceptable range of the guidance set forth in the County of Imperial General Plan Noise Element.

Table 4.10-6: Construction Noise Levels

Sensitive Receptor	Source Level at 50 Feet (dBA)	Approximate Distance to Project Site Property Line	Noise Reduction Due to Distance (dBA)	Resultant Noise Level at Sensitive Receptor (dBA)
Residence	93	0.5 miles east	-35	58
County of Imperial Threshold				75
IMPACT?				**NO**

The Hell's Kitchen geothermal well drilling and some power plant construction activities would take more time than those established by the County's construction noise standards. Drilling operations would occur 24 hours a day, 7 days a week. However, the Imperial County Land Use Ordinance (Division 17) includes general drilling standards specific to geothermal projects. This ordinance allows for drilling on a 24-hour basis, provided the County-specified noise control measures (Land Use Ordinance 91702.01, Sections B, D, M, O, and S) are implemented. The Project proponent will be required to implement these measures to comply with the local applicable standards.

The Hell's Kitchen power plant construction schedule is based on a 10-hour/day, 6-days/week basis. This implies that the Project may exceed the County Noise Element's construction limits for construction on

Saturdays, when the allowed construction time is limited to 8 hours. Therefore, the Project will be required to comply with all applicable noise control measures contained in the County General Plan Noise Element and Noise Abatement and Control Ordinance. In addition, the Project will be required to comply with the standards of Division 17 (Geothermal) of the County's Land Use Ordinance, which include specific noise control measures associated with geothermal well drilling.

Based on the County of Imperial's Noise Element of the General Plan, construction noise from a single piece of equipment or a combination of equipment, shall not exceed 75 dB Leq, when averaged over an eight-hour period, and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB Leq when averaged over a one -hour period. Since the nearest receptors are located over a half mile from the construction, the 75 dBA in a one-hour period is not anticipated to be exceeded, as can be seen in Table 4.10-6 above. Therefore, the Project may request to work outside the normal construction hours.

Construction Conclusions

As can be seen in Table 4.10-6, at 0.5 miles from the residential property, the point source noise attenuation from construction activities is reduced 35 dBA to a level of approximately 58 dBA. This would result in an anticipated worst-case eight-hour average combined noise level well below 75 dBA at the property line. As such, the noise levels will comply with the County of Imperial's 75 dBA standard at all Project property lines, and no impacts are anticipated.

Table 4.10-7: Construction Equipment Noise Characteristics

Equipment	Acoustical Use Factor[a] (Percent)	Maximum Sound Level at 50 Feet (dBA Lmax[b])
Off-highway trucks (flatbed truck)	40	74.3
Rollers	20	80.0
Crawler tractor (dozer)	40	81.7
Excavators	40	80.7
Graders	40	85.0
Water trucks (dump truck)	40	76.5
Rubber-tire loaders (front-end loader)	40	79.1
Scrapers	40	83.6
Cranes	16	80.6
Generator sets	50	80.6
Forklifts	40	83.4
Tractor/Loader/Backhoe	40	84.0
Aerial lifts (man lift)	20	74.7
Welders	40	74.0
Air compressors	40	77.7
Pavers	50	77.2
Paving equipment	50	77.2

[a]Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[b]Lmax is the maximum sound level during a measurement period or a noise event.

Table 4.10-7 shows the type of mechanical equipment that will be used during construction of the Project and their associated noise levels.

Onsite Operation Noise Impacts

Potential Operational Noise Impacts

This section examines the potential stationary noise source impacts associated with the operation of the Project. Primary noise sources at the geothermal power plant would include turbine operations, cooling towers, and associated Project vehicles. Typically, the loudest components at geothermal power plant operations are the cooling tower(s) and the non-condensable gas (NCG) equipment. Operational noise levels for the geothermal plant and operating wells were obtained from the Hudson Ranch Power II and Simbol Calipatria II Noise Study (Hudson Ranch Power II and Simbol Calipatria II Final EIR, 2012). The Final EIR gathered noise level measurements from the Hudson Ranch I geothermal power plant. Operational noise measured during operation at the Hudson Ranch I geothermal power plant at a distance of 50 feet from the cooling tower resulted in a noise level of 77 dBA. Noise levels measured during operation at the Hudson Ranch I geothermal power plant at a distance of 50 feet from the NCG equipment resulted in a noise level of 78 dBA. Based on noise levels referenced during the operation of production wells 13-2 and 13-3 at the HR-1 Project, the average maximum operational noise level from production wells would be approximately 58 dBA at 50 feet.

Assuming similar noise levels for the HKP1 operations, the combined noise level for the simultaneous operation of the cooling towers and the NCG facility would be approximately 81 dBA at 50 feet. The nearest project property line is located as close as 0.5-miles from the sensitive residential receptor to the east. However, facilities at this distance include well pads and ponds that do not generate significant noise. The majority of the HKP1 operations that generate significant noise include the cooling towers located a minimum of 0.75 miles or more from the nearest residence to the southeast. This would result in a combined noise level at the closest receptor of approximately 43 dBA, which would be below the County Property Line Noise Standards. Additionally, HKP1 will be required to comply with the County Land Use Ordinance 91702.01(B), which limits drilling noise to a sound level equivalent to CNEL 60 dBA as measured at the nearest human receptor location outside the parcel boundary. This level may be exceeded by 10 percent if the noise is intermittent and during daylight hours.

Table 4.10-8 provides an estimate of the projected noise levels from HKP1 operations at the nearest sensitive receptor. As presented in the table, operating sound levels are estimated to be 43 dBA at these closest sensitive receptors.

Table 4.10-8 Operational Noise Levels

Sensitive Receptor	Source Level at 50 Feet (dBA)	Approximate Distance to Project Site Property Line	Noise Reduction Due to Distance (dBA)	Resultant Noise Level at Sensitive Receptor (dBA)
Residence	81	0.75 miles southeast	-38	43
County of Imperial Threshold				45
IMPACT?				**NO**

Implementation of the Project would not result in a substantial increase in ambient noise levels at off-site noise-sensitive receptors or exceed the County of Imperial Property Line Noise Standards (70 dBA anytime for Light Industrial/Industrial Park Zones) and the applicable Noise/Land Use Compatibility criteria. Based on reported noise levels from similar operations, it is anticipated that noise levels would not exceed the County property line noise limits at the closest sensitive receptors. Therefore, operational noise impacts would be less than significant.

Off-Site Roadway Noise Impacts

To determine if direct or cumulative off-site noise level increases associated with the development of the Project would create noise impacts, the traffic volumes for the existing conditions were compared with the traffic volume increase of existing plus the Project. According to the Project VMP Analysis (DKS Associates, 2021), the Project is expected to generate 432 daily trips.

The Project will be accessed from Davis Road via new ingress/egress driveways. Project traffic will access the site from Highway 111 via McDonald Road and Davis Road. The existing average daily traffic (ADT) volumes on SR 111 is several thousand ADT. Typically, a project needs to double (or add 100 percent) the traffic volumes to have a direct impact of 3 dBA CNEL or be a major contributor to the cumulative traffic

volumes. The project will add less than a 12 percent increase to SR 111 volumes. The Project will be accessed from Davis Road via new ingress/egress driveways. Project traffic will access the site from Highway 111 via McDonald Road and Davis Road. The Project has the potential to impact noise levels along these roadways; however, no sensitive uses exist along these roadway segments. Therefore, no direct or cumulative impacts are anticipated.

4.10.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the Project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a])[1]).

Due to the localized nature of noise and since the nearest sensitive receptor to the Project site is a single-family residence located .5 miles to the east of the Project site, cumulative noise impacts would be limited to offsite roadway noise impacts. The cumulative roadway noise impacts have been analyzed in the Section 4.11 of this EIR.

Cumulative Projects Operational Traffic Conditions

To determine if direct or cumulative off-site noise level increases associated with the development of the Project would create noise impacts, the traffic volumes for the existing condition were compared with the traffic volume increase of existing plus the Project. According to the Project VMP Analysis (DKS Associates, 2021), the Project is expected to generate 432 daily trips.

The Project will be accessed from Davis Road via new ingress/egress driveways. Project traffic will access the site from Highway 111 via McDonald Road and Davis Road. The existing average daily traffic (ADT) volumes on SR 111 is several thousand ADT. Typically, a project needs to double the traffic volumes to have a direct impact of 3 dBA CNEL or be a major contributor to the cumulative traffic volumes. The Project will add less than a 12 percent increase to SR 111 volumes. The Project has the potential to impact noise levels along these roadways; however, no sensitive uses exist along these roadway segments. Therefore, no direct or cumulative impacts are anticipated.

4.10.7 Mitigation Measures

Given that all Project impacts regarding noise are less than significant, no mitigation measures are required.

4.10.8 Level of Significance After Mitigation

No mitigation measures are required; impacts related to noise would remain less than significant.

4.11 TRANSPORTATION

This section discusses the potential transportation and traffic impacts that would occur in association with implementation of the proposed Hell's Kitchen PowerCo 1 and LithiumCo 1 Project. This analysis includes a discussion of the effects of Project construction and operational traffic on Highway 111, Davis Road, and McDonald Road. Information contained in this section is summarized from the *Vehicle Miles Travelled (VMT) Analysis* prepared by DKS Associates (December 3, 2021), included in Appendix K of this EIR.

4.11.1 Existing Environmental Setting

Regional Setting

The following roadway classifications are derived from the County of Imperial General Plan Circulation and Scenic Highways Element (County 2008):

Expressway

The main function of this classification is to provide regional and intracounty travel services. Features include high design standards with six travel lanes; wide, landscaped medians; highly restricted access; provisions for public transit lands, including but not limited to bus lanes, train lanes, or other mass transit type means; and no parking. Minimum right-of-way (ROW) is 210 feet and consists of three travel lanes per direction, a 56-foot median, and shoulders along both sides of the travel way. The ROW width is exclusive of necessary adjacent easements, such as for those for the Imperial Irrigation District (IID) facilities, because these vary. The minimum intersection spacing is 1 mile (ROWs may be greater if the road segment also serves as a corridor for public utilities).

Prime Arterial

The main function of this classification is to provide regional, subregional, and intracounty travel services. Features include high design standards with four to six travel lanes; raised and landscaped medians; highly restricted access, which in most cases will be a 1-mile minimum; provisions for public transit lanes, including but not limited to bus lanes, train lanes, or other mass transit type means; and no parking. The absolute minimum ROW without public transit lanes is 136 feet. ROW dimensions are specified in the standards for specific road segments.

Minor Arterial

These roadways provide intracounty and subregional service. Access and parking may be allowed but will be closely restricted to ensure proper function of this roadway. Typical standards include the provision for four and six travel lanes with raised, landscaped medians for added safety and efficiency, as well as protected left turn lanes at selected locations. Some roadways may also contain provisions for public transit lanes or other mass transit type means. Minimum ROW is 102 feet for four lanes and 126 feet for six lanes.

Major Collector (Collector)

These roadways are designed to provide intracounty travel as a link between the long-haul facilities and the collector/local facilities. This type of roadway frequently provides direct access to abutting properties, although that is not its primary purpose. Typical design features include provision for four travel lanes

without a raised median; some roadways may also contain provisions for public transit lanes or other mass transit type means. Minimum ROW is 84 feet. Parking is generally not permitted.

Minor Local Collector (Local Collector)

These roadways \ connect local streets with adjacent Collectors or the arterial street system. Design standards include provision for two travel lanes and parking, except in specific locations where parking is removed to provide a turn lane at intersections. Local Collector streets frequently provide direct access to abutting properties, although that should be avoided where feasible. Minimum ROW is 70 feet.

Residential Street

This street type includes residential cul-de-sac and loop streets and is designed to provide direct access to abutting properties and to give access from neighborhoods to the Local Street and Collector Street system. This classification should be discontinuous in alignment to discourage through trips. Typical design standards include provision for two travel lanes, parking on both sides, and direct driveway access. Minimum ROW is 60 feet.

Existing Street Network

Proposed Access Roads

State Route 111 (SR 111 or Highway 111) is classified as a State Highway/Expressway in the Imperial County General Plan Circulation Element. Highway 111 is a north–south highway connecting the three largest cities in Imperial County (Calexico, El Centro, and Brawley) and runs from Interstate 10 in Riverside County to the U.S.-Mexico border. Outside the towns of Calipatria and Niland, Highway 111 is constructed as a two-lane, undivided, north–south roadway, providing one lane of travel per direction; and the posted speed limit is 65 mph.

McDonald Road is an east–west route though Imperial County. Currently, McDonald Road is a paved two-lane roadway west of English Road, an unpaved two-lane roadway from English Road east to Highway 111, and a two-lane paved roadway east of Highway 111.

Davis Road is a north–south route through Imperial County. Davis Road starts at the western terminus of West Schrimpf Road and proceeds north toward and ultimately terminates at Highway 111. Davis Road is currently an unpaved two-lane roadway within the Project vicinity. Following construction, Davis Road is proposed to be paved from Noffsinger Road to McDonald Road.

Other Roads in Project Vicinity

Roads near the Proposed Project that are not proposed to be used for construction access or during operations include the following:

Noffsinger Road is an east–west route through Imperial County.

Alcott Road is an east–west route through Imperial County.

Pound Road is an east–west route through Imperial County. Hazard Road is currently an unpaved two-lane roadway within the Project vicinity.

Hazard Road is an east–west route through Imperial County. Hazard Road is currently an unpaved two-lane roadway within the Project vicinity.

Traffic Study Areas

The following is a list and brief description of the roadways that would be utilized for access to the Project site during construction and subsequent operational activities.

Intersections

1. Highway 111 and McDonald Road
2. McDonald Road and Davis Road

Segments

1. **Highway 111:** North and south of McDonald Road
2. **McDonald Road:** Highway 111 to Davis Road
3. **Davis Road:** McDonald Road to Project site

Project Site Access

The Project will be accessed from Davis Road via new ingress/egress driveways. Project traffic will access the site from Highway 111 via McDonald Road and Davis Road.

Project Site

The Project would be located within Imperial County (County), California, approximately 3.6 miles west from the town of Niland, which is a census-designated place. The Project would be adjacent to Davis Road and south of Noffsinger Road. The HKP1 and HKL1 shared facilities would be on three parcels (Assessor Parcel Numbers 020-010-012, 020-010-013, and 020-070-060). The gen-tie and power lines would span 13 additional parcels. The Project is in a rural area of the County, with the closest residence approximately 1 mile east of the Proposed Project site on Pound Road. Davis Road is an unpaved road that typically does not experience through traffic.

4.11.2 Regulatory Setting

State

Vehicle Miles Traveled

In accordance with Senate Bill (SB) 743 and the resulting changes to the CEQA Guidelines, local agencies may no longer use measures of vehicle delay, such as level of service (LOS), to quantify transportation impacts on the environment. LOS has been replaced by vehicle miles traveled (VMT), which is a systemic metric and a useful indicator of overall land use and transportation efficiency. The most efficient system is one that minimizes VMT by encouraging shorter vehicle trip lengths; more walking and biking; or increased carpooling and transit. VMT has been codified in the CEQA Guidelines as the most appropriate measure for measuring transportation impacts under CEQA (CEQA Section 15064.3). This change went into effect Statewide on July 1, 2020. Imperial County has not yet adopted any VMT thresholds or standards for environmental analysis of development project.

California Department of Transportation

The California Department of Transportation (Caltrans) manages more than 50,000 miles of the State's highway and freeway lanes; provides intercity rail services; permits more than 400 public-use airports and special-use hospital heliports; and works with local agencies. Specifically, Caltrans is responsible for the design, construction, maintenance, and operation of the California State Highway system. As it relates to the Proposed Project and potential construction access routes, Caltrans is responsible for maintaining and managing Highway 111.

Regional

2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

On April 7, 2016, the SCAG adopted the 2016–2040 RTP/SCS (SCAG 2016). The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. It receives input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders within Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. The RTP/SCS demonstrates how the region will reduce emissions from transportation sources to comply with SB 375 and meet the National Ambient Air Quality Standards set forth by the Clean Air Act.

The updated RTP/SCS contains thousands of individual transportation projects that aim to improve the region's mobility and air quality and revitalize the economy. Following the adoption of the RTP/SCS, the county transportation commissions have identified new project priorities and have experienced technical changes that are time sensitive. Additionally, the new amendments for the plan have outlined minor modifications to project scopes, costs, and/or funding and updates to completion years. The amendments to the RTP/SCS do not change any other policies, programs, or projects in the plan.

Local

County of Imperial Circulation and Scenic Highways Element

The Circulation and Scenic Highways Element identifies the location and extent of transportation routes and facilities. It is intended to meet the transportation needs of local residents and businesses and serve as a source for regional coordination. The inclusion of Scenic Highways provides a means of protecting and enhancing scenic resources within highway corridors in Imperial County. The purpose of the Circulation and Scenic Highways Element is to provide a comprehensive document which contains the latest knowledge about the transportation needs of the County and the various modes available to meet these needs. Additionally, the purpose of this Element is to provide a means of protecting and enhancing scenic resources within both rural and urban scenic highway corridors.

Imperial County has not yet adopted any VMT thresholds or standards for environmental analysis of development project. The County does not have published significance criteria for circulation. However, the County General Plan does state that the LOS goal for intersections and roadway segments is to operate at LOS "C" or better (County 2008). Coordination across jurisdictional standards for road classification and design standards was identified as a crucial component to the 2008 update of the Circulation and Scenic Highways Element. Table 4.10-4 analyzes the consistency of the Project with specific policies contained in the Imperial County General Plan associated with transportation and traffic.

Table 4.11-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Circulation and Scenic Highways Element		
Safe, Convenient, and Efficient Transportation System		
Goal 1 – The County will provide and require an integrated transportation system for the safe and efficient movement of people and goods within and through the County of Imperial with minimum disruption to the environment.	Consistent	A VMT analysis was prepared for the Project by DKS Associates. The analysis estimated the Project's daily VMT per employee using data from the California Statewide Travel Demand Model. Based on the VMT analysis, the Proposed Project represents a less than significant transportation impact and will result in minimal disruption to the environment. Therefore, the Project is consistent with this objective.
Objective 1.1 – Maintain and improve the existing road and highway network, while providing for future expansion and improvement based on travel demand and the development of alternative travel modes.	Consistent	To improve the existing road and highway network, the Applicant will upgrade Davis Road with aggregate base during construction of the HKP1 Project and construct a bridge across the R Drain to connect the northern and southern portions of the site. County road ingress/egress points will be constructed in conformance with Imperial County Public Works Department and Fire Department requirements. Road access will be restricted during construction and appropriate traffic controls will be used during construction. Davis Road will be paved from McDonald Road to Noffsinger Road at the completion of HKL1 construction. Therefore, the Project is consistent with this objective.
Objective 1.2 – Require a traffic analysis for any new development which may have a significant impact on County roads. A traffic analysis may not be necessary in every situation, such as when the size or location of the project will not have a significant impact upon and generate only a small amount of traffic. Also, certain types of projects, due to the trip generation characteristics, may add virtually no traffic during peak periods. These types of projects may be exempt from the traffic analysis requirements. Whether a particular project qualifies for any exemption will be determined by the Department of Public Works Road Commissioner.	Consistent	A VMT analysis was prepared for the Project by DKS Associates. The analysis concluded that the Proposed Project represents a less than significant transportation impact based on VMT, and no further VMT analysis is required. Because the Proposed Project would not have a significant effect on County roads, a traffic analysis is not required. Therefore, the Project is consistent with this objective.

County of Imperial Bicycle Master Plan Update: Final Plan

In 2012, the County adopted an updated Bicycle Master Plan to serve as the guiding document for the development of an integrated network of bicycle facilities and supporting programs designed to link the unincorporated areas and attractive land uses throughout the County. This document is an update to the previously adopted Countywide Bicycle Master Plan and was prepared to accomplish the following goals:

1. To promote bicycling as a viable travel choice for users of all abilities in the County
2. To provide a safe and comprehensive regional connected bikeway network
3. To enhance environmental quality, public health, recreation, and mobility benefits for the County through increased bicycling

The County of Imperial's General Plan, Circulation and Scenic Highways Element, and Conservation and Open Space Element provide a solid planning basis for the Bicycle Master Plan. Even though Imperial County has a limited number of bicycle facilities and no comprehensive bicycle system, interest in cycling is growing; and numerous cyclists bike on a regular basis for both recreation and commuting to work and school.

4.11.3 Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have an impact on transportation if it would:

Threshold a) **Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?**

Threshold b) **Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?**

Threshold c) **Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

Threshold d) **Result in inadequate emergency access?**

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that weredetermined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.11.4 Methodology

Proposed Project

Construction

As discussed in **Chapter 3.0: Project Description**, the HKP1 Project will require approximately 54,000 truck trips over the course of the Project construction. The HKL1 Project is estimated to have an average of 25 trucks per day to and from the construction site, except during site grading, when about 250 trucks will travel to and from the Project construction site daily. Up to 500 workers will travel to the site per day at the peak of construction. Below is a typical list of construction equipment anticipated to be required for the Project:

- Off-highway trucks
- Rollers
- Crawler tractors
- Excavators
- Graders
- Water trucks
- Compactors
- Rubber-tire loaders
- Scrapers
- Cranes
- Generator sets
- Concrete pump
- Plate compactors
- Rough-terrain forklifts
- Skid-steer loaders
- Tractors/Loaders/Backhoes
- Aerial lifts
- Welders
- Air compressors
- Pavers
- Paving equipment

Operation

The HKP1 facility will require up to 22 full-time, on-site employees during operation. Operational staff will include operators, managers, supervisors, maintenance technicians, and lab technicians. On a typical day, the operators will assume a two-shift, 24-hour workday, and all other personnel will assume a standard 8-hour workday. Approximately 22 worker trips, 3 vendor trips, and 1 haul-truck trip will take place during daily operations.

The HKL1 facility is expected to require 90 full-time, on-site employees during operation. Facility operations will continue 24 hours per day, 7-days per week. It is projected that up to 44 employees will be on-site at any given time, with 28 day-staff employees and two rotating shifts of 16 additional employees overlapping the day staff and covering nights, weekends, and holidays. Approximately 48 trucks per day will travel in and out of the Project site during normal operations. Daily truck traffic includes up to 40 trucks for product shipping. All trucks used for product shipping will be electric. Truck traffic will also include approximately eight truck deliveries of reagent chemicals, cooling tower treatment chemicals, consumptive media, product-packaging materials, and fuel. Outgoing general waste generated on the site will be removed by truck as needed and is expected to require less than one truck per day.

Parking and Site Access

Parking will be available in the administration and control building area. The Project will be accessed from Davis Road via new ingress/egress driveways. Davis Road will be upgraded with aggregate base during construction of the HKP1 Project. Project traffic will access the site from Highway 111 via McDonald Road and Davis Road. A bridge will be constructed across the R Drain to connect the northern and southern portions of the Project site. County road ingress/egress points will be constructed in conformance with Imperial County Public Works Department and Fire Department requirements. Road access will be restricted during construction, and appropriate traffic controls will be in place during construction of the

Project. Davis Road will be paved from McDonald Road to Noffsinger Road at the completion of HKL1 Project construction. All structures within the IID ROW, including the bridge over the R Drain, will require IID ROW and approval.

Project Trip Generation Forecast

Construction Trip Generation

The HKP1 Project will require approximately 54,000 truck trips over the course of the project construction. The HKL1 Project is estimated to have an average of 25 trucks per day to and from the construction site, except during site grading when approximately 250 trucks will travel to and from the Project construction site daily. Up to 500 workers will travel to the site per day at the peak of construction.

Day-to-Day Operations Trip Generation

Trip generation for the day-to-day operations portion of the Project was also obtained from the Project description, as stated above. The Institute of Transportation Engineers (ITE) *Trip Generation Manual,* 11th Edition (Manual) was utilized to estimate daily project trip generation. While the Manual has many categories of land use, it does not include data for a geothermal plant land use category specifically or for power plants in general. The most analogous ITE land use category is under the general land use group of "Industrial." The most appropriate specific land use in the manual is "Utility" (Code 170), representing land uses pertaining to energy production and similar uses. The Trip Generation Manual includes formulas and rates for trip generation based on metrics including project building square footage and number of employees. Often, building square footage is the appropriate metric to use, however in this case, it is not possible given that the Proposed Project is over 600,000 square feet of building, while the maximum building square footage allowed in ITE Code 170 is less than 50,000 square feet. Therefore, employment is the only metric for estimating trip generation. As shown on Table 4.11-2, a total of 432 estimated daily trips would occur during Project operations.

Table 4.11-2: Day-to-Day Operations Trip Generation

Project/Use	Estimated Employees	ITE Code[a]	Daily Trip Rate[a]	Estimated Daily Trips
Power Plant	22	170 (Utility)	3.85 per employee	85
Extraction	90	170 (Utility)	3.85 per employee	347
Total	**112**			**432**

Note:

[a] *Trip Generation Manual*, 11th Edition, Institute of Transportation Engineers

Vehicle Miles Traveled

Significance Threshold

Because the County has not yet adopted its own threshold for VMT, it is relying on the guidance provided in the Technical Advisory published by the Governor's Office of Planning and Research (OPR) in December 2018 (the "OPR Guidance") for purposes of evaluating the potential VMT impacts of development projects. The OPR Guidance for VMT states that depending on the type of project, different thresholds of significance are applicable. The "Recommended Numeric Thresholds for Residential, Office, and Retail

Project" section of the OPR Guidance includes a section on "Other Project Types," which applies to the Project:

> Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT. For that reason, OPR recommends the quantified thresholds described [in the Residential, Office, and Retail Project section] for purposes of analysis and mitigation. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types.

Guidance from OPR's Technical Advisory is used to establish a significance threshold of a minimum 15-percent reduction or more from the regional average VMT per employee for this Project evaluation. That is, if the Project's VMT per employee is more than 15 percent below the regional average, no significant transportation impact would result. It should be noted that the Technical Advisory has no guidelines for truck trips.

VMT Methodology

The VMT assessment was conducted using California Statewide Travel Demand Model (CSTDM) data provided by Caltrans. The following is a summary of steps involved in calculating the trip length and region wide VMT:

1. Determine the appropriate Traffic Analysis Zone (TAZ) for the Project's location
2. Determine the estimated VMT per employee for the Project's TAZ
3. Determine the average estimated VMT per employee for Imperial County as a whole (i.e., the Region)
4. Compare the estimated VMT per employee for the Project's TAZ to the County as a whole and determine if the Project TAZ's result is more than 15% below the County average.

4.11.5 Project Impact Analysis

Threshold a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?

Threshold b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

As stated in the methodology above, the Project's daily VMT per employee has been estimated using data from the CSTDM. On its website, Caltrans has provided a link to VMT per Capita and VMT per Employee estimates by TAZ based on both the existing (2010) and 2040 versions of the model. **Table 4.11-3** shows the VMT per Employee, by TAZ.

Table 4.11-3: VMT per Employee by TAZ (Imperial County)

TAZ[a]	VMT	HBW[b] VMT	HBW TRIP Length	Employees	VMT per Employee	% of County Average
5600	**48,026**	**19,184**	**13.53**	**2,305**	**20.84**	**82.5%**
5601	103,324	35,017	9.24	3,438	30.05	119.0%
5602	58,731	18,633	7.69	1,740	33.75	133.7%
5603	76,193	22,281	5.86	2,329	32.72	129.6%

TAZ[a]	VMT	HBW[b] VMT	HBW TRIP Length	Employees	VMT per Employee	% of County Average
5604	52,467	21,345	12.18	2,144	24.47	96.9%
5605	93,969	38,537	8.73	4,165	22.56	89.4%
5606	169,048	62,861	7.30	5,772	29.29	116.0%
5607	130,294	47,401	6.17	4,869	26.76	106.0%
5608	82,801	33,034	7.11	3,517	23.54	93.2%
5609	53,983	20,240	6.04	2,178	24.79	98.2%
5610	84,984	34,285	6.23	3,472	24.48	96.9%
5611	28,830	11,097	5.80	1,437	20.06	79.5%
5612	94,598	33,225	4.87	4,511	20.97	83.1%
5613	24,725	9,427	5.24	1,347	18.36	72.7%
5614	62,291	16,545	16.27	1,288	48.36	191.5%
5615	15,591	7,219	14.16	814	19.15	75.9%
5616	115,892	50,620	9.35	5,073	22.84	90.5%
5699	55,663	23,371	6.25	3,106	17.92	71.0%
6836	99	103	17.21	21	4.72	18.7%
COUNTY	**1,351,510**	**504427**	**169.22**	**53526**	**25.25**	**100%**
THRESHOLD	**(85% of Countywide Average)**				**21.46**	**85%**

Notes:
[a] The Proposed Project is in TAZ 5600 (bolded)
[b] HBW = Home Based Work

The table shows that the Project's traffic analysis zone (TAZ 5600) has an estimated VMT per employee of 20.84, which is approximately 82.5% of the Countywide average of 25.25 and falls below the 85% threshold of 21.46. Therefore, based on the VMT analysis presented above, the Proposed Project represents a less than significant transportation impact and no further VMT analysis is required.

4.11.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

The construction and operation of the Proposed Project would not result in direct impacts on intersections, roadway segments, or freeway segments. Therefore, less than significant impacts have been identified. Implementation of the Project in combination with other proposed, approved, and reasonably foreseeable projects in the region would not result in cumulative impacts to any street segments or intersections. Additionally, related projects would similarly undergo CEQA review, and determinations regarding the significance of impacts of the related projects on transportation would be made on a case-by-case basis. If necessary, the applicants of the related projects would be required to implement appropriate mitigation measures. Therefore, implementation of related projects and other anticipated

growth in Imperial County would not combine with the Proposed Project to result in cumulatively considerable impacts on transportation.

4.11.7 Mitigation Measures

Based on the results discussed above, the Proposed Project land use does not require any VMT based mitigation.

4.12 TRIBAL CULTURAL RESOURCES

This section evaluates the Proposed Project's potential impacts on tribal cultural resources (TCRs). TCRs are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR) or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

Applicable State and local policies related to TCRs are discussed and potential impacts to TCRs are based on coordination and consultation with California Native American tribes that are traditionally and culturally affiliated with the Project site. The consultation process was conducted pursuant to PRC Section 21080.3. Additionally, information used in preparing this section was derived from the consultation summaries and communication between the County and tribes. A record of the consultation is contained in Appendix L of this EIR.

4.12.1 Existing Environmental Setting

In accordance with Section 15063(a) of the CEQA Guidelines, the County prepared a Notice of Preparation (dated December 11, 2020) that identified the topics to be analyzed in the EIR. In compliance with Assembly Bill (AB) 52 (2014), the County provided formal notification of the Proposed Project on March 21, 2022, via United States Postal Service (USPS) certified mail to each representative of two Native American groups and individuals who may have knowledge of cultural resources in the Project area. The letters can be seen in Appendix L: AB 52 Tribal Consultation. Letters were sent to the Quechan Indian Tribe and the Torres-Martinez Indian Tribe. Both Tribes had until April 25, 2022, to respond. Consultation with the Tribes was concluded on October 5, 2022.

4.12.2 Regulatory Setting

State

Assembly Bill 52

AB 52, in effect as of July 1, 2015, introduces tribal cultural resources as a class of cultural resources and additional considerations relating to Native American consultation into CEQA. As a general concept, a tribal cultural resource is similar to the federally defined Traditional Cultural Properties; however, it incorporates consideration of local and State significance and required mitigation under CEQA. A tribal cultural resource may be considered significant if it is included in a local or State register of historical resources; is determined by the lead agency to be significant pursuant to criteria set forth in California Public Resource Code (PRC) Section 5024.1; is a geographically defined cultural landscape that meets one or more of these criteria; or is a historical resource described in PRC Section 21084.1, a unique archaeological resource described in PRC Section 21083.2, or a nonunique archaeological resource if it conforms with the above criteria.

Native American Historic Resource Protection Act

State law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Native American Heritage Commission (NAHC) to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act (PRC Section 5097 et seq.) makes it a misdemeanor punishable by up to one year in jail to deface or destroy a Native American historic or cultural site that is listed or may be eligible for listing in the CRHR.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C., Chapter 32), enacted in 2001, requires all State agencies and museums that receive State funding and have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The NAGPRA also provides a process for the identification and repatriation of these items to the appropriate tribes.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code (HSC) Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Section 7050.5b). If the coroner determines or has reason to believe that the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Section 7050.5c). The NAHC will notify the most likely descendant (MLD); with the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 24 hours' notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

Imperial County General Plan

The Conservation and Open Space Element of the General Plan includes goals, objectives, and policies for the protection of tribal cultural resources and scientific sites that emphasize identification, documentation, and protection of tribal cultural resources. Table 4.12-1 provides a consistency analysis of the applicable Imperial County General Plan policies relevant to cultural resources as they relate to the Project. While this EIR analyzes the Project's consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

Table 4.12-1: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Conservation and Open Space Element		
Preservation of Cultural Resources		
Objective 3.3 – Engage all local Native American Tribes in the protection of tribal cultural resources, including prehistoric trails and burial sites.	Consistent	AB 52 letters were sent to the Fort Yuma–Quechan (Quechan) Indian Tribe and the Torres-Martinez Indian Tribe. Both tribes had until April 25, 2022, to respond. Both tribes responded, and the Quechan Indian Tribe requested to consult with the County. The County met with the tribe on two separate occasions and provided requested updates from the tribe to the cultural resources report. The Project is consistent with this objective.

4.12.3 Thresholds of Significance

To assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have an impact on tribal cultural resources if it would:

Threshold a) **Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American tribe, and that is:**

(i) **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as define in Public Resources Code Section 5020.1(k), or**

(ii) **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth is subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?**

4.12.4 Methodology

PRC Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the NAHC to identify potential significant impacts to TCRs, as further defined in PRC Section 21074 as part of CEQA. In accordance with PRC Section 21080.3.1(d), the County formally notified the California Native American tribes associated with the Project area to address potential impacts associated with California Native American resources.

As previously mentioned in Section 4.3: Cultural Resources, the South Coastal Information Center records search performed for the Project resulted in 19 cultural studies indicating the entire Project area has been previously surveyed. Two resources were noted based on the survey and record searches that could be of relevance to the Project area (HK-I-1, a historic-era isolated bottle base) and TES-HK-001H (remnants of a historic-era house). Based on the background research and results of the survey, Tierra Environmental Services archaeologists determined that TES-HK-001H would be unlikely to provide cultural value to any California Native American tribes and does not require further archaeological testing or evaluation.

4.12.5 Project Impact Analysis

Threshold a) **Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American tribe, and that is:**

(i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as define in Public Resources Code Section 5020.1(k), or

(ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth is subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?

As previously mentioned, based on the background research and results of the survey, Tierra Environmental Services archaeologists determined that the newly discovered site, TES-HK-001H, is unlikely to provide cultural value to any California Native American tribes. No other sites listed or eligible for listing in a historical register were identified within or adjacent to the Project site.

Additionally, AB 52 letters were sent to the Quechan Indian Tribe and the Torres-Martinez Indian Tribe. Both Tribes had until April 25, 2022, to respond. Pursuant to PRC 21080.3.1(d), each tribal government or representative was given 30 days upon receipt of the AB 52 notification letter to provide a request for consultation on the Project. Both tribes responded to the initial notification letter, with one tribe, the Quechan Indian Tribe, requesting consultation on April 5, 2022. The County met with the Quechan Indian Tribe on May 20, 2022, where the tribe requested additional information, including the cultural resources report, which was sent to the tribe. A subsequent AB 52 consultation with the Quechan Indian Tribe was scheduled for and conducted on August 19, 2022. The tribe requested changes to the cultural resources report, these changes were made, and the updated cultural report was sent to the tribe. As lead agency, the County of Imperial has fulfilled its obligations under AB 52 to engage in tribal consultation with all other tribal governments.

Based on the results of the Cultural Resources Survey and in consultation with the tribes, the County has determined there are no known tribal cultural resources within the Project site. However, the potential remains for the Project's ground-disturbing activity to impact undiscovered resources. These resources could include but not be limited to lithic materials, faunal, pottery, ceramics, building materials, or

glassware. Impacts would be considered less than significant with implementation of the mitigation measures outlined in Section 4.4.

4.12.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

According to CEQA, the importance of TCRs is the value of the resource to California Native American tribes culturally affiliated with the Project area. Therefore, the issue that must be explored in a cumulative analysis is the cumulative loss of TCRs. For TCRs that are avoided or preserved through dedication within open space, no impacts would occur. However, if avoidance or dedication of open space to preserve TCRs is infeasible, those impacts must be considered in combination with TCRs that would be impacted for other projects included in the cumulative project list.

The Project site does not contain any TCRs listed in the CRHR or known to a California Native American tribe; therefore, the Project's cumulative impacts to TCRs would be less than significant. Additionally, individual projects would be evaluated on a project-by-project basis to determine the extent of potential impacts to TCRs and historical/archeological resources. Further, each project would be required to comply with AB 52 for the purposes of identifying potential TCRs. With adherence to State laws as well as implementation of Project-specific mitigation as needed, cumulative impacts to TCRs would be less than significant.

4.12.7 Mitigation Measures

Refer to Section 4.4 Cultural Resources for a complete discussion.

CUL-1 The Applicant shall retain the services of a Qualified Archaeologist meeting the Secretary of the Interior Standards or County standards, whichever is greater, and require that all initial ground-disturbing work be monitored by archaeological specialist (monitor) proficient in artifact and feature identification in monitoring contexts. The Consultant (Qualified Archaeologist and/or monitor) shall be present at the Project construction phase kickoff meeting.

CUL-2 Prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project site, the Consultant shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the Lead Contractor and all subcontractors shall make their personnel available. A tribal monitor shall be provided an opportunity to attend the preconstruction briefing, if requested. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to archaeological resources and maintain environmental compliance. This WEAP training will educate the monitor(s) of construction procedures to avoid construction-related injury or harm. This training may be

performed periodically, such as for new personnel coming on to the Project as needed.

CUL-3 The Contractor shall provide the Consultant with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours will be provided to the Consultant of commencement of any initial ground-disturbing activities, such as vegetation grubbing or clearing, grading, trenching, or mass excavation.

A monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the Qualified Archaeologist, shall observe initial ground-disturbing activities and, as they proceed, adjust the number of monitors as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The Consultant and the Lead Contractor and subcontractors shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance to provide appropriate oversight.

CUL-4 In the event of the discovery of previously unidentified archaeological materials, the Contractor shall immediately cease all work activities within an area of no less than 100 feet of the discovery. After cessation of excavation, the Contractor shall immediately contact the County. Except in the case of cultural items that fall within the scope of the Native American Grave Protection and Repatriation Act (NAGPRA), the California Health and Safety Code 7050.5, CEQA Section 15064.5, or California Public Resources Code Section 5097.98, the discovery of any cultural resource within the Project area shall not be grounds for a Project-wide "stop work" notice or otherwise interfere with the Project's continuation except as set forth in this paragraph. Additionally, all consulting Native American tribal groups that requested notification of any unanticipated discovery of archaeological resources on the Project shall be notified appropriately. If a discovery results in the identification of cultural items that fall within the scope of NAGPRA, the Contractor shall immediately cease all work activities within an area of no less than 100 feet (30 meters) of the discovery. In the event of an unanticipated discovery of archaeological materials during construction, the Applicant-retained Qualified Professional Archaeologist shall be contacted to evaluate the significance of the materials prior to resuming any construction-related activities in the vicinity of the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and it cannot be avoided, the Applicant shall implement an archaeological data recovery program.

CUL-5 At the completion of all ground-disturbing activities, the Consultant shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds as well as providing follow-up reports of any finds to the SCCIC, as required.

In the event unanticipated, buried prehistoric archaeological resources (lithic material, faunal, pottery, etc.) or historical archaeological resources (ceramics, building materials, glassware, etc.) are unearthed during construction or any ground disturbing activities within the Project area, additional resource treatments would become necessary. Once a potential resource has been identified, all work within 100 feet must be halted until the find can be assessed by a qualified archaeologist.

4.12.8 Level of Significance After Mitigation

Impacts related to tribal cultural resources would be less than significant with implantation of Mitigation Measures CUL-1 through CUL-5 identified above.

4.13 UTILITIES AND SERVICE SYSTEMS

This section includes an evaluation of potential impacts for identified utilities and service systems that could result from implementation of the Project. Utilities and service systems include water supply and treatment, wastewater treatment facilities, stormwater drainage facilities, electricity, natural gas, telecommunication facilities, and solid waste disposal. The impact analysis provides an evaluation of potential impacts to utilities and service systems based on criteria derived from the California Environmental Quality Act (CEQA) Guidelines in conjunction with actions proposed in Section 2, Project Description. Information in this section is based on information obtained from the WSA for the Project (Chambers Group 2023) included in Appendix M of this EIR.

4.13.1 Existing Environmental Setting

Regional Setting

Water and Sewer Service

Groundwater underlying the Imperial Valley is generally of poor quality and unsuitable for domestic or irrigation purposes; thus, the main source of water for wholesalers is the Colorado River (IWF 2012).

In the unincorporated areas of the County, water and sewer services are generally limited to parcels within or immediately adjacent to established communities or incorporated cities. Each city and unincorporated community has its own water treatment facilities for treating and distributing water to the users of each jurisdiction. Ten communities within Imperial County receive water for domestic purposes from the Imperial Irrigation District (IID): Calexico, Holtville, El Centro, Imperial, Brawley, Westmorland, Calipatria, Niland, Seeley, and Heber (County 1997b).

Five other water districts supply water to other areas in Imperial County outside the IID boundaries. These additional water districts are the Palo Verde Irrigation District, the Palo Verde County Water District, the Bard Water District, the Winterhaven Water District, and the Coachella Valley Water District. The East Mesa Unit and the West Mesa Unit are located within the IID boundaries; however, the East Mesa Unit relies on four groundwater wells that are approximately 600 feet deep, and the West Mesa Unit has water delivered from the Elder Lateral Canal. The communities of Ocotillo, Nomirage, and Yuha Estates rely on groundwater from the Ocotillo-Coyote Wells groundwater basin (County 1997b).

Outside established communities where urban services cannot be extended or an individual water well cannot be provided, water is available through a canal system for uses other than drinking and through commercial drinking water companies. Sewage is treated by individual septic tank systems. Larger developments may require State-approved sewer or water treatment systems or may have to connect to special districts (County 2013).

Colorado River Water Rights

The 2003 Quantification Settlement Agreement and Related Agreements (QSA) serve as the laws, regulations, and agreements granting California the most senior water rights along the Colorado River and specifying that IID has access to 3.1 million acre-feet (maf) of Colorado River water per year. Imperial Dam, located north of Yuma, Arizona, serves as a diversion structure for water deliveries throughout

southeastern California, Arizona, and Mexico. Water is transported to the IID water service area through the All-American Canal (AAC) for use throughout the Imperial Valley.

Stormwater

The federal Clean Water Act provides the California Regional Water Quality Control Boards (RWQCBs) with the authority and framework for regulating stormwater discharges under the (National Pollutant Discharge Elimination System) NPDES Permitting Program. Cities and local jurisdictions that operate municipal stormwater systems must obtain NPDES permit coverage for discharges of municipal stormwater to waters of the United States. The State and RWQCBs implement multiple stormwater permitting programs to regulate stormwater entering local municipal systems, including Municipal Separate Storm Sewer System (MS4) Permits (SWRCB 2020).

Phase 1 MS4 permits regulate stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people or more) municipalities. The Statewide Phase II MS4 permit regulates small municipalities (population of less than 100,000 people). On April 30, 2003, the California State Water Resources Control Board (SWRCB) issued a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities (population less than 100,000). The Cities of Imperial and El Centro, Calexico, and Brawley and the County of Imperial are enrolled under the State Water Board General Order for Phase II MS4s (RWQCB 2021).

Electricity and Natural Gas

Electricity is available for most areas of the County through IID, Southern California Edison, or San Diego Gas and Electric Company (SDG&E) (County 2013). IID provides electricity to more than 150,000 customers in Imperial County, as well as to parts of Riverside and San Diego Counties. The service area covers approximately 6,471 square miles. IID's generating facilities and sources of power are varied and dispersed across the County. Renewable sources of energy generation include solar, hydroelectric, geothermal, and wind. More diverse sources include biomass and biowaste (IID 2021).

IID's transmission system consists primarily of 161-kilovolt (kV) and 92-kV transmission lines and lower-voltage distribution lines. IID also has two 230-kV transmission lines that allow for import/export of electrical power to its system in the County. SDG&E and IID operate a 500-kV transmission line that traverses the southern part of Imperial County and interconnects with the transmission system in Arizona. This 500-kV transmission line is the primary import line for electrical power to be wheeled into SDG&E's system to supply power to San Diego County and the City of San Diego. This line also provides import/export capacity to IID's service area (EDAW 2006).

Natural gas service within the County is provided by SoCalGas, with transmission lines following mainly along Highway 111, Interstate 8, Dogwood Road, and Barbara Worth Road. Transmission lines stretch from the Chocolate Mountains in the northern portion of the County to the Mexico border in the southern portion. High-pressure distribution lines branch off the transmission lines in all directions. The majority of these high-pressure distribution lines are concentrated around the City of El Centro (SoCalGas 2022).

In 2019, Imperial County consumed a total of approximately 1,486.2 GWh of electricity and approximately 41.9 million therms of natural gas (CEC 2022a; 2022b). IID, specifically, consumed approximately 3,678.63 GWh over the course of 2019 (CEC 2022c).

Solid Waste

The County has eight permitted landfills: Calexico, Holtville, Hot Spa, Imperial, Niland, Ocotillo, Palo Verde, and Salton City (County 2022). In 2019, Imperial County disposed of approximately 135,092 tons of solid waste (CalRecycle 2019). The locations of those landfills are listed in Table 4.13-1 below.

Table 4.13-1: Imperial County Waste Disposal Sites

Name of Landfill	Address
Calexico	133 West Highway 98, Calexico, CA 92231 East of Hammers Road on Highway 98 Approximately 3 miles west of Calexico
Holtville	Whitlock Road north of Norrish Road
Hot Spa	10466 Spa Road, Niland, CA 92257 Spa Road west of Frink Road
Imperial	1705 West Worthington Road, Imperial, CA 92251 3 miles west of Forrester Road on Worthington Road
Niland	8450 Cuff Road, Niland, CA 92257 Cuff Road north of Beal Road
Ocotillo	1802 Shell Canyon Road, Ocotillo, CA 92259 Shell Canyon Road north of Ocotillo
Palo Verde	589 Stallard Road, Palo Verde, CA 92266 Stallard Road approximately 3 miles south of Palo Verde
Salton City	935 West Highway 86, Salton City, CA 92275 South of State Route 22 and west of Highway 86

Source: https://www.icphd.org/environmental-health/solid-waste/solid-waste-facilities/

4.13.2 Regulatory Setting

Federal

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. The Energy Policy Act of 2005 gave FERC additional responsibilities in this capacity. The Federal Communications Commission (FCC) regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 and is the principal federal law in the United States governing the disposal of solid waste and hazardous waste. The U.S. Environmental Protection Agency (USEPA) oversees waste management regulation pursuant to Title 40 of the Code of Federal Regulations. Under RCRA, however, states are authorized to carry out many of the functions of the federal law through their own hazardous waste programs and laws if they are at least as stringent (or more so) than the federal regulations. Thus, the California Department of Resources Recycling and Recovery (CalRecycle) manages the State of California's solid waste and hazardous materials programs pursuant to USEPA approval.

State

Senate Bill 610

Senate Bill (SB) 610 is an act that amended Section 21151.9 of the Public Resources Code (PRC) and sections 10631, 10656, 10910, 10911, 10912, and 10915 of the Water Code. SB 221 amended Section 11010 of the Business and Professions Code, and amended Section 65867.5 of the Government Code. SB 221 also added Sections 66455.3 and 66473.7 to the Government Code. SB 610 was signed by Governor Gray Davis and filed with the Secretary of State on October 9, 2001, becoming effective January 1, 2002. SB 610 requires a lead agency to determine that a project (as defined in Water Code section 10912) subject to CEQA), identify any public water system that may supply water for the project and to request the applicants to prepare a specified Water Supply Assessment (WSA).

Water Code section 10911(c) requires that the lead agency "determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses." Specifically, Water Code section 10910(c)(3) states:

> If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20 year projection, will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

With the introduction of SB 610, any project under CEQA shall provide a WSA if the project meets the definition of Water Code section 10912:

> For the purposes of this part, the following terms have the following meanings:
>
> (a) ''Project'' means any of the following:
>
> (1) A proposed residential development of more than 500 dwelling units
>
> (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space
>
> (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space
>
> (4) A proposed hotel or motel, or both, having more than 500 rooms
>
> (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area
>
> (6) A mixed-use project that includes one or more of the projects specified in this subdivision

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project

(b) If a public water system has fewer than 5,000 service connections, then ''project'' means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to or greater than the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

After review of Water Code section 10912a and section 10912 (a)(5)(B), it was determined that the Project is deemed a project under Water Code section 10912 because it is considered an industrial water use project that is considered a processing plant in accordance with Water Code section 10912a (5).

Porter-Cologne Water Quality Act

The California Legislature enacted the Porter-Cologne Water Quality Control Act in 1969 to preserve, enhance, and restore the quality of the State's water resources. The SWRCB and nine RWQCBs were established by the act as the primary state agencies charged with controlling water quality in California. The Porter-Cologne Water Quality Control Act establishes water quality policy, enforces surface water and groundwater quality standards, and regulates point and nonpoint source pollutants. The act also authorizes the SWRCB to establish water quality principles and guidelines for long-range resource planning, including groundwater and surface water management programs and the control and use of recycled water.

State Water Resources Control Board

The SWRCB has dual authority to allocate and protect water. This twofold responsibility enables the SWRCB to provide comprehensive protection for California's waters. Nine RWQCBs dispersed throughout California carry out the duties of the SWRCB. The RWQCBs develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters. The Project is within the jurisdiction of the Colorado River Basin (CRB) RWQCB, Region 7. The CRB RWQCB regulates the discharge of waste to surface waters (rivers, streams, lakes, wetlands, and the Pacific Ocean), storm drains, the ground surface, and groundwater.

Water Quality Control Plan for the Colorado River Basin

The Water Quality Control Plan for the Colorado River Basin (Basin Plan) prepared by the CRB RWQCB identifies beneficial uses of surface waters within the CRB region; establishes quantitative and qualitative water quality objectives for protection of beneficial uses; and establishes policies to guide the implementation of these water quality objectives. Water bodies that have beneficial uses that may be affected by construction activity and post-construction activity include the Imperial Valley Drains (includes the Wistaria Drain and Greeson Wash), New River, and the Salton Sea.

Assembly Bill 885

Assembly Bill (AB) 885 was signed into law in September 2000. AB 855 requires the SWRCB to develop statewide regulations for the permitting and operation of on-site wastewater treatment systems, better

known as septic systems. These regulations are developed through consultation with the Department of Health Services, California Conference of Directors of Environmental Health, California Coastal Commission, counties, cities, and other interested parties. Individual disposal systems that use subsurface disposal are all included under AB 885.

National Pollution Discharge Elimination System General Industrial and Construction Permits

The NPDES General Industrial Permit requirements apply to the discharge of stormwater associated with industrial sites. The permit requires implementation of management measures that will achieve the performance standard of the best available technology economically achievable and best conventional pollutant control technology. Under the statute, operators of new facilities must implement industrial BMPs in the projects' SWPPP and perform monitoring of stormwater discharges and unauthorized non–stormwater discharges.

Construction activities are regulated under the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit) which covers stormwater runoff requirements for projects where the total amount of ground disturbance during construction exceeds 1 acre. Coverage under a General Construction Permit requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and submittal of a Notice of Intent (NOI) to comply with the General Construction Permit. The SWPPP includes a description of best management practices (BMPs) to minimize the discharge of pollutants from the sites during construction. Typical BMPs include temporary soil stabilization measures (e.g., mulching and seeding); storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or stormwater; and using filtering mechanisms at drop inlets to prevent contaminants from entering storm drains. Typical postconstruction management practices include street sweeping and cleaning stormwater drain inlet structures. The NOI includes site-specific information and the certification of compliance with the terms of the General Construction Permit.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. CPUC is responsible for regulating electric utility rates, electric power procurement and generation, some electric infrastructure, ratepayer-funded energy efficiency programs, and other areas. The CPUC evaluates the necessity for additional power generation by the regulated utilities in California in both the long- and short-term, accomplished using public input, data provided by the utilities, the California Energy Commission, the California Independent System Operator, and following the regulations of the Commission, the Public Utilities Code, and FERC. CPUC has primary ratemaking jurisdiction over the funding of distribution-related expenditures generally for power lines of 66 kV or less. While CPUC does not have ratemaking responsibility for transmission lines, it does have a substantial role in permitting transmission and substation facilities. CPUC regulates natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems; storage; procurement; metering; and billing. Additionally, CPUC regulates telecommunications and broadband operations and infrastructure in the state. As such, CPUC is responsible for licensing, registration, and the processing of tariffs on local exchange carriers, competitive local carriers, and nondominant interexchange carriers. It is also responsible for registration of wireless service providers and franchising of video service providers, among other duties.

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (AB 939), signed into law by Governor George Deukmejian on September 29, 1989, was intended to reduce dependence on landfills for the disposal of solid waste and to ensure an effective and coordinated system for the safe management of all solid waste generated within California. AB 939 required each California city and county to divert 25 percent of its waste stream by 1995 and 50 percent by 2000 (PRC, Section 41780). It also required local governments to prepare and implement plans to improve waste resource management by integrating management principles that place importance on first reducing solid waste through source reduction, reuse, recycling, and composting before disposal at environmentally safe landfills or via transformation (e.g., regulated incineration of solid waste materials). These plans must also be updated every five years. Waste disposal is managed through the implementation of the Source Reduction and Recycling Element (SRRE). The SRRE was approved by CalRecycle (formerly the California Integrated Waste Management Board) on November 17, 1993, and adopted in December 1993. Under the SRRE, counties are required to demonstrate how they intend to achieve the mandated diversion goals through the implementation of various programs.

The County of Imperial agreed to implement the following programs to meet the required diversion goals:

1. Agriculture Plastic
2. Commercial Source and Recycling
3. Compost Operation
4. Construction and Demolition
5. Procurement Policy
6. School Recycling
7. Christmas Tree Diversion
8. County Waste Reduction Policy

CalRecycle

This State agency performs a variety of regulatory functions pursuant to California Code of Regulations (CCR) Title 27 and other rules. Among other things, CalRecycle sets minimum standards for the handling and disposal of solid waste designed to protect public health and safety, as well as the environment. It is also the lead agency for implementing the State of California's municipal solid waste program, deemed adequate by USEPA for compliance with RCRA.

Construction and Demolition Waste Materials Diversion Requirements (SB 1374)

Construction and Demolition Waste Materials Diversion Requirements, passed in 2002, added Section 42912 to the California PRC. SB 1374 requires that jurisdictions include a summary of the progress made in diverting construction and demolition waste in their annual AB 939 report. The legislation also required that CalRecycle adopt a model ordinance for diverting 50 to 75 percent of all construction and demolition waste from landfills.

Local

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. SCAG is the federally

recognized metropolitan planning organization (MPO) for this region, which encompasses more than 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and State law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the MPO for Southern California, SCAG cooperates with the Southern California Air Quality Management District, the California Department of Transportation, and other agencies in preparing regional planning documents. SCAG has developed regional plans to achieve specific regional objectives, including the Regional Transportation Plan and Sustainable Communities Strategies component pursuant to State law.

Imperial Integrated Water Resources Management Plan

The Imperial IRWMP serves as the governing document for regional water planning to meet present and future water resource needs and demands by addressing such issues as additional water supply options, demand management, and determination and prioritization of uses and classes of service provided. In November 2012, the Imperial County Board of Supervisors approved the Imperial IRWMP, and the City of Imperial City Council and the IID Board of Directors approved it in December 2012. Approval by these three stakeholders meets the basic requirement of California Department of Water Resources for an IRWMP. Through the IRWMP process, IID presented options to the region's stakeholders, such as water storage and banking, recycling of municipal wastewater, and desalination of brackish water, in the event long-term water supply augmentation is needed.

Imperial Irrigation District

The IID is an irrigation district organized under the California Irrigation District Law, codified in Section 20500 et seq. of the California Water Code. Critical functions of IID include diversion and delivery of Colorado River water to the Imperial Valley, operation and maintenance of the drainage canals and facilities, including those in the Project area, and generation and distribution of electricity. Several policy documents govern IID operations and are summarized below:

- The Law of the River and historical Colorado River decisions, agreements, and contracts
- The Quantification Settlement Agreement and Transfer Agreements
- The Definite Plan, now referred to as the Systems Conservation Plan, which defines the rigorous agricultural water conservation practices being implemented by growers and IID to meet the Quantification Settlement Agreement commitments
- The Equitable Distribution Plan, which defines how IID will prevent overruns and stay within the cap on the Colorado River water rights
- Existing IID standards and guidelines for evaluation of new development and defining IID's role as a responsible agency and wholesaler of water

IID has adopted an Interim Water Supply Policy (IWSP) for Non-Agricultural Projects during the development of the Imperial IWRMP, from which water supplies can be contracted to serve new developments within IID's water service area. For applications processed under the IWSP, applicants shall

be required to pay a processing fee and, after IID board approval of the corresponding agreement, will be required to pay a reservation fee(s) and annual water supply development fees.

Imperial County Public Health Department, Division of Environmental Health

The Imperial County Public Health Department, Division of Environmental Health is responsible for issuance of sanitation permits for private onsite sewage disposal systems in the County. Coordination of site design for proposed projects must occur with the Public Health Department to obtain final permits.

Imperial County Land Use Ordinance, Division 10 Building, Grading, and Sewage Regulations

Chapter 13, Sanitation Permits, of the Imperial County Land Use Ordinance, Division 10 Building, Grading, and Sewage Regulations, regulates the construction, relocation, and alteration of sewage disposal systems in the unincorporated areas of Imperial County. Standards for such systems described in this chapter must be met for a permit to be issued by the County Public Health Department.

Countywide Integrated Waste Management Plan for Imperial County

All California counties are required to prepare and submit to CalRecycle a Countywide Integrated Waste Management Plan (CIWMP). The CIWMP is to include all SRREs, all Household Hazardous Waste Elements, a Countywide Siting Element, all Non-Disposal Facility Elements, all applicable regional SRREs, Household Hazardous Waste Elements, and an applicable Regional Siting Element (if regional agencies have been formed).

CalRecycle summarizes waste management problems specific to each county and provides an overview of actions that would be taken to achieve the SRRE implementation schedule (PRC Section 41780). Imperial County's CIWMP was approved by CalRecycle (formerly CIWMB) in May of 2000. The Executive Director of the CIWMB approved by Resolution 2008-91 the Five-Year Review Report of the Countywide Integrated Waste Management Plan for the County of Imperial on June 17, 2008.

Imperial County General Plan

The Land Use Element and the Conservation and Open Space Element of the General Plan contain goals, objectives, policies, and programs to ensure water resources in the County are preserved and coordination occurs among local agencies. The Imperial County General Plan does not contain any goals, objectives, policies, or programs pertaining to solid waste that are applicable to the Project. Table 4.13-2 provides a consistency analysis of the applicable Imperial County General Plan goals and objectives as they relate to the Project. While this EIR analyzes the Project's consistency with the General Plan pursuant to CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

Table 4.13-2: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Land Use Element		
Public Facilities		

Table 4.13-2: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
Goal 8 – Coordinate local land use planning activities among all local jurisdictions and state and federal agencies.	Consistent	The Project is being planned and designed in coordination with the County of Imperial as well as State and federal agencies as appropriate. Examples include but are not limited to the IID Water, IID Energy, Imperial County Planning and Development Services Department, Imperial County Public Works Department, California Department of Fish and Wildlife, and Imperial County Air Pollution Control District. Therefore, the Project is consistent with this goal.
Conservation and Open Space Element		
Preservation of Water Resources		
Objective 6.3 – Protect and improve water quality and quantity for all water bodies in Imperial County.	Consistent	The Project will require 240 acre-feet of water per year (AFY) for construction, representing approximately 0.65% of the annual unallocated water supply. The Project requires 6,500 AFY for operations, which represents 28.2% of the unallocated supply. Thus, the Project's estimated water demand would not affect IID's ability to provide water to other users in IID's water service area. The Project would protect water quality during construction through compliance with the NPDES General Construction Permit, SWPPP, and BMPs. The Project will be designed to include site design, source control, and treatment control BMPs. The use of source control, site design, and treatment BMPs would result in a decreased potential for stormwater pollution.
Objective 6.10 – Encourage water conservation and efficient water use among municipal and industrial water users, as well as reclamation and reuse of wastewater.	Consistent	As previously mentioned, the Project's water use represents 28.2% of the unallocated supply set aside in the IWSP for nonagricultural projects and approximately 28.2% of forecasted future nonagricultural water demands planned in the Imperial IRWMP through 2055. Wastewater in the form of spent process fluid will be reused on site through injection back into the injection wells to replenish the geothermal resource.

4.13.3 Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have impacts to utilities and services systems if it would:

Threshold a) **Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?**

Threshold b) **Have sufficient water supplies available to serve the project from existing and reasonably foreseeable future development during normal, dry and multiple dry years?**

Threshold c) **Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

Threshold d) **Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

Threshold e) **Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

4.13.4 Methodology

Chambers Group was prepared a WSA for the Project in April 2023 (Appendix J). The WSA evaluates water availability during a normal year, single-dry, and multiple-dry water years for the required 20-year period, plus an additional 30 years for a total of a 50-year water demand for the Project. The WSA also evaluates reasonably foreseeable planned future water demands to be served by the IID. Evaluations of potential wastewater, stormwater, electricity and natural gas usage, telecommunications, and solid waste impacts are based on information provided by the Applicant, as well as information from publicly available federal, State, and local government sources.

Regional Water Demand

The 2012 Imperial IRWMP addresses water supplies (Colorado River and groundwater), demand, baseline and forecasted through 2050, and IID water budget. The IRWMP also addresses projects, programs and policies, and funding alternatives. The IRMWP lists and details a set of capital projects that IID might pursue, including the amount of water that might result (AFY) and cost (dollars per acre-foot [$/AF]) if necessary. These also highlight potential capital improvement projects that could be implemented in the future.

Imperial Valley's historic nonagricultural water demand for 2015 and forecasted nonagricultural water demand for 2020 to 2055 are provided in Table 4.13-3 in five-year increments. Total water demand for nonagricultural uses is projected to be 198.4 kilo acre feet (kaf) in the year 2055. This is a forecasted increase in the use of nonagricultural water from 107.4 kaf for the period of 2015 to 2055. These values were modified from the Imperial IRWMP to reflect updated conditions from the IID Provisional Water Balance for calendar year 2015. Due to the recession in 2009 and other factors, nonagricultural growth projections have lessened since the 2012 Imperial IRWMP. Projections in Table 4.13-3 have been adjusted (reduced by 3 percent) to reflect IID 2015 delivery data.

Table 4.13-3: Nonagricultural Water Demand in IID Water Service Area, 2015-2055 (kaf per Year)

	2015	2020	2025	2030	2035	2040	2045	2050	2055
Municipal	30.0	30.9	36.8	39.8	41.5	46.3	51.7	57.8	61.9
Industrial	26.4	26.0	39.8	46.5	53.2	59.9	66.6	73.3	80.0
Other	5.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Feedlots/Dairies	17.8	19.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Envr. Resources	8.3	9.2	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Recreation	7.4	9.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Service Pipes	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Nonagri.	**107.4**	**113.1**	**136.1**	**145.8**	**154.2**	**165.7**	**177.8**	**190.6**	**201.4**

Notes: 2015 and 2020 nonagricultural water demands are from IID 2015 Provisional Water Balance rerun 01/25/2021. 2020-2055 demands are modified from 2012 Imperial IRWMP Chapter 5, Table 5-22 p 5-50 based on IID 2015 Provisional Water Balance. Industrial Demand includes geothermal, but not solar, energy production.

In addition to agricultural and nonagricultural water demands, system operational demands must be included to account for operational discharge; main and lateral canal seepage; and AAC seepage, river evaporation, and phreatophyte evapotranspiration from Imperial Dam to IID's measurement site at AAC Mesa Lateral 5. These system operation demands are shown in Table 4.13-4. IID measures system operational uses and at AAC Station 2900 just upstream of Mesa Lateral 5 Heading.

Table 4.13-4: IID System Operations Consumptive Use within IID Water Service Area and from AAC at Mesa Lateral 5 to Imperial Dam, 2019

System Operational Use	Kilo Acre Feet (kaf)
Delivery System Evaporation	24.4
Canal Seepage	90.8
Canal Spill	13.1
Lateral Spill	121.5
Seepage Interception	-39.0
Unaccounted Canal Water	-40.0
Total System Operational Use, In-Valley	**167.8**
Imperial Dam to AAC @ Mesa Lat 5	9.2
LCWSP	-10
Total System Operational Use in 2020	**167.0**

Total system operational use for 2020 was 167.0 kaf, including 10 kaf of Lower Colorado Water Supply Project (LCWSP) input, 39.0 kaf of seepage interception input, and 40.0 kaf of unaccounted canal water input.

Table 4.13-5 shows historic 2015 nonagricultural water demand compared to delivery and forecasts the IID's demand and delivery to nonagricultural land uses through 2055. This data reflects the IID's ability to meet nonagricultural water demands through 2055.

Table 4.13-5: IID Historic and Forecasted Consumptive Use for Nonagricultural Land Uses

	2015	2020	2025	2030	2035	2040	2045	2050	2055
Nonagri. Demand	107.4	123.5	133.3	142.8	151.2	162.7	174.8	187.6	198.4
Nonagri. Delivery	110.1	115.2	133.1	142.9	151.4	163.2	175.4	188.4	199.3

Notes:
2015 Provisional Water Balance rerun 01/25/21.
Nonagricultural Delivery CI 15.0%, Ag Delivery CI 3.0%, QSA SS mitigation CI 15%.

As shown above, IID forecasted nonagricultural demand has the potential to exceed delivery volumes during several time intervals through the projected lifespan for the Project.

Project Site

The Project site is primarily undeveloped, with four geothermal exploratory well pads and six separate geothermal exploratory wells built within the Project site. Power is provided by existing overhead power lines; however, no other utilities exist onsite.

The Project site is located in the Imperial Valley Planning Area of the Colorado River Basin. The Colorado River Basin Region is divided into seven major planning areas on the basis of different economic and hydrologic characteristics. The Imperial Valley Planning Area is characterized as a closed basin; and, therefore, all runoff generated within the watershed discharges into the Salton Sea.

Imperial Valley relies on the Colorado River for its water, which IID transports, untreated, to delivery gates for agricultural, municipal, industrial (including geothermal and solar energy), environmental (managed marsh), recreational (lakes), and other nonagricultural uses. IID supplies the cities, communities, institutions, and Golden State Water Company (which includes all or portions of Calipatria, Niland, and some adjacent Imperial County territory) with untreated water that they treat to meet State and federal drinking water guidelines before distribution to their customers.

The Project site is located within IID's Imperial Unit and district boundary and as such is eligible to receive water service (IWF 2012). The Project is also located within the IID's energy service area (IID 2021). The Project operations would generate up to 49.9 MW with lithium mining operations consuming an average of 35 MW with a peak of 40 MW of electricity consumed, 240 AFY of water for construction, and 6,500 AFY of water for operations, as disclosed by the Project Applicant. Mining operations would only be completed during operation of the geothermal power unit.

4.13.5 Project Impact Analysis

Threshold a) **Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?**

The Project site was previously permitted for four geothermal exploratory well pads and six separate geothermal exploratory wells constructed onsite through Geothermal CUP #16-0001, which were

constructed but no other utilities were constructed. The Project will therefore require connections for water, wastewater, natural gas, and telecommunications, and electric power to the Project site.

Water

The Project's potable water requirements include washbasin water, eyewash equipment water, water for showers and toilets in the crews' quarters, and sink water in the sample laboratory. The HKP1 and HKL1 potable water treatment plant was designed to accommodate sufficient use and reliability for both the HKP1 and HKL1 and the Project facilities, anticipating a future mineral extraction plant. This system will be operated under one permit by the Project, and the applicant would purchase water for the Project from IID.

The Project would share the freshwater storage containment pond between both HKP1 and HKL1. Water will be obtained from the "Q" and "R" laterals adjacent to the Project site. Water will be transferred to a water storage pond, with a capacity of approximately 18 AF, located adjacent to the Q Drain. A 100,000-gallon aboveground water tank will be constructed to serve as the primary water supply for the joint fire suppression system for the HKP1 and HKL1 sites. This 100,000-gallon tank will be a one-time fill from the IID unless a fire occurs on site.

Installation of water and fire infrastructure would be limited to onsite connections, and no offsite connections would need to be installed or upgraded. A more detailed discussion of water requirements can be found in Threshold b) below.

Wastewater

Sanitary waste generated by the Project would be collected in the septic tank to digest the sewer effluent. The septic system would be designed in accordance with County guidelines and would obtain approval prior to construction and installation of the tank. Wastewater in the form of processed spent fluid would be returned to the HKP1 facility via a brine return pipeline and would be injected directly into the injection wells to replenish the geothermal resource in conformance with the CalGEM guidelines.

Stormwater

The Project would share a stormwater retention basin for both facilities. The stormwater runoff will be contained in the pond and will be managed allowing the water to evaporate or percolate into the soil.

Electricity and Natural Gas

Electrical power required for the mining facilities of the Project would be provided by HKP1 with a 3 MW diesel generator with black start capabilities and an 800kW emergency generator would be installed on site, and a new power line will be constructed to the Project site from the current IID/HR1 substation located near the northeast corner of the McDonald Road and Davis Road. Electrically driven equipment, including a power distribution unit, will be installed onsite to deliver geothermal brine, steam/steam condensate, and non-condensable gas to the HKL1 facility. The power transmission line would connect to an onsite substation via a gen-tie line from the Project to the IID/HR1 substation. Project operations would consume approximately 35 MW with a peak consumption of 40 MW from the 49.9 MW capacity of HKP1.

Natural gas is not expected to be required or delivered to the Project site.

Telecommunications

Telecommunication services on site would likely be provided by AT&T for phone and by Beamspeed for internet, the same as the nearby HR1 site. All utility infrastructure required for the Project would be built entirely within previously disturbed areas, particularly within the HR1 plant site, and would require expansion currently existing utilities.

New facilities would be constructed for the purpose of water, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications. Expansion of these facilities would utilize existing infrastructure no limited to existing irrigation canals and power/telephone lines which would minimize damage to existing facilities. Therefore, no significant environmental effects are expected to result. Impacts would be less than significant.

Threshold b) **Have sufficient water supplies available to serve the project from existing and reasonably foreseeable future development during normal, dry and multiple dry years?**

The Project's WSA evaluates the required 20-year water demands per SB 610, plus an additional 30 years, for a 50-year water demand of the Project. The WSA evaluates reasonably foreseeable planned future water demands to be served by the IID to determine whether or not the IID water supply will be adequate to serve the Project in conjunction with other projects in the area. The IID's IWSP for Non-Agricultural Projects dedicates 25,000 AFY of IID's annual water supply to serve new projects. As of January 2022, 23,020 AFY remain available for new projects, ensuring reasonably sufficient supplies for new nonagricultural water users.

Additionally, the Project site has already been permitted in the past for a Geothermal exploratory wells and pads as part of CUP #16-0001. The applicant would install a reverse osmosis water system as part of the Project to meet potable water needs. The Project will require increased water service only for dust mitigation during construction, as well as processing, landscaping, fire suppression, and dust mitigation during operations. Dust mitigation as part of operations would make use of non-water dust management practices. Project water uses are summarized in Table 4.13-6.

Table 4.13-6: Project Water Uses (AFY)

Water Use	Expected Years	Water Required (AFY)
Construction	2	240
Total for Water Construction		**480**
HKP1 Operations	46	200
HKL1 Operations		6,300
Total Operational Water Usage		**299,000**

Approximately 240 AFY of water would be needed for fugitive dust control during Project site grading and construction activities, which are anticipated to last up to 2 years (Table 4.13-6). Approximately 6,500 AFY would be required for Project operations, lasting up to 46 years. The Project's total water demand is approximately 6,500 AFY, resulting in 299,960 AF total over the 50-year lifespan of the Project (Table 4.13 -7).

Table 4.13-7: Project Water Summary

Water Use	Expected Years	Total AFY
Construction	2	480
Operations	46	299,000
Decommissioning	2	480
Total	**50**	**299,960**

Table 4.13-8 shows the Project's water use amortized, calculated to define the Project's proportion of unallocated water supply set aside in the IWSP for nonagricultural projects and the Project's proportion of forecasted future nonagricultural water demands planned in the Imperial IRWMP through 2055.

Table 4.13-8: Amortized Project Water Summary

Project Water Use—Life of Project	Years	Total Years Combined (AF)[a]	IWSP (AFY)	% of IWSP per Year[b]
240 AFY	2	480	23,020	2.1
6,500 AFY	46	299,000	23,020	28.20

[a](6,718.3 AFY x 46 Years)
[b](6,718.3 AFY/23,800 AFY x 100)

Project construction represents 2.1 percent of the unallocated supply set aside in the IWSP for nonagricultural projects in the Imperial IRWMP through 2055. Project operations represent 28.2 percent of the unallocated supply set aside in the IWSP for nonagricultural projects in the Imperial IRWMP through 2055. The amount of water available and the stability of the IID water supply along with on-farm and system efficiency conservation and other measures being undertaken by IID and its customers ensure that the Project's water needs will be met for the next 50 years.

When drought conditions exist within the IID water service area, as has been the case for the past decade or so, the water supply available to meet agricultural and nonagricultural water demands remains the same as normal year water supply because IID continues to rely on its entitlement for Colorado River water. Due to the priority of water rights and other agreements, drought affecting Colorado River water supplies causes shortages for Arizona, Nevada, and Mexico, but not California or IID. Therefore, the likelihood that IID will not receive its annual 3.1 million AF apportionment under the QSA obligations of Colorado River water is low due to the high priority of the IID entitlement relative to other Colorado River contractors (see Appendix J for further details on the IID's water rights). If such reductions were to come into effect within the life of the 30-year Project, a significant impact would occur. If such reductions do occur, Mitigation Measure (MM) UTIL-1 would be implemented, requiring the Applicant to work with IID to ensure any reduction in water availability during the life of the Project can be managed. Therefore, with implementation of MM UTIL-1, impacts would remain less than significant.

Threshold d) **Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

All nonhazardous and hazardous wastes generated during Project construction and operation would be handled and disposed of in accordance with applicable laws, ordinances, regulations, and standards. Nonhazardous solid waste would be disposed of using a locally licensed waste hauling service, Allied Waste.

For further discussion on hazardous wastes, refer to Section 4.8: Hazards and Hazardous Materials. The mineral extraction process would not generate any waste but result in biproducts which will be sold. The geothermal plant and its mineral processing would generate waste oil, aerosol cans, filters, etc. during plant overhaul and would generate general waste and solid scale. It is anticipated that no more than 25 tons per year of nonhazardous waste would be generated. Wastes that exceed CCR toxicity standards would be required to be trucked out of state to Arizona. If Arizona toxicity standards were to be exceeded, hazardous wastes would be sent to Idaho or Nevada. A summary of the different waste types is provided below.

Nonhazardous Solid Waste

Nonhazardous solid waste from construction activities may include lumber, excess concrete, metal, glass, scrap, and empty nonhazardous containers. Management of these wastes will be the responsibility of the construction contractors and would involve management practices such as recycling when required, proper storage of waste and debris to prevent wind dispersion, and weekly pickup and disposal to Class III landfills.

The total amount of nonhazardous solid waste to be generated by Project construction activities has been estimated to be up to about 1,794.5 tons (2.5 pounds per square foot), which is similar to that generated for normal commercial construction (USEPA 2007). Although the number of tons per cubic yard for construction waste varies by material, CalRecycle estimates that there are 2,400 pounds in 1 cubic yard of construction debris (asphalt or concrete, loose) (CalRecycle 2022a). Therefore, because 1,794.5 tons is equivalent to 3.6 million pounds, 3.6 million pounds is roughly equivalent to 1,495.4 cubic yards (3.6 million / 2,400 = 1,458).

The total amount of nonhazardous solid waste to be generated by Project operational activities has been estimated to be up to 1,000 pounds per day (8.93 pounds per employee per day), or 365,058.4 pounds per year. Therefore, 365,058.4 pounds is equivalent to 152.1 cubic yards (365,058.4 / 2,400 = 152.1). Nonhazardous waste generated during operations is expected to be nominal because it would result from limited office waste and general refuse from employees.

Hazardous Wastes Meeting California Disposal Standards

Hazardous solid wastes may be generated over the course of construction as a result of empty hazardous material containers, spill cleanup wastes, and welding. Hazardous materials that are expected to be used during construction include paints, oil and lubricants, solvents, and welding materials. Used oil would be recycled, and oil or heavy metal contaminated materials (e.g., filters) requiring disposal would be transported to an off-site waste disposal facility that is authorized to accept such wastes. Scale from pipe and equipment cleaning operations would be disposed in a similar manner. Any hazardous wastes generated during Project construction and operations would be collected in hazardous waste accumulation containers near the point of generation and moved daily to the contractor's 90-day hazardous waste storage area or operational hazardous material storage area located on the Project site.

The accumulated waste would be subsequently delivered to an authorized Class I or Class II landfill authorized to accept the waste for proper disposal.

Construction-related hazardous materials that are expected to be used include:

- Adhesives
- Diesel fuel
- Hydraulic fluids
- Lubricants
- Oil
- Paint material
- Solvents
- Unleaded gasoline

Operations-related hazardous materials that are expected to be used include:

- Calcium oxide
- Diesel fuel
- Hydraulic fluid
- Hydrochloric acid (32% by weight)
- Manganese
- Sodium hydroxide
- Sodium sulfide
- Transformer oil
- Unleaded gasoline

The HKP1 facility may include transformer oil for transformer operation, lube oil for the turbine generator operation, diesel for generator fueling, and HCl (32% by weight). The transformer oil will be contained within the transformers; the lube oil will be stored on a skid. Diesel will be stored in a diesel storage tank with a capacity of approximately 3,000 gallons. Two polymer or fiber-reinforced plastic HCl tanks, with capacities of approximately 20,000 and 75,000 gallons, will store the HCI for the acid modification process. The HCI tanks will be fitted with scrubbers. All chemicals will be stored outdoors on impervious surfaces in aboveground storage tanks with secondary containment. The secondary containment areas for the bulk storage tanks will not have drains. Any chemical spill occurring in these areas will be removed with portable equipment and reused or disposed properly. Other chemicals will be stored and used in their delivery containers. The operator would sell manganese, and would be stored in indestructible containers for shipping.

The Project would generate no more than approximately 10 tons of hazardous wastes per year. The solid wastes would be hauled to either the Allied Imperial Landfill, Niland Solid Waste Site, or the Salton City Landfill located in the County, which have an approximate combined remaining capacity of 13,859,609 cy, as shown in Table 4.13-9. The Allied Imperial Landfill has approximately 12,384,000 cy of remaining capacity and is expected to remain in operation through 2040 (CalRecycle 2022b). Niland Solid Waste Site has approximately 211,439 cy of remaining capacity and is estimated to remain in operation through 2046 (CalRecycle 2022c). The Salton City Landfill has a remaining capacity of 1,264,170 cy as of 2018 and is expected to have sufficient capacity for the foreseeable future (CalRecycle 2022d). The Project represents approximately 0.3 percent of the remaining capacity of the three landfills, which would be considered nominal; therefore, the County has ample landfill capacity to receive the solid waste generated by the Project.

Table 4.13-9: County of Imperial Landfills Near the Project Site

Name of Landfill	Location	Permitted Capacity	Remaining Capacity	Class	Approximate Distance from Project Site
Niland Solid Waste Site	8450 Cuff Road Niland CA	318,673 cy	211,439 cy	III	4.5 miles northeast
Allied Imperial Landfill	104 East Robinson Road Imperial, CA	19,514,700 cy	12,384,000 cy	III	23 miles south

Salton Sea Solid Waste Facility	935 West Highway 86 Salton City, CA	65,100,000 cy	1,264,170 cy	III	32 miles northwest

Sources: CalRecycle 2022b, CalRecycle 2022c, and CalRecycle 2022d

Hazardous Wastes Exceeding California Standards

As previously mentioned, it is estimated that 90 percent of filter cakes would fall below California thresholds for soluble threshold limit concentration (STLC) and total threshold limit concentration (TTLC). The remaining 10 percent, or approximately 4,178 cy, would exceed these standards and would be trucked to the Copper Mountain Landfill located at 34853 County 12th Street in Wellton, Arizona, approximately 96 miles southeast of the Project site. This landfill has a design capacity for 2.5 million megagrams. Although the remaining landfill capacity is not available, the amount of solid waste sent to this facility would be minimal. If the filter cakes were to exceed Arizona's toxicity standards which is not expected to occur, the Applicant will arrange for hazardous materials to be trucked to Idaho or Nevada.

As mentioned in Chapter 2: Project Description, approximately every three years the Project facilities will be shut down for about three weeks to complete a facility cleaning. This process would remove mineral scale from Project plant piping. The scale removed during this process has the potential to exceed STLC and TTLC standards for Arizona, in which case solid waste would be required to be trucked to Nevada. However, this is an extremely rare occurrence, and in the past 10 years only two truckloads have needed to be transported to Nevada. The implementation of the Proposed Project would not increase the amount of solid waste needing to go out of state.

Therefore, solid waste facilities have adequate permitted capacity for solid waste materials generated by the Project. Impacts would be less than significant.

Threshold e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

As discussed above, solid waste would be generated during construction and operation. Some construction waste would be recycled prior to the remainder of the waste being disposed of at the local landfill. The Proposed Project would be operated in a manner that would be consistent with all source reduction and recycling goals set forth by the City to achieve compliance with the applicable regulatory plans consistent with the City's obligations under AB 939, including the CIWMP for Imperial County, by appropriately distributing solid waste materials and recycling materials when feasible.

Disposal of solid/hazardous wastes generated during Project construction and operations would be in compliance with local federal, State, and County regulations and disposed of at authorized facilities. Therefore, a less than significant impact would occur.

4.13.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

The cumulative setting and geographic scope for water service is the IID water service area, which includes 10 cities and approximately 500,000 acres of agricultural, municipal, and industrial use (IID 2008). The cumulative setting for electrical service is also IID's service area, which encompasses almost all of Imperial County. Only a small portion of the northeast corner of the County receives service from Southern California Edison. For conservative purposes, this solid waste service area is assumed in this analysis to encompass the entire County of Imperial. As previously described above in Section 14.3.1: Existing Environmental Setting, the County has permitted eight landfills and contracts with private collection companies for solid waste pickup.

Other proposed, approved, and reasonably foreseeable projects in the region are identified in Table 3.0-1 in Chapter 3.0, Environmental Setting. All of these projects are located within the cumulative setting for water, electricity, and solid waste. Water for Project construction and operations represents 28 percent of the unallocated supply set aside in the IWSP for nonagricultural projects and approximately 28 percent of forecasted future nonagricultural water demands planned in the Imperial IRWMP through 2055. The amount of water available and the stability of the IID water supply, along with on-farm and system efficiency conservation and other measures being undertaken by IID and its customers, ensure that the Project's water needs will be met for the next 50 years. The electricity required for the mining facilities of the Project would be provided by the geothermal facilities, and would not operate independently.

Waste resulting from Project construction and operations is anticipated marginal when compared to the of the combined remaining capacity of the Allied Imperial Landfill, Niland Solid Waste, and Salton Sea Solid Waste Facility. Remaining capacity would be available for cumulative projects in the area.

Implementation of the Project, in combination with other proposed, approved, and reasonably foreseeable projects in the County of Imperial, would result in cumulative demand for water, electricity, and solid waste service and landfill capacity. However, similar to the Project, new development projects would be subject to County review to ensure that the existing public utility facilities would be adequate to meet the demands of each project; and individual projects would be subject to federal, State, and local requirements regarding infrastructure improvements needed to meet respective future demands. Implementation of related projects and other anticipated growth in Imperial County would not combine with the Proposed Project to result in cumulatively considerable impacts on utility and service systems.

4.13.7 Mitigation Measures

To minimize potential impacts to future water resources for the Project, the following mitigation measure shall be implemented:

UTIL-1: If the IID does not receive its annual 3.1 maf water apportionment according to the QSA obligations of Colorado River water during the Project's 30-year lifespan, the Applicant shall work with IID to ensure any reduction in water availability can be managed by the Project.

4.13.8 Level of Significance After Mitigation

With the implementation of Mitigation Measure UTIL-1, the Project would ensure potential impacts related to utilities, specifically water availability, would remain less than significant.

CHAPTER 5.0 – ALTERNATIVES ANALYSIS

5.1 INTRODUCTION AND OVERVIEW

CEQA requires that an EIR describe a range of reasonable alternatives to the Proposed Project, or to the location of the Proposed Project, which could feasibly avoid or lessen any significant environmental impacts while substantially attaining the basic objectives of the project. An EIR should also evaluate the comparative merits of the alternatives. This chapter describes potential alternatives to the Proposed Project that were considered, identifies alternatives that were eliminated from further consideration and reasons for dismissal, and analyzes available alternatives in comparison to the potential environmental impacts associated with the Proposed Project.

Key provisions of the CEQA Guidelines (§15126.6) pertaining to the alternatives analysis are summarized below:

- The discussion of alternatives shall focus on alternatives to the Proposed Project or its location that are capable of avoiding or substantially lessening any significant effects of the Proposed Project, even if these alternatives would impede to some degree the attainment of the Proposed Project objectives or would be more costly.

- The No Project Alternative shall be evaluated along with its impact. The No Project analysis shall discuss the existing conditions at the time the Notice of Preparation is published. Additionally, the analysis shall discuss what would be reasonably expected to occur in the foreseeable future if the Proposed Project were not approved, based on current plans and consistent with available infrastructure and community services.

- The range of alternatives required in an EIR is governed by a "rule of reason"; therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. Alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the Proposed Project.

- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the Proposed Project need to be considered for inclusion in the EIR.

- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan contingency, regulatory limitation, jurisdictional boundaries, and whether the proponent could reasonably acquire, control, or otherwise have access to the alternative site. An EIR need not consider an alternative whose effects cannot be reasonably identified, whose implementation is remote or speculative, and that would not achieve the basic Project Objectives.

5.2 PROJECT OBJECTIVES

The HKP1 objectives include the following:

- To produce 49.9MW (net) of geothermal green energy from within CTR's geothermal lease area.
- To provide power to the Imperial Irrigation District and other potential off takers.
- To minimize and mitigate potential impacts to sensitive environmental resources while producing renewable energy and creating jobs.

The HKL1 objectives include the following:

- To provide a sustainable domestic source of lithium, a designated critical material identified by the U.S. Department of Energy.
- To extract and produce lithium hydroxide, silica, bulk sulfide, and polymetallic products for commercial sale from the geothermal brine within the Hell's Kitchen lease area
- To minimize the distance between the geothermal power plant and lithium extraction plant for production efficiency and to reduce the extent of pipeline required to convey brine and steam to and from the geothermal power facility to the mineral extraction plant, therefore minimizing the overall industrial footprint of the combined power and mineral operations
- To minimize and mitigate potential impacts to sensitive environmental resources within the Project area.

5.3 ALTERNATIVES CONSIDERED BUT REJECTED

Several alternatives could be considered for the Project which address the Project size or development of a similar project elsewhere in the Project area. A range of alternatives that are "reasonable" for analysis have been defined by the County and are discussed below in Section 5.4 Alternatives Analyzed. The following section describes alternatives or alternative concepts that were given consideration but rejected from further analysis in the EIR due to their infeasibility.

5.3.1 Reduced Project Size Alternative

The possibility of reducing the overall size of the Project was considered; however, this alternative was deemed infeasible. The Project has been designed using three different components crafted by three different companies, each having very specific parameters. Considering the components currently on market and available for sale to the Applicant, the current scale of the Project is the smallest system possible to execute Project objectives. The various vessels associated with the Project all have to match each other to ensure proper function of the facility and to uphold safety standards. Engineers have not been able to identify a feasible way to scale the Project down. As a result, the reduced Project alternative was considered but rejected from further review.

5.3.2 Other Project Location Alternative

The potential for relocating the Project to another site in the area was considered but deemed infeasible. Locations further from the Project site would require a longer pipeline system between facilities. Longer pipelines between the facilities would increase the industrial footprint, thus generating more impact and requiring additional facilities. would increase the travel time of post clarifier brine and depleted brine, increasing the cooling time of the brine during transfer. The chemistry required for mineral extraction is temperature-dependent; thus, increased cooling of the brine would not allow for the Project to operate

as required. As a result, the other Project location alternative was considered but rejected from further review.

5.4 ALTERNATIVES ANALYZED

In accordance with CEQA Guidelines Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the Project. Furthermore, each alternative is evaluated to determine whether the Project objectives would be substantially attained by the alternative.

5.4.1 No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires analysis of a No Project alternative that (1) discusses existing site conditions at the time the NOP is prepared or the Draft EIR is commenced and (2) analyzes what is reasonably expected to occur in the foreseeable future based on current plans if the Project were not approved. Potential effects for the No Project Alternative were compared to the environmental topics that were analyzed as a part of this Draft EIR.

The No Project Alternative would mean that the Project would not be constructed. No additional lithium, manganese, zinc, and other strategic minerals from geothermal brine would be processed for commercial sale and no additional supplemental supply of lithium for domestic use would be available. Under the No Project Alternative, the Project site would remain in its existing condition, which would mean a majority of the site would remain vacant.

Air Quality

Under the No Project Alternative, construction of the Project would not occur and the Project site would remain as it currently exists, mostly vacant. Moreover, long-term operational emissions would also be eliminated. Although the Proposed Project's air quality impacts would be less than significant, the potential impacts to air quality would be reduced under the No Project Alternative.

Biological Resources

The No Project Alternative would result in no change in conditions within the Project boundaries. While impacts under the Proposed Project would be less than significant with mitigation, as no construction is proposed, the No Project Alternative would avoid the need for pre-construction Burrowing Owl surveys. Like the Proposed Project, the No Project Alternative would not affect riparian habitat or other sensitive natural community, wetlands, wildlife corridors, or native wildlife nursery sites; conflict with local policies or ordinance protecting biological resources; or conflict with the provisions of a Habitat Conservation Plan. Although the Proposed Project's biological resource impacts would be less than significant with mitigation, impacts to biological resources under the No Project Alternative would be considered reduced compared to the Project.

Cultural

Under the No Project Alternative, no excavation and trenching would occur. Therefore, potential impacts to undiscovered human remains would have no potential to occur. Although the Proposed Project's cultural resources impacts would be less than significant, the potential impacts to cultural resources would be reduced under the No Project Alternative.

Energy

Under the No Project Alternative, the need for fuel and electricity for Project construction would not increase, as no construction would occur. The use of electricity, water, or natural gas during operations would not increase. As with the Proposed Project, impacts to energy would be less than significant; however, impacts would be reduced under the No Project Alternative.

Geology and Soils

Under the No Project Alternative, no new structures would be built, avoiding exposure to potential seismic hazards. Likewise, no impacts associated with seismic ground shaking, expansive soils, or paleontological resources would occur under the No Project Alternative. Although the Proposed Project's geology and soils impacts would be less than significant with mitigation, impacts to geology and soils under the No Project Alternative would be considered reduced compared to the Project.

Greenhouse Gas

Under the No Project Alternative, construction of the Project would not occur; and the Project site would remain as it currently exists, mostly vacant. Operational greenhouse gas impacts would not occur under the No Project Alternative. The Proposed Project's greenhouse gas impacts would be less than significant; however, the potential impacts to greenhouse gases would be reduced under the No Project Alternative.

Hazards and Hazardous Materials

The No Project Alternative would not involve the transport, use, and disposal of hazardous materials, as no construction or operation would occur. Although the Proposed Project's impacts related to hazards and hazardous materials would be less than significant, impacts associated with accidental release during hazardous materials transport, use, and disposal would be reduced under the No Project Alternative.

Hydrology and Water Quality

Under this Alternative, the Project site would remain in its current condition, and no grading or development would occur. Existing stormwater flows across the Project site would continue to occur, and the existing hydrologic and drainage patterns would remain unchanged. Changes to hydrology and water quality during construction of the Project would not occur, and no water would be required for construction or operation. While the Proposed Project would result in less than significant impacts, impacts under the No Project Alternative would be reduced when compared to those of the Proposed Project.

Noise

No short-term construction-related noise impacts would occur under the No Project Alternative, as no mineral extraction plant would be built. Noise impacts associated with the Proposed Project would be less than significant; however, under the No Project Alternative, impacts would be reduced when compared to the Project.

Transportation

No construction traffic would be generated in association with the No Project Alternative because no mineral extraction plant would be constructed. Additionally, fewer truck trips would occur under the No Project Alternative, resulting in less impacts and no need to mitigate the potential safety impact at the intersection of Highway 111 and McDonald Road. Although with mitigation, Project impacts to transportation would be less than significant, impacts under the No Project Alternative would be reduced when compared to the Project.

Tribal Cultural Resources

Under the No Project Alternative, the Project site would remain in its existing condition. Maintaining the site in its existing condition would not affect any Tribal Cultural Resources in the vicinity of the site. Additionally, no new ground-disturbing activities would occur; therefore, the potential to disturb or unearth human remains would be reduced when compared to the Proposed Project. Although the Proposed Project's Tribal Cultural Resource impacts would be less than significant, the potential impacts to Tribal Cultural Resources would be reduced under the No Project Alternative.

Utilities and Service Systems

Under the No Project Alternative, no new structures would be built, avoiding the need for new and expanded utility connections. Likewise, no impacts associated with water, electricity, stormwater, and solid waste would occur under the No Project Alternative. Neither the No Project Alternative nor the Project would result in unmitigable impacts to water, wastewater, natural gas, telecommunications, or solid waste. However, impacts to utility and service systems would be reduced under the No Project Alternative.

Conclusion and Relationship to Project Objectives

The No Project Alternative would not change existing conditions at the Project site. The No Project Alternative would result in mostly reduced environmental effects compared to the Proposed Project's less than significant impacts. However, under the No Project Alternative, impacts to transportation would be considered greater and potentially significant without the mitigation to install a northbound left-turn pocket lane to improve the current safety hazards at this intersection.

The No Project Alternative would not develop the site to fully utilize the existing geothermal operations. Additionally, the No Project Alternative would not help the County provide a supplemental domestic source of lithium, a designated critical material identified by the U.S. Department of Energy. Furthermore, by not producing lithium under the No Project Alternative, the need for lithium production to meet certain technical processing needs would remain and may result in future mining projects other than and potentially with greater impacts than the Proposed Project. While the No Project Alternative would also minimize and mitigate any potential impacts to sensitive environmental issues, the No Project Alternative would not meet any other Project objectives. The Project's objectives and the ability for the No Project Alternative to meet those objectives are summarized in Table 5.0-1.

Table 5.0-1: Comparison of Alternatives – Project Objectives

Project Objectives	Ability of Alternatives to Meet Project Objectives
	No Project
To produce 49.9MW (net) of geothermal green energy from within CTR's geothermal lease area.	Unable to meet Project objective.
To provide power to the Imperial Irrigation District and other potential off takers.	Unable to meet Project objective.
To minimize and mitigate potential impacts to sensitive environmental resources while producing renewable energy and creating jobs	Unable to meet Project objective.
To provide a sustainable domestic source of lithium, a designated critical material identified by the U.S. Department of Energy.	Unable to meet Project objective.
To extract and produce lithium hydroxide, silica, bulk sulfide, and polymetallic products for commercial sale from the geothermal brine within the Hell's Kitchen lease area.	Unable to meet Project objective.
To minimize the distance between the geothermal power plant and lithium extraction plant for production efficiency and to reduce the extent of pipeline required to convey brine and steam to and from the geothermal power facility to the mineral extraction plant, therefore minimizing the overall industrial footprint of the combined power and mineral operations.	Unable to meet Project objective.
To minimize and mitigate potential impacts to sensitive environmental resources within the Project area.	Unable to meet Project objective.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

As previously discussed, only one alternative was considered feasible and analyzed in this analysis. A comparison of the Project's impacts and the No Project Alternative impacts is shown in Table 5.0-2. The No Project Alternative would be considered the environmentally superior alternative, as it would avoid or reduce all of the potential impacts associated with construction and operation of the Project. The No Project Alternative would not meet most of the Project objectives including that it would not provide a sustainable domestic source of lithium, a designated critical material identified by the U.S. Department of Energy, (2) produce 49.9MW (net) of geothermal green energy from within CTR's geothermal lease area.; or (3) minimize the distance between the geothermal power plant and lithium extraction plant for production efficiency and to reduce the extent of pipeline required to convey brine and steam to and from the geothermal power facility to the mineral extraction plant, therefore minimizing the overall industrial footprint of the combined power and mineral operations. Furthermore, the No Project Alternative may result in future projects other than and potentially with greater impacts than the Proposed Project.

CEQA Guidelines requires that, if the No Project Alternative is determined to be the environmentally superior alternative, an environmentally superior alternative must also be identified among the remaining alternatives. However, reducing the Project size and relocating the Project to another site in the area were deemed to be infeasible alternatives. Thus, the only environmentally superior alternative identified is the No Project Alternative.

Table 5.0-2: Comparison of Environmental Issues

Environmental Issue Area	Project	No Project Alternative
Air Quality	Less than Significant	Reduced (Less than Significant)
Biological Resources	Less than Significant with Mitigation	Reduced (Less than Significant)
Cultural Resources	Less than Significant	Reduced (Less than Significant)
Energy	Less than Significant	Reduced (Less than Significant)
Geology and Soils	Less than Significant with Mitigation	Reduced (Less than Significant)
Greenhouse Gas	Less than Significant	Reduced (Less than Significant)
Hazards and Hazardous Materials	Less than Significant	Reduced (Less than Significant)
Hydrology and Water Quality	Less than Significant	Reduced (Less than Significant)
Noise	Less than Significant	Reduced (Less than Significant)
Transportation	Less than Significant with Mitigation	Reduced (Less than Significant)
Tribal Cultural Resources	Less than Significant	Reduced (Less than Significant)
Utilities and Service Systems	Less than Significant with Mitigation	Reduced (Less than Significant)

CHAPTER 8.0 – REPORT PREPARATION

8.1 EIR PREPARERS

This Draft EIR was prepared for the County of Imperial by Chambers Group, Inc. at 9620 Chesapeake Drive, Suite 202, San Diego, CA 92123. The following professionals participated in its preparation:

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The following persons and organizations were contacted in preparation of this document:

- Quechan Indian Tribe
- Caltrans

CHAPTER 9.0 – ACRONYMS AND ABBREVIATIONS

Term	Definition
2018 PM_{10} Plan	*Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter Less than 10 Microns in Diameter*
2018 $PM_{2.5}$ SIP	*Imperial County 2018 Annual Particulate Matter less than 2.5 Microns in Diameter State Implementation Plan*
µg/m^3	micrograms per cubic meter
AAC	All American Canal
AB	Assembly Bill
ACM	asbestos-containing material
A.D.	Anno Domini
ADT	Average Daily Traffic
AF	acre-foot
AFY	acre-foot per year
Air Basin	Salton Sea Air Basin
ALUCP	Airport Land Use Compatibility Plan
APN	Assessor Parcel Number
Applicant	Energy-Source Minerals LLC
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
BAU	business as usual
BG	Bare Ground
BLM	Bureau of Land Management
BMP	best management practice
bmsl	below mean sea level
B.P.	Before Present
Brawley Station	Brawley–220 Main Street Monitoring Station
BTR	Biological Technical Report
BUOW	burrowing owl
°C	degrees Celsius
CAAQS	California Ambient Air Quality Standards
CAFE	corporate average fuel economy
CAISO	California Independent System Operator
Cal/ARP	California Accidental Release Prevention Program
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalGEM	California Geologic Energy Management Division
CALGreen	California Green Building Standards Code
Cal/OSHA	Division of Occupational Safety and Health
CalRecycle	California Department of Resources Recycling and Recovery

Term	Definition
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCC	California Coastal Commission
CCDEH	California Conference of Directors of Environmental Health
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDOGGR	California Division of Oil, Gas, and Geothermal Resources
CDRW	California Department of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CIWMP	Countywide Integrated Waste Management Plan
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
County	Imperial County
CPT	cone penetrometer
CPUC	California Public Utilities Commission
CRB	Colorado River Basin
CRHR	California Register of Historical Resources
CRIT	Colorado River Indian Tribes
CRNA	California Natural Resources Agency
CRPR	California Rare Plant Rank
CSTDM	California Statewide Travel Demand Model
CTR	Controlled Thermal Resources
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CWC	California Water Code
cy	cubic yard
dB	decibel
dBA	A-weighted decibel
DHS	Department of Health Systems

Term	Definition
DOC	California Department of Conservation
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EI	expansion Index
EIR	Environmental Impact Report
EO	Executive Order
EOP	Emergency Operations Plan
ERP	Emergency Response Plan
°F	degrees Fahrenheit
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
Fe	iron
FE	federally listed endangered
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FT	federally listed threatened
FTA	Federal Transit Administration
g/h	gallons per hour
GHG	greenhouse gas
gpm	gallons per minute
GPS	Global Positioning Systems
GSA	groundwater sustainability agency
GWh	gigawatt-hours
GWP	global warming potential
H2S	hydrogen sulfide
HAP	hazardous air pollutant
HCl	hydrochloric acid
HDPE/PVC	high-density polyethylene/polyvinyl chloride
HCF	hydrofluorocarbon
HI	hazard index
Highway 111	State Route (SR) 111
HKL1	Hell's Kitchen LithiumCo 1
HKP1	Hell's Kitchen PowerCo 1
HMBP	Hazardous Materials Business Plan
HR1	Hudson Ranch Power I Geothermal Plant
HR2	Hudson Ranch II and Simbol Calipatria II Geothermal Plant
HRA	Health Risk Assessment
HVAC	heating/ventilating/air conditioning

Term	Definition
HWCL	Hazardous Waste Control Law
IBC	International Building Code
ICAPCD	Imperial County Air Pollution Control District
ICFD	Imperial County Fire District
ICE	Intersection Control Evaluation
ICPDSD	Imperial County Planning and Development Services Department
IID	Imperial Irrigation District
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Water Management Plan
IS	Initial Study
IWF	Imperial Water Forum
IWMA	Integrated Waste Management Act
IWSP	Interim Water Supply Policy
JHA	job hazard analysis
kaf	kilo acre foot
kg	kilogram
KGRA	Known Geothermal Resource Area
kV	kilovolt
Ldn	Day-Night Average Level
LEED	Leadership in Energy and Environmental Design
Leq	the sound level in decibels equivalent to the total sound energy measured over a stated period of time
LEV	Low Emission Vehicle standards
Li	lithium
LiCl	lithium chloride
Li_2CO_3	lithium carbonate
LIOH	lithium hydroxide monohydrate
L_{max}	maximum sound level during a measurement period or a noise event
LOS	Level of Service
maf	million acre-feet
MERV	Minimum Efficiency Reporting Value
mgd	million gallons per day
MJHMP	Multi-Jurisdiction Hazard Mitigation Plan
MLD	most likely descendant
MM	mitigation measure
MMT	million metric ton
$MMTCO_2e$	million metric ton of carbon dioxide equivalent
Mn	manganese
mph	miles per hour
MPO	Metropolitan Planning Organization

Term	Definition
MS4	Municipal Separate Storm Sewer System
$MTCO_2e$	metric tons of carbon dioxide equivalent
MW	megawatt
MWh	megawatt-hour
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCG	noncondensable gas
NEHRPA	National Earthquake Hazards Reduction Program
NHSTA	The National Highway Traffic Safety Administration
Niland Station	Niland–English Road Monitoring Station
NO_2	nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
ONAC	Office of Noise Abatement and Control
ONC	California Office of Noise Control
OSHA	Occupational Safety and Health Administration
OSHPD	Office of Statewide Health Planning and Development
Pb	lead
PCB	polychlorinated biphenyl
PCE	Passenger Car Equivalent
pcf	equivalent fluid pressure
PFC	perfluorocarbon
PFO	Potential for Occurrence
PLA	Project Labor Agreement
$PM_{2.5}$	fine particulate matter less than 2.5 microns in diameter
PM_{10}	inhalable particulate matter less than 10 microns in diameter
PPE	personal protective equipment
ppm	parts per million
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
psf	pounds per square foot
psi	pounds per square inch
PURPA	Public Utility Regulatory Policies Act

Term	Definition
PV	photovoltaic
QF	qualifying facility
QSA	Quantification Settlement Agreement
Q2	Business Quarter 2
Q3	Business Quarter 3
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
REL	reference exposure level
ROG	reactive organic gas
ROW	right-of-way
RPS	Renewable Portfolio Standards
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCIC	South Coastal Information Center
SCS	Sustainable Communities Strategy
SDG&E	San Diego Gas and Electric Company
SDNHM	San Diego Natural History Museum
SF_6	sulfur hexafluoride
SE	state listed endangered
SEAOC	Structural Engineers Association of California
SGMA	Sustainable Groundwater Management Act
SiO_2	silica
SIP	State Implementation Plan
SLF	Sacred Lands File
SO_2	sulfur dioxide
SPCC	spill prevention control and countermeasure
SR	State Route
SRRE	Source Reduction and Recycling Element
STLC	soluble threshold limit concentration
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SSC	Species of Special Concern
ST	stated listed threatened
SWR	State Water Project
TAC	toxic air contaminant
TAZ	Transportation Analysis Zone

Term	Definition
TCR	Tribal Cultural Resource
TIA	Traffic Impact Analysis
TTLC	total threshold limit concentration
TMDL	total maximum daily load
TWSC	Two-Way Stop Controlled (intersection)
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USCS	Unified Soil Classification System
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USPS	U.S. Postal Service
UST	underground storage tank
UV	ultraviolet
V/C	volume to capacity
VMT	vehicle miles traveled
VOC	volatile organic compound
WPLT	Western Pluvial Lakes Tradition
WQMP	Water Quality Management Plan
WSA	Water Supply Assessment
Zn	zinc