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April 15, 2022

Keith McDaniels
Juniper Energy LLC
818 Crystal Springs Road
Hillsborough, California 94010

Subject: **Biological Constraints Report for the Juniper Energy Project at 315 Roy Road, Hinkley, San Bernardino County**

Dear Mr. McDaniels:

This biological constraints report describes the existing biological conditions of the approximate 83-acre property (project site) located at 315 Roy Road in the unincorporated Hinkley, San Bernardino County, California. Included in this report is a discussion of the biological survey methods and results, and potential for special-status species evaluated under the California Environmental Quality Act (CEQA) and the state and federal Endangered Species Acts. Additionally, recommendations are provided to avoid or minimize potential impacts.

1 Project Location and Description

The proposed project site is located on 315 Roy Road in unincorporated Hinkley, San Bernardino County (Figure 1, Project Location). The project site lies within the U.S. Geological Survey Twelve Gauge and Lockhart quadrangles with a latitude of N 34°59'58.71" and longitude of W 117°19'25.20".

The site is currently undeveloped land located in the southwestern region of the Mojave Desert, containing areas of native vegetation communities and land covers, with elevations of 2,116 feet to 2,084 feet above mean sea level. Soils on site are characterized as Cajon Sand, 0% to 2% slopes; Cajon loamy sand, loamy substratum, 0% to 2% slopes; and Norob-Halloran complex, 0% to 5% slopes (USDA 2022) (Figure 2, Soils and Hydrology).

2 Regional Resource Planning Context

San Bernardino County spans several distinct ecoregions supporting a diverse assemblage of plant and wildlife species, vegetation communities, and land covers. High species diversity in San Bernardino County is due, in part, to the biogeographic differences and gradients among the valley, mountain, and desert regions of San Bernardino County. The project site occurs within the desert region of San Bernardino County. The desert region is the largest of the three geographic regions. This region is north of the San Bernardino and San Gabriel Mountains and extends east to the Arizona state line. Kern and Los Angeles Counties are located to the west, with Inyo County and the Nevada state line are to the north. Within this region there is an assemblage of low mountain ranges and desert floors, with the most conspicuous water features being the Mojave and Colorado Rivers.

San Bernardino County Plant Protection and Management Code

Chapter 88.01 of the San Bernardino County Development Code provides regulatory and management guidance for plant resources within unincorporated areas of San Bernardino County, as well as within mixed public and private lands within San Bernardino County. The goal is to promote healthy plant community growth and the preservation of native species. In turn, the standardization of these practices helps with the conservation of natural waterways within San Bernardino County, and provides sustainable habitat for many local plant and wildlife species. This code primarily relates to tree and vegetation removal on public land and private land within unincorporated areas of San Bernardino County.

Desert Native Plant Protection

Chapter 88.01.060 of the San Bernardino County Development Code is a subset of the Plant Protection and Management Code that is focused on the conservation of specified desert plant species. Chapter 88.01.060 specifically states, "Removal of all plants protected or regulated by the Desert Native Plants Act (Food and Agricultural Code Section 80001 et seq.) shall comply with the provisions of the Act before the issuance of development permit or approval of a land use application. All members of the family Cactaceae (Cactus Family) require a permit for harvesting under the Desert Native Plants Act." This ordinance contains provisions for the protection of certain desert native plants, as follows:

- The following desert native plants with stems 2 inches or greater in diameter or 6 feet or greater in height:
  - Psorothamnus spinosus (smoketree).
  - All species of the genus Prosopis (mesquites).
- All species of the family Agavaceae (century plants, nolinas, yuccas).
- Creosote Rings, 10 feet or greater in diameter.
- All Joshua trees.
- Any part of any of the following species, whether living or dead:
  - Olneya tesota (desert ironwood).
  - All species of the genus Prosopis (mesquites).
  - All species of the genus Cercidium (palo verdes).

Riparian Plant Conservation

Chapter 88.01.080 of the San Bernardino County Development Code is a subset of the Plant Protection and Management Code that is focused on promoting the health of riparian corridors in relation to their impact on waterways within the region, their use as habitat by various plant and wildlife species, and their stabilization of stream banks.

San Bernardino County Soil and Water Conservation Code

Chapter 88.02 of the San Bernardino County Development Code provides a regulatory framework to promote the health of soil communities within San Bernardino County, limit soil erosion potential, and preserve air quality. This code primarily regulates ground-disturbing activities within San Bernardino County.

SANBAG Countywide Habitat Preservation/Conservation Framework

As part of the Environment Element of the Countywide Vision, a Countywide Habitat Preservation/Conservation Framework Study (Phase 1) was prepared as a guidance document that outlines conservation issues and concerns, inventories existing conservation, identifies conservation opportunities, and itemizes data gaps associated with habitat conservation in San Bernardino County (SANBAG 2015). The study identified conservation planning subareas, overarching principles, and recommendations to further develop a comprehensive approach to habitat preservation/conservation across the incorporated cities, unincorporated San Bernardino County lands, and public lands.

San Bernardino County Regional Conservation Investment Strategy

The San Bernardino County Regional Conservation Investment Strategy (SBC RCIS) is a voluntary, nonregulatory framework for conservation and mitigation actions in key regions of San Bernardino County, California. The County of San Bernardino, San Bernardino Associated Governments (now San Bernardino Council of Governments), and the Environment Element stakeholder group, in collaboration with the Southern California Association of Governments, developed the SBC RCIS based on a set of biological and planning principles that arose from the Countywide Vision planning process. In an effort to streamline mitigation decisions and generate the best conservation outcomes, the SBC RCIS was developed to provide a regional, science-based conservation guidebook for use by public agencies, the development community, environmental groups, other interested entities, and the public when planning and carrying out conservation and mitigation actions in western San Bernardino County (San Bernardino County et al. 2018).

The SBC RCIS covers the Valley Region, the Cajon Pass through the Mountain Region, and the western Desert Region. The conservation strategy was built around conservation elements, including 7 habitat groups and 16 general vegetation communities supporting the 52 focal species (San Bernardino County et al. 2018).

Building off the landscape context and baseline biological information, the SBC RCIS is founded on conservation goals and objectives that structure and focus the conservation strategy on priority actions and areas. The conservation actions toolbox provides the suite of actions available for SBC RCIS users to select from based on their individual conservation or mitigation needs, and the prioritization guidelines provide decision support at a regional scale for optimizing the effectiveness of conservation and mitigation actions. Following approval by the California Department of Fish and Wildlife (CDFW), the SBC RCIS can be used to support more informed conservation and mitigation decisions (San Bernardino County et al. 2018).

3 Methods

Data regarding biological resources present within the project site were obtained through a review of pertinent literature and field surveys conducted in 2022; both are described in detail below. Survey conditions are provided in Table 1.

Table 1. Survey Conditions

Date	Hours	Personnel	Survey Focus	Survey Conditions
04/07/2022	07:16 AM–12:52 PM	Sedona Maniak	Wildlife Habitat Assessment, Rare Plant Survey	48–83°F, 0% cc, 1 mph
04/07/2022	07:16 AM–12:52 PM	Anna Cassady	Vegetation Mapping, Jurisdictional Aquatic Resource Assessment	48–83°F, 0% cc, 1 mph

°F = degrees Fahrenheit; cc = cloud cover; mph = miles per hour (wind).

3.1 Literature Review

Prior to conducting field surveys, Dudek biologists reviewed the latest CDFW California Natural Diversity Database (CNDDB) (CDFW 2022a), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2022a), and the U.S. Fish and Wildlife Service (USFWS) Critical Habitat and Occurrence Data (USFWS 2022) databases to identify special-status species and critical habitat that are known to occur or may potentially occur within the project site based on the physical characteristics of the project site (including biogeography, elevation, soils, and vegetation communities).

The following databases were reviewed prior to the jurisdictional delineation: historical aerial photographs (Google Earth 2021; Historic Aerials 2021); U.S. Geological Survey's National Hydrography Dataset (USGS 2021); U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (USDA 2022); and the USFWS National Wetland Inventory (USFWS 2021).

3.2 Survey Methods

Vegetation mapping within the project site was conducted on April 7, 2022, by Dudek biologist Anna Cassady. Natural vegetation communities were mapped in the field following A Manual of California Vegetation (CNPS 2022b), where feasible. Vegetation communities and land covers were mapped in the field using a mobile data collection application. Vegetation surveys were conducted throughout the site on foot. Following the completion of fieldwork, vegetation polygons were digitized using ArcGIS, and GIS coverage was created. Acreage calculations of vegetation communities and land covers were determined using ArcGIS.

A rare plant survey for special-status plant species and a habitat assessment for special-status wildlife species was conducted on April 7, 2022, by Dudek biologist Sedona Maniak. The habitat assessment for special-status wildlife species was conducted to determine the need for protocol-level surveys, which were not included as part of this survey effort. Given the typical blooming periods of the special-status plant species potentially occurring within the project site based on soils, elevation, and vegetation communities, it was determined that all target special-status species could be surveyed for in one pass in April. The survey methods conformed to CNPS's Botanical Survey Guidelines (CNPS 2001), Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018), and the USFWS General Rare Plant Survey Guidelines (Cypher 2002). All plant species encountered during the field surveys were identified to subspecies or variety, if applicable, to determine sensitivity status. If special-status plant or wildlife species were encountered, field personnel recorded data points demarcating the edge of the polygon and assessed population numbers using the Esri ArcGIS mobile application.

A jurisdictional delineation was conducted in accordance with the procedures defined in A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008). To aid in the delineation and in conformance with the U.S. Army Corps of Engineers' 2008 Field Guide, two OHWM datasheets were recorded within the unvegetated channel to determine OHWM indicators. The delineation defined areas under the jurisdiction of CDFW pursuant to Sections 1600–1603 of the California Fish and Game Code. CDFW streambeds are typically delineated at the width of the channel or lake measured at the top of bank or the extent of associated riparian vegetation beyond the top of bank. For shallow drainages and washes that do not support riparian vegetation, the top-of-bank measurement may be the same as the OHWM measurement. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979). Additionally, waters of the state were delineated based on watercourse characteristics present in the field, which include surface flow, sediment transportation and sorting, physical indicators of channel forms, channel morphology, and riparian habitat associated with a streambed. The limits of aquatic resources were collected in the field using the ESRI Collector mobile application with sub-meter accuracy. The geographic extents were digitized in GIS using ArcGIS software.

3.3 Special-Status Species

Special-status species are defined as follows:

- Species classified as endangered or threatened by USFWS under the federal Endangered Species Act ("federally listed")
- Species classified as endangered, threatened, or rare by CDFW under the California Endangered Species Act ("state listed")
- Candidates for future listing under the federal or state Endangered Species Act
- Plant species designated by CNPS as "rare, threatened, or endangered in California" (California Rare Plant Rank of 1B and 2B)
- Wildlife species designated as a species of special concern by CDFW
- Wildlife species fully protected under California Fish and Game Code Sections 3511, 4700, 5050, and 5515
- Species that are considered a locally significant species; that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context, such as within a county or region, or is so designated in local or regional plans, policies, or ordinances

Special-status species data were compiled from the following sources: the CNDDB (CDFW 2022a), the CNPS Inventory of Rare and Endangered Plants (CNPS 2022a), and the USFWS species occurrence database (USFWS 2022). The CNDDB and CNPS queries were run for all species recorded within the Twelve Gauge and Lockhart U.S. Geological Survey 7.5-minute quadrangles and the surrounding 10 quadrangles. To determine current range and other species-specific parameters, a number of species-specific resources were used, including the Consortium of California Herbarium (2022), California Wildlife Habitat Relationships data (CDFW 2022b; Zeiner et al. 1990), and California Bird Species of Special Concern (Shuford and Gardali 2008).

4 Results

4.1 Vegetation Communities and Land Covers

Based on species composition and general physiognomy, four vegetation communities or land cover types occur within the project site. Acreages for each vegetation community or land cover type are provided in Table 2, and their spatial distribution is shown in Figure 3, Biological Resources. Descriptions for each vegetation community or land cover type are provide below.

Table 2. Vegetation Communities and Land Covers within the Project Site

Vegetation Community/Land Cover Type	Ranking[1]	Total Acreage
Allscale scrub (*Atriplex polycarpha*, 36.340.04)	G4, S4	77.69
Unvegetated Wash	GNR, SNR	0.86
Disturbed Habitat	GNR, SNR	3.86
Urban/Developed	GNR, SNR	0.56
	Total	**82.97**

Notes: Totals may not sum due to rounding.

[1] In September 2020, CDFW published the Natural Communities List (CDFW 2021), which uses the scientific name of the dominant species in that alliance as the alliance name and includes a global and state rarity rank based on the NatureServe Standard Heritage Program methodology (NatureServe 2022). The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global and S = subnational). The numbers have the following meaning (NatureServe 2022):

1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure
NA = not applicable
GNR = unranked, global rank not yet assessed
SNR = unranked, subnational rank not yet assessed

Because NatureServe ranks vegetation communities at the global level, it has few rankings at the state or province level available. However, the Natural Communities List (CDFW 2021) includes state-level rarity rankings (i.e., the subnational [S] rank) for vegetation communities. This list is considered the authority for ranking the conservation status of vegetation communities in California. Natural Communities with ranks of S1–S3 are considered Sensitive Natural Communities to be addressed in the environmental review processes of CEQA (CDFW 2021).

Allscale Scrub (36.340.04)

The allscale scrub (*Atriplex polycarpa*) alliance is recognized by the Natural Communities List (CDFW 2021). The allscale scrub alliance often occurs on dissected alluvial fans and rolling hills, as well as washes, playa lake beds and shores, terraces, and edges of large, low-gradient washes. Soils may be carbonate-rich and sandy, alkaline, or sandy clay loams (CNPS 2022b). Allscale scrub alliance communities include allscale as the sole or dominant shrub in the canopy. Allscale scrub has a continuous or open shrub canopy less than 3 meters (10 feet) in height with a variable ground layer (CNPS 2022b). Shrub species associated with the allscale scrub alliance occurring within the project site include cheesebush (*Ambrosia salsola*), Anderson's boxthorn (*Lycium andersonii*), peach thorn (*Lycium cooperi*), and creosote bush (*Larrea tridentata*). Understory plants occurring within the project site include redstem stork's bill (*Erodium cicutarium*) and Arabian schimus (*Schismus arabicus*). The allscale scrub alliance is ranked by

CDFW (2021) as a G4S4 alliance and is therefore not considered a sensitive biological resource by CDFW under CEQA (CDFW 2021).

Unvegetated Wash

Although not recognized by the Natural Communities List (CDFW 2021), unvegetated wash typically occurs on alluvium associated with riverine floodways. The nature of this community is one of periodic natural disturbance by flood action and deposition of alluvial sediments. The areas within the project site mapped as unvegetated wash are composed of a system of braided ephemeral channels carrying surface flows across the site from south to north. Unvegetated wash is not considered a sensitive vegetation community by CDFW under CEQA (CDFW 2021). However, these areas are typically regulated as non-wetland waters under Regional Water Quality Control Board (RWQCB) jurisdiction and as streambeds under CDFW jurisdiction.

Disturbed Habitat

Although not recognized by the Natural Communities List (CDFW 2021), disturbed habitat is an area that has been physically disturbed and is no longer recognizable as a native or naturalized vegetation association. These areas may continue to retain soil substrate. If vegetation is present, it is almost entirely composed of non-native vegetation, such as ornamentals or ruderal exotic species. Disturbed habitat within the project site consists of dirt roads and the portion of the site previously occupied by a residence. Disturbed habitat is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2021).

Urban/Developed

Although not recognized by the Natural Communities List (CDFW 2021), urban/developed land refers to areas that have been constructed upon or disturbed so severely that native vegetation is no longer supported. Urban/developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with large amounts of debris or other materials. Urban/developed land within the project site consists of the portion of the site previously occupied by a residence. Urban/developed land is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2021).

4.2 Inventory of Plant and Wildlife Species

A total of 14 vascular plant species consisting of 10 native species (71%) and 4 non-native species (29%) were recorded during the surveys (see Attachment A, Plant Compendium). A total of 11 wildlife species were observed within the project site, including 8 bird species and 3 reptile species (see Attachment B, Wildlife Compendium).

4.3 Special-Status Plant Species

No special-status plant species were observed during the rare plant survey conducted in April 2022. None of the special-status plant species included in Attachment C are expected to occur within the project site based on the survey results, soils, elevation, and prior disturbances occurring within the project site. Additionally, there is no USFWS designated critical habitat for plant species within or directly adjacent to the project site (USFWS 2022).

4.4 Special-Status Wildlife Species

One special-status wildlife species, LeConte's thrasher (*Toxostoma lecontei*), was observed during the biological surveys conducted within the project site (Figure 3). This species has potential to nest within scrub habitat on the project site.

Attachment D provides a summary of the special-status wildlife species documented within the project vicinity and their potential to occur on site based on the location of the site, species' range and distribution, and the vegetation communities found on site. Where pertinent, a distinction is made between foraging and breeding habitat available on site. Four species, desert tortoise (*Gopherus agassizii*), Mohave ground squirrel (*Spermophilus mohavensis*), burrowing owl (*Athene cunicularia*), and American badger (*Taxidea taxus*), have moderate potential to occur within the project site due to presence of burrows, which are discussed further below.

Although no protocol-level surveys were conducted, five burrows were detected during the habitat assessment within the project site (Figure 3). Overall, the burrows were all deemed inactive due to the presence of cobwebs and the burrows partially collapsing. Three of the burrows had approximately 12-inch diameters and could potentially be used by coyote or American badger. One burrow showed signs of claw marks, likely from American badger. The other burrow was smaller (i.e., small mammal sized) but had no positive sign of use. No burrowing owl, desert tortoise, or Mohave ground squirrel sign (e.g., feathers, whitewash, scat, carapace, individuals) was observed within the project site.

Additionally, there is moderate potential for desert kit fox (*Vulpes macrotis arsipus*) to occur within the project site. Although desert kit fox is not considered listed by USFWS or CDFW under any special-status designation, this species is considered a "fur-bearing mammal," protected from take under the California Fish and Game Commission's Mammal Hunting Regulations (Subdivision 2, Chapter 5), which effectively protects it from hunting and trapping. No hunting or trapping is proposed or would be allowed under future projects, and no future projects would be allowed take of this species.

There is no USFWS-designated critical habitat for any wildlife species within or directly adjacent to the project site (USFWS 2022).

4.5 Jurisdictional Aquatic Resources

Significant surface flow is both unpredictable and scarce in the arid desert environment. Substantial surface water is typically ephemeral and usually the result of flash-flood events. These events may result in stream channels taking the form of alluvial fans, discontinuous ephemeral channels, single-thread channels with floodplains, and compound (braided) channels (USACE 2008). Within the project site there is a system of braided ephemeral channels carrying surface flows across the site from south to north toward Harper Lake, which is a dry lakebed or playa (Figure 3). However, the existing Lockhart solar facility may prevent surface flow from reaching Harper Lake. The Harper Lake playa is at the lowest part of an undrained desert basin, generally devoid of vegetation (USGS 2021). Additionally, there is a riverine USFWS National Wetland Inventory classification (USFWS 2021) and an unnamed ephemeral U.S. Geological Survey National Hydrography Dataset flowline occurring within the project site (Figure 2). Soils mapped within the project site are considered partially hydric (USDA 2022).

The results of the delineation concluded there are non-wetland RWQCB jurisdictional waters of the state and CDFW jurisdictional streambeds within the project site. The project site does not contain any streams, wetland waters, or other waters that are subject to federal jurisdiction under Section 404 of the Clean Water Act. Ephemeral channels within the project site either dissipate, evaporating or infiltrating into the groundwater basin, or may continue to flow to Harper Dry Lake during larger storm events. The Harper Valley is considered a closed basin and functions as an isolated intrastate watershed system lacking the presence of a traditional navigable water. Therefore, all features within the project site were considered to be non-jurisdictional under the U.S. Army Corps of Engineers.

Water resources are also subject to state laws administered by CDFW and the RWQCB. Resources subject to the jurisdiction of CDFW pursuant to Section 1602 of the California Fish and Game Code include ephemeral, intermittent, and perennial stream channels, as well as lakes, including dry lakes or playas. The resources on site subject to the jurisdiction of the RWQCB pursuant to the Porter–Cologne Water Quality Control Act overlap those under the jurisdiction of CDFW.

Approximately 0.86 acres (4,810 linear feet) of non-wetland waters of the state occur within the project site, composed of braided ephemeral channels. Table 3 includes the acres and linear feet of non-wetland waters of the state within the project site; the extent of jurisdictional waters are depicted on Figure 3. Descriptions of the jurisdictional waters on the project site are described in further detail below.

Table 3. Jurisdictional Aquatic Resources within the Project Site

Potential Resource	RWQCB/CDFW (acreage/linear feet)
Non-Wetland Water/Stream Channel	0.86/4,810
Total	**0.86/4,810**

Notes: Totals may not sum due to rounding.
RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife

A system of braided ephemeral channels flows from the southwest corner to the northeast corner across the project site carrying surface flows. The braided channels dissipate (i.e., lose OHWM indictors) within the middle of the site where there is a former residence, and dissipate off site prior to reaching Harper Lake (i.e., surface flow may be blocked by an existing solar facility). Indicators, including bed and bank (only present for the first 100 feet along the southern end), drainage swales, minor wracking, and sediment sorting, were observed in the field. Transect data collected at both ends of this system confirmed active fluvial processes throughout this area (Figure 3).

5 Recommendations

5.1 Nesting Birds

Although no active or inactive nests were identified during surveys conducted in 2022, there is a potential for birds to nest on site, including the special-status species LeConte's thrasher. In the event that construction activities occur during the nesting bird breeding season (i.e., March 1 through September 1), a qualified biologist would

conduct pre-construction surveys no earlier than 14 days prior to any on-site grading and construction. Pre-construction nesting bird surveys would also cover a 500-foot buffer around the site, as feasible.

If occupied nests are found, then limits of construction to avoid occupied nests would be established by the qualified biologist in the field with flagging, fencing, or other appropriate barriers (e.g., 250 feet around active passerine nests to 500 feet around active non-listed raptor nests), and construction personnel would be instructed on the sensitivity of nest areas. The qualified biologist would serve as a construction monitor during those periods when construction activities are to occur near active nest areas to avoid inadvertent impacts to these nests. The qualified biologist may adjust the 250-foot or 500-foot setback at her/his discretion depending on the species and the location of the nest (e.g., if the nest is well protected in an area buffered by dense vegetation). Once the qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, construction may proceed in the setback areas. If nesting raptors or migratory birds are not detected during the pre-construction survey, no further measures would be required, and construction activities may proceed.

5.2 Burrow Surveys

Since burrows were observed within the project site, protocol-level surveys for burrowing owl, desert tortoise, and Mohave ground squirrel are recommended in the measures below.

5.2.1 Burrowing Owl

Because there is suitable habitat for burrowing owl and to demonstrate that burrowing owl is absent, a focused survey as described in the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012) would be conducted by a qualified biologist. If presence of burrowing owl is known or assumed, the following measures would be noted on the grading plan prior to grading permit issuance and required to be implemented by the applicant within the project site.

No fewer than 14 days prior to ground-disturbing activities (vegetation clearance, grading), a qualified biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) would conduct pre-construction take avoidance surveys on and within 200 meters (656 feet) of the project site to identify occupied breeding or wintering burrowing owl burrows. The burrowing owl surveys would be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012) and would consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any burrows with fresh burrowing owl sign or presence of burrowing owls. Copies of the burrowing owl survey results will be submitted to CDFW and San Bernardino County.

If burrowing owls are detected on site, no ground-disturbing activities would be permitted within 200 meters (656 feet) of an occupied burrow during the breeding season (February 1 through August 31), unless otherwise authorized by CDFW. During the nonbreeding season (September 1 through January 31), ground-disturbing work can proceed near active burrows, provided the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.

If avoidance of active burrows is infeasible during the nonbreeding season, then before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and/or scoping, a qualified project biologist would implement a passive relocation program in accordance with the 2012 Staff Report on Burrowing Owl Mitigation, Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) (CDFG

2012). Passive relocation consists of excluding burrowing owls from occupied burrows and providing suitable artificial burrows nearby for the excluded burrowing owls.

5.2.2 Desert Tortoise

Focused surveys for desert tortoise would be required to determine its presence or absence and any potential project effects to this species. The protocol-level surveys would be conducted in accordance with the USFWS 2017 protocol (or with the most currently available protocol), which requires 10-meter-wide transects in all areas of suitable habitat.

If the surveys conclude that desert tortoise is absent from the project site, unavoidable impacts to unoccupied suitable habitat would be compensated for at a minimum of 1:1 through on- or off-site preservation with permanent protection and long-term funding, or through purchase of equivalent credits through a mitigation bank, if available. In the event that the surveys determine that desert tortoise is present within the areas to be either temporarily or permanently disturbed as a result of implementation of future projects, the project applicant would be required to obtain an Incidental Take Permit (ITP) from CDFW under Section 2081 of California Fish and Game Code, and from USFWS under Section 7 and/or Section 10 of the Endangered Species Act. The ITP process would be coordinated with the CDFW and USFWS regional offices. The ITP would include an analysis of whether project impacts would jeopardize the continued existence of the species, provide suitable avoidance and minimization measures to reduce potential impacts, and provide adequate mitigation through conservation or mitigation banking. Unavoidable impacts to occupied suitable habitat would be compensated at a minimum of 1:1, as described above, in addition to implementing all other measures and conditions of the ITP.

5.2.3 Mohave Ground Squirrel

Focused surveys for Mohave ground squirrel would be required to determine its presence or absence and any potential project effects to this species. Focused Mohave ground squirrel surveys would be conducted either in accordance with CDFW guidelines (CDFG 2010), or in accordance with any modified survey methodology as approved in writing by CDFW.

If the surveys conclude that Mohave ground squirrel is absent from the project site, unavoidable impacts to unoccupied suitable habitat would be compensated at a minimum of 1:1 through on- or off-site preservation with permanent protection and long-term funding, or through purchase of equivalent credits through a mitigation bank, if available. In the event that the surveys determine that Mohave ground squirrel is present within the areas to be either temporarily or permanently disturbed, the project applicant would be required to obtain an ITP from CDFW under Section 2081 of California Fish and Game Code. The ITP process would be coordinated with the regional CDFW office. The ITP would include an analysis of whether project impacts would jeopardize the continued existence of the species, provide suitable avoidance and minimization measures to reduce potential impacts, and provide adequate mitigation through conservation or mitigation banking. Unavoidable impacts to occupied suitable habitat would be compensated at a minimum of 1:1, as described above, in addition to implementing all other measures and conditions of the ITP.

5.2.4 American Badger and Desert Kit Fox

A pre-construction survey for American badger and desert kit fox would be conducted on the project site within 10 days prior to the start of construction to determine the presence/absence of either species. If either species is discovered during the survey, an American Badger/Desert Kit Fox Mitigation and Monitoring Plan would be developed. The Mitigation and Monitoring Plan would include avoidance and minimization measures to reduce potential impacts to either species, as well as compensatory mitigation to offset direct or indirect impacts. The plan would be developed in consultation with CDFW. At a minimum, the plan would do the following:

- Identify pre-construction survey methods for American badger and desert kit fox
- Describe feasible pre-construction and construction-phase avoidance methods
- Describe pre-construction and construction-phase relocation methods, including the possibility for passive relocation
- For burrows that will not be impacted by the project, identify appropriate construction exclusion zones for both active and natal burrows
- Coordinate survey findings prior to and during construction to meet the information needs of wildlife health officials in monitoring the health of kit fox populations

5.3 Jurisdictional Aquatic Resources

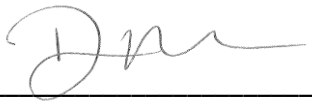
Because there are jurisdictional waters located within the project site, and if avoidance of impacts to potentially jurisdictional areas is not practicable, then the project applicant would obtain the applicable permits to impact these resources, a Streambed Alteration Agreement from CDFW, and a Waste Discharge Requirement from the RWQCB. Final mitigation requirements for the impact would be established by these agencies, and a final Wetlands/Waters Mitigation Plan would be prepared prior to issuance of a grading permit. However, at a minimum, the following requirements would be met:

- Mitigation for permanent impacts to jurisdictional waters would occur at no less than 1:1 ratio for the impacts to jurisdictional waters. A waters mitigation and monitoring plan would be prepared that outlines the compensatory mitigation in coordination with CDFW and the RWQCB. Mitigation would include creation, enhancement, and/or restoration, and would be either completed on site or off site. The mitigation program would be designed to replace the functions and values of the jurisdictional resources impacted, with requirements to achieve specific success criteria. The mitigation areas would be designed to have similar vegetative characteristics (excluding exotic species) to those of the affected areas. If creation is provided, the site would be designed to emulate the density and structure of the affected areas once the establishment areas have met the mitigation success criteria. As applicable, the qualified biologist would determine the appropriate planting and seeding palettes.
- All temporary impacts to jurisdictional waters would be restored on site. Restoration would include recontouring and erosion control with a native seed mix. Prior to seeding temporary ground disturbance areas, the qualified biologist would review the seeding palette to ensure that no seeding of invasive plant species, as identified in the most recent version of the California Invasive Plant Inventory for the region, would occur, and that the mix is appropriate for the area.

- If a jurisdictional aquatic resource of the state is avoided by the project, the grading and construction plans would identify the resource, and the resource would be fenced off prior to the issuance of a grading or construction permit. If on-site avoidance occurs, it would be verified prior to the issuance of a construction permit that non-native plant species listed on the most recent California Invasive Plant Council inventory (https://www.cal-ipc.org/plants/inventory/) with a rating of moderate or high would not be included in landscaping.

If any questions should arise during your review, or you need additional information, please contact me at 760.840.7461 or dmullen@dudek.com.

Sincerely,



Danielle Mullen
Biologist

Figures 1–3
Attachment A, Plant Compendium
Attachment B, Wildlife Compendium
Attachment C, Special-Status Plant Species Potential to Occur
Attachment D, Special-Status Wildlife Species Potential to Occur

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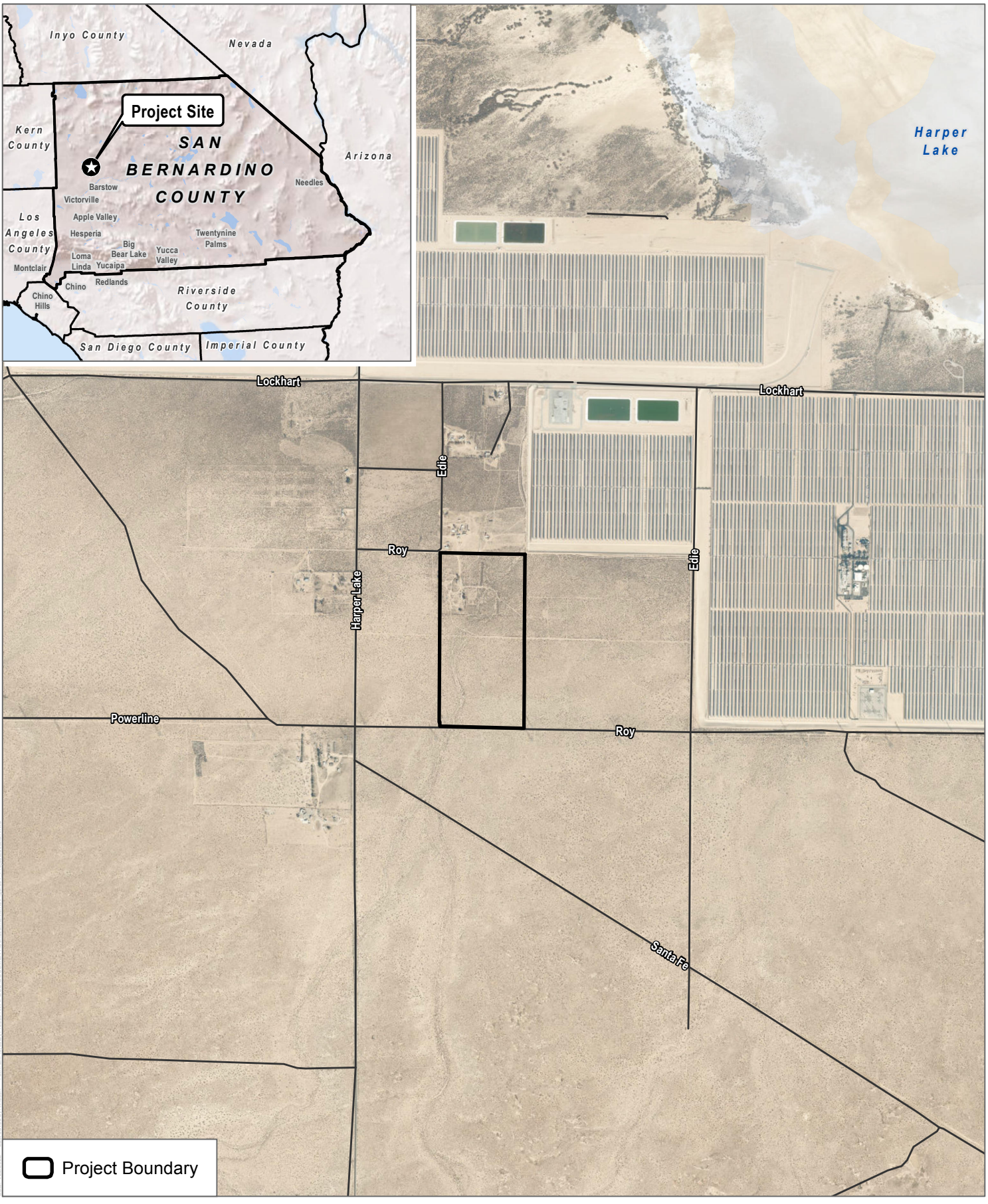


SOURCE: ESRI Imagery 2022, County of San Bernardino 2021

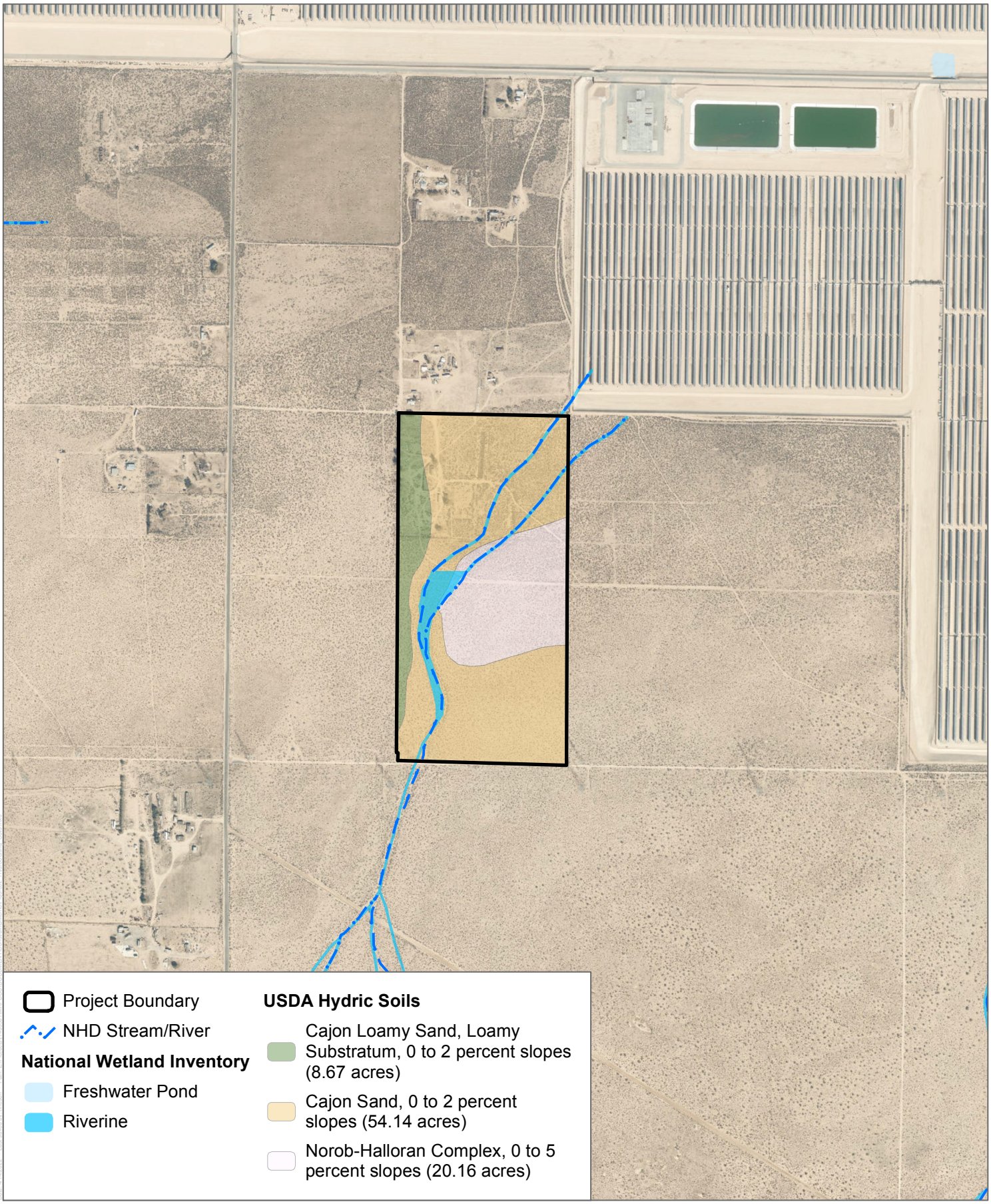
DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Biological Constraints Report for the Juniper Energy Project at 315 Roy Street, Hinkley, San Bernardino County



SOURCE: ESRI Imagery 2022, County of San Bernardino 2021, USGS 2021, USFWS 2021, USDA 2008

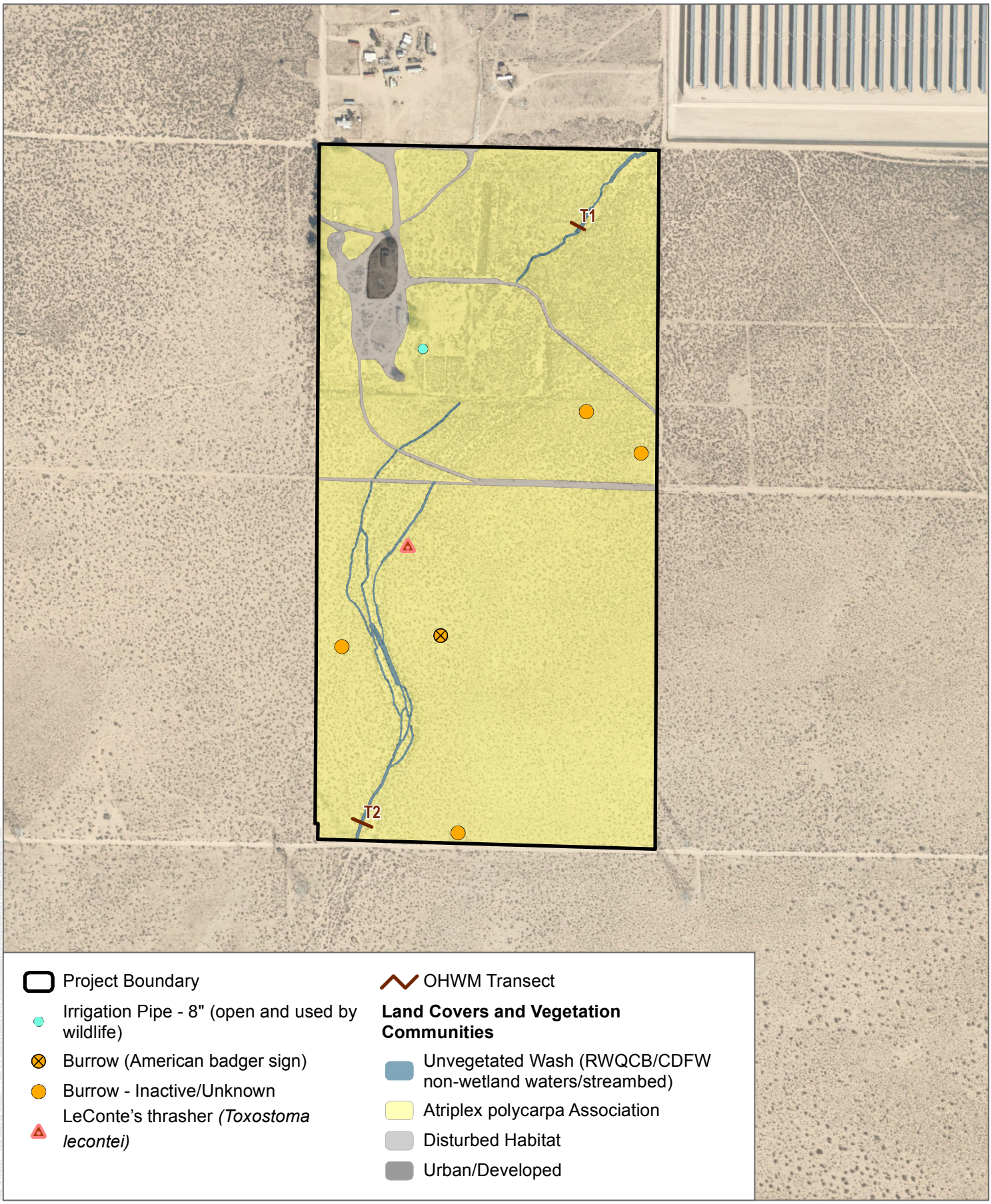
DUDEK

0 500 1,000 Feet

FIGURE 2

Soils and Hydrology

Biological Constraints Report for the Juniper Energy Project at 315 Roy Road, Hinkley, San Bernardino County



SOURCE: ESRI Imagery 2022, County of San Bernardino 2021, USGS 2021, USFWS 2021, USDA 2008

DUDEK

0 250 500 Feet

FIGURE 3

Biological Resources

Biological Constraints Report for the Juniper Energy Project at 315 Roy Road, Hinkley, San Bernardino County

Attachment A

Plant Compendium

VASCULAR SPECIES

EUDICOTS

ASTERACEAE—SUNFLOWER FAMILY

Ambrosia salsola—cheesebush

Chaenactis fremontii—pincushion flower

Malacothrix glabrata—smooth desertdandelion

BORAGINACEAE—BORAGE FAMILY

Cryptantha sp. —cryptantha sp.

BRASSICACEAE—MUSTARD FAMILY

* *Brassica tournefortii*—Tournefort's mustard

CACTACEAE—CACTUS FAMILY

Cylindropuntia echinocarpa—Wiggins' cholla

CHENOPODIACEAE—GOOSEFOOT FAMILY

Atriplex polycarpa—allscale

GERANIACEAE—GERANIUM FAMILY

* *Erodium cicutarium*—redstem stork's bill

POLEMONIACEAE—PHLOX FAMILY

Langloisia setosissima—Great Basin langloisia

SOLANACEAE—NIGHTSHADE FAMILY

Lycium andersonii—Anderson’s boxthorn

Lycium cooperi—peach thorn

TAMARICACEAE—TAMARISK FAMILY

* *Tamarix ramosissima*—tamarisk

ZYGOPHYLLACEAE—CALTROP FAMILY

Larrea tridentata—creosote bush

MONOCOTS

POACEAE—GRASS FAMILY

* *Schismus arabicus*—Arabian schismus

* Signifies introduced non-native species

Attachment B

Wildlife Compendium

BIRDS

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Sayornis saya—Say's phoebe

JAYS, MAGPIES AND CROWS

CORVIDAE—CROWS AND JAYS

Corvus corax—common raven

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

Toxostoma lecontei—LeConte's thrasher

OLD WORLD SPARROWS

PASSERIDAE—OLD WORLD SPARROWS

* *Passer domesticus*—house sparrow

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

STARLINGS AND ALLIES

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

NEW WORLD SPARROWS

PASSERELLIDAE—NEW WORLD SPARROWS

Artemisiospiza nevadensis—sagebrush sparrow

REPTILES

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Uta stansburiana—common side-blotched lizard

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris—tiger whiptail

CROTAPHYTIDAE—COLLARED LIZARDS

Gambelia wislizenii—long-nosed leopard lizard

* Signifies introduced non-native species

Attachment C

Special-Status Plant Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Canbya candida	white pygmy-poppy	None/None/4.2	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland; Granitic, Gravelly, Sandy/annual herb/Mar–June/1,965–4,790	Low potential to occur. Species not observed during rare plant survey.
Chorizanthe spinosa	Mojave spineflower	None/None/4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Playas; Alkaline (sometimes)/annual herb/Mar–July/20–4,265	Low potential to occur. Species not observed during rare plant survey.
Cymopterus deserticola	desert cymopterus	None/None/1B.2	Joshua tree "woodland", Mojavean desert scrub; Sandy/perennial herb/Mar–May/2,065–4,920	Low potential to occur. Species not observed during rare plant survey.
Diplacus mohavensis	Mojave monkeyflower	None/None/1B.2	Joshua tree "woodland", Mojavean desert scrub; Gravelly (sometimes), Sandy (sometimes), Washes (often)/annual herb/Apr–June/1,965–3,935	Low potential to occur. Species not observed during rare plant survey.
Eriophyllum mohavense	Barstow woolly sunflower	None/None/1B.2	Chenopod scrub, Mojavean desert scrub, Playas/annual herb/Mar–May/1,640–3,145	Low potential to occur. Species not observed during rare plant survey.
Lycium torreyi	Torrey's box-thorn	None/None/4.2	Mojavean desert scrub, Sonoran desert scrub; Rocky, Sandy, Streambanks, Washes/perennial shrub/(Jan–Feb)Mar–June(Sep–Nov)/-,165–4,000	Low potential to occur. Species not observed during rare plant survey.
Mentzelia tridentata	creamy blazing star	None/None/1B.3	Mojavean desert scrub; Gravelly, Rocky, Sandy/annual herb/Mar–May/2,295–3,850	Not expected to occur. The site is outside of the species' known elevation range.
Muilla coronata	crowned muilla	None/None/4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland/perennial bulbiferous herb/Mar–Apr(May)/2,195–6,430	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Pediomelum castoreum	Beaver Dam breadroot	None/None/1B.2	Joshua tree "woodland", Mojavean desert scrub/perennial herb/Apr–May/2,000–5,000	Low potential to occur. Species not observed during rare plant survey.
Sclerocactus polyancistrus	Mojave fish-hook cactus	None/None/4.2	Great Basin scrub, Joshua tree "woodland", Mojavean desert scrub/perennial stem/Apr–July/2,095–7,610	Low potential to occur. Species not observed during rare plant survey.
Yucca brevifolia	western Joshua tree	None/SC/CBR	Great Basin grassland, Great Basin scrub, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland, Sonoran desert scrub, Valley and foothill grassland/perennial leaf succulent/Apr–May/1,310–6,560	Not expected to occur. Perennial species not observed during rare plant surevy. Additonally, site occurs outside of CDFW Distribution for this species.

Attachment D

Special-Status Wildlife Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Amphibians				
Anaxyrus californicus	arroyo toad	FE/SSC	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. Suitable aquatic habitat is not present on the project site or in the vicinity.
Reptiles				
Gopherus agassizii	Mojave desert tortoise	FT/ST	Arid and semi-arid habitats in Mojave and Sonoran Deserts, including sandy or gravelly locations along riverbanks, washes, sandy dunes, canyon bottoms, desert oases, rocky hillsides, creosote flats, and hillsides	Moderate potential to occur. There are local, recent records of the species and suitable habitat is present; however, no recent sign of the species was observed during the initial survey.
Uma scoparia	Mohave fringe-toed lizard	None/SSC	Loose wind-blown sand dunes, flats with sandy hummocks, washes, and banks of rivers	Not expected to occur. Suitable habitat is not present on the project site or in the vicinity.
Birds				
Aquila chrysaetos (nesting & wintering)	golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur (nesting and wintering). Suitable nesting habitat is not present on the project site or in the vicinity; however, the species may forage in the area.
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	None/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Moderate potential to occur. There are local, recent records of the species and suitable habitat is present; however, no sign of the species was observed during the initial survey.
Charadrius alexandrinus nivosus (nesting)	western snowy plover	FT/SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur (nesting). Suitable habitat is not present on the project site or in the vicinity.
Charadrius montanus (wintering)	mountain plover	None/SSC	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	Not expected to occur (wintering). Suitable aquatic habitat is not present on the project site or in the vicinity.
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT/SE	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. Suitable habitat is not present on the project site or in the vicinity.
Falco mexicanus (nesting)	prairie falcon	None/WL	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Not expected to occur (nesting). Suitable nesting habitat is not present on the project site or in the vicinity; however, the species may forage in the area.
Lanius ludovicianus (nesting)	loggerhead shrike	None/SSC	Nests and forages in open habitats with scattered shrubs, trees, or other perches	Low potential to occur. Limited suitbale habitat within the site and species was not observed during the habitat assessment.
Rallus obsoletus yumanensis	Yuma Ridgway's rail	FE/FP, ST	Freshwater marsh dominated by Typha spp., Scirpus spp., Schoenoplectus spp., and Bolboschoenus spp.; mix of riparian tree and shrub species along the marsh edge; many occupied areas are now man-made, such as managed ponds or effluent-supported marshes	Not expected to occur. Suitable habitat is not present in the project site.
Toxostoma lecontei	LeConte's thrasher	None/SSC	Nests and forages in desert wash, desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats; nests in spiny shrubs or cactus	Observed within the site during the initial survey and potential to nest within desert scrub habitat.
Fishes				
Siphateles bicolor mohavensis	Mohave tui chub	FE/FP, SE	Lacustrine ponds or pools; 4 feet min water depth; freshwater flow; mineralized and alkaline environment; habitat for aquatic invertebrate prey and egg attachment substrate; Ruppia maritima preferred for egg attachment and thermal refuge in summer months	Not expected to occur. Suitable aquatic habitat is not present on the project site or in the vicinity.
Mammals				
Lasionycteris noctivagans	silver-haired bat	None/None	Old-growth forest, maternity roosts in trees, large snags 50 feet aboveground; hibernates in hollow trees, rock crevices, buildings, mines, caves, and under sloughing bark; forages in or near coniferous or mixed deciduous forest, stream or river drainages	Not expected to occur. Suitable habitat is not present in the project site.
Microtus californicus mohavensis	Mojave river vole	None/SSC	Wet, weedy, herbaceous areas along the Mojave River	Not expected to occur. Suitable habitat is not present in the project site.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Spermophilus (Xerospermophilus) mohavensis	Mohave ground squirrel	None/ST	Desert scrub habitats including those dominated by creosote bush and burrobush, desert sink scrub, and desert saltbush scrub	Moderate potential to occur. There are local, recent records of the species and suitable habitat is present; however, no small burrows were observed during the initial survey.
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Moderate potential to occur. There are local, recent records of the species and suitable habitat is present; however, no active burrows were observed during the initial survey.
Invertebrates				
Bombus crotchii	Crotch bumble bee	None/None	Open grassland and scrub communities supporting suitable floral resources.	Low potential to occur. Limited floral resources occur within the site.
Bombus occidentalis	western bumble bee	None/None	Once common and widespread, species has declined precipitously from central California to southern British Columbia, perhaps from disease	Not expected to occur. Suitable habitat is not present in the project site.