



**Eagle Mountain Pumped Storage Project
Draft Final Environmental Impact Report
Volume I**

**State Clearinghouse No. 2009011010
FERC Project No. 13123**

State Water Resources Control Board
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Executive Summary

This Eagle Mountain Pumped Storage Project (Project) Draft Final Environmental Impact Report (EIR) was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 [Public Resources Code §§21000-21178] and the 2012 CEQA Guidelines [California Code of Regulations, Title 14, Chapter 3, §15000-15387]. The State Water Resources Control Board (State Water Board) is the CEQA Lead Agency (Public Resources Code §210667).

Pursuant to CEQA Guidelines §15123, this Executive Summary provides a brief overview of the proposed Project and its environmental consequences (CEQA Guidelines §15123(a)), identifies each potentially significant effect of the proposed Project with proposed mitigation program (CEQA Guidelines §15123 (b)(1)), describes the areas of controversy known to the Lead Agency, issues raised by agencies and the public (CEQA Guidelines §15123 (b)(2)), and lists the issues to be resolved [the basis for the scope of EIR] including the choice of Project alternatives and how to mitigate significant effects (CEQA Guidelines §15123 (b)(3)).

Table ES-1, Summary of Potentially Significant Impacts Subject to Mitigation Program, provided at the end of this section, presents a summary of the Project's potentially significant impacts with proposed mitigation measures and alternatives that would reduce or avoid those effects.

A more detailed mitigation program summary table can be found in Section 6.0 Table 6-1 Summary of Project Impacts, Mitigation Program, and Residual Effect, which demonstrates the identified:

1. Potential Environmental Impacts
2. Level of Significance
3. Details of the Mitigation Program (which have been designed to avoid, reduce, or offset the potential environmental impact)
4. Level of Significance after Implementation of the Mitigation Program (residual impact)

Pursuant to Public Resources Code §21068, a *significant effect on the environment* is defined as “a substantial, or potentially substantial, adverse change in the environment.” The State Water Board recognizes this definition for the purpose of the environmental review and analysis of the proposed Project contained within this EIR.

ES-1 Introduction

The State Water Board has prepared this EIR to provide the public, governmental and/or responsible agencies, and other interested parties with information about the environmental effects of the proposed Project located near the community of Desert Center, within Riverside County, California.

The proposed action of developing and operating the pumped storage facility constitutes a “project” under CEQA as it requires discretionary approval by the State Water Board (CEQA Guidelines §15357); as such, the State Water Board is the CEQA Lead Agency (CEQA Guidelines §15367).

The Federal Energy Regulatory Commission (FERC) is the federal Lead Agency responsible for licensing the pumped storage facility. As such, in January 2012 the FERC released an Environmental Impact Statement (EIS) under the guidelines of the National Environmental Policy Act (NEPA) [which is independent of CEQA]. NEPA requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

As described in CEQA Guidelines §15121(a), an EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.

CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. It is not the purpose of an EIR to recommend either approval or denial of a project. Rather, an EIR is a document whose primary purpose is to disclose the potential environmental impacts associated with an action or project. The reader should not rely exclusively on the Executive Summary as the sole basis for judgment of the proposed Project and alternatives. The complete EIR document and supporting technical appendices should be consulted for specific information about the potential environmental effects and implementation of the mitigation program.

ES-2 Overview of the proposed Project

The Project Applicant, Eagle Crest Energy Company (ECE), submitted an application for Clean Water Act Section 401 water quality certification to the State Water Board for the proposed Project. The Project will provide system peaking capacity and system regulating benefits to southwestern electric utilities. The Project will use off-peak energy to pump water from a lower reservoir to an upper reservoir during periods of low electrical demand and generate peak energy by passing the water from the upper reservoir to the lower reservoir through the generating units during periods of higher electrical demand. The low demand periods are expected to be during weekday nights and throughout the weekend, and the high demand periods are expected to be in the daytime during week days, especially during the summer months.

The Project will provide an economical supply of peaking capacity, as well as load following, electrical system regulation through spinning reserve, and immediately available standby generating capacity. These latter benefits, referred to as ancillary services, are considered

essential for integration of renewable wind and solar power resources to meet California's Renewable Portfolio Standards (RPS) of 33 percent by year 2020 and to offset fossil-fueled peak power generation to help meet California greenhouse gas (GHG) emissions reductions goals. Ancillary services are employed as a means to increase stability of the electrical system and provide improved transmission reliability.

The proposed Project consists of a pumped storage project using two existing mining pits, part of the former Eagle Mountain Mine (owned by Kaiser), near the town of Eagle Mountain, California (Figures ES-1 and ES-2). Water will be pumped from a lower pit/reservoir to an upper pit/reservoir during periods of low demand to generate peak energy during periods of high demand. To obtain the needed storage volume at the existing upper pit, two dams will be constructed along its perimeter. As the lower pit has sufficient storage for the total required volume, no dams will be needed for the lower reservoir

The Project will consist of the following facilities:

- Two roller-compacted concrete dams at the upper reservoir at heights of 60 feet and 120 feet
- An upper reservoir with capacity of 20,000 acre-feet
- A lower reservoir with capacity of 21,900 acre-feet
- Inlet/outlet structures
- Water conveyance tunnels consisting of 4,000-foot-long by 29-foot-diameter upper tunnel; 1,390-foot-long by 29-foot-diameter shaft; 1,560-foot-long by 29-foot-diameter lower tunnel; four 500-foot-long by 15-foot-diameter penstocks leading to the powerhouse; 6,835-foot-long by 33-foot-diameter tailrace tunnel to the lower reservoir
- Surge control facilities
- A 72-foot-wide, 150-foot-high, and 360-foot-long underground powerhouse with four Francis-type turbine units
- A 13.5-mile, 500-kilovolt transmission line
- Water supply facilities including a reverse osmosis system and associated brine ponds
- Access roads
- Appurtenant facilities

The proposed Project will occupy 2,364 acres of land in total. Parts of the Project (approximately 1,059 acres) are located on federal lands managed by the United States Bureau of Land Management (BLM), through the Palm Springs South Coast Field Office. If the proposed BLM land exchange with Kaiser (the current owner of the Central Project Area, where the reservoirs and powerhouse are proposed to be located) is executed, 676 acres of the Project features will be on federal lands. The remainder of the Project is on privately-owned lands.

The Project is located within the California portion of the western Sonoran Desert, commonly referred to as the "Colorado Desert." This includes the area between the Colorado River Basin

and the Coast Ranges south of the Little San Bernardino Mountains and the Mojave Desert. The Project is located at the edge of the Eagle Mountains at elevations ranging from approximately 400 to 2,500 feet above mean sea level.

There are no perennial streams or wetlands in the Project vicinity. Drainages in this area are generally limited to high-energy runoff via desert washes that are usually dry. As water from these events quickly percolates into the surrounding soil or evaporates, the establishment of wetland conditions and related vegetation is precluded. Neither the upper reservoir nor the lower reservoir are located on a surface water course. The reservoirs will receive only incidental runoff from small surrounding tributary runoff areas.

As designed, the Project goals and objectives are:

GOAL AND OBJECTIVE #1

Support California's Energy Policy

California's energy policy is described in the California Energy Commission's (CEC) *2011 Integrated Energy Policy Report*. This report emphasizes the importance of ensuring that the state has sufficient, reliable, and safe energy infrastructure to meet current and future energy demand as well as the state's clean energy goals (CEC, 2011). Energy projects provide for affordable peak power generation and storage of energy to support renewable energy production and support California's energy policy.

Even in this economic downturn, California's demand for energy continues to grow. In 2010, Californians consumed about 272,300 gigawatt hours (GWh) of electricity (CEC, 2011). The CEC estimates that by 2022, California's electricity consumption will reach between 313,493 GWh and 332,514 GWh, an annual average growth rate of between 1.15 percent and 1.22 percent. The CEC states that "it is essential that the state's energy sectors be flexible enough to respond to future fluctuations in the economy and that the state continue to develop and adopt the 'green' technologies that are critical for long-term reliability and economic growth" (CEC, 2009).

GOAL AND OBJECTIVE #2

Provide Generation to Meet Part of California's Peak Power Requirements

An additional goal of the Project is to provide hydroelectric generation to meet part of California's power requirements, resource diversity, and capacity needs. Peak demand is forecast to increase in California by 1.3 percent per year between 2010 and 2018 (Kavalek and Gorin, 2009). Additional generation will be needed to continue to meet peak power demands.

GOAL AND OBJECTIVE #3

Provide Energy Storage for Integration of Renewable Energy Generation

Energy storage allows integration of intermittent renewable energy generation (primarily wind and solar power) for attainment of California's RPS and GHG reduction goals.

GOAL AND OBJECTIVE #4

Provide Ancillary Services for Management of the Transmission Grid

Ancillary services, including spinning reserves, voltage regulation, load following, Black Start (restoring power to the grid after a full blackout), and protection against over-generation ensures reliability and supports the transmission of energy from generation sites to customer loads.

GOAL AND OBJECTIVE #5

Provide for Flexible Transmission Grid Operations

Provide operational improvements in the electrical grid to substantially improve transmission efficiency, reliability, and affordability, while fully incorporating renewable and traditional energy sources and reducing carbon emissions.

GOAL AND OBJECTIVE # 6

Reduce GHG Emissions

California Assembly Bill 32 (Statutes 2006, Chapter 488, Núñez), the Global Warming Solutions Act of 2006, established the goal of reducing GHG emissions to 1990 levels by 2020. Operating a smarter grid reduces waste, thus reducing GHG emissions. Integrating renewable energy generation sources that do not produce GHG emissions and providing GHG-free peak power generation, will displace traditional fossil-fueled GHG-producing peak power generation, thus reducing GHG emissions.

GOAL AND OBJECTIVE # 7

Re-use Existing Industrial Sites

The environmental impacts of energy generation can be minimized by siting facilities on already disturbed sites, such as the Eagle Mountain Mine site.

GOAL AND OBJECTIVE # 8

Locate Energy Generation Adjacent to the Transmission Grid

By locating energy generation facilities in close proximity to the transmission grid, the environmental impacts of the construction and operation of transmission interconnection is minimized. In addition, shorter transmission interconnection results in reduced Project costs, benefiting the rate payer. The Project is within approximately 15 miles of a major transmission

corridor (including Southern California Edison's [SCE] 500 kilovolt (kV) Devers-Palo Verde 1 Transmission Line [DPV1], serving the southern California energy market).

GOAL AND OBJECTIVE # 9

Generate Hydropower without Causing Impacts to Surface Waters and Aquatic Ecosystems

By locating the Project in existing mining pits, all impacts to streams, fisheries resources, wetlands, and other aquatic ecosystems are avoided. No natural surface waters will be affected.

GOAL AND OBJECTIVE # 10

Redevelopment of the Eagle Mountain Mines – Central and Eastern Pits

The Central Pit of the Eagle Mountain Mine will be used for the upper reservoir. The East Pit of the Eagle Mountain Mine will form the lower reservoir for the Project. The mining pits are empty and have not been actively mined for decades. The Project reservoirs will be formed by filling the existing mining pits with water. There is an elevation difference between the reservoirs that will provide an average net head of 1,410 feet. Redevelopment of these mining pits provides necessary Project components without the need for massive earthwork.

ES-3 Issues of Concern / Areas of Controversy

Pursuant to CEQA Guidelines §15123(B)(2), the areas of controversy known to the State Water Board, including issues raised by agencies and the public are demonstrated below in Table ES-2 Areas of Controversy / Issues of Concern Identified During Project Scoping.

Public Involvement Process

ECE conducted a pre-filing consultation process under FERC's Traditional Licensing Process (TLP). The intent of FERC's pre-filing process is to initiate public involvement early in the Project planning process and to encourage citizens, governmental entities, tribes, and other interested parties to identify and resolve issues prior to an application being formally filed with FERC.

On January 10, 2008, ECE filed with FERC a Notice of Intent to file a license application, a request to use the TLP, and a Pre-Application Document (PAD) for the proposed 1,300-megawatt Project.¹

¹ Previously, the project was given FERC Project No. 12509-001. Upon issuance of a new preliminary permit on August 13, 2008, the project was given FERC Project No. 13123-000. On March 4, 2008, FERC approved Eagle Crest Energy Company's request to use the TLP.

On June 16, 2008, ECE submitted a Draft License Application (DLA). As a part of the TLP, a public comment period was held on the DLA and many interested stakeholders provided comments.

On September 26, 2008, ECE filed with the State Water Board an application for water quality certification under Section 401 of the Clean Water Act. Section 401 provides that water quality certification conditions shall become conditions of any federal license or permit for the Project.

On October 17, 2008, ECE filed a request for approval of an early scoping process to coordinate both federal and California state environmental procedures. FERC approved this request on October 29, 2008, and held early scoping to coordinate the FERC's NEPA with the State Water Board's CEQA to initiate the environmental assessment and analysis of the proposed Project.

On December 17, 2008, FERC and the State Water Board issued Scoping Document 1 (SD1) which disclosed the FERC and the State Water Board's preliminary view of the scope of environmental issues associated with the proposed Project.

In accordance with CEQA Guidelines §§15082 and 15161, the State Water Board prepared a Notice of Preparation (NOP) for the proposed Project on January 7, 2009. The NOP was circulated to the State Office of Planning and Research, State Clearinghouse (SCH), responsible and trustee agencies, governmental and tribal entities, and interested persons and organizations.

Scoping meetings (CEQA Guidelines §15082 (c)(1)) were held on January 15 and 16, 2009, at the University of California, Riverside (Palm Desert Extension) in the City of Palm Desert, California. A site visit for any interested parties was conducted on January 16, 2009. The purpose of the scoping meeting and public information meeting was to provide information on the proposed Project and CEQA requirements for the scoping and EIR process, to solicit input from individuals and agencies, and to assist in the determination of the scope of analyses and issues to be addressed in the EIR. In addition, and as part of the FERC licensing process, a public comment period was held on the PAD and many interested stakeholders provided comments. Transcripts of the joint scoping meeting are posted on the FERC website (www.ferc.gov).

Based on the verbal comments received at the scoping meetings, and written comments received throughout the scoping process, FERC and the State Water Board prepared Scoping Document 2 (SD2).

A copy of the NOP, NOP distribution list, public notices, and comment letters received by the State Water Board on the NOP and scoping are included in Section 13.0 (Appendix D) of this EIR.

Table ES-2 lists the areas of controversy known to the State Water Board, including issues raised by agencies and the public during Project scoping.

Table ES-2 Areas of Controversy / Issues of Concern Identified During Project Scoping

<i>Geology and Soils</i>
<ul style="list-style-type: none"> • Effects of Project construction, filling, and operation on geology and soil resources in the Project boundary, including assessment of potential geologic hazards such as soil liquefaction, Project-induced seismicity, and slope instability.
<ul style="list-style-type: none"> • Effects of Project construction, filling, and operation on soil erosion and sedimentation in the Project area.
<ul style="list-style-type: none"> • Effect of Project construction, filling, and operation on the potential for subsidence and hydrocompaction in the Project area and associated Chuckwalla Valley Groundwater Basin, including potential effects in adjacent river basins (e.g., the Pinto Valley Groundwater Basin) and on the Colorado River Aqueduct (CRA).
<i>Water Resources (Groundwater and Surface Water)</i>
<ul style="list-style-type: none"> • Effects of construction activities on water quality in the Project area.
<ul style="list-style-type: none"> • Effects of reservoir and tunnel on seepage and on groundwater levels in the Project area.
<ul style="list-style-type: none"> • Effects of seepage from the reservoirs and brine pond(s) on groundwater quality in the Project area.
<ul style="list-style-type: none"> • Effects of groundwater pumping on groundwater levels, including assessment of groundwater level changes in relation to: other groundwater users; local springs; the CRA; and United States Bureau of Reclamation's accounting surface elevation for monitoring use of Colorado River water.
<ul style="list-style-type: none"> • Effects of groundwater pumping on groundwater quantity and quality in the Project area.
<ul style="list-style-type: none"> • Effects on long-term water quantity and quality in the reservoirs and brine ponds, including the potential for colonization by avian organisms.
<i>Biological Resources</i>
<ul style="list-style-type: none"> • No issues associated with aquatic resources have been identified.
<ul style="list-style-type: none"> • Effects of the reservoirs as a rare water source in the desert environment on the attraction of waterfowl and bats, attraction of predators (e.g., coyotes, badger, and ravens), and establishment and composition of riparian communities.
<ul style="list-style-type: none"> • Effects of Project construction (i.e., disturbance and habitat fragmentation) and operation (i.e., lighting, physical and noise disturbance, and migration barriers) on desert bighorn sheep migration patterns, foraging habitat, and breeding and lambing behavior; including an assessment of consequences to desert bighorn sheep populations in the area.
<ul style="list-style-type: none"> • Potential effects of the Project's reservoirs on deer, big horn sheep, and desert tortoise drowning in the reservoirs, and effectiveness of fencing.
<ul style="list-style-type: none"> • Effects of the brine ponds on birds, and measures to minimize adverse effects.
<ul style="list-style-type: none"> • Effects of Project construction and operation, including, but not limited to, construction of the access roads, water pipeline, transmission line, powerhouse, brine ponds and reservoirs, staging areas, transmission line pulling areas, and waste spoil and disposal sites on vegetation.

<ul style="list-style-type: none"> • Effects of changes in local springs on wildlife, including desert bighorn sheep.
<ul style="list-style-type: none"> • Effects of Project construction and operation on the spread of invasive species including the consequences of the spread of noxious weeds on vegetation species composition and wildlife habitat values.
<ul style="list-style-type: none"> • Effects of Project construction and operation on special status species, including BLM sensitive species and state-threatened and endangered species.
<ul style="list-style-type: none"> • Effects of Project facilities and operations on raven populations.
<ul style="list-style-type: none"> • Effect of Project construction and operation on federally-threatened and endangered species: (1) desert tortoise and its critical habitat, the (2) Coachella Valley milkvetch.
<ul style="list-style-type: none"> • Potential conflicts between the proposed Project and the terms of Kaiser's incidental take statement for the Eagle Mountain Landfill project.
<p>Recreation</p>
<ul style="list-style-type: none"> • Effects of Project construction and operation on recreational use within the Project area, including lands administered by the BLM for dispersed recreational use and, at the Joshua Tree National Park.
<ul style="list-style-type: none"> • Effects of Project construction and operation on special designated areas, including BLM's Chuckwalla Valley Dune Thicket Area of Critical Environmental Concern, and Chuckwalla Critical Habitat Unit (an area designated by the United States Fish and Wildlife Service as desert tortoise habitat), and federally-designated wilderness areas within Joshua Tree National Park.
<p>Land Use Issues</p>
<ul style="list-style-type: none"> • Effects of Project construction and operation on the CRA and other land uses, including future mineral development, and solar farms.
<ul style="list-style-type: none"> • Effects of Project construction and operation on the proposed Eagle Mountain Landfill and Recycling Center, including assessment of potential areas of incompatibility between the proposed Project and the proposed landfill.
<ul style="list-style-type: none"> • Effects of Project-related brine ponds (from the reverse osmosis system) and associated removal of an estimated 2,500 tons of salt from the upper reservoir on land use.
<ul style="list-style-type: none"> • Effects of the proposed Project on the Riverside County Fire Department's ability to provide an acceptable level of service.
<p>Cultural Resources</p>
<ul style="list-style-type: none"> • Effects of construction and operation of the proposed Project on historic, archeological, and traditional resources that may be eligible for inclusion in the National Register of Historic Places.
<ul style="list-style-type: none"> • Effects of Project's construction and operation on the Project's defined area of potential effects.
<p>Aesthetic Resources</p>
<ul style="list-style-type: none"> • Effects of proposed Project facilities on visitors who view the landscape (i.e., Riverside County has designated the section of Interstate 10 from Desert Center to Blythe as a scenic corridor).
<ul style="list-style-type: none"> • Effects of Project construction and operation on visitors to the area, including visitors

to wilderness and non-wilderness areas within Joshua Tree National Park, and effects on Joshua Tree National Park's wilderness values.
Transportation
<ul style="list-style-type: none"> • Effects of increased traffic and potential congestion on local roads due to the combination of existing mining-related and landfill traffic and Project construction and operation.
Air Quality
<ul style="list-style-type: none"> • Effects of construction and operation of the Project on air quality in the region.
GHG Emissions
<ul style="list-style-type: none"> • Effects of the Project on carbon production emissions.

A Draft EIR was published by the State Water Board on July, 23 2010. A 76-day public comment period followed. This Draft Final EIR contains responses to the comments submitted on the Draft EIR in Volume IV.

A Draft Water Quality Certification for the proposed Project was issued by the State Water Board on June 27, 2012, followed by a 30-day public comment period.

ES-4 Organization and Scope of the EIR

Pursuant to CEQA Guidelines §15123(B)(3), the issues to be resolved and analyzed within this EIR are included in the list below. The EIR addresses each of these areas of concern or controversy in detail, examines Project-related and cumulative environmental impacts, and identifies significant adverse environmental impacts. Where necessary, recommended mitigation has been designed to reduce, avoid, or eliminate potentially significant impacts. This Draft Final EIR is organized as follows:

Volume I

Executive Summary. This section presents a summary of the proposed Project and Alternatives considered in this EIR, identifies areas of controversy, significant unavoidable impacts, and provides a summary of potential environmental impacts and the mitigation program directly related to such impacts. Also within the section is a table that lists the potentially significant environmental impacts, the level of significance, , related mitigation program, and residual impact.

Volume II

Section 1.0 – Introduction. This section describes the purpose and scope of the EIR which is based on the CEQA EIR process. Public scoping efforts are discussed, including environmental

issues to be analyzed in the EIR. The public review and intent of the EIR document are addressed, followed by an organizational list of EIR sections.

Section 2.0 – Project Description. This section provides the Project Description, including the location and identification of potential environmental issues. Within this section are the Project Objectives, existing environment and background, and identification of potential environmental impacts. Lastly, this section concludes with a list of agencies expected to use the EIR document for review of approvals and permits required for implementation of the proposed Project.

Section 3.0 – Environmental Analysis. This section describes the regional and local environmental setting for the proposed Project. The section also describes the regulatory setting (if applicable), thresholds of significance, and includes a discussion of potentially significant adverse environmental impacts associated with the proposed Project for each environmental issue area. Where applicable, this section outlines a mitigation program based on project design features (PDF) and/or mitigation measures (MM) to reduce or avoid potentially significant impacts and identifies the residual level of significance of the impact once the mitigation program is implemented. This section addresses each of these resource topics in detail, accounting for Sections 3.1 through 3.17:

Geology and Soils – Construction activities of the dams and reservoirs, along the water conveyance corridor and/or transmission line corridor, and Project operations may have the potential to impact the geological resources on-site.

Surface Water – Construction activities along the water conveyance corridor or transmission line corridor, and Project operations planned at the facility may impact aqueducts, springs, groundwater levels, groundwater quality, and wells.

Groundwater – Construction and operation will affect this resource. This section discusses groundwater quality and supply data for the Chuckwalla Valley Groundwater Basin, wells, water bearing formations, and hydraulic characteristics.

Agricultural Resources – This discussion focuses on the Project’s compatibility with existing agricultural and forestry resources land uses.

Biological Resources – Construction and operational activities planned at the facility, along the water conveyance corridor and/or transmission line corridor may impact plant communities and wildlife. The Project will be required to adhere to federal, state, regional, and local biological plans.

Threatened and Endangered Species – Project implementation may impact state-listed threatened and/or endangered species having the potential to occur on-site, or having suitable habitat on-site or in the Project vicinity.

Aesthetic Resources – The physical character of the site will be modified. The overall aesthetic appearance of the facilities as viewed from off-site requires evaluation to ensure consistency with national and regional standards.

Cultural Resources – Project construction and operational activities proposed along the water conveyance corridor and/or transmission line corridor may have the ability to impact archeological, paleontological, or historical resources within the Area of Potential Effect.

Land Use / Public Services – Project construction and operational activities proposed along the water conveyance corridor and/or transmission line corridor will change the existing land use on-site, and have the potential to affect public services times and utility capacities. The existing land use is an out-of-use iron ore mine that has been inactive since 1983. At present, gravel mining and military training is conducted on the site. Development on this site will be evaluated for compatibility with surrounding land uses and national and regional long-term goals.

Recreation – Project construction and operational activities proposed along the water conveyance corridor and/or transmission line corridor may have the ability to impact surrounding recreational areas, including the Joshua Tree National Park and Wilderness Area.

Population / Housing – Project construction and operational activities proposed along the water conveyance corridor and/or transmission line corridor may increase population and/or housing demands within the region.

Transportation – Construction activities and operational phases have the potential to increase traffic and decrease level of service.

Air Quality – Construction, operational activities, and truck and automotive traffic anticipated and planned at the facility will generate emissions and dust that may have an effect on local and/or regional air quality.

Noise – Construction and operational activities of the pumped storage project could generate increased noise levels adversely affecting surrounding sensitive receptors.

GHG Emissions – Project construction and operational activities could generate GHG emissions.

Hazards & Hazardous Materials – Construction and operational activities may have impacts to public health and environmental issues related to hazards and the use of hazardous materials. This section also describes potential fire hazards.

Environmental Justice – Although not required under the CEQA, the EIR includes a discussion of environmental justice with applicable regulations and policies. This section addresses whether and how the impacts of the proposed Project and alternatives may disproportionately affect minority and/or low-income populations or Native American communities.

Section 4.0 – Alternatives Analysis. The purpose of the alternatives analysis is to identify ways to mitigate or avoid the significant effects a project may have on the environment; as such, this section begins by providing an overview of the alternative selection process. This section describes the alternatives to the proposed Project and compares their relative impacts to those of the proposed Project while considering the Project objectives and specific evaluation criteria. This section also provides a description of alternatives considered but rejected from further analysis, as well as, the determination of the environmentally superior alternative.

Section 5.0 – CEQA Mandated Discussions. This section discusses potentially significant irreversible effects and irretrievable commitments of resources, the potential for growth-inducing impacts, and cumulative impacts. The purpose of this section is to evaluate the potential for growth-inducing effects of the proposed Project. Additionally, this section considers the effects of the proposed Project that would result in a commitment of resources and uses of the environment that could not be recovered if the proposed Project was constructed, as well as describing the potential for unavoidable adverse impacts from the proposed Project. Cumulative impacts are those impacts that are individually less than significant, but when considered together with related impacts of other projects in the affected area, could result in a combined effect that is significant.

Section 6.0 – Mitigation Summary. This section of the Draft Final EIR presents a comprehensive matrix of the recommended mitigation program which catalogs the potential environmental impact, level of significance, related mitigation program, and residual impact after implementation of the mitigation program (*see* Table 6-1). In addition, the Mitigation Monitoring and Reporting Program (MMRP) table (*see* Table 6-2) provides a checklist table listing each mitigation measure and project design feature, implementation timing, party-responsible for monitoring or reporting, and agency responsible for verification and enforcement. The MMRP has been designed to ensure compliance during Project implementation and will be incorporated into the State Water Board’s water quality certification for the proposed Project.

Section 7.0 – References. This section provides a list of the sources of information cited in the Draft Final EIR.

Section 8.0 – Organizations and Persons Consulted. This section identifies the individuals, agencies, and organizations consulted in preparing the Draft Final EIR.

Section 9.0 – List of Draft Final EIR Preparers. This section provides the names of the State Water Board staff, consulting scientists and planners who contributed to preparation of the Draft Final EIR. In addition, resumes of the lead technical staff are provided, along with statements from each technical preparer regarding the methods used in the analysis, and conclusions drawn.

Section 14.0 – Figures. Figures related to Section 1 through Section 4 of the Draft Final EIR are included in this section.

Volume III

Section 10.0 – Appendix A – Sensitive Species in Proposed Project Area

Section 11.0 – Appendix B – Fish and Wildlife Observed in Proposed Project Area

Section 13.0 – Appendix D – Scoping Materials / Public Notices / EIR Notification List

- 13.1 State Clearinghouse NOP
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Volume IV

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Volume V

Section 12.0 – Appendix C – Technical Memoranda

- 12.1 Stage 1 Design Level Site Investigation Plan
- 12.2 Erosion and Sediment Control Plan
- 12.3 Preliminary Groundwater Supply Wells, Pipeline, and Operating Costs: Eagle Mountain Pumped Storage Project
- 12.4 Groundwater Supply Pumping Technical Memorandum
- 12.5 Eagle Mountain Pumped Storage Project: Seepage Analysis for Upper and Lower Reservoirs
- 12.6 Seepage Recovery Wells, Groundwater Modeling Report
- 12.7 Schedule, Manpower, and Equipment Utilization During Construction of the Eagle Mountain Pumped Storage Project
- 12.8 Eagle Mountain Pumped Storage Project – Landfill Compatibility
- 12.9 Project Drainage Plan and Reservoir Spillway Designs
- 12.10 Appendix to Air Quality Analysis, Construction-Related Data

- 12.11 Class I Cultural Resources Investigation for the Proposed Eagle Mountain Pumped Storage Project.
- 12.12 Class III Cultural Resources Report
- 12.13 Final Historic Properties Management Plan and Correspondence with the State Office of Historic Preservation
- 12.14 Biological Mitigation and Monitoring Reports
- 12.15 Golden Eagle Aerial Surveys for Eagle Mountain Pumped Storage Project in the Mojave Desert Region, California.
- 12.16 Results of Class I record search and Class III field inventory of Eagle Mountain Pumped Storage Project alternative transmission line corridors and substations

Volume VI

Confidential Information, Not Publically Available

ES-5 Other CEQA Mandated Sections

CEQA requires consideration and discussion of a range of issues extending beyond analysis of project-specific impacts to individual resource areas. Section 5.0 of the Final EIR contains a complete analysis of additional mandated CEQA discussions, as well as discussion of CEQA Guidelines Appendix F, Energy Conservation. The mandated analyses are as follows:

- Unavoidable Adverse Impacts – CEQA Guidelines §15126.2(b)
- Growth Inducing Effects – CEQA Guidelines §15126.2(d)
- Significant Irreversible Environmental Changes – CEQA Guidelines §15126.2(c)
- Cumulative Impacts – CEQA Guidelines §15130

These potential impacts are summarized below:

Unavoidable Adverse Impacts

Pursuant to CEQA Guidelines §15126.2(b), the proposed Project will result in significant and unavoidable adverse impacts related to: long-term impacts on visual resources from the transmission line; short-term air quality impacts during construction (nitrogen oxide [NO_x] emissions from heavy equipment); and cumulative impacts to groundwater resources from proposed Project pumping combined with groundwater use for other reasonably foreseeable projects. A brief description of each significant and unavoidable impact is provided below.

Aesthetics

The transmission line segment from the Eagle Mountain Road turnoff to the interconnection substation (~2.5 miles) would introduce a new utility feature to the landscape, creating high visual contrast within foreground view zones. Of the 10 Key Observation Points established, two (Interstate 10 [I-10] and Desert Center) would be exposed to significant, visual changes that cannot be entirely mitigated to less than significant. Although the proposed Project's transmission line would be similar in design and height to SCE's Devers-Palo Verde 2 (DPV2) transmission line segment proposed to cross I-10 in the foreground (*see* various figures within this EIR for locations of existing and proposed transmission lines), the new structures would cause additional view blockage in the foreground of the panoramic views of the Chuckwalla Valley and surrounding mountains. The new transmission line and new right-of-way (ROW) would also increase the structural complexity and industrial character, which would be more pronounced as the viewer gets closer to the structures. Viewers traveling eastbound on I-10 would be most affected by the proposed Project transmission line whereas unobstructed views of the line would be apparent in the foreground/middle-ground view zones. The new structures will be apparent to westbound travelers as well, but potentially "filtered" due to the proposed DPV2 line. The moderate-to-high level of visual change that would result from this component of the proposed Project would be inconsistent with the applicable BLM Visual Resource Management (VRM) Class III management objectives, resulting in a *significant and unavoidable impact*.

Air Quality

The proposed Project will result in a significant (short-term) construction-related impact from NO_x during construction; resulting in a *significant and unavoidable impact*. Other air quality parameters will not exceed the thresholds of significance. No significant operational air quality impacts were identified.

Groundwater

Pumping will exceed recharge for approximately four years of the 50-year Project life. During the remaining years, recharge will exceed pumping. By the end of the 50-year FERC license period, the aquifer storage (cumulative change) is projected to increase by about 74,000 acre-feet. This will not result in depletion of groundwater supplies, and this potential impact is *less than significant*. However, in combination with pumping for all reasonably foreseeable projects, Chuckwalla Valley Groundwater Basin overdraft of about nine feet is likely to occur over the life of the Project, in which case, this proposed Project would contribute to a *significant adverse cumulative effect*.

Growth Inducing Effects

Public Resources Code § 21100(a)(5) requires that the growth-inducing impacts of a project be addressed in the EIR. A project may be growth-inducing if it directly or indirectly fosters economic or population growth or the construction of additional housing, removes obstacles to

growth, taxes community service facilities, or encourages or facilitates other activities that cause significant environmental effects. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment (CEQA Guidelines §15126.2[d]).

The proposed Project proposes to establish industrial activities. Industrial activities are typically associated with economic growth and population growth. However, the proposed Project's operation does not require a large number of employees that would typically be required for other industrial operations, such as a landfill or mining pit. At Project buildout, the pumped storage facility would be expected to operate with a staff totaling 30 persons based on three work-shifts within a given 24-hour period.

The majority of required manpower is needed during construction, particularly in the time frame approximately two years into the construction period, with considerably less needed in the first and last years. Peak monthly employment would occur during the second year of construction with a high of 209 employees.

It is expected that most of the general labor required during construction would be available from the labor pool within Riverside County and the proposed Project region. As much as 50 percent of the skilled trades and management and support personnel could also be provided by regional labor. There would be some immigration of non-local workers to meet proposed Project manpower requirements. It is expected that many of these employees will use local housing. Significant vacant housing and rental units are available within Riverside County as well as large numbers of hotel/motel rooms. Long-term employment during proposed Project operation may generate additional demand for housing in the Desert Center area, but the number of employees will be small (approximately 30 employees) and the existing housing stock will likely accommodate these employees.

Estimates of peak construction work force and the expected percentage of non-local workers suggest that during the peak period, approximately 105 workers will require short-term (two years) housing accommodations. The relatively small number of employees would likely be derived from the area's resident population and significant numbers of employees from outside the area would not be needed long-term. The proposed Project would have no indirect growth-inducing impacts. Based on this analysis, the growth inducing impact based on implementation of the proposed Project would be considered *less than significant*.

Significant Irreversible Environmental Changes

Public Resources Code § 21100(b)(2)(B) requires an EIR to include a detailed statement setting forth any significant effects on the environment that would be irreversible if a project were implemented. Pursuant to CEQA Guidelines §15126.2(c), the uses of nonrenewable resources during the initial and continued phases of the proposed Project may be irreversible since a large

commitment of such resources makes removal or nonuse thereafter unlikely; whereas irreversible damage and irretrievable commitments of resources may result in significant impacts.

Using the site for a pumped storage facility may limit the capacity to recover further iron ore; however, as stated in Section 3.1 Geology and Soils, the property's owner intends to convert the site to a landfill. The remaining deposits contain low average iron content, and no ore processing facilities remain on the site. Furthermore, using rail to transport material would require substantial reconstruction for reoperation. Therefore, future iron mining is unlikely to occur within the proposed Project boundary.

The proposed Project may use part of the fine tailings stored on-site to create a reservoir liner or construction of a low-permeability central core in the embankments proposed for the reservoirs. Recycling of the large volumes of mine tailings around the site would be a significant benefit over the long-term. None of these changes are irreversible, but resources will be committed for the life of the proposed Project.

The proposed Project will convert disturbed land to industrial use with reservoirs, transmission structures, and other related components; however, these changes would only occur over the life of the proposed Project. This impact could be reversed if the reservoirs were reclaimed (i.e., drained) and the transmission line is dismantled at the end of the proposed Project. The proposed Project duration is estimated at 50 years based in part on FERC licensing, State Water Board permitting, market conditions, and various other components which are unknown at this time. In summary, the proposed Project would have *no significant irreversible environmental changes*.

Cumulative Project / Cumulative Impact

A cumulative project refers to land development projects that are in various phases of entitlement, planning and/or construction and that may affect the same resources and geographic area as the proposed Project. Under CEQA Guidelines §15130, the EIR must discuss cumulative impacts when they are significant. Cumulative impacts are defined as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

The geographic area of cumulative effect varies by resource. For example, air quality impacts tend to disperse over a large area, while traffic impacts are typically more localized. For this reason, the geographic scope for the analysis of cumulative impacts must be identified for each resource area (*see* Table 5-1 Geographic Scope of Cumulative Effects Analysis). The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of each analysis is based on topography and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects often extends beyond the scope of the direct effects, but not beyond the scope of the direct and indirect effects

of the proposed action and alternatives. The geographic area encompassed by the listed projects covers an approximate 15 to 20 mile radius around the proposed Project site.

The cumulative projects in the immediate proposed Project vicinity include those along the I-10 corridor in eastern Riverside County. The list of cumulative projects was compiled by the BLM for use in the cumulative environmental impact analysis for the proposed solar energy projects and was provided to the State Water Board (Lead Agency) in March 2010 (Ysmael Wariner, BLM staff, personal communication, March 2010). Several projects in the Chuckwalla Valley are in the planning and permitting stage. They include various proposed solar energy projects, the Eagle Mountain Landfill project, and other relevant probable future projects.

The following is a summary of the cumulative impact analysis as contained in Section 5.0 CEQA Mandated Analyses:

Groundwater

Proposed Project pumping will exceed recharge for approximately four years of the 50-year Project life. During the remaining years, recharge will exceed pumping. By the end of the 50-year FERC Project license, the aquifer storage (cumulative change) is projected to increase by about 74,000 acre-feet. This will not result in depletion of groundwater supplies, and this potential impact *is less than significant*. However, in combination with pumping for all reasonably foreseeable projects, Chuckwalla Valley Groundwater Basin overdraft of about nine feet is likely to occur over the life of the proposed Project, in which case, this proposed Project would contribute to a *significant adverse cumulative effect*.

Aesthetics

Cumulative projects include the proposed DPV2 Transmission Line Project, with two 500 kV transmission lines parallel to the existing DPV1. These projects considered together would result in a significant cumulative impact. Because the proposed Project will add to the region's increase in developed facilities and progressive change in visual character of the natural landscape, its contribution to this cumulative impact would be *cumulatively considerable*.

Air Quality

The proposed Project alone would result in a significant construction-related impact from NO_x during initial construction years. If a project would individually have a significant air quality impact, the proposed Project would also be considered to have a *significant cumulative air quality impact*. As such, the proposed Project would also have a significant cumulative contribution to NO_x impacts as a precursor to ozone formation in construction years.

No significant cumulative impacts were identified for geology and soils, surface water, agriculture, biological resources, cultural resources, land use / public services, recreation,

population and housing, traffic, GHG emissions, noise, hazards and hazardous materials, and environmental justice.

Energy Conservation, CEQA Guidelines Appendix F

CEQA Guidelines §15126.4(a)(1)(C) states: “Energy conservation measures, as well as other appropriate mitigation measures, shall be discussed when relevant.” Whereas CEQA Appendix F recognizes the goal of conserving energy and implies the wise and efficient use of energy. The means of achieving this goal include:

- Decreasing overall per capita energy consumption
- Decreasing reliance on natural gas and oil
- Increasing reliance on renewable energy sources

The proposed Project can integrate solar and wind generation and offset natural gas-fired power with the overall benefit of reduced GHG emissions and direct contribution to long-term climate change effects. The proposed Project provides an economical supply of peaking capacity, as well as load following, electrical system regulation through spinning reserve, and immediately available standby generating capacity. These additional benefits, referred to as ancillary services, are considered essential for integration of renewable wind and solar power resources to meet California RPS of 33 percent by year 2020, and to offset fossil-fuel peak power generation to help meet state GHG emissions reductions goals.

The proposed Project has been designed to play an important role in the integration of renewable energy resources already mandated to be developed by the state of California; as such, the proposed Project is intended to meet existing and future energy demands.

ES-6 Alternatives

CEQA Guidelines §15126.6 require that an EIR describe and evaluate the comparative merits of a range of alternatives to the proposed Project that could feasibly attain most of the objectives of the proposed Project but would avoid or substantially lessen significant effects. An EIR is not required to consider alternatives which are infeasible. However, CEQA Guidelines §15126.6(b) specifies that the EIR shall evaluate alternatives capable of avoiding or substantially lessening significant effects of the proposed Project even if these alternatives could impede to some degree attainment of Project objectives, or impose additional costs.

The alternatives evaluated in this Draft Final EIR were identified based on a range of alternatives that could feasibly accomplish most of the basic Project objectives and could avoid or substantially lessen one or more significant effects (CEQA Guidelines §15126.6(c)).

The five alternatives to the proposed Project that are discussed in Chapter 4.0 Alternatives of this EIR include:

- Alternative 1 – Proposed Project Alternative
- Alternative 2 – Extend Construction Period to Limit Equipment to 100 pounds of NO_x per day (lbs/day NO_x)
- Alternative 3 – Eastern Red Bluff Substation Alternative
- Alternative 4 – Western Red Bluff Substation Alternative
- Alternative 5 – No Project Alternative

The environmental analysis concluded that based upon the elimination of proposed Project impacts to aesthetics and air quality, the environmentally superior alternative would be the No Project Alternative (Alternative 5). However, while addressing Project-specific impacts, including the proposed Project goals and objectives as criteria, the No Project Alternative would eliminate a major utility-scale energy storage project from development, with the possible effect of impeding state goals for successful integration of 33 percent renewable energy generation sources by year 2020. This outcome would have related consequences for attainment of GHG reduction goals by year 2020 as well. With this perspective, the conclusion that the No Project Alternative is environmentally superior is questionable.

CEQA directs that in the case where the No Project Alternative is identified as the environmentally superior alternative, the EIR shall also identify the environmentally superior *development* alternative (Guidelines §15126.6(e)). As documented in Section 4.0 Alternatives, numerous development alternatives were examined and rejected as either infeasible, or having greater potential environmental consequences. These included alternative locations, transmission line alignment configurations, water supply and water treatment, powerhouse location, generation capacity, and reservoir capacities.

The Proposed Project Alternative (Alternative 1) has evolved substantially over a period of years to include a variety of features (fully described in Section 4.0) intended to specifically address and minimize potential environmental effects. This alternative also incorporates a comprehensive mitigation program intended to avoid or minimize environmental effects to the extent feasible, while still allowing attainment of basic Project goals and objectives. However, impacts to groundwater, air quality during construction, and aesthetics remain significant with the application of the mitigation program.

Alternative 2 (Extend Construction Period to Limit Equipment to 100 lbs/day NO_x) is the only alternative action that could reduce NO_x emissions to below the significance threshold. This alternative would limit the number of pieces of equipment that could operate on any single day to keep NO_x emissions below the 100 lbs/day standard. With NO_x emissions at approximately four times this threshold value, this implies that construction would need to be extended over a much longer period of time, and instead of three to four years for completion of proposed Project works, construction would extend over 10 to 12 years or more.

Alternative 2 does eliminate the short-term construction related air quality impact; however, it may increase other impacts by extending the duration of habitat disturbance, and proposed Project traffic and noise. This alternative would also substantially constrain attainment of proposed Project goals by substantially extending the time to full Project operations, and it very likely would undermine the proposed Project's ability to be financed, thereby fundamentally affecting feasibility of the proposed Project.

Two alternative substation locations, Eastern Red Bluff Substation and Western Red Bluff Substation (referred to as Alternatives 3 and 4 respectively) provide up to three alternative interconnection routes; all of which were examined. Both of the alternative substation locations have less visual impact than the proposed Project, although impacts remain significant.

From the western substation location, one interconnection route was examined (Interconnection Alternative #3). However, the western substation location has greater impacts to desert tortoise and cultural resources than either the proposed Project or the eastern substation location.

From the eastern substation location, two alternative interconnection routes were examined. Interconnection Alternative #1A has less impact to desert tortoise, land use, and visual resources than Interconnection Alternative #1B or Interconnection Alternative #2. Therefore, it is concluded that the Interconnection Alternative #1A which interconnects to the Eastern Red Bluff Substation, with incorporation of all alternative features and implementation of the mitigation program identified throughout the resource analyses in this Draft Final EIR, qualifies as the environmentally superior interconnection (development) alternative; it reduces biological, land use and aesthetics impacts, although visual impacts and short-term air quality impacts remain significant and unavoidable.

ES-7 Thresholds of Impact / Level of Significance

The threshold of impact used throughout this EIR to assess potential environmental impact as a result of proposed Project implementation was developed in consultation with CEQA Guidelines, local/regional plans and ordinances, accepted standards of practice, and/or consultation with recognized environmental experts. Within Section 3.0 Environmental Analysis, each resource section provides specific criteria for determining environmental impact assessment.

The following terminology is used throughout the Draft Final EIR to describe the level of significance of potential environmental impacts:

- A finding of **no impact** is appropriate if the analysis concludes that the proposed Project would not affect the particular resource in any way.
- An impact is considered **less than significant** if the analysis concludes that it would not cause substantial adverse change to the environment and requires no mitigation.

- An impact is considered **potentially significant and subject to the mitigation program** if the analysis concludes that it could have a substantial adverse effect on the environment and requires implementation of a mitigation program.
- An impact is considered **significant and unavoidable** if the analysis concludes that it would cause substantial adverse change to the environment and no feasible mitigation program was developed taking into account economic, environmental, legal, social, and technological factors.

ES-8 Mitigation Program

Implementation of the recommended mitigation program would reduce potentially significant impacts to a less than significant level. The resource areas of Groundwater, Aesthetics, and Air Quality have unavoidable and significant environmental impacts of which will require a statement of overriding consideration (CEQA Guideline §15093). Where stated, the potential environmental effects of the proposed Project are categorized to reduce the impacts to less than significant. The mitigation program includes both PDFs and MMs.

PDFs are design elements inherent to the proposed Project that reduce or eliminate potential impacts. Because PDFs are incorporated into the proposed Project, either in the proposed Project design or by law as part of proposed Project implementation, they do not constitute MMs, which are required to reduce or avoid a potentially significant impact. For clarity, PDFs are described within the mitigation program and are described within the analysis of each CEQA resource topic. MMs are provided to reduce impacts from the proposed Project to below a level of significance, where applicable.

Please refer to Section 6.0 Mitigation Summary for Table 6-1 Summary of Project Impacts, Mitigation Program, and Residual Effect. Table 6-1 presents a listing by threshold of significance by resource area, identified environmental impacts, mitigation program component, and level of significance after mitigation is incorporated into the Project. The table also identifies cumulative impacts resulting from build out of the proposed Project in conjunction with the approved and pending cumulative projects.

Please refer to Section 6.0 Mitigation Summary for Table 6-2 Mitigation Monitoring and Reporting Program. Table 6-2 provides a checklist table listing each MM and PDF, responsible party, and the MM timing. The MMRP has been designed to ensure compliance during Project implementation, to provide a verification schedule for the mitigation program, and to be incorporated into the State Water Board's water quality certification for the proposed Project. The MMRP fulfills the State Water Board's monitoring requirements with respect to AB 3180 (Statutes 1988, Chapter 1232, Cortese) (Public Resources Code §21081.6).

ES-9 Public Review of the EIR

On July 23, 2010, the State Water Board issued a Draft EIR for public review and comment. The Responses to Comments received on the Draft EIR are contained in Volume VII of this Draft Final EIR. This Draft Final EIR is provided to show how the comments received and State Water Board response have been incorporated into the environmental document. The responses and Draft Final EIR are posted on the State Water Board's website at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ceqa_projects.shtml#eagle

Hard copies of the Responses to Comments on the Draft EIR will be made available to public agencies that provided comments on the Draft EIR and will be available at the locations listed below at least 10 days before adoption of the Final EIR:

Cal/EPA Building
1001 I Street, Second Floor
Water Rights File Room
Sacramento, CA 95814

Lake Tamarisk Library
P.O. Box 260
43-880 Tamarisk Drive
Desert Center, CA 92239

Indio Library
200 Civic Center Mall
Indio, CA 92201

Palo Verde Valley District Library
125 W. Chanslor Way
Blythe, CA 92225

Table ES-1, Summary of Potentially Significant Impacts Subject to Mitigation Program

Category	Potential Significant Impacts	Mitigation Measures (MMs) and Project Design Features (PDFs)²
Geology & Soils	3.1-4 (Soil Erosion)	MM GEO-1 (Erosion Control Plan)
	3.1-5 (Landslides & Mass Movements)	PDF GEO-1 (Subsurface Investigations) PDF GEO-2 (Geologic Mapping)
Surface Water	3.2-1 (Existing Surface Water)	MM GEO-1 (Erosion Control Plan)
	3.2-3 (Water Quality impacts to the Project created surface waters)	MM SW-1 (On-site Studies of Acid Production Potential) PDF GW-2 (Water Treatment Facility) MM GW-6 (Water Quality Sampling) MM GEO-1 (Erosion Control Plan)
Groundwater	3.3-2 (Local Groundwater Level Effects)	MM GW-1 (Groundwater Level Monitoring)
	3.3-4 (Subsidence and Hydrocompaction Potential)	MM GW-3 (Extensionmeters) MM GW-2 (Well Monitoring) MM GW-4 (Lower Reservoir Seepage Recovery Wells) MM GW-5 (Upper Reservoir Seepage Recovery Wells)
	3.3-5 (Groundwater Quality)	MM GW-6 (Water Quality Sampling) PDF GW-2 (Water Treatment Facility)
	3.3-7 (Loss of Existing Wells)	MM GW-7 (Replacement Wells)
Agricultural & Forestry Resources	None	Not applicable
Biological Resources	3.5-1 (Construction Impacts on Plants)	MM BIO-1 (Mitigation and Monitoring Program) MM BIO-2 (Biological Reporting to Resource Agencies) MM BIO-3 (Designation of an Approved Biologist) MM BIO-4 (Worker Environmental Awareness Program) MM BIO-5 (Minimize Surface Disturbance) MM BIO-6 (California Desert Native Plants Act) MM BIO-7 (Revegetation Plan) MM BIO-8 (Invasive Species Monitoring and Control) MM BIO-9 (Couch's Spadefoot) PDF BIO-1 (Pre-construction Special Species and Habitat Survey) PDF BIO-2 (Pre-construction Plant Survey)
	3.5-2 (Construction Impacts on Wildlife)	MM BIO-1 (Mitigation and Monitoring)

² The full MMs and PDFs can be found in Section 6.0 of the EIR. PDFs are design elements inherent to the Project that reduce or eliminate potential impacts. Because PDFs are incorporated into the Project, either in the Project design or by law as part of Project implementation, they do not constitute MMs, which are required to reduce or avoid a potentially significant impact. For clarity, PDFs are described within the mitigation program and are described within the analysis of each CEQA resource topic. MMs are intended to reduce all impacts from the proposed Project to below a level of significance, where applicable.

Category	Potential Significant Impacts	Mitigation Measures (MMs) and Project Design Features (PDFs) ²
	Species	Program) MM BIO-2 (Biological Reporting to Resource Agencies) MM BIO-3 (Designation of an Approved Biologist) MM BIO-4 (Worker Environmental Awareness Program) MM BIO-9 (Couch's Spadefoot) MM BIO-10 (Breeding Bird Surveys and Avoidance) MM BIO-11 (Brine Ponds Management) MM BIO-12 (Burrowing Owls Phase III Survey) MM BIO-13 (Burrowing Owl Breeding Season) MM BIO-14 (Raptor Buffer) MM BIO-15 (Bat Survey) MM BIO-16 (Wildlife Fencing) MM BIO-17 (Construction and Operation Restricted Areas) MM BIO-18 (Construction during Daylight Hours) MM BIO-19 (Construction of Pipeline Trenches) MM BIO-20 (Minimize Nighttime Lighting Impacts) MM BIO-22 (Dry Desert Washes) PDF BIO-1 (Pre-construction Special Species and Habitat Survey) PDF BIO-3 (Pre-construction Mammals Surveys)
	3.5-3 (Operational Effects on Plant Species)	MM BIO-1 (Mitigation and Monitoring Program) MM BIO-2 (Biological Reporting to Resource Agencies) MM BIO-3 (Designation of an Approved Biologist) MM BIO-4 (Worker Environmental Awareness Program) MM BIO-5 (Minimize Surface Disturbance) MM BIO-6 (California Desert Native Plants Act) MM BIO-7 (Revegetation Plan) MM BIO-8 (Invasive Species Monitoring and Control) PDF BIO-1 (Pre-construction Special Species and Habitat Survey) PDF BIO-2 (Pre-construction Plant Survey)
	3.5-4 (Operational Effects to Wildlife Species)	MM BIO-1 (Mitigation and Monitoring Program) MM BIO-2 (Biological Reporting to Resource

Category	Potential Significant Impacts	Mitigation Measures (MMs) and Project Design Features (PDFs) ²
		Agencies) MM BIO-3 (Designation of an Approved Biologist) MM BIO-4 (Worker Environmental Awareness Program) MM BIO-9 (Couch's Spadefoot) MM BIO-10 (Breeding Bird Surveys and Avoidance) MM BIO-11 (Brine Ponds Management) MM BIO-12 (Burrowing Owls Phase III Survey) MM BIO-13 (Burrowing Owl Breeding Season) MM BIO-14 (Raptor Buffer) MM BIO-15 (Bat Survey) MM BIO-16 (Wildlife Fencing) MM BIO-20 (Minimize Nighttime Lighting Impacts) MM BIO-22 (Habitat Compensation) PDF BIO-4 (Avian Protection of Transmission Line)
	3.5-6 (Impacts of Brine Ponds)	MM BIO-11 (Brine Ponds Management)
	3.5-7 (Transmission Impacts to Birds)	PDF BIO-4 (Avian Protection of Transmission Line)
	3.5-9 (Dry Desert Washes)	MM BIO-21 (Dry Desert Washes)
Threatened & Endangered Species	3.6-1 (Coachella Valley Milkvetch)	PDF BIO-2 (Pre-construction Plant Survey)
	3.6-2 (American Peregrin Falcon)	PDF BIO-1 (Pre-construction Special Species and Habitat Survey)
	3.6-3 (Gila Woodpecker)	PDF BIO-1(Pre-construction Special Species and Habitat Survey)
	3.6-4 (Desert Tortoise)	MM TE-1 (Desert Tortoise Pre-construction Surveys and Clearance Surveys) MM TE-2 (Desert Tortoise Construction Monitoring) MM TE-3 (Desert Tortoise Exclusion Fencing) MM TE-4 (Revised Desert Tortoise Clearance and Relocation/Translocation Plan) MM TE-6 (Habitat Compensation) MM TE-7 (Operations and Maintenance) MM BIO-1 (Mitigation and Monitoring Program) MM BIO-2 (Biological Reporting to Resource Agencies) MM BIO-3 (Designation of an Approved Biologist) MM BIO-4 (Worker Environmental Awareness Program)
	3.5-5 (Increase to Raven Population)	MM TE-5 (Predator Monitoring and Control Program)
Aesthetics	3.7-1 (Central Project Area)	MM AES-1 (Lighting)
	3.7-2 (Transmission Line Construction	PDF AES-1 (Staging Areas)

Category	Potential Significant Impacts	Mitigation Measures (MMs) and Project Design Features (PDFs) ²
	Activities)	MM AES-4 (Transmission Line)
	3.7-4 (Operation of Transmission Line from the MWD Eagle Mountain Pump Station to Eagle Mountain Road Turnoff)	MM AES-3 (Road Crossings) MM AES-4 (Transmission Line)
	3.4-5 (Operation of Transmission Line from the Eagle Mountain Road Turnoff to the Interconnection Substation)	MM AES-3 (Road Crossings) MM AES-4 (Transmission Line)
	3.7-6 (Construction and Operation of the Water Pipeline)	MM AES-2 (Water Pipeline)
Cultural Resources	3.8-1 (Transmission Line Route from the Crossing of the CRA to the Interconnector Substation)	MM CR-3 (Implement the Historic Properties Management Plan [HPMP] and a Worker Environmental Awareness Program) MM CR-4 (Offer Opportunities for Public Interpretation) MM CR-5 (Review Effectiveness of the HPMP) MM CR-6 (Consult with SHPO, the BLM, Riverside County, interested Indian Tribes, and FERC) MM CR-7 (Class I Investigation) MM CR-8 (Class III Cultural Resources Field Investigation) MM CR-9 (Testing Phase Cultural Resources Field Investigation) MM CR-10 (Data Recovery or Alternative Mitigation) MM CR-11 (Treatment of Unanticipated Discoveries of Cultural Resources and Human Remains)
	3.8-2 (Transmission Line and Water Pipeline Crossing of CRA)	MM CR-1 (Protect Known Historic Properties) MM CR-3 (Implement the Historic Properties Management Plan and a Worker Environmental Awareness Program) MM CR-5 (Review Effectiveness of the HPMP) MM CR-6 (Consult with SHPO, the BLM, Riverside County, interested Indian Tribes, and FERC) MM CR-11 (Treatment of Unanticipated Discoveries of Cultural Resources and Human Remains)
	3.8-3 (Transmission Line Crossing of the Eagle Mountain Railroad)	MM CR-2 (Inventory and Evaluate Cultural Resources Within the Kaiser Mine Property) MM CR-3 (Implement the Historic Properties Management Plan and a Worker Environmental Awareness Program) MM CR-4 (Offer Opportunities for Public Interpretation) MM CR-5 (Review Effectiveness of the HPMP) MM CR-6 (Consult with SHPO, the BLM,

Category	Potential Significant Impacts	Mitigation Measures (MMs) and Project Design Features (PDFs) ²
		Riverside County, interested Indian Tribes, and FERC) MM CR-7 (Class I Investigation) MM CR-8 (Class III Cultural Resources Field Investigation) MM CR-9 (Testing Phase Cultural Resources Field Investigation) MM CR-10 (Data Recovery or Alternative Mitigation) MM CR-11 (Treatment of Unanticipated Discoveries of Cultural Resources and Human Remains)
	3.8-4 (Central Project Site)	MM CR-2 (Inventory and Evaluate Cultural Resources Within the Kaiser Mine Property) MM CR-3 (Implement the Historic Properties Management Plan and a Worker Environmental Awareness Program) MM CR-4 (Offer Opportunities for Public Interpretation) MM CR-5 (Review Effectiveness of the HPMP) MM CR-6 (Consult with SHPO, the BLM, Riverside County, interested Indian Tribes, and FERC) MM CR-7 (Class I Investigation) MM CR-8 (Class III Cultural Resources Field Investigation) MM CR-9 (Testing Phase Cultural Resources Field Investigation) MM CR-10 (Data Recovery or Alternative Mitigation) MM CR-11 (Treatment of Unanticipated Discoveries of Cultural Resources and Human Remains)
	3.8-5 (Unknown/Buried Cultural Resources)	MM CR-2 (Inventory and Evaluate Cultural Resources Within the Kaiser Mine Property) MM CR-3 (Implement the Historic Properties Management Plan and a Worker Environmental Awareness Program) MM CR-4 (Offer Opportunities for Public Interpretation) MM CR-5 (Review Effectiveness of the HPMP) MM CR-6 (Consult with SHPO, the BLM, Riverside County, interested Indian Tribes, and FERC) MM CR-7 (Class I Investigation) MM CR-8 (Class III Cultural Resources Field Investigation) MM CR-9 (Testing Phase Cultural Resources Field Investigation)

Category	Potential Significant Impacts	Mitigation Measures (MMs) and Project Design Features (PDFs) ²
		MM CR-10 (Data Recovery or Alternative Mitigation) MM CR-11 (Treatment of Unanticipated Discoveries of Cultural Resources and Human Remains)
Land Use/ Public Services	3.9-1 (Short-term Construction Impacts from Transmission Line and Interconnection to Substation)	PDF LU-1 (Construction Access) PDF LU-2 (Construction Monitoring) PDF LU-5 (Public Outreach Program)
	3.9-3 (Short-term Construction Impacts from the Water Pipeline Corridor)	PDF LU-1 (Construction Access) PDF LU-2 (Construction Monitoring) PDF LU-3 (Pipeline Construction) PDF LU-5 (Public Outreach Program)
	3.9-7 (Existing and Proposed Land Uses in the Central Project Site)	MM LU-2 (Coordination with MWD [Metropolitan Water District of Southern California]) PDF LU-4 (Coordination with Adjacent Projects) PDF LU-5 (Public Outreach Program)
	3.9-11 (Potential Impacts to the Landfill Liner)	PDF GW-1 (Groundwater Seepage) MM GW-5 (Upper Reservoir Seepage Recovery Wells)
	3.9-12 (Compatibility of Specific Features and Ancillary Facilities Interferences)	PDF LU-4 (Coordination with Adjacent Projects) PDF LU-5 (Public Outreach Program)
	3.9-15 (Impact to Public Services)	MM LU-1 (Development Impact Fee) PDF LU-5 (Public Outreach Program)
Recreation	None	Not Applicable.
Population and Housing	None	Not Applicable.
Transportation	3.12-1 (Construction-related Traffic)	MM AQ-6 (Transportation Management Plan) PDF LU-1 (Construction Access) PDF LU-2 (Construction Monitoring)
Air Quality	3.13-2 (Daily Emissions during Construction)	MM AQ-1 (Fugitive Dust) MM AQ-2 (Trackout) MM AQ-3 (Grading) MM AQ-4 (Surface Disturbance) MM AQ-5 (Earth-moving Activities) MM AQ-6 (Transportation Management Plan) MM AQ-7 (Diesel Trucks) MM AQ-8 (Equipment) MM AQ-9 (Generators) MM AQ-10 (Heavy-duty Diesel Trucks) MM AQ-11 (Construction Equipment) MM AQ-12 (Off-road Construction Equipment) MM AQ-13 (Air quality Study Design)
Noise	3.14-2 (Construction Noise, Linear Feature)	MM N-1 (Construction Equipment)
Greenhouse Gas Emissions	None	Not Applicable.
Hazards and	3.16-1 (Hazardous Materials During	MM HM-1 (UXO [Unexploded Ordinance])

Category	Potential Significant Impacts	Mitigation Measures (MMs) and Project Design Features (PDFs) ²
Hazardous Materials	Construction)	Plan)

