Appendix F

Biological Technical Report

BIOLOGICAL TECHNICAL REPORT

FOR

HELLMAN PROPERTY SOLAR PANEL ARRAY

LOCATED IN THE CITY OF SEAL BEACH, ORANGE COUNTY, CALIFORNIA

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INFORMATION SUMMARY

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B. Report Title: Biological Technical Report for Hellman Property Solar Panel Array

C. Project Site Location: Seal Beach, Orange County

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TABLE OF CONTENTS

Page #

1.0 INTRODUCTION 1
1.1 Background and Scope of Work 1
1.2 Project Location 1
1.3 Project Description 2
2.0 METHODOLOGY 2
2.1 Botanical Resources 3
2.2 Wildlife Resources 5
2.3 Jurisdictional Waters 7
3.0 REGULATORY SETTING 8
3.1 Endangered Species Acts 8
3.2 California Environmental Quality Act 10
3.3 Jurisdictional Waters 13
4.0 RESULTS 18
4.1 Existing Conditions 18
4.2 Vegetation Mapping 19
4.3 Special-Status Vegetation Communities 22
4.4 Special-Status Plants 23
4.5 Special-Status Animals 28
4.6 Nesting Birds 39
4.7 Wildlife Linkages/ Corridors and Nursery Sites 39
4.8 Critical Habitat 40
4.9 Jurisdictional Waters 40
5.0 IMPACT ANALYSIS 41
5.1 California Environmental Quality Act (CEQA) 41
5.2 Special-Status Species 43
5.3 Sensitive Vegetation Communities 45
5.4 Wetlands 46
5.5 Wildlife Movement and Native Wildlife Nursery Sites 46
5.6 Local Policies or Ordinances 47
5.7 Habitat Conservation Plans 47
5.8 Jurisdictional Waters 47

5.9 Indirect Impacts to Biological Resources 47
6.0 MITIGATION/AVOIDANCE MEASURES 49
6.1 Nesting Birds 49
6.2 Burrowing Owl 49
6.3 Special-Status Plants 49
6.4 Least Bell's Vireo 51
7.0 REFERENCES 52
8.0 CERTIFICATION 54

TABLES

Table 2-1. Summary of Biological Surveys for the Project Site 3
Table 2-2. Summary of Wandering Skipper Surveys 7
Table 3-1. CRPR Ranks 1, 2, 3, & 4, and Threat Code Extensions 12
Table 4-1. Summary of Vegetation/Land Use Types for the Study Area 19
Table 4-2. Special-Status Plants Evaluated for the Study Area 23
Table 4-3. Special-Status Animals Evaluated for the Study Area 29
Table 5-1. Summary of Permanent and Temporary Vegetation/Land Use Impacts 45

EXHIBITS

Exhibit 1 Regional Map
Exhibit 2 Vicinity Map
Exhibit 3 Site Plan
Exhibit 4 Jurisdictional Determination Map
Exhibit 5 Soils Map
Exhibit 6a Vegetation Map
Exhibit 6b Vegetation Impact Map
Exhibit 7 Site Photographs
Exhibit 8a Special-Status Species Map
Exhibit 8b Southern Tarplant Locations Map
Exhibit 9 Special-Status Species Impact Map

APPENDICES

Appendix A Floral Compendium
Appendix B Faunal Compendium
Appendix C Jurisdictional Delineation Report
Appendix D Southern Tarplant Mitigation and Monitoring Plan for Hellman Property Solar Panel Array

1.0 INTRODUCTION

1.1 Background and Scope of Work

This document provides the results of general biological surveys and focused biological surveys for the approximately 4.57-acre Solar Panel Array (the Project) located in the City of Seal Beach, Orange County, California. This report identifies and evaluates impacts to biological resources associated with the proposed Project in the context of the California Environmental Quality Act (CEQA), and State and Federal regulations such as the California Coastal Act (CCA), Endangered Species Act (ESA), Clean Water Act (CWA), and the California Fish and Game Code.

The scope of this report includes a discussion of existing conditions for the approximately 4.57-acre Project site that is contained within a larger 12.46-acre Study Area, all methods employed regarding the general biological surveys and focused biological surveys, the documentation of botanical and wildlife resources identified (including special-status species), and an analysis of impacts to biological resources. Methods of the study include a review of relevant literature, field surveys, and a Geographical Information System (GIS)-based analysis of vegetation communities. As appropriate, this report is consistent with accepted scientific and technical standards and survey guideline requirements issued by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), the California Native Plant Society (CNPS), and other applicable agencies/organizations.

The field study focused on a number of primary objectives that would comply with CEQA, including (1) general reconnaissance survey and vegetation mapping; (2) general biological surveys; (3) habitat assessments and focused surveys for special-status plant species; (4) habitat assessments and focused surveys for special-status wildlife species; (5) assessment for the presence of wildlife migration and colonial nursery sites; (6) assessments for wetlands and environmentally sensitive habitat areas (ESHA) pursuant to the CCA; and (7) assessments for areas subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) jurisdiction pursuant to Section 404 of the Clean Water Act, State Water Quality Control Board pursuant to Section 401 of the Clean Water Act, and CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600–1616 of the California Fish and Game Code. Observations of all plant and wildlife species were recorded during the biological studies and are included as Appendix A: Floral Compendium and Appendix B: Faunal Compendium.

1.2 Project Location

The Project site comprises approximately 4.57 acres in the City of Seal Beach, Orange County, California [Exhibit 1 – Regional Map] and is located within Sections 11 and 12 of Township 5 South, Range 12 West of the U.S. Geological Survey (USGS) 7.5-minute quadrangle map Los Alamitos, California [Exhibit 2 – Vicinity Map]. The Project site is located in the Hellman Property, which is an active oil field with a network of earthen roads, active oil wells, oil and gas storage tanks, and associated infrastructure. The Project site is located in the northeastern portion of the Hellman Property and is bordered by the Los Alamitos Retarding Basin to the north, a water quality basin associated with the Heron Pointe residential development to the east, and

active oil fields to the south and west. A portion of the Los Cerritos Wetlands, which was formerly part of the Hellman Property, is located to the south and west beyond the active oil field.

1.3 Project Description

The proposed project consists of the installation of a 1.5MW fixed-tilt ground mounted solar photovoltaic system. This system will interconnect with the Hellman Property's electrical infrastructure and operate in parallel with the utility grid to provide sustainable clean energy in support of the facilities operations. The system features 3 arrays with a total of 56 low profile table structures supported by piles with concrete foundations.

For this report, the term "Project site" is defined as that area proposed for direct impact by the proposed Project and totals 4.57 acres [Exhibit 3]. The 4.57-acre Project site includes a 2.66-acre permanent impact area and a 1.91-acre temporary impact area consisting of staging and temporary work areas. The term "Study Area" is defined as all portions of the Project site, a 100-foot buffer beyond the Project site that was included in the analysis in accordance with the requirements of the Coastal Act and the Seal Beach Local Coastal Program (LCP), and additional areas beyond the 100-foot buffer that support sensitive biological resources [Exhibit 3]. The Study Area totals 12.46 acres.

It should be noted that an access road for and a portion of the Los Alamitos Retarding Basin are located within the 100-foot buffer as depicted by Exhibit 3; however, the biological resources in these areas were not mapped or surveyed for this analysis, and these areas are not included in the Study Area.

2.0 METHODOLOGY

In order to adequately identify biological resources in accordance with the requirements of CEQA, Glenn Lukos Associates (GLA) assembled biological data consisting of the following main components:

- Delineation of aquatic resources (including wetlands and riparian habitat) subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), CDFW, and also wetlands as defined by the California Coastal Act
- Performance of vegetation mapping for the Project site
- Performance of habitat assessments and site-specific biological surveys to evaluate the potential presence/absence of special-status species in accordance with the requirements of CEQA
- Performance of focused surveys for rare plants and wildlife.

The focus of the biological surveys was determined through initial site reconnaissance, a review of the California Natural Diversity Database CNDDB (CDFW 2022), CNPS 9th edition online inventory (CNPS 2022), Natural Resource Conservation Service soil data (NRCS 2022), other

pertinent literature, knowledge of the region, and GLA's extensive knowledge of the Hellman Property. Site-specific general surveys within the Project site and the surrounding buffer area were conducted on foot in the proposed development areas for each target plant or animal species identified below. Table 2-1 provides a summary list of survey dates, survey types and personnel.

Table 2-1. Summary of Biological Surveys for the Project Site

Survey Type	Survey Dates	Biologist(s)
General Biological Survey	July 29, August 4, 2022	TB, ET
Vegetation Mapping	July 29, August 4, August 25, October 25 2022	TB, ET, BG
Focused Botanical Surveys	July 29, August 4, 2022 February 17, March 7, 2023	TB, ET, DM
Survey for Least Bell's Vireo	July 29, August 4, August 25, 2022	TB, ET
Wandering Skipper Focused Surveys	July 29, August 4, August 25, 2022	TB, ET
Assessment for Federal and State Jurisdictional Waters and Coastal Act Wetlands	August 25, October 25, 2022 March 6, 2023	TB, ET, BG

TB = Tony Bomkamp, ET = Erin Trung, BG = Brittany Gale, DM = David Moskovitz

Individual plants and wildlife species were evaluated in this report based on their special status. For this report, plants were considered special status based on one or more of the following criteria:

- Listing through the Federal and/or State Endangered Species Act (ESA); and/or
- CNPS California Rare Plant Rank 1A, 1B, 2A, 2B, 3, or 4.

Wildlife species were considered special status based on one or more of the following criteria:

- Listing through the Federal and/or State ESA; and
- Designation by the State as a Species of Special Concern (SSC) or Fully Protected (FP) species.

Vegetation communities and habitats were considered special status based on one or more of the following criteria:

- Global (G) and/or State (S) ranking of category 3 or less based on CDFW (see Section 3.2.2 below for further explanation)/

2.1 Botanical Resources

A site-specific survey program was designed to accurately document the botanical resources within the Project site, and consisted of five components: (1) a literature search; (2) preparation

of a list of target special-status plant species and sensitive vegetation communities that could occur within the Project site; (3) general field reconnaissance survey(s); (4) vegetation mapping according to the List of Vegetation Alliances and Associations; and (5) habitat assessments and focused surveys for special-status plants.

2.1.1 Literature Search

Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. A thorough archival review was conducted using available literature and other historical records. These resources included the following:

- California Native Plant Society, Rare Plant Program. Inventory of Rare and Endangered Plants of California (online edition, v-9.5, CNPS 2023)
- CNDDB for the Los Alamitos, California USGS 7.5-minute quadrangle and surrounding six quadrangles (CDFW 2023)

The literature review also included biological studies previously conducted for the Hellman Property and adjacent Los Cerritos Wetlands:

- Raptor Foraging Habitat Assessment at Hellman Ranch (GLA 2001)
- Biological Technical Report, Hellman Ranch Tank Farm Relocation Project (GLA 2006)
- Biological Technical Report for Proposed Hellman Gas Plant Project (GLA 2018)
- Los Cerritos Wetlands Habitat Assessment Report: Habitat Types & Special Status Species (Tidal Influence 2012)

2.1.2 Vegetation Mapping

Vegetation communities within the Project site were mapped according to the "Membership Rules" of the List of Vegetation Alliances and Associations (or Natural Communities List). The list is based on A Manual of California Vegetation, Second Edition or MCVII, which is the California expression of the National Vegetation Classification. Where necessary, deviations were made when areas did not fit into exact vegetation descriptions (membership rules). Non-conforming vegetation alliances or cover types were named based on the dominant plant species present. Plant communities were mapped in the field directly onto a 100-scale (1″=100′) aerial photograph.

2.1.3 Special-Status Plant Species and Habitats Evaluated for the Project Site

Based on the information compiled from the literature search, vegetation profiles and a list of target sensitive plant species and habitats that could occur within the Project site were developed and incorporated into a mapping and survey program to achieve the following goals: (1) characterize the vegetation associations and land use; (2) prepare a detailed floristic compendium; (3) identify the potential for any special-status plants that may occur within the Project site; and (4) prepare a map showing the distribution of any sensitive botanical resources associated with the Project site, if applicable.

2.1.4 Botanical Surveys

GLA biologists Tony Bomkamp and Erin Trung visited the site on July 29, and August 4, 2022, and Erin Trung and David Moskovitz visited the site on February 17 and March 6, 2023, to conduct general and focused plant survey(s). Southern tarplant was censused and mapped during 2022 surveys, and Coulter's goldfields was mapped during 2023 surveys. Survey(s) were conducted in accordance with accepted botanical survey guidelines (Nelson 1984, USFWS 2000, CNPS 2001, CDFW 2018). As applicable, survey(s) were conducted at appropriate times based on precipitation and flowering periods. An aerial photograph, a soil map, and/or a topographic map were used to determine the community types and other physical features that may support sensitive and uncommon taxa or communities within the Project site. Survey(s) were conducted by following meandering transects within target areas of suitable habitat. All plant species encountered during the field survey(s) were identified and recorded following the above-referenced guidelines. A complete list of the plant species observed is provided in Appendix A. Scientific nomenclature and common names used in this report follow Baldwin et al. (2012) and Munz (1974).

2.2 Wildlife Resources

Wildlife species were evaluated and detected during the field survey(s) by sight, call, tracks, and scat. Site reconnaissance was conducted in such a manner as to allow inspection of the entire Project site by direct observation, including the use of binoculars. Observations of physical evidence and direct sightings of wildlife were recorded in field notes during the visit(s). A complete list of wildlife species observed within the Project site is provided in Appendix B. Scientific nomenclature and common names for vertebrate species referred to in this report follow the Complete List of Amphibian, Reptile, Bird, and Mammal Species in California (CDFW 2016), Standard Common and Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians 6th Edition, Collins and Taggart (2009) for amphibians and reptiles, and the American Ornithological Society Checklist of Middle and North American Birds (Chesser et al. 2022) for birds. The methodology (including any applicable survey protocols) utilized to conduct general survey(s), habitat assessment(s), and/or focused surveys for special-status animals are included below.

2.2.1 General Surveys

Birds

During the general biological and reconnaissance survey within the Project site, birds were identified incidentally within each habitat type. Birds were detected by both direct observation and by vocalizations and were recorded in field notes.

Mammals

During general biological and reconnaissance survey within the Project site, mammals were identified incidentally within each habitat type. Mammals were detected both by direct observations and by the presence of diagnostic sign (i.e., tracks, burrows, scat, etc.).

Reptiles and Amphibians

During general biological and reconnaissance surveys within the Project site, reptiles and amphibians were identified incidentally during surveys within each habitat type. Habitats were examined for diagnostic reptile sign, which include shed skins, scat, tracks, snake prints, and lizard tail drag marks. All reptiles and amphibian species observed, as well as diagnostic sign, were recorded in field notes.

2.2.2 Special-Status Animal Species Evaluated for the Project Site

A literature search was conducted to obtain a list of special-status wildlife species with the potential to occur within the Project site. Species were evaluated based on two factors: 1) species identified by the CNDDB as occurring (either currently or historically) on or in vicinity of the Project site, and 2) any other special-status animals that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs on the Project site.

2.2.3 Habitat Assessment for Special-Status Animal Species

GLA biologist(s) Tony Bomkamp and Erin Trung conducted habitat assessments for special-status animal species on July 29, 2022. An aerial photograph, soil map and/or topographic map were used to determine the community types and other physical features that may support special-status and uncommon taxa within the Project site.

2.2.4 Focused Surveys for Special-Status Animals Species

Wandering Skipper

GLA biologists Tony Bomkamp and Erin Trung conducted focused surveys for wandering skipper (*Panoquina errans*) within areas of potentially suitable habitat in the Study Area. Focused surveys were conducted because this species is known from the Los Cerritos Wetlands (Tidal Influence 2012). There is no official survey protocol for wandering skipper, so surveys were conducted based on USFWS protocols for other skipper species. The Study Area was assessed for the presence of the larval host plant, salt grass (*Distichlis spicata*), and for nectar plants, which can include alkali heath (*Frankenia salina*), alkali heliotrope (*Heliotropium curassivicum*), and brassicas such as summer mustard (*Hirschfeldia incana*) and wild radish (*Raphanus sativa*). In areas of potentially suitable habitat, which consists of salt grass interspersed with or bordered by nectar plants, transects were slowly and methodically walked with frequent stops for observation, including with the use of binoculars. Three survey visits were conducted during the flight period, which begins as early as March and ends as late as November, but typically occurs June to September. Surveys were conducted between 9:00 am and 12:00 pm, with wind speeds less than 10 mph, and temperatures between 65° and 80°F.

Table 2-2. Summary of Wandering Skipper Surveys

Survey Date	Biologist(s)	Start/End Time	Start/End Temperature (°F)	Start/End Wind Speed (mph)	Cloud Cover
07/29/22	TB, ET	0830/0950	70°/75°	0mph/5mph	clear
08/04/22	TB	0800/1000	68°/70°	2mph/3mph	clear
08/25/22	TB, ET	0800/0950	74°/78°	0mph/5mph	clear

TB = Tony Bomkamp, ET = Erin Trung

Least Bell's Vireo

GLA biologists Tony Bomkamp and Erin Trung conducted surveys for the least Bell's vireo in the adjacent, offsite Heron Pointe detention basin, a portion of which is located in the 100-foot buffer. The basin supports a mix of willow forest, willow scrub and mulefat scrub that exhibits potential for supporting the state and federally listed migratory songbird. GLA previously observed this species within the willow and mulefat habitat during surveys in the basin for an unrelated maintenance project by the Heron Pointe HOA in 2019. Based on the previous observation, GLA biologists conducted informal surveys on July 29, August 4, and August 25, 2022, between 0700 and 0800 to determine potential presence/absence. As noted in Table 2-2 above, conditions were suitable for detection of this species. USFWS survey guidelines, which require eight survey visits during the time period from April 10 to July 31, were not followed because 1) presence/absence was able to be determined with a shortened, informal protocol, and 2) precise mapping of least Bell's vireo breeding territories was not necessary because the Heron Pointe detention basin is not within the Project site and the Project will not result in take of least Bell's vireo or impacts to its habitat.

2.3 Jurisdictional Waters

The Study area was evaluated to identify the limits of jurisdictional waters, including waters of the U.S. (including wetlands) subject to the jurisdiction of the Corps and Regional Board, waters of the State (including riparian vegetation) subject to the jurisdiction of CDFW, and wetlands as defined under the California Coastal Act. Prior to beginning the field delineation, a 100-scale color aerial photograph, a soils map, and the previously cited USGS topographic maps were examined to determine the locations of potential areas of Corps/CDFW jurisdiction. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Potential wetland habitats at the subject site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual (Wetland Manual) and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement). Reference was also made to the 2019 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Board Wetland Definition and Procedures) to identify suspected State wetland habitats as regulated by the Regional Board. While in the field, the locations where data was collected were recorded with a sub-meter Trimble GPS device in conjunction with a color aerial photograph using visible landmarks.

For purposes of the jurisdictional delineation, the site was separated into a "western field" and "eastern field" as depicted on Exhibit 4. In order to eliminate sampling bias, data collection points for potential wetland hydrology, soils, and vegetation in the western field were located along four transects in a rough grid pattern. The spacing between of each of the points and between the four transects was determined using a random numbers generator [Exhibit 4 – Jurisdictional Determination Map].

A portion of the 100-foot buffer adjacent to the eastern field extends into the water quality basin associated with the Heron Pointe residential development [Exhibit 4]. This basin is vegetated with riparian vegetation and may contain areas with wetland hydrology and/or hydric soil indicators. However, because it is a constructed water quality basin, is not part of the Hellman Property, and would not be impacted by the proposed project, it was not included in the jurisdictional assessment.

3.0 REGULATORY SETTING

The proposed Project is subject to state and federal laws and regulations associated with a number of regulatory programs. These programs often overlap and were developed to protect natural resources, including state and federally listed plants and animals; aquatic resources including rivers and creeks, ephemeral streambeds, wetlands, and areas of riparian habitat; special-status species which are not listed as threatened or endangered by the state or federal governments; and special-status vegetation communities.

3.1 Endangered Species Acts

3.1.1 California Endangered Species Act

California's Endangered Species Act (CESA) defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." The State defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species." Candidate species are defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list." Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened, endangered, or candidate species by stating "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product

thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided." Under the CESA, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Exceptions authorized by the state to allow "take" require permits or memoranda of understanding and can be authorized for endangered species, threatened species, or candidate species for scientific, educational, or management purposes and for take incidental to otherwise lawful activities. Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

3.1.2 Federal Endangered Species Act

The FESA of 1973 defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA it is unlawful to "take" any listed species. "Take" is defined in Section 3(18) of FESA: "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification that result in injury to, or death of species as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action that could affect a federally listed plant and animal species, the property owner and agency are required to consult with USFWS. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

3.1.3 State and Federal Take Authorizations

Federal or state authorizations of impacts to or incidental take of a listed species by a private individual or other private entity would be granted in one of the following ways:

- Section 7 of the FESA stipulates that any federal action that may affect a species listed as threatened or endangered requires a formal consultation with USFWS to ensure that the action is not likely to jeopardize the continued existence of the listed species or result in destruction or adverse modification of designated critical habitat. 16 U.S.C. 1536(a)(2).
- In 1982, the FESA was amended to give private landowners the ability to develop Habitat Conservation Plans (HCP) pursuant to Section 10(a) of the FESA. Upon development of an HCP, the USFWS can issue incidental take permits for listed species where the HCP specifies at minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan.
- In certain circumstances, Section 2080.1 of the California Fish and Game Code allows CDFW to adopt the federal incidental take statement or the 10(a) permit as its own based on its findings that the federal permit adequately protects the species under state law.

3.2 California Environmental Quality Act

3.2.1 CEQA Guidelines Section 15380

CEQA requires evaluation of a project's impacts on biological resources and provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts. Sections 5.1.1 and 5.2.2 below set forth these thresholds and guidelines. Furthermore, pursuant to the CEQA Guidelines Section 15380, CEQA provides protection for non-listed species that could potentially meet the criteria for state listing. For plants, CDFW recognizes that plants with a California Rare Plant Rank (CRPR) of 1A, 1B, or 2 in the CNPS *Inventory of Rare and Endangered Plants in California* may meet the criteria for listing and should be considered under CEQA. CDFW also recommends protection of plants that are regionally important, such as locally rare species, disjunct populations of more common plants, or plants CNPS Ranked 3 or 4.

3.2.2 Special-Status Plants, Wildlife and Vegetation Communities Evaluated Under CEQA

Federally Designated Special-Status Species

Within recent years, the USFWS instituted changes in the listing status of candidate species. Former C1 (candidate) species are now referred to simply as candidate species and represent the only candidates for listing. Former C2 species (for which the USFWS had insufficient evidence to warrant listing) and C3 species (either extinct, no longer a valid taxon or more abundant than was formerly believed) are no longer considered as candidate species. Therefore, these species are no longer maintained in list form by the USFWS, nor are they formally protected. This term is employed in this document but carries no official protections. All references to federally protected species in this report (whether listed, proposed for listing, or candidate) include the most current published status or candidate category to which each species has been assigned by USFWS.

For this report the following acronyms are used for federal special-status species:

- FE Federally listed as Endangered
- FT Federally listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FC Federal Candidate Species (former C1 species)

State-Designated Special-Status Species

Some mammals and birds are protected by the state as Fully Protected (SFP) Mammals or Fully Protected Birds, as described in the California Fish and Game Code, Sections 4700 and 3511, respectively. California SSC are designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's CNDDB project. Informally listed taxa are not protected but warrant

consideration in the preparation of biotic assessments. For some species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest sites.

For this report the following acronyms are used for State special-status species:

- SE State-listed as Endangered
- ST State-listed as Threatened
- SR State-listed as Rare
- SCE State Candidate for listing as Endangered
- SCT State Candidate for listing as Threatened
- FP State Fully Protected
- SSC State Species of Special Concern

CNDDB Global/State Rankings

The CNDDB provides global and state rankings for species and communities based on a system developed by The Nature Conservancy to measure rarity of a species. The ranking provides a shorthand formula about how rare a species/community is and is based on the best information available from multiple sources, including state and federal listings, and other groups that recognize species as sensitive (e.g., Bureau of Land Management, Audubon Society, etc.). State and global rankings are used to prioritize conservation and protection efforts so that the rarest species/communities receive immediate attention. In both cases, the lower ranking (i.e., G1 or S1) indicates extreme rarity. Rare species are given a ranking from 1 to 3. Species with a ranking of 4 or 5 is considered to be common. If the exact global/state ranking is undetermined, a range is generally provided. For example, a global ranking of "G1G3" indicates that a species/community global rarity is between G1 and G3. If the animal being considered is a subspecies of a broader species, a "T" ranking is attached to the global ranking. The following are descriptions of global and state rankings:

Global Rankings

- G1 – Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or because of some factor(s) making it especially vulnerable to extinction.
- G2 – Imperiled globally because of rarity (6-20 occurrences), or because of some other factor(s) making it very vulnerable to extinction throughout its range.
- G3 – Either very rare and local throughout its range (21 to 100 occurrences) or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region), or because of some other factor(s) making it vulnerable to extinction throughout its range.
- G4 – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5 – Common, widespread, and abundant.

State Rankings

- S1 – Extremely rare; typically 5 or fewer known occurrences in the state; or only a few remaining individuals; may be especially vulnerable to extirpation.
- S2 – Very rare; typically between 6 and 20 known occurrences; may be susceptible to becoming extirpated.
- S3 – Rare to uncommon; typically 21 to 50 known occurrences; S3 ranked species are not yet susceptible to becoming extirpated in the state but may be if additional populations are destroyed.
- S4 – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5 – Common, widespread, and abundant in the state.

California Native Plant Society/CNDDB California Rare Plant Ranks

CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. In a collaborative effort with CDFW's CNDDB Project, the CNPS Ninth Edition *Inventory of Rare and Endangered Plants of California* categorizes plants of interest into six California Rare Plant Ranks (CRPR) based on their geographic distribution and potential threats to existing populations. The CNPS Inventory is used by CDFW as the candidate species list for plants that may be listed as state Threatened and Endangered. The six categories of rarity are summarized in Table 3-1.

Table 3-1. CRPR Ranks 1, 2, 3, & 4, and Threat Code Extensions

CRPR Rank	Comments
Rank 1A – Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere	Thought to be extinct in California based on a lack of observation or detection for many years.
Rank 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere	Species, which are generally rare throughout their range that are also judged to be vulnerable to other threats such as declining habitat.
Rank 2A – Plants presumed Extirpated in California, But Common Elsewhere	Species that are presumed extinct in California but more common outside of California
Rank 2B – Plants Rare, Threatened or Endangered in California, But More Common Elsewhere	Species that are rare in California but more common outside of California
Rank 3 – Plants About Which More Information Is Needed (A Review List)	Species that are thought to be rare or in decline but CNPS lacks the information needed to assign to the appropriate list. In most instances, the extent of surveys for these species is not sufficient to allow CNPS to accurately assess whether these species should be assigned to a specific rank. In addition, many of the Rank 3 species have associated taxonomic problems such that the validity of their current taxonomy is unclear.

CRPR Rank	Comments
Rank 4 – Plants of Limited Distribution (A Watch List)	Species that are currently thought to be limited in distribution or range whose vulnerability or susceptibility to threat is currently low. In some cases, as noted above for Rank 3 species, CNPS lacks survey data to accurately determine status in California. Many species have been placed on Rank 4 in previous editions of the "Inventory" and have been removed as survey data has indicated that the species are more common than previously thought. CNPS recommends that species currently included on this list should be monitored to ensure that future substantial declines are minimized.
Extension	**Comments**
.1 – Seriously endangered in California	Species with over 80% of occurrences threatened and/or have a high degree and immediacy of threat.
.2 – Fairly endangered in California	Species with 20-80% of occurrences threatened.
.3 – Not very endangered in California	Species with <20% of occurrences threatened or with no current threats known.

3.3 Jurisdictional Waters

3.3.1 Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a) as:

(1) Waters which are:

(i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(ii) The territorial seas; or

(iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraphs (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

Corps regulations at 33 CFR Part 328.3(b) exclude the following from being "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5) above:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(c)(4) as:

> ...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

"Adjacent" wetlands are defined by 33 CFR 328.3(c)(2) as those wetlands "having a continuous surface connection" to other waters of the United States.

Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(c)(1) as "areas that are inundated or saturated by surface or ground water at a frequency and duration

sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In 1987 the Corps published the Wetland Manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the Wetland Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Wetland Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be hydrophytic in nature as published in the most current national wetland plant list;

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the Wetland Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

3.3.2 Regional Water Quality Control Board

The State Water Resource Control Board and each of its nine Regional Boards regulate the discharge of waste (dredged or fill material) into waters of the United States[1] and waters of the state. Waters of the United States are defined above in Section II.A and waters of the state are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]).

Section 401 of the CWA requires certification for any federal permit or license authorizing impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as Section 404 of the CWA and Section 10 of the Safe Rivers and Harbors Act, to ensure that the impacts do not violate state water quality standards. When a project could impact waters outside of federal jurisdiction, the Regional Board has the authority under the Porter-Cologne Water

[1] Therefore, wetlands that meet the current definition, or any historic definition, of waters of the U.S. are waters of the state. In 2000, the State Water Resources Control Board determined that all waters of the U.S. are also waters of the state by regulation, prior to any regulatory or judicial limitations on the federal definition of waters of the U.S. (California Code or Regulations title 23, section 3831(w)). This regulation has remained in effect despite subsequent changes to the federal definition. Therefore, waters of the state includes features that have been determined by the U.S. Environmental Protection Agency (U.S. EPA) or the U.S. Army Corps of Engineers (Corps) to be "waters of the U.S." in an approved jurisdictional determination; "waters of the U.S." identified in an aquatic resource report verified by the Corps upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of "waters of the U.S." or any current or historic federal regulation defining "waters of the U.S." under the federal Clean Water Act.

Quality Control Act to issue Waste Discharge Requirements (WDRs) to ensure that impacts do not violate state water quality standards. Clean Water Act Section 401 Water Quality Certifications, WDRs, and waivers of WDRs are also referred to as orders or permits.

State Wetland Definition

The Water Boards define an area as wetland as follows: "An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation."

The following wetlands are waters of the state:

1. Natural wetlands;
2. Wetlands created by modification of a surface water of the state;[2] and
3. Artificial wetlands[3] that meet any of the following criteria:

    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):

        i. Industrial or municipal wastewater treatment or disposal,
        ii. Settling of sediment,
        iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
        iv. Treatment of surface waters,
        v. Agricultural crop irrigation or stock watering,
        vi. Fire suppression,
        vii. Industrial processing or cooling,

[2] "Created by modification of a surface water of the state" means that the wetland that is being evaluated was created by modifying an area that was a surface water of the state at the time of such modification. It does not include a wetland that is created in a location where a water of the state had existed historically, but had already been completely eliminated at some time prior to the creation of the wetland. The wetland being evaluated does not become a water of the state due solely to a diversion of water from a different water of the state.
[3] Artificial wetlands are wetlands that result from human activity.

viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
ix. Log storage,
x. Treatment, storage, or distribution of recycled water, or
xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
xii. Fields flooded for rice growing.[4]

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

3.3.3 California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as "a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators."

It is important to note that the Fish and Game Code defines wildlife to include "all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities, including the habitat upon which they depend for continued viability" (FGC Division 0.5, Chapter 1, section 89.5. Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

3.3.4 California Coastal Commission

The California Coastal Commission (CCC) regulates the diking, filling, or dredging of wetlands within the coastal zone. The Coastal Act Section 30121 defines "wetlands" as land "which may

[4] Fields used for the cultivation of rice (including wild rice) that have not been abandoned due to five consecutive years of non-use for the cultivation of rice (including wild rice) that are determined to be a water of the state in accordance with these Procedures shall not have beneficial use designations applied to them through the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, except as otherwise required by federal law for fields that are considered to be waters of the United States. Further, agricultural inputs legally applied to fields used for the cultivation of rice (including wild rice) shall not constitute a discharge of waste to a water of the state. Agricultural inputs that migrate to a surface water or groundwater may be considered a discharge of waste and are subject to waste discharge requirements or waivers of such requirements pursuant to the Water Board's authority to issue or waive waste discharge requirements or take other actions as applicable.

be covered periodically or permanently with shallow water." The 1998 CCC Statewide Interpretive Guidelines state that hydric soils and hydrophytic vegetation "are useful indicators of wetland conditions, but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetlands under the Coastal Act. In the past, the Commission has considered all relevant information in making such determinations and relied upon the advice and judgment of experts before reaching its own independent conclusion as to whether a particular area will be considered wetland under the Coastal Act. The Commission intends to continue to follow this policy."

Areas regulated by the Corps, RWQCB, CDFW and CCC are often not coincident due to the different goals of the respective regulatory programs and because these agencies use different definitions for determining the extent of wetland areas. The Corps requires that under normal circumstances, all three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) be present for an area to be considered as a jurisdictional wetland; however, the CCC policy provides for a positive determination for the presence of wetlands based on the presence of any one of the three criteria.

4.0 RESULTS

This section provides the results of general biological surveys, vegetation mapping, habitat assessments and focused surveys for special-status plants, habitat assessments and focused surveys for special-status animals, and a jurisdictional assessment for Waters of the United States (including wetlands) subject to the jurisdiction of the Corps and Regional Board, streams (including riparian vegetation) and lakes subject to the jurisdiction of CDFW, and wetlands subject to the jurisdiction of the CCC.

4.1 Existing Conditions

The Study Area is located within the Hellman Property oil field and consists of disturbed land with existing oil wells, and pipes, and associated infrastructure, internal roads, and open fields. The vegetation communities are generally disturbed with a substantial component of non-native species. The topography is flat, with elevations ranging from 2 feet above mean sea level (AMSL) in the southeast portion of the Study Area to 8 feet AMSL in the northwest portion of the study area. Soils within the Study Area consist of Bolsa silty clay loam [Exhibit 5 – Soil Map]. Annual average rainfall for the region totals about 12 inches, average annual high temperature is 74 degrees, and average annual low temperature is 56 degrees.[5]

Under existing conditions in the Study Area, areas within 100 feet of oil wells, electrical equipment, and associated facilities are subject to required maintenance/mowing due to fire risk. Fuel modification areas are periodically maintained to remove any vegetation that presents a fire hazard, but these areas support annual grasses and forbs such as ripgut (*Bromus diandrus*), wild oats (*Avena barbata*), hare barley (*Hordeum murinum* ssp. *leporinum*), five-hook bassia (*Bassia hyssopifolia*), and southern tarplant (*Centromadia parryi* ssp. *australis*) that can reestablish

[5] Data for Long Beach Daugherty Field for 1991–2020: https://www.ncei.noaa.gov/access/us-climate-normals/#dataset=normals-annualseasonal&timeframe=30&station=USW00023129

during the interval between maintenance events. Some of the fuel modification areas also include limited amounts of saltgrass and alkali heath. The 100-foot width of the fuel modification zones was determined in consultation with Orange County Fire Authority (OCFA) and California Geologic Energy Management Division (CalGEM).

In December 2022 and February 2023, Southern California Edison powerlines fell within and near the Study Area. Emergency repairs were completed without incident, including fire or damage to oil field facilities, but these events underscore the need for periodic fuel modification on the Hellman Property.

4.2 Vegetation Mapping

The Study Area supports 16 different land use and vegetation types with varying degrees of disturbance as summarized in Table 4-1 below. Where vegetation types are mapped to association, both the alliance and association are listed. Descriptions of each vegetation type follow the table. A Vegetation Map is attached as Exhibit 6a. Photographs depicting the Project site are shown in Exhibit 7.

Table 4-1. Summary of Vegetation/Land Use Types for the Study Area

VEGETATION/ LAND USE TYPE	Code	Rank	Total Study Area (acres)
Alkali heliotrope fields	--	--	0.12
Annual grassland/ herbaceous semi-natural stands	--	--	1.20
Baccharis pilularis shrubland alliance	32.060.23	S5	0.05
Disturbed *Baccharis pilularis* shrubland alliance	63.510.00	S5	0.35
Bassia hyssopifolia association	42.015.02	--	3.54
Castor bean stands	--	--	0.05
Cressa truxillensis-Distichlis spicata herbaceous alliance	46.100.09	S2	0.20
Distichlis spicata – annual grasses	41.200.13	S4	3.23
Disturbed/Developed	--	--	2.51
Malvella leprosa fields	--	--	0.11
Mixed shrub seminatural stands	--	--	0.04
Ornamental	--	--	0.01
Raphanus sativus association	--	--	0.18
Salix lasiolepis – Baccharis salicifolia shrubland alliance	61.201.06	S4	0.58
Tree tobacco stands	--	--	0.27
Total			**12.46**

Alkali heliotrope fields

The Study Area supports approximately 1.11 acre of nearly monocultural alkali heliotrope (*Heliotropium curassavicum*). There is no corresponding alliance in the Natural Communities List for this vegetation type and no state rarity rank.

Annual grassland/herbaceous semi-natural stands

The Study Area supports approximately 1.20 acre of disturbed areas vegetated with a mix of five-hook bassia (*Bassia hyssopifolia*) and non-native annual grasses including Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), ripgut (*Bromus diandrus*), wild oat (*Avena barbata*), and hare barley (*Hordeum murinum* ssp. *leporinum*). Southern tarplant (*Centromadia parryi* ssp. *australis*, CRPR 1B.1) is also present in this area. There is no corresponding alliance in the Natural Communities List for this vegetation type and no state rarity rank.

***Baccharis pilularis* shrubland alliance (coyote brush scrub)**

- ***Baccharis pilularis* (32.060.23)**

The Study Area supports an approximately 0.05-acre area along a pipeline consisting of dense coyote brush (*Baccharis pilularis*) with a few individuals of tree tobacco (*Nicotiana glauca*) and mulefat (*Baccharis salicifolia*). The membership rule for this alliance states that *Baccharis pilularis* must have greater than 50 percent absolute cover in the shrub layer. This alliance has a state rarity rank of S5.

Disturbed *Baccharis pilularis* shrubland alliance (coyote brush scrub)

The Study Area supports approximately 0.35 acre of disturbed coyote brush scrub that is within the 100-foot buffer but located off site in the Los Cerritos Wetlands property. This area consists of coyote brush with roughly 30–40 percent cover, with other component species being non-native invasives including including black mustard (*Brassica nigra*) and poison hemlock (*Conium maculatum*). The membership rule for this alliance states that *Baccharis pilularis* must have greater than 50 percent absolute cover in the shrub layer; nevertheless, this area is characterized as disturbed coyote brush scrub because it is the single most dominant species. This alliance has a state rarity rank of S5.

***Salsola tragus – Isatis tinctoria – Bassia spp*. semi-natural alliance (Russian thistle – dyers woad – five-hook bassia fields)**

- ***Bassia hyssopifolia* (42.015.02)**

The Study Area supports 3.54 acres in which five-hook bassia is either a dominant or co-dominant species. Other component species include crown daisy (*Glebionis coronaria*), summer mustard (*Hirschfeldia incana*), perennial pepperweed, stinkwort (*Dittrichia graveolens*), and alkali heliotrope. This alliance is listed in the Pending Additions to the Natural Community List, and therefore is not included in MCVII. CDFW states that "Vegetation scientists at NatureServe, the California Native Plant Society, and CDFW determine non-native stands based on a rule of at least 90% cover of non-native species without evenly distributed or diverse native forbs and grasses at any time in the growing season" (CDFW 2022d). These areas exhibit 90-percent cover

of non-native species overall, with alkali heliotrope being the only native species present with very limited cover. This alliance does not have a state rarity rank.

Castor Bean stands

The Study Area supports 0.05 acre of nearly monocultural castor bean (*Ricinus communis*). There is no corresponding alliance in the Natural Communities List for this vegetation type and no state rarity rank.

***Cressa truxillensis–Distichlis spicata* herbaceous alliance (alkali weed – salt grass playas and sinks)**

- ***Cressa truxillensis* (46.100.09)**

The Study Area supports 0.20 acre of monocultural alkali weed. The membership rules for this alliance state that *Cressa truxillensis*, *Crypsis schoenoides*, or *Distichlis spicata* are usually abundant in the herbaceous layer. The *Cressa truxillensis* association is a provisional designation with no rarity rating; however, the alliance has an S2 rarity rank, and as such CDFW identifies it as a sensitive natural community.

***Distichlis spicata* herbaceous alliance (salt grass flats)**

- ***Distichlis spicata* – annual grasses (41.200.13)**

The Study Area supports approximately 3.23 acres dominated by *Distichlis spicata* but with a substantial component of annual grasses ranging from 5 to 45 percent relative cover, including ripgut, wild oat, hare barley, and Mediterranean barley. Southern tarplant is also present. This area also has a few small, isolated patches of alkali heath that are not large enough to comprise a separate mapping unit. The membership rules for this alliance require that *Distichlis spicata* have greater than 50 percent relative cover in the herbaceous layer, and higher cover than any other grass species. The *Distichlis spicata* – annual grasses association has no state rarity rank; however, the alliance has an S4 rarity rank.

Disturbed/Developed

The Study Area includes 2.51 acres of disturbed/developed lands, which consist of vehicular access roads, oil wells and associated infrastructure, and bare ground. Some southern tarplant occurs on road margins and otherwise unvegetated areas.

***Malvella leprosa* fields**

The Study Area includes a 0.11-acre area of nearly monocultural alkali mallow (*Malvella leprosa*). There is no corresponding alliance in the Natural Communities List for this vegetation type and no state rarity rank.

Mixed Shrub Seminatural Stands

This vegetation type is limited to a 0.04-acre disturbed area of stockpiled broken concrete and other debris. Component species consist of coyote brush, pampas grass (*Cortaderia* sp.), and tree tobacco in approximately equal proportions. There is no corresponding alliance in the Natural Communities List for this vegetation type and no state rarity rank.

Ornamental

This vegetation type consists of a single Canary Island date palm (*Phoenix canariensis*) covering 0.01 acre.

***Brassica nigra – Centaurea* semi-natural alliance (upland mustards or star-thistle fields)**

- ***Raphanus sativus* (42.011.04)**

The Study Area supports approximately 0.18 acre of nearly monocultural wild radish (*Raphanus sativus*). The membership rules for this alliance require that the mustard species be dominant in the herbaceous layer. There is no state rarity rank for this alliance.

***Salix lasiolepis* shrubland alliance (arroyo willow thickets)**

- ***Salix lasiolepis – Baccharis salicifolia* (61.201.06)**

The 100-foot buffer includes a 0.58-acre portion of the water quality basin associated with the Heron Pointe residential development, which is subject to periodic maintenance. Dominant species in the tree and shrub layers of the basin include *Salix lasiolepis* and *Baccharis salicifolia*. The membership rules for this alliance state that *Salix lasiolepis* must have greater than 50 percent relative cover in the tree canopy. The state rarity rank for the alliance and association are both S4.

Tree Tobacco Stands

The Study Area supports 0.27 acre of nearly monocultural tree tobacco. There is no corresponding alliance in the Natural Communities List for this vegetation type, and no state rarity rank.

4.3 Special-Status Vegetation Communities

The CNDDB identifies the following five special-status vegetation communities for the Los Alamitos, Seal Beach, Long Beach, South Gate, Whittier, La Habra, Anaheim, and Newport Beach quadrangle maps: Southern Foredunes, Southern Dune Scrub, Southern Coastal Salt Marsh, Southern Cottonwood Willow Riparian Forest, California Walnut Woodland.

The Study Area contains one special-status vegetation type, the *Cressa truxillensis–Distichlis spicata* herbaceous alliance, which has an S2 rarity rating.

4.4 Special-Status Plants

One special-status plant species, southern tarplant (*Centromadia parryi* ssp. *australis*), was detected in the Study Area in 2022, and a second species, Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) was detected in the Study Area in 2023. Both of these species were previously detected in the Study Area during focused surveys conducted in 2009 and 2010, and southern tarplant is also known historically from other locations on the Hellman Property and Los Cerritos Wetlands. Table 4-2 provides a list of special-status plants evaluated for the Project site through general biological surveys, habitat assessments, and focused surveys. Species were evaluated based on the following factors: 1) species identified by the CNDDB and CNPS as occurring (either currently or historically) on or in the vicinity of the Study Area, and 2) any other special-status plants that are known to occur within the vicinity of the Study Area, or for which potentially suitable habitat occurs within the site.

Table 4-2. Special-Status Plants Evaluated for the Study Area

Species	Status	Habitat	Potential for Occurrence
Aphanisma *Aphanisma blitoides*	Federal: None State: None CRPR: 1B.2	Sandy soils in coastal bluff scrub, coastal dunes, and coastal scrub.	Does not occur due to a lack of suitable habitat.
Brand's star phacelia *Phacelia stellaris*	Federal: None State: 1B.1 CRPR: 1B.1	Coastal scrub, coastal dunes.	Does not occur due to a lack of suitable habitat.
California box-thorn *Lycium californicum*	Federal: None State: None CRPR: 4.2	Coastal bluff scrub, coastal scrub.	Does not occur due to a lack of suitable habitat.
California Orcutt grass *Orcuttia californica*	Federal: FE State: SE CRPR: 1B.1	Vernal pools	Does not occur due to a lack of suitable habitat.
Catalina mariposa lily *Calochortus catalinae*	Federal: None State: None CRPR: 4.2	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland.	Does not occur due to a lack of suitable habitat.
Chaparral sand verbena *Abronia villosa* var. *aurita*	Federal: None State: None CRPR: 1B.1	Sandy soils in chaparral, coastal sage scrub.	Does not occur due to a lack of suitable habitat.
Coast woolly-heads *Nemacaulis denudata* var. *denudata*	Federal: None State: None CRPR: 1B.2	Coastal dunes.	Does not occur. This species is known from the vicinity of the Project site; however, no suitable habitat is present in the Study Area.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CRPR:1B.1	Playas, vernal pools, marshes and swamps (coastal salt).	Confirmed present in the Study Area in 2009, 2010, and 2023.

Species	Status	Habitat	Potential for Occurrence
Coulter's saltbush *Atriplex coulteri*	Federal: None State: None CRPR: 1B.2	Coastal bluff scrub, coastal dunes, coastal sage scrub, valley and foothill grassland. Occurring on alkaline or clay soils.	Does not occur due to a lack of suitable habitat
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	Federal: None State: None CRPR: 1B.2	Alkaline soils in coastal sage scrub, coastal bluff scrub.	Does not occur due to a lack of suitable habitat.
Decumbent goldenbush *Isocoma menziesii* var. *decumbens*	Federal: None State: None CRPR: 1B.2	Chaparral, coastal scrub (sandy, often in disturbed areas)	Confirmed absent.
Estuary seablite *Suaeda esteroa*	Federal: None State: None CRPR: 1B.2	Coastal salt marsh and swamps. Occurs in sandy soils.	Does not occur due to a lack of suitable habitat r.
Gambel's water cress *Nasturtium gambelii*	Federal: FE State: ST CRPR: 1B.1	Marshes and swamps.	Does not occur due to a lack of suitable habitat.
Horn's milk-vetch *Astragalus hornii* var. *hornii*	Federal: None State: None CRPR: 1B.1	Lake margins with alkaline soils, meadows and seeps, and playas.	Does not occur. This species is known from the vicinity of the Project site; however, the known populations are assumed to be extirpated and no suitable habitat is present in the Study Area.
Intermediate mariposa-lily *Calochortus weedii* var. *intermedius*	Federal: None State: None CRPR: 1B.2	Coastal scrub, chaparral, valley and foothill grassland.	Does not occur due to a lack of suitable habitat.
Lewis' evening-primrose *Camissoniopsis lewisii*	Federal: None State: None CRPR: 3	Sandy or clay soils in coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland.	Does not occur.
Los Angeles sunflower *Helianthus nuttallii* ssp. *parishii*	Federal: None State: None CRPR: 1A	Salt and freshwater marshes, historically in Los Angeles, Orange, Riverside and San Bernardino Counties. Presumed to be extinct. Plant discovered in Santa Clarita most likely hybrid between *H. nuttallii* and *H. californicus*.	Does not occur and is presumed to be extinct.
Lucky morning-glory *Calystegia felix*	Federal: None State: None CRPR: 1B.1	Meadows and seeps, riparian scrub.	Does not occur due to a lack of suitable habitat.

Species	Status	Habitat	Potential for Occurrence
Lyon's pentachaeta *Pentachaeta lyonii*	Federal: FE State: SE CRPR: 1B.1	Chaparral (openings), coastal sage scrub, valley and foothill grassland.	Does not occur due to a lack of suitable habitat.
Many-stemmed dudleya *Dudleya multicaulis*	Federal: None State: None CRPR: 1B.2	Chaparral, coastal sage scrub, valley and foothill grassland. Often occurring in clay soils.	Does not occur due to a lack of suitable habitat.
Mud nama *Nama stenocarpum*	Federal: None State: None CRPR: 2B.2	Vernal pools and freshwater seasonal ponds.	Does not occur due to a lack of suitable habitat.
Parish's brittlescale *Atriplex parishii*	Federal: None State: None CRPR: 1B.1	Chenopod scrub, playas, vernal pools.	Does not occur due to a lack of suitable habitat.
Plummer's mariposa-lily *Calochortus plummerae*	Federal: None State: None CRPR: 4.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest.	Does not occur due to a lack of suitable habitat.
Prostrate vernal pool navarretia *Navarretia prostrata*	Federal: None State: None CRPR: 1B.1	Coastal sage scrub, valley and foothill grassland (alkaline), vernal pools. Occurring in mesic soils.	Does not occur due to a lack of suitable habitat.
Red sand-verbena *Abronia maritima*	Federal: None State: None CRPR: Rank 4.2	Coastal dunes.	Does not occur due to a lack of suitable habitat.
Salt marsh bird's-beak *Chloropyron maritimus* ssp. *maritimus*	Federal: FE State: SE CRPR:1B.2	Coastal dune, coastal salt marshes and swamps.	Does not occur due to a lack of suitable habitat.
Salt spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None CRPR:2B.2	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub.	Does not occur due to a lack of suitable habitat.
San Bernardino aster *Symphyotrichum defoliatum*	Federal: None State: None CRPR:1B.2	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas.	Does not occur due to a lack of suitable habitat.
San Diego button-celery *Eryngium aristulatum* var. *parishii*	Federal: FE State: SE CRPR: 1B.1	Mesic soils in vernal pools, valley and foothill grasslands, coastal sage scrub.	Does not occur due to a lack of suitable habitat.
Sanford's arrowhead *Sagittaria sanfordii*	Federal: None State: None CRPR: 1B.2	Marshes and swamps (assorted shallow freshwater).	Does not occur due to a lack of suitable habitat.
Seaside cistanthe *Cistanthe maritima*	Federal: None State: None CRPR: 4.2	Sandy soils in coastal bluff scrub, coastal scrub, and valley and foothill grassland.	Does not occur due to a lack of suitable habitat.

Species	Status	Habitat	Potential for Occurrence
Small-flowered morning-glory *Convolvulus simulans*	Federal: None State: None CRPR: 4.2	Chaparral (openings), coastal sage scrub, valley and foothill grassland. Occurring on clay soils and serpentinite seeps.	Does not occur due to a lack of suitable habitat.
Small spikerush *Eleocharis parvula*	Federal: None State: None CRPR: 4.3	Marshes and swamps.	Does not occur due to a lack of suitable habitat.
South coast saltscale *Atriplex pacifica*	Federal: None State: None CRPR: 1B.2	Coastal bluff scrub, coastal dunes, coastal sage scrub, playas.	Does not occur due to a lack of suitable habitat.
South coast branching phacelia *Phacelia ramosissima* var. *austrolitoralis*	Federal: None State: None CRPR: 3.2	Sandy, sometimes rocky soils in chaparral, coastal dunes, coastal scrub, and marshes and swamps (coastal salt)	Does not occur due to a lack of suitable habitat.
Southern tarplant *Centromadia parryi* ssp. *australis*	Federal: None State: None CRPR: 1B.1	Disturbed habitats, margins of marshes and swamps, vernally mesic valley and foothill grassland, vernal pools.	Confirmed present within the Study Area in 2009, 2010, and 2022.
Southwestern spiny rush *Juncus acutus* ssp. *leopoldii*	Federal: None State: None CRPR: 4.2	Coastal dunes (mesic), meadows and seeps (alkaline seeps), and marshes and swamps (coastal salt).	Does not occur due to a lack of suitable habitat.
Ventura Marsh milk-vetch *Astragalus pycnostachyus* var. *lanosissimus*	Federal: FE State: SE CRPR: 1B.1	Coastal salt marsh. Within reach of high tide or protected by barrier beaches, more rarely near seeps on sandy bluffs.	Does not occur due to a lack of suitable habitat.
Vernal barley *Hordeum intercedens*	Federal: None State: None CRPR: 3.2	Coastal dunes, coastal sage scrub, valley and foothill grassland (saline flats and depressions), vernal pools.	Does not occur due to a lack of suitable habitat.
Woolly seablite *Suaeda taxifolia*	Federal: None State: None CRPR: 4.2	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt).	Does not occur due to a lack of suitable habitat.

STATUS

Federal
FE – Federally Endangered
FT – Federally Threatened
FC – Federal Candidate

State
SE – State Endangered
ST – State Threatened

CRPR
Rank 1A – Plants presumed extirpated in California and either rare or extinct elsewhere.
Rank 1B – Plants rare, threatened, or endangered in California and elsewhere.
Rank 2A – Plants presumed extirpated in California, but common elsewhere.
Rank 2B – Plants rare, threatened, or endangered in California, but more common elsewhere.
Rank 3 – Plants about which more information is needed (a review list).
Rank 4 – Plants of limited distribution (a watch list).

Threat Code extension
.1 – Seriously endangered in California (over 80% occurrences threatened)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

OCCURRENCE

- Does not occur – The site does not contain habitat for the species and/or the site does not occur within the geographic range of the species.
- Confirmed absent – The site contains suitable habitat for the species, but the species has been confirmed absent through focused surveys.
- Not expected to occur – The species is not expected to occur onsite due to low habitat quality, however absence cannot be ruled out.
- Potential to occur – The species has a potential to occur based on suitable habitat, however its presence/absence has not been confirmed.
- Confirmed present – The species was detected onsite incidentally or through focused surveys

4.4.1 Special-Status Plants Detected at the Project Site

Southern Tarplant (*Centromadia parryi* ssp. *australis*) is a CRPR 1B.1 species, indicating that it is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California. This species is an annual herb in the sunflower family that blooms from May to November. It is adapted to and thrives in disturbed areas, and it also occurs in vernal pools, alkali playas, alkali grasslands, and along the margins of salt marshes. This species is very distinctive and flowers as early as June and sometimes into October or November.

A population of approximately 1,072 individuals was detected during focused surveys in the Study Area in 2022, of which 457 were in areas subject to ongoing fuel modification and 615 were not in fuel modification areas. Exhibit 8a depicts the locations of southern tarplant within the Study Area, including the locations of southern tarplant observed in 2009 and 2010. Exhibit 8b depicts additional populations of southern tarplant detected outside the Study Area in 2022 and historic tarplant locations surveyed in the 2000s on the Hellman Property and in the portions of the Los Cerritos Wetlands previously under Hellman Property ownership.

It should be noted that rainfall in 2022 was below average. The National Weather Service cooperative observer station in Long Beach, CA recorded rainfall at 62 percent of average for the 2021-2022 water year.[6] This may have resulted in reduced germination of the southern tarplant seedbank. However, in 2022 tarplant generally occurred in the same locations mapped in 2009 and 2010, when rainfall at the Long Beach station was at 73 and 121 percent of average, respectively.[7] Tarplant data collected in 2009 and 2010 includes only general distributional polygons, and not a numerical census of the population, so a comparison of 2022 tarplant abundance to 2009 and 2010 tarplant abundance is not possible; however, given that the tarplant was mapped in 2022 in the same general locations on the extreme northwest end of the study

[6] https://www.cnrfc.noaa.gov/monthly_precip_2022.php
[7] 2009 data: https://www.cnrfc.noaa.gov/monthly_precip_2009.php; 2010 data: https://www.cnrfc.noaa.gov/monthly_precip_2010.php

area as previous years, and was also mapped in new locations in the eastern end of the western field, it is evident that tarplant germinated sufficiently in 2022 to evaluate Project-related impacts.

Coulter's Goldfields (*Lasthenia glabrata* ssp. *coulteri*) is a CRPR 1B.1 species, indicating that it is rare, threatened, or endangered in California and elsewhere and is seriously endangered in California. This annual member of the sunflower family occurs in salt marsh areas near the coast at the extreme upper end of tidal inundation. It has also been noted on the periphery of vernal pools such as near Miramar Airfield and in alkali marshes and meadows in the inland valleys of western Riverside County.

Focused surveys conducted in 2023 detected Coulter's goldfields in the Study Area in approximately the same location as previous focused surveys conducted by GLA in 2009 and 2010 [Exhibit 8a]. The Coulter's goldfields nearest the proposed Project footprint are located between 36 and 73 feet away.

Rainfall preceding and between the two focused survey visits on February 17 and March 7, 2023, totaled 6.32 inches in January 2023 and 2.90 inches in February 2023. The average rainfall during 1991–2020 for January was 2.89 inches and February was 3.02 inches, indicating that rainfall for January and February 2023 combined was above the 30-year average.[8] As such, the population of Coulter's goldfields mapped during surveys likely represents the maximum extent of the population present in the Study Area.

4.4.2 Special-Status Plants Confirmed Absent Through Focused Surveys at the Project Site

Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)

Decumbent goldenbush is a CRPR 1B.2 species, indicating that it is rare, threatened, or endangered in California and elsewhere, and is fairly endangered in California. This perennial member of the sunflower family occurs in coastal scrub and chaparral in sandy soils and is often in disturbed areas. This distinctive variety of goldenbush was included as a target species for focused surveys because it is known from disturbed areas in coastal southern California. Decumbent goldenbush was not detected during focused surveys.

4.5 Special-Status Animals

One special-status animal species, least Bell's vireo (*Vireo bellii pusillus*) was detected in the Study Area during general and focused surveys for the Project. Several other special-status animals are known to occur from past biological surveys in and around the Hellman Property. Table 4-3 provides a list of special-status animals evaluated for the Project site through general biological surveys, habitat assessments, and focused surveys. Species were evaluated based on the following factors, including: 1) species identified by the CNDDB as occurring (either currently or historically) on or in the vicinity of the Study Area, and 2) any other special-status

[8] https://www.ncei.noaa.gov/access/us-climate-normals/#dataset=normals-monthly&timeframe=30&station=USW00023129

animals that are known to occur within the vicinity of the Study Area, for which potentially suitable habitat occurs on the site.

Table 4-3. Special-Status Animals Evaluated for the Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
INVERTEBRATES			
Crotch bumble bee *Bombus crotchii*	Federal: None State: SC	Relatively warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert.	Does not occur due to a lack of suitable habitat and high degree of disturbance in Study Area.
Dorothy's El Segundo Dune weevil *Trigonoscuta dorothea dorothea*	Federal: None State: None	Sand dunes in El Segundo, CA.	Does not occur due to a lack of suitable habitat.
Globose dune beetle *Coelus globosus*	Federal: None State: None	Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	Does not occur due to a lack of suitable habitat.
Mimic tryonia (California brackish water snail) *Tryonia imitator*	Federal: None State: None	Coastal areas with brackish waters.	Does not occur due to a lack of suitable habitat.
Monarch – California overwintering population *Danaus plexippus plexippus* pop. 1	Federal: FC State: None	Roosts in winter in wind-protected tree groves along the California coast from northern Mendocino to Baja California, Mexico.	Does not occur. Known wintering population in nearby Gum Grove Park, but no wintering habitat present in the Study Area.
Palos Verdes blue butterfly *Glaucopsyche lygdamus palosverdesensis*	Federal: FE State: None	Locoweed and deerweed in the Palos Verdes Peninsula.	Does not occur due to a lack of suitable habitat and larval host plants.
Riverside fairy shrimp *Streptocephalus wootoni*	Federal: FE State: None	Deep seasonal vernal pools, with warm water, and low to moderate dissolved solids, that remained filled for extended periods of time. Annual grasslands or patches.	Does not occur due to a lack of suitable vernal pool habitat.
Salt marsh wandering skipper *Panoquina errans*	Federal: None State: None ICUN: NT (near threatened)	Coastal salt marsh and coastal strand areas dominated by saltgrass.	Confirmed absent.
San Diego fairy shrimp *Branchinecta sandiegonensis*	Federal: FE State: None	Seasonal vernal pools.	Does not occur due to a lack of suitable vernal pool habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Sandy beach tiger beetle *Cicindela hirticollis gravida*	Federal: None State: None	Coastal dunes.	Does not occur due to a lack of suitable habitat.
Senile tiger beetle *Cicindela senilis frosti*	Federal: None State: None	Forages in open unvegetated areas such as marsh pans and levees.	Does not occur due to a lack of suitable habitat.
Western beach tiger beetle *Cicindela latesignata*	Federal: None State: None	Mudflats and beaches.	Does not occur due to a lack of suitable habitat.
Western tidal-flat tiger beetle *Habroscelimorpha gabbii*	Federal: None State: None	Open, unvegetated areas in or near salt marshes.	Does not occur due to a lack of suitable habitat.
AMPHIBIANS			
Arroyo toad *Anaxyrus californicus*	Federal: FE State: SSC	Historically along length of drainages; currently in headwaters, sandy washes and arroyos grown to willows, cottonwoods or sycamores.	Does not occur due to a lack of suitable habitat.
California red-legged frog *Rana draytonii*	Federal: FT State: SSC	Permanent flowing water sources, including marshes, streams, lakes ponds; woodland or valley foothill grasslands; sufficient vegetative cover	Does not occur due to a lack of suitable habitat.
Western spadefoot toad *Spea hammondi*	Federal: None State: SSC	Coastal sage scrub, vernal pools, and grasslands; breeds in associated temporary pools and riparian areas.	Does not occur due to a lack of suitable habitat.
REPTILES			
Coast horned lizard *Phrynosoma blainvillii*	Federal: None State: SSC	Occurs in a variety of vegetation types including coastal sage scrub, chaparral, annual grassland, oak woodland, and riparian woodlands.	Does not occur due to a lack of suitable habitat.
Coast patch-nosed snake *Salvadora hexalepis virgultea*	Federal: None State: SSC	Open areas within coastal sage scrub, chaparral, grassland, desert scrub, washes, sand flats, & rocky areas.	Does not occur due to a lack of suitable habitat.
Coastal whiptail *Aspidoscelis tigris stejnegeri*	Federal: None State: SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Orange-throated whiptail *Aspidoscelis hyperythra*	Federal: None State: WL	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes & other sandy areas with patches of brush & rocks. Perennial plants necessary for its major food – termites.	Does not occur due to a lack of suitable habitat.
Pacific green sea turtle *Chelonia mydas*	Federal: FT State: None IUCN: EN	Green turtles are generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae.	Does not occur due to a lack of suitable habitat.
Red diamond rattlesnake *Crotalus ruber*	Federal: None State: SSC	Chapparal, woodland, grassland, & desert areas from coastal San Diego county to the eastern slopes of the mountains. Occurs in rocky areas & dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Does not occur due to a lack of suitable habitat.
Southern California legless lizard *Anniella stebbinsi*	Federal: None State: SSC	Sparse coastal sage scrub, chaparral, grassland, riparian and woodland habitats within moist sandy soil.	Does not occur due to a lack of suitable habitat.
Western pond turtle *Emys marmorata*	Federal: None State: SSC	Slow-moving permanent or intermittent streams, small ponds and lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and treatment lagoons. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Does not occur due to a lack of suitable habitat.
Two-striped garter snake *Thamnophis hammondii*	Federal: None State: SSC	Highly aquatic. Found in freshwater marshes and riparian habitats, in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
BIRDS			
American peregrine falcon *Falco peregrinus anatum*	Federal: None State: FP	Near wetlands, lakes, rivers or other water, on cliffs, banks, dunes, mounds, also human-made structures.	Does not occur due to a lack of suitable habitat.
Bank swallow *Riparia riparia*	Federal: None State: ST	Colonial nester; nests primarily in riparian and other lowland habitats west or the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Does not occur due to a lack of suitable habitat.
Belding's savannah sparrow *Passerculus sandwichensis beldingi*	Federal: None State: SE	Coastal salt marshes. Nests in *Salicornia* sp. in and around margins of tidal flats.	Does not occur. Known from Los Cerritos Wetlands but does not occur in the Study Area due to a lack of suitable habitat.
Bell's sage sparrow *Amphispiza belli belli*	Federal: None State: WL	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above the ground.	Does not occur due to a lack of suitable habitat.
Black skimmer *Rynchops niger*	Federal: None State: SSC	Nests on gravel bars, low islets and sandy beaches, unvegetated sites.	Does not occur due to a lack of suitable habitat.
Burrowing owl *Athene cunicularia*	Federal: None State: SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not expected to occur.
California black rail *Laterallus jamaicensis coturniculus*	Federal: None State: ST, FP	Salt marshes bordering larger bays, coastal spartina marshes, inland in dense, shortgrass, shallow marshes.	Does not occur due to a lack of suitable habitat.
California Brown Pelican *Pelecanus occidentalis californicus*	Federal: Delisted State: Delisted, FP	Coastal, salt bays, ocean, beaches. Nests on coastal islands of small to moderate size that afford immunity from attack by ground-dwelling predators.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
California horned lark *Eremophila alpestris actia*	Federal: None State: WL	Coastal regions in Southern California. Short-grass prairies "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Not expected to occur due to a lack of suitable habitat.
California least tern *Sterna antillarum browni*	Federal: FE State: SE, FP	Flat, vegetated substrates near the coast. Occurs near estuaries, bays, or harbors where fish is abundant.	Does not occur due to a lack of suitable habitat.
Coastal cactus wren *Campylorhynchus brunneicapillus sandiegensis*	Federal: None State: SSC	Southern California coastal sage scrub. Wrens require tall opuntia cactus for nesting and roosting.	Does not occur due to a lack of suitable habitat.
Coastal California gnatcatcher *Polioptila californica californica*	Federal: FT State: SSC	Low elevation coastal sage scrub and coastal bluff scrub.	Does not occur due to a lack of suitable habitat.
Cooper's hawk *Accipiter cooperii*	Federal: None State: WL	Primarily occurs in riparian areas and oak woodlands, most commonly in montane canyons. Known to use urban areas, occupying trees among residential and commercial.	Low potential to occur for foraging only
Ferruginous hawk (wintering) *Buteo regalis*	Federal: None State: WL	Only present as wintering individuals. Prefers open grasslands and agricultural areas.	Low potential to occur for foraging only.
Grasshopper sparrow *Ammodramus savannarum*	Federal: None State: SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes.	Does not occur due to a lack of suitable habitat.
Least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Does not occur in the Project site. Confirmed present in Heron Pointe water quality basin in the Study Area.
Light-footed Ridgway's rail *Rallus obsoletus levipes*	Federal: FE State: SE, FP	Found in salt marshes where cordgrass and pickleweed are the dominant vegetation. Requires dense growth of either pickleweed or cordgrass for nesting or escape cover, feeds on mollusks and crustaceans.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Loggerhead shrike (nesting) *Lanius ludovicianus*	Federal: None State: SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree & riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting with perches for scanning and fairly dense shrubs and brush for nesting.	Confirmed present west of the Study Area within the Hellman Property during a 2008 survey. Moderate potential to occur for foraging only.
Long-eared owl *Asio otus*	Federal: None State: SSC	Riparian bottomlands grown to tall willows & cottonwoods; also belts of live oak paralleling stream courses. Require adjacent open land productive of mice and presence of old nests of crows.	Does not occur due to a lack of suitable habitat.
Merlin (wintering) *Falco columbarius*	Federal: None State: WL	Only present as wintering individuals. Forages in a variety of habitats including riparian areas such as present in the Study Area adjacent to the Project site.	Low potential to occur for foraging only.
Northern harrier (nesting) *Circus hudsonius*	Federal: None State: SSC	A variety of habitats, including open wetlands, grasslands, wet pasture, old fields, dry uplands, and croplands.	Low potential to occur for foraging only.
Osprey (nesting) *Pandion haliaetus*	Federal: None State: WL	Ocean shore, bays, fresh-water lakes, and larger streams. Large nests built in treetops within one mile of a good fish-producing body of water.	Low potential to occur for foraging only.
Short-eared owl (nesting) *Asio flammeus*	Federal: None State: SSC	Found in swamplands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	Low potential to occur for wintering only. Known from Los Cerritos Wetlands.
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	Federal: None State: WL	Resident in Southern California coastal sage scrub and sparse mixed chaparral.	Not expected to occur due to a lack of suitable habitat.
Southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE	Riparian woodlands in southern California.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Swainson's Hawk (nesting) *Buteo swainsoni*	Federal: None State: ST	Breeding habitat consists of grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands. Requires adjacent suitable foraging areas such as grasslands or alfalfa or grain fields that support rodent populations.	Does not occur due to a lack of suitable habitat.
Tricolored blackbird (nesting colony) *Agelaius tricolor*	Federal: None State: ST, SSC	Requires open water, protected nesting & foraging area with insect prey within a few km of the colony.	Does not occur due to a lack of suitable habitat.
Western least bittern (nesting) *Ixobrychus exilis*	Federal: None State: SSC	Colonial nester in marshlands and borders of ponds and reservoirs that provide ample cover. Nests usually placed low in tules over water.	Does not occur due to a lack of suitable habitat.
Western snowy plover (nesting) *Charadrius nivosus nivosus*	Federal: FT State: SSC	Sandy or gravelly beaches along the coast, estuarine salt ponds, alkali lakes, and at the Salton Sea.	Does not occur due to a lack of suitable habitat.
Western yellow-billed cuckoo (nesting) *Coccyzus americanus occidentalis*	Federal: FT State: SE	Dense, wide riparian woodlands with well-developed understories.	Does not occur due to a lack of suitable habitat.
White-tailed kite (nesting) *Elanus leucurus*	Federal: None State: FP	Low elevation open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Dense canopies used for nesting and cover.	Low potential to occur for foraging only.
Yellow-breasted chat *Icteria virens*	Federal: None State: SSC	Summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	Does not occur due to a lack of suitable habitat.
Yellow warbler (nesting) *Setophaga petechia*	Federal: None State: SSC	Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores & alders for nesting & foraging. Also nests in montane shrubbery in open conifer forests.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
MAMMALS			
American badger *Taxidea taxus*	Federal: None State: SSC	Occurs in drier shrub, forest, and herbaceous habitats. Needs open, uncultivated ground and friable soils for digging burrows. Preys on burrowing rodents.	Does not occur due to a lack of suitable habitat.
Big free-tailed bat *Nyctinomops macrotis*	Federal: None State: SSC WBWG: MH	Occurs in low-lying arid areas in Southern California. Roosts in high cliffs or rocky outcrops.	Does not occur due to a lack of suitable habitat.
Hoary bat *Lasiurus cinereus*	Federal: None State: None WBWG: M	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Does not occur due to a lack of suitable habitat.
Pacific pocket mouse *Perognathus longimembris pacificus*	Federal: FE State: SSC	Seems to prefer soils of fine alluvial sands near the ocean.	Does not occur due to a lack of suitable habitat.
San Diego desert woodrat *Neotoma lepida intermedia*	Federal: None State: SSC	Occurs in a variety of shrub and desert habitats, primarily associated with rock outcrops, boulders, cacti, or areas of dense undergrowth.	Does not occur due to a lack of suitable habitat.
Silver-haired bat *Lasionycteris noctivagans*	Federal: None State: None WBWG: M	Temperate, northern hardwoods with ponds or streams nearby. Roost in hollow snags and bird nests.	Does not occur due to a lack of suitable habitat.
South coast marsh vole *Microtus californicus stephensi*	Federal: None State: SSC	Tidal marshes in Los Angeles, Orange and southern Ventura Counties.	Does not occur due to a lack of suitable habitat.
Southern California salt marsh shrew *Sorex ornatus salicornicus*	Federal: None State: SSC	Coastal marshes in Los Angeles, Orange and southern Ventura Counties. Requires dense vegetation and woody debris for cover.	Does not occur due to a lack of suitable habitat.
Western mastiff bat *Eumops perotis californicus*	Federal: None State: SSC WBWG: H	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees, & tunnels.	Does not occur due to a lack of suitable habitat.

STATUS

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FC – Federal Candidate

State
SE – State Endangered
ST – State Threatened
SC– State Candidate
FP – State Fully-Protected Species
SSC – Species of Special Concern
WL – Watch List

Western Bat Working Group (WBWG)
H – High Priority
LM – Low-Medium Priority
M – Medium Priority
MH – Medium-High Priority

OCCURRENCE

- Does not occur – The site does not contain habitat for the species and/or the site does not occur within the geographic range of the species.
- Confirmed absent – The site contains suitable habitat for the species, but the species has been confirmed absent through focused surveys.
- Not expected to occur – The species is not expected to occur onsite due to low habitat quality, however future occurrence cannot be ruled out.
- Potential to occur – The species has a potential to occur based on suitable habitat, however its presence/absence has not been confirmed.
- Confirmed present – The species was detected onsite incidentally or through focused surveys

4.5.1 Special-Status Wildlife Species Observed within the Study Area

Least Bell's Vireo (*Vireo bellii pusillis*) is a state and federally listed endangered songbird that is a summer resident of southern California riparian habitats. This species was detected during biological surveys within the 100-foot buffer portion of the Study Area that extends into the off-site water quality basin to the immediate east of the Study Area. The basin is not part of the Hellman Property, but rather collects runoff from the adjacent Heron Pointe development. Two individual males were detected by vocalization on July 29, August 4, and August 25, 2022.

The Project site and Study Area outside of the water quality basin do not support any riparian habitat suitable for least Bell's vireo, and this species does not occur within the Project site.

4.5.2 Special-Status Wildlife Species Not Observed but Known to Historically Occur in the Immediate Vicinity of the Study Area

Burrowing Owl (*Athene cunicularia*) is a ground-dwelling and ground-nesting bird of prey that inhabits grassy fields, salt marshes, and other areas with flat or gentle topography with moderate to sparse cover. It does not excavate its own burrows, but rather uses rodent burrows and man-made structures such as culverts and pipes. Numerous rodent burrows were detected on the Hellman Property during past surveys; a wintering burrowing owl was reported during site visits conducted on December 9 and 19, 1996 and on January 16, 1997. Follow-up breeding season surveys in spring of 1997 confirmed that this wintering individual had departed the site. This

species was not detected during surveys in 2004 on the Hellman Property for the Tank Farm Relocation project.

As no suitable man-made structures or rodent burrows were observed in the Study Area in 2022, this species is not expected to occur. However, given the historic wintering burrowing owl occurrences in the Hellman Property, future occurrence cannot be ruled out.

4.5.3 Special-Status Wildlife Species Not Observed During Focused Surveys at the Project Site

Wandering Skipper (*Panoquina errans*) is a butterfly species with no state or federal status but is listed as "near threatened" by the International Union for the Conservation of Nature (IUCN).[9] The largest known colony of this species is located at Upper Newport Bay in Orange County. This species occurs in coastal salt marshes of southern California, where it uses saltgrass (*Distichlis spicata*) as a larval host plant. This species likely occurs in the Los Cerritos Wetlands south of the Hellman Property.

No wandering skipper individuals were detected during focused surveys of the Study Area; and this species is not expected to occur in the future based on lack of detection and the disturbed condition of the Study Area, including a low abundance of nectar plants in close proximity to salt grass.

4.5.4 Special-Status Wildlife Species that Occur in the Vicinity of the Study Area

Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) is state listed as endangered and inhabits coastal salt marshes from Santa Barbara south through San Diego County. Belding's Savannah sparrow nests in pickleweed on and around margins of tidal flats. No suitable habitat occurs within the Study Area. Three individuals were detected in pickleweed habitat during surveys conducted by GLA in 1996 in a former area of the Hellman Property that is now owned by Los Cerritos Wetland Authority (LCWA). At that time, it was concluded that the individuals were transient non-resident individuals. Surveys conducted in April 2015 by Richard Zembal identified 36 territories in portions of the Los Cerritos marsh that were previously part of the Hellman Property (Zembal et al. 2015).

Loggerhead shrike (*Lanius ludovicianus*) is an SSC but is a common resident and winter visitor in lowlands throughout California. Loggerhead shrikes prefer open habitats with scattered shrubs, trees, posts, fences, utility lines, and other perches and will eat mostly large insects, but will also take small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. Shrikes usually fly directly to prey on ground or in a shrub; sometimes hovering. Occasionally it will hawk aerial insects in mid-air. This species was previously observed perching but not actively foraging in the Hellman Property southwest of the Study Area.

Short-eared owl (*Asio flammeus*) is an SSC when nesting and is known from the nearby Los Cerritos Wetlands. This species nests on dry ground tucked amongst grasses and low vegetation,

[9] See http://www.iucnredlist.org

including salt marsh vegetation. This species has not been observed within the Study Area, but it has low potential to occur for foraging only.

4.5.5 Raptor Use

The Study Area provides suitable foraging habitat for a number of raptor species, including special-status raptors.

GLA previously conducted detailed raptor surveys, including foraging studies, on the Hellman Property, encompassing the present Study Area (Glenn Lukos Associates 2001). The following raptors were identified during raptor surveys or general biological surveys conducted for the 1997 Draft Environmental Impact Report for the Hellman Property: red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperi*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), osprey (*Pandion haliaetus*), and turkey vulture (*Cathartes aura*). Also detected was loggerhead shrike (*Lanius ludovicianus*), which is a songbird that hunts like a raptor. The American kestrel, loggerhead shrike, and red-tailed hawk in particular comprise the three dominant raptor or raptor-like species observed on the Hellman Property. Surveys in 2001 for the Tank Farm Relocation site, which is immediately south of the present Study Area, identified loggerhead shrike and American kestrel.[10] During surveys for the present Project, two raptor species, red-tailed hawk and American kestrel, were identified perching near or flying over the Study Area. Two other species, ferruginous hawk (*Buteo regalis*) and merlin (*Falco columbarius*), also have low potential to occur for foraging only.

The Study Area lacks potential nesting habitat (e.g., mature trees, shrubs) for those raptor species that breed in southern California, but is expected to provide foraging habitat for all of these species in the form of insects, spiders, lizards, snakes, small mammals, and other birds.

4.6 Nesting Birds

The Project site contains trees, shrubs, and ground cover that provide suitable habitat for nesting native birds. Mortality of native birds (including eggs) is prohibited under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.[11]

4.7 Wildlife Linkages/ Corridors and Nursery Sites

Habitat linkages are areas which provide a connection between two or more habitat areas which are often larger or superior in quality to the linkage. Such linkage sites can be quite small or constricted, but may can be vital to the long-term health of connected habitats. Linkage values

[10] There was one occurrence each of a perching loggerhead shrike and perching American kestrel. No foraging was detected within the proposed Tank Farm Relocation site.

[11] The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R.21). In addition, Sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

are often addressed in terms of "gene flow" between populations, with movement taking potentially many generations.

Corridors are similar to linkages but provide specific opportunities for individual animals to disperse or migrate between areas, generally extensive but otherwise partially or wholly separated regions. Adequate cover and tolerably low levels of disturbance are common requirements for corridors. Habitat in corridors may be quite different than that in the connected areas, but if used by the wildlife species of interest, the corridor will still function as desired.

Wildlife nurseries are sites where wildlife concentrate for hatching and/or raising young, such as rookeries, spawning areas, and bat colonies. Nurseries can be important to both special-status species as well as commonly occurring species.

The Project site is located in an area with a patchwork of urban development and undeveloped open space, with residential development to the south and east, and commercial development to the northeast. The undeveloped areas are associated with the Los Cerritos wetlands complex to the south and northwest, the Seal Beach Naval Weapons Station, and Seal Beach National Wildlife Refuge to the east and southeast, and the Los Alamitos Retarding Basin to the north. The Haynes Intake Channel and San Gabriel River are located to the northwest.

The Study Area may provide for local movement between the undeveloped areas discussed above for common, urban-adapted mammal species such as coyote, striped skunk, raccoon, and opossum. However, the Study Area is not located within a regionally significant wildlife linkage or corridor.

The Study Area does not contain any wildlife nursery habitat.

4.8 Critical Habitat

The Study Area is not located within any USFWS designated or proposed critical habitat areas.

4.9 Jurisdictional Waters

The Project site does not contain any jurisdictional waters that would be regulated by the Corps, Regional Board, or CDFW.

The Project site does not contain any wetlands that would be regulated by the CCC as defined by the California Coastal Act. The 100-foot buffer portion of the Study Area includes part of the Heron Pointe water quality basin that supports riparian vegetation and may have indicators of wetland hydrology and hydric soils; however, it was not evaluated for this Project [Appendix C – Jurisdictional Delineation Report].

5.0 IMPACT ANALYSIS

The following discussion examines the potential impacts to plant and wildlife resources that would occur as a result of the proposed project. Impacts (or effects) can occur in two forms, direct and indirect. Direct impacts are considered to be those that involve the loss, modification, or disturbance of plant communities, which in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or animals, which may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and population stability.

Indirect impacts pertain to those impacts that result in a change to the physical environment, but which is not immediately related to a project. Indirect (or secondary) impacts are those that are reasonably foreseeable and caused by a project but occur at a different time or place. Indirect impacts can occur at the urban/wildland interface of projects, to biological resources located downstream from projects, and other offsite areas where the effects of the project may be experienced by plants and wildlife. Examples of indirect impacts include the effects of increases in ambient levels of noise or light; predation by domestic pets; competition with exotic plants and animals; introduction of toxics, including pesticides; and other human disturbances such as hiking, off-road vehicle use, unauthorized dumping, etc. Indirect impacts are often attributed to the subsequent day-to-day activities associated with project build-out, such as increased noise, the use of artificial light sources, and invasive ornamental plantings that may encroach into native areas. Indirect effects may be both short-term and long-term in their duration. These impacts are commonly referred to as "edge effects" and may result in a slow replacement of native plants by non-native invasive species, as well as changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to project sites.

5.1 California Environmental Quality Act (CEQA)

5.1.1 Thresholds of Significance

Environmental impacts to biological resources are assessed using impact significance threshold criteria, which reflect the policy statement contained in CEQA, Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the State of California:

> *"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities..."*

Determining whether a project may have a significant effect, or impact, plays a critical role in the CEQA process. According to CEQA, Section 15064.7 (Thresholds of Significance), each public agency is encouraged to develop and adopt (by ordinance, resolution, rule, or regulation) thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the

effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. In the development of thresholds of significance for impacts to biological resources CEQA provides guidance primarily in Section 15065, Mandatory Findings of Significance, and the CEQA Guidelines, Appendix G, Environmental Checklist Form. Section 15065(a) states that a project may have a significant effect where:

> *"The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species..."*

Therefore, for the purpose of this analysis, impacts to biological resources are considered potentially significant (before considering offsetting mitigation measures) if one or more of the following criteria discussed below would result from implementation of the proposed project.

5.1.2 Criteria for Determining Significance Pursuant to CEQA

Appendix G of the 2018 State CEQA guidelines indicate that a project may be deemed to have a significant effect on the environment if the project is likely to:

> *a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*
>
> *b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*
>
> *c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*
>
> *d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*
>
> *e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*
>
> *f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

5.2 Special-Status Species

Appendix G(a) of the CEQA guidelines asks if a project is likely to "have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service."

5.2.1 Special-Status Plants

The proposed Project will impact one special-status plant species, southern tarplant [Exhibit 9 – Special-Status Species Impact Map].

Southern Tarplant

A population of 1,072 southern tarplant individuals was detected within the 12.46-acre Study Area, of which 457 tarplant individuals were detected in areas subject to ongoing fuel modification, and 615 individuals were not in existing fuel modification zones).[12] Of the 615 individuals not located within existing fuel modification zones, 57 individuals would be subject to temporary impacts and 26 individuals would be permanently impacted by the proposed Project.

In the Project site, southern tarplant occurs in highly disturbed areas with a predominance of non-native species, at the edges of dirt roads, and on bare ground.

Southern tarplant is highly adapted to disturbance as evidenced by the occurrence of this species within the disturbed portions of the Study Area. However, the loss of 83 individuals in the temporary and permanent impact areas, which totals 13 percent of the population in the Study Area not subject to ongoing fuel modification, would be considered a significant impact under CEQA. A mitigation measure is included in Section 6.0 of this report that reduces impacts to southern tarplant to less than significant. The remaining tarplant in the Study Area will be avoided by the Project. A measure is included in Section 6.0 of this report to ensure avoidance of southern tarplant outside the Project impact area during construction.

With regards to potential ESHA, the Coastal Act Section 30107.5 defines an ESHA as:

> …any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

When making a determination of ESHA for a rare plant population, the CCC considers multiple parameters including the number of individuals, size of the area occupied, degree of isolation,

[12] The 457 southern tarplant individuals in ongoing fuel modification zones are not included in the impact totals for this Project as they are located in areas subject to periodic maintenance as part of oil field operations. Impacts to southern tarplant in the fuel modification zones occurs periodically and is not related to the project evaluated by this biological technical report.

fragmentation, and connectivity to suitable open space for the species, level of disturbance/degradation of the occupied area, adjacent development, level of invasion by non-native species, and potential jeopardy to regional populations by loss of the subject population. Coastal Commission Staff Senior Ecologist Jonna Engel previously evaluated southern tarplant populations for potential ESHA at several of the Synergy Oil consolidation sites in Long Beach, California, located a short distance from the Study Area. Dr. Engel determined that some of the southern tarplant subpopulations in areas of existing oil infrastructure did not rise to the level of ESHA based on the degree of disturbance, poor soils, and habitat fragmentation (Engel 2017).

Southern tarplant often occurs in areas that are highly disturbed and do not support native vegetation, such as cracks in concrete, disturbed roadsides, and areas with a gravel substrate. It can also occur with non-native halophytes such as small-flowered iceplant. Accordingly, as acknowledged by Dr. Engel in the above-referenced memorandum, a determination of ESHA for areas occupied by this species does not depend solely on the presence of southern tarplant. Rather, the determination should consider the size and area of the population, isolation/fragmentation, degree of disturbance, and other parameters listed above.

Overall, the western portion of the Study Area that supports southern tarplant consists of a disturbed open field and active oil extraction facilities, including active wells, oil field infrastructure, staging and equipment storage areas, and associated fuel modification areas within a mosaic of non-native vegetation. Where southern tarplant occurs in the Project site, the predominant vegetation/land-cover types consist of disturbed habitat that either lacks a state rarity rank (Disturbed/Developed, Annual grassland/Herbaceous Semi-Natural Stands) or has a state rarity ranking greater than S3 and have a substantial component of non-native grasses and forbs (*Distichlis spicata*–Annual Grasses, S4). Given the highly disturbed nature of both the overall Study Area and the Project site where southern tarplant occurs, as well as the level of invasion by non-native species, the southern tarplant in the Study Area does not rise to the level of ESHA, and construction of the proposed Project would not directly affect or result in impacts to ESHA. It is also important to note that southern tarplant thrives in disturbed areas, and based on GLA's experience, grows easily in an appropriately prepared restoration site. With the mitigation proposed in Section 6.3 below, impacts to southern tarplant in the Project site would not result in potential jeopardy to the regional population.

Coulter's Goldfields

Three distinct population clusters of Coulter's goldfields were mapped during surveys in 2023 and are located a minimum of 36 to 78 feet from the temporary project impact areas [Exhibit 9]. The Coulter's goldfields will be fully avoided by the proposed Project. A measure is included in Section 6.0 of this report to ensure avoidance of Coulter's goldfields during construction.

5.2.2 Special-Status Animals

The proposed Project will not impact special-status animals [Exhibit 9 – Special-Status Species Impact Map]. Least Bell's vireo (FE, SE) occurs in the Heron Pointe water quality basin on the east end of the Study Area; however, the proposed Project will not impact the riparian vegetation in the water quality basin.

A wintering burrowing owl (SSC) was observed on the Hellman Property in 1996 and 1997. No burrowing owls, suitable structures or rodent burrows, or owl sign was observed during biological surveys for the proposed Project; therefore, no impacts to this species will occur as a result of development of the Project. Nevertheless, a measure is included in Section 6.0 of this report to ensure avoidance of impacts to burrowing owl.

Development of the proposed Project would preclude raptor foraging within the Project site; however, the permanent loss of 2.66 acres of raptor foraging area from the proposed Project would be less than significant given the extensive raptor foraging area immediately surrounding the Project site, including the remainder of the Hellman Property, the adjacent Los Cerritos Wetlands, and the Los Alamitos Retarding Basin.

5.3 Sensitive Vegetation Communities

Appendix G(a) of the CEQA guidelines asks if a project is likely to "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service."

The proposed Project would not impact or have a substantial adverse effect on riparian vegetation or sensitive natural communities with a rarity rating of S3 or less. The proposed project would permanently impact approximately 2.66 acres of lands through installation of the solar panel array [Exhibit 6b – Vegetation Impact Map]. Of the 2.66 acres to be impacted, only a small portion of that area would be directly impacted through ground disturbance and vegetation removal. The majority of the impact area consists of the vegetated areas under and between the proposed solar panels. Shading from the proposed solar panels may result in loss of vegetation and diminished habitat value. Permanent impacts include approximately 0.04 acre of alkali heliotrope fields, 1.55 acre of *Bassia hyssopfolia* association, 1.05 acre of *Distichlis spicata*-annual grassland association, and 0.02 acre of tree tobacco stands. The Project will avoid the entirety of the 0.02 acre of *Cressa truxillensis* association (S2 rarity rating). The project will also avoid the riparian vegetation associated with the Heron Pointe water quality basin.

The proposed Project will temporarily impact 1.91 acres of lands, none of which consist of sensitive vegetation communities, for trenching to bury utility lines and for temporary work and staging areas. The trenched areas will be restored to the original grade following construction and are expected to passively revegetate. Table 5-1 provides a summary of impacts to vegetation/land use types.

Table 5-1. Summary of Permanent and Temporary Vegetation/Land Use Impacts

VEGETATION/ LAND USE TYPE	Code	Rank	Permanent Impacts (acres)	Temporary Impacts (acres)	Avoided	Total Study Area (acres)
Alkali heliotrope fields	--	--	0.04	0.06	0.01	1.11
Annual grassland/ herbaceous semi-natural stands	--	--	0	0.02	1.18	1.20
Baccharis pilularis shrubland alliance	32.060.23	S5	0	0.04	0.01	0.05

VEGETATION/ LAND USE TYPE	Code	Rank	Permanent Impacts (acres)	Temporary Impacts (acres)	Avoided	Total Study Area (acres)
Disturbed *Baccharis pilularis* shrubland alliance	63.510.00	S5	0	0	0.35	0.35
Bassia hyssopifolia association	42.015.02	--	1.55	0.88	1.11	3.54
Castor bean stands	--	--	0	0.03	0.02	0.05
Cressa truxillensis-Distichlis spicata herbaceous alliance	46.100.09	S2	0	0	0.20	0.20
Distichlis spicata – annual grasses	41.200.13	S4	1.05	0.61	1.57	3.23
Disturbed/Developed	--	--	0	0.22	2.29	2.51
Malvella leprosa fields	--	--	0	0	0.11	0.11
Mixed shrub seminatural stands	--	--	0	0	0.04	0.04
Ornamental	--	--	0	0	0.01	0.01
Raphanus sativus association	--	--	0	0	0.18	0.18
Salix lasiolepis – Baccharis salicifolia shrubland alliance	61.201.06	S4	0	0	0.58	0.58
Tree tobacco stands	--	--	0.02	0.05	0.20	0.27
Total			2.66	1.91	7.89	12.46

5.4 Wetlands

Appendix G(c) of the State CEQA guidelines asks if a project is likely to "have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means."

The Project site does not contain and will not impact any state or federally protected wetlands, including wetlands as defined under the CCA.

5.5 Wildlife Movement and Native Wildlife Nursery Sites

Appendix G(d) of the State CEQA guidelines asks if a project is likely to "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites."

The Study Area is not located within a regionally significant wildlife linkage or corridor. Additionally, the development of the Project would not preclude the movement of wildlife through the Study Area. Thus, the proposed Project would not result in a significant impact to native resident or migratory wildlife corridors.

The Study Area does not contain any wildlife nursery sites.

The project has the potential to impact active bird nests if vegetation is removed during the nesting season (February 1 to September 15). Impacts to nesting birds are prohibited by the MBTA and California Fish and Game Code.

Although impacts to native birds are prohibited by MBTA and similar provisions of California Fish and Game Code, impacts to native birds by the proposed Project would not be a significant impact under CEQA. The native birds with potential to nest on the Project site would be those that are extremely common to the region and highly adapted to human landscapes (e.g., house finch, killdeer). The number of individuals potentially affected by the Project would not significantly affect regional, let alone local populations of such species. A measure is identified in Section 6.0 of this report to avoid impacts to nesting birds.

5.6 Local Policies or Ordinances

Appendix G(e) of the State CEQA guidelines asks if a project is likely to "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance." The Project will not conflict with any local policies or ordinances protecting biological resources.

5.7 Habitat Conservation Plans

Appendix G(f) of the State CEQA guidelines asks if a project is likely to "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan."

The Study Area is not located within or subject to the provisions of any habitat conservation plans.

5.8 Jurisdictional Waters

The Project site does not contain and will not impact any jurisdictional waters.

5.9 Indirect Impacts to Biological Resources

In the context of biological resources, indirect effects are those effects associated with developing areas adjacent to native open space.

The Project is not expected to result in significant indirect impacts to special-status biological resources. The operation of the proposed solar panel array inherently lacks many potential sources of indirect impacts, including drainage, toxic materials, lighting, noise, and invasive species. To minimize temporary edge effects potentially associated with construction, Project will implement measure to address the following:

- Drainage
- Toxics
- Lighting

- Noise
- Human Use

5.9.1 Drainage

The Project's contractor will develop a Stormwater Pollution Prevention Plan (SWPPP) to address runoff and water quality during construction. Following the completion of construction activities, the Project area will not contain any developed or paved areas and will not result in drainage to the surrounding area. As such, no measures would be required post-construction.

5.9.2 Toxics

Land uses that use chemicals or generate bioproducts that are potentially toxic may adversely affect wildlife species, habitat, or water quality. The proposed Project will implement a SWPPP that will address runoff during construction.

5.9.3 Lighting

No night lighting will be associated with the proposed Project. If temporary night lighting is required during construction, shielding shall be incorporated to ensure ambient lighting is not increased, and such lighting will be subject to the approval of the project biologist.

5.9.4 Noise

It is anticipated that noise levels from installation of solar panels will generally not exceed ambient noise levels associated with normal oil field operations, although there may be a temporary, unavoidable increase in noise levels during construction; however, noise will be minimized to the greatest extent practicable. The City's standard construction regulations require all construction vehicles or equipment, fixed or mobile, to be equipped with properly operating and maintained mufflers to minimize noise. Furthermore, construction is limited to the hours of 7:00 a.m. to 8:00 p.m. on weekdays and 8:00 a.m. to 8:00 p.m. on weekends. Nevertheless, to ensure that there are no significant temporary noise impacts to least Bell's vireo in the Heron Pointe water quality basin during breeding season (March 15 to September 15), a measure is identified in Section 6.0 of this report. There would be no other significant temporary or permanent noise impacts resulting from the proposed project.

No noise is associated with operation of the proposed Project.

5.9.5 Human Use

Currently, on-site human use is limited to employees tending to oil field operations. Typically, less than five people are on site at any given time. There will be no change in post-construction human use associated with the proposed project, as the solar array does not require any additional personnel except for periodic maintenance. The property will remain private and fenced, so there is no possibility of increased public access to the property. The proposed project would therefore not cause any significant human impacts.

6.0 MITIGATION/AVOIDANCE MEASURES

The following discussion provides project-specific mitigation/avoidance measures for actual or potential impacts to special-status resources.

6.1 Nesting Birds

The Project site contains vegetation with the potential to support native nesting birds. As discussed above, the California Fish and Game Code prohibits mortality of native birds, including eggs. The following measure is recommended to avoid mortality to nesting birds. Potential impacts to native birds were not considered a biologically significant impact under CEQA; however to comply with state law, the following is recommended:

- As feasible, vegetation clearing and ground disturbance should be conducted outside of the nesting season, which is generally identified as February 1 through September 15. If avoidance of the nesting season is not feasible, then a qualified biologist shall conduct a nesting bird survey within three days prior to any disturbance of the site, including vegetation clearing and ground disturbance. If active nests are identified, the biologist shall establish suitable buffers around the nests, and the buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests.

6.2 Burrowing Owl

Although no burrowing owls, suitable burrows, or owl sign were detected during general biological surveys, wintering owls have historically occurred on the Hellman Property. Although unlikely, owls may occupy the site between the time of biological surveys and construction activities. Therefore, the following required actions would ensure compliance with the MBTA and California Fish and Game Code.

- A pre-construction (initial take avoidance) burrowing owl survey shall be conducted by a qualified biologist no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the 2012 Department of Fish and Game Staff Report on Burrowing Owl Mitigation. If the pre-construction survey is positive for owl presence, the project proponent will immediately inform the Wildlife Agencies (CDFW, USFWS) to acquire proper avoidance measures, including the possibility of preparing a Burrowing Owl Protection and Relocation Plan, prior to initiating ground disturbance. If the species is not found, no further action is needed.

6.3 Special-Status Plants

As noted above, the proposed Project will result in the loss of 83 individuals of southern tarplant, including 26 individuals in the permanent impact area and 57 individuals in the temporary impact area occupying approximately 0.03 acre. The following measure identifies mitigation for

impacts to southern tarplant as discussed in the Southern Tarplant Mitigation and Monitoring Plan [Appendix D]:

- Prior to impacts to the southern tarplant in the Project site, the project biologist will implement the measures contained in the Southern Tarplant Mitigation and Monitoring Plan, which provides for replacement of the impacted 83 individuals at a ratio of 4:1, for a total of 332 individuals. However, if pre-construction surveys are implemented as outlined in the measure below and the total numbers of impacted individuals changes, the number total number of replacement individuals shall be adjusted accordingly at a 4:1 ratio. The plan identifies a candidate area of the Hellman Property where southern tarplant may be established and preserved in perpetuity. The plan includes provisions for seed collection, planting, performance standards for a five-year monitoring period, and contingency plans if the performance standards are not met.

The proposed Project is located within 36–78 feet of Coulter's goldfields populations in the Study Area. To ensure full avoidance of Coulter's goldfields, the following measure shall be implemented:

- Prior to the initiation of construction activities and under the direction of the Project Biologist, the populations of Coulter's goldfields in proximity to the Project site will be demarcated with construction fencing. No vegetation clearing, ground disturbance, or other construction activities shall occur in the fenced areas or within 30 feet of any Coulter's goldfields.

The proposed Project is located immediately adjacent to some areas of avoided southern tarplant in the Study Area. To ensure full avoidance of southern tarplant outside of the impact area, the following measure shall be implemented:

- Prior to the initiation of construction activities and under the direction of the Project Biologist, any southern tarplant within 100 feet of the Project site will be demarcated with construction fencing or flagging. No vegetation clearing, ground disturbance, or other construction activities shall occur in the fenced areas.

The distribution of southern tarplant and Coulter's goldfields in the Study Area and Project site is well understood based upon multiple years of focused survey data. However, the number and distribution of individuals may vary from year to year. Based on existing survey data, the project is expected to impact southern tarplant but not Coulter's goldfields. To ensure that impacts are fully mitigated, the following measure shall be implemented:

- Prior to the initiation of construction activities, a qualified biologist shall conduct pre-construction surveys for southern tarplant and Coulter's goldfields during the appropriate season for each species to determine final mitigation requirements. If Coulters goldfields are detected in the Project impact area, then the Southern Tarplant Mitigation and Monitoring Plan will be amended to include mitigation for Coulter's goldfields at a 4:1 ratio at a location with suitable habitat for the species.

6.4 Least Bell's Vireo

Two individual least Bell's vireo were present in the Heron Pointe water quality basin adjacent to the Project site during the 2022 breeding season. No habitat for least Bell's vireo, including in the Heron Pointe water quality basin, will be impacted by the Proposed project; however, to avoid indirect noise impacts to breeding least Bell's vireo, the following measures will be implemented in consultation with the City of Seal Beach and USFWS if project construction activities will occur between March 15 and September 15:

- Surveys for least Bell's vireo should be conducted pursuant to the recommended protocol survey guidelines as established by the USFWS. If full protocol surveys cannot be conducted, then a qualified biologist shall survey suitable habitat in the Heron Pointe water quality bason for the least Bell's vireo weekly for a minimum of four weeks (within the breeding season) prior to the commencement of any construction.

- If least Bell's vireo is detected during surveys, and construction activities will occur between March 15 and September 15, the least Bell's vireo breeding season, an analysis showing that noise generated by construction activities would not exceed 60 dB hourly average at the edge of occupied habitat must be completed by a qualified acoustician prior to commencement of construction activities. Where construction activities would result in noise levels exceeding 60 dB hourly average at the edge of occupied least Bell's vireo habitat, additional measures must be implemented.

- At least two weeks prior to commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., walls, panels) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB hourly average at the edge of habitat occupied by least Bell's vireo. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60dB hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16). Construction noise monitoring shall continue to be monitored at least once weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB hourly average or to the ambient noise level if it already exceeds 60 dB hourly average. If not, other measures shall be implemented in consultation with the project biologist and the City and USFWS, as necessary, to reduce noise levels to below 60 dB hourly average or to the ambient noise level if it already exceeds 60 dB hourly average. Such measures include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

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8.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Signed: Tony Bowlus Date: October 12, 2023

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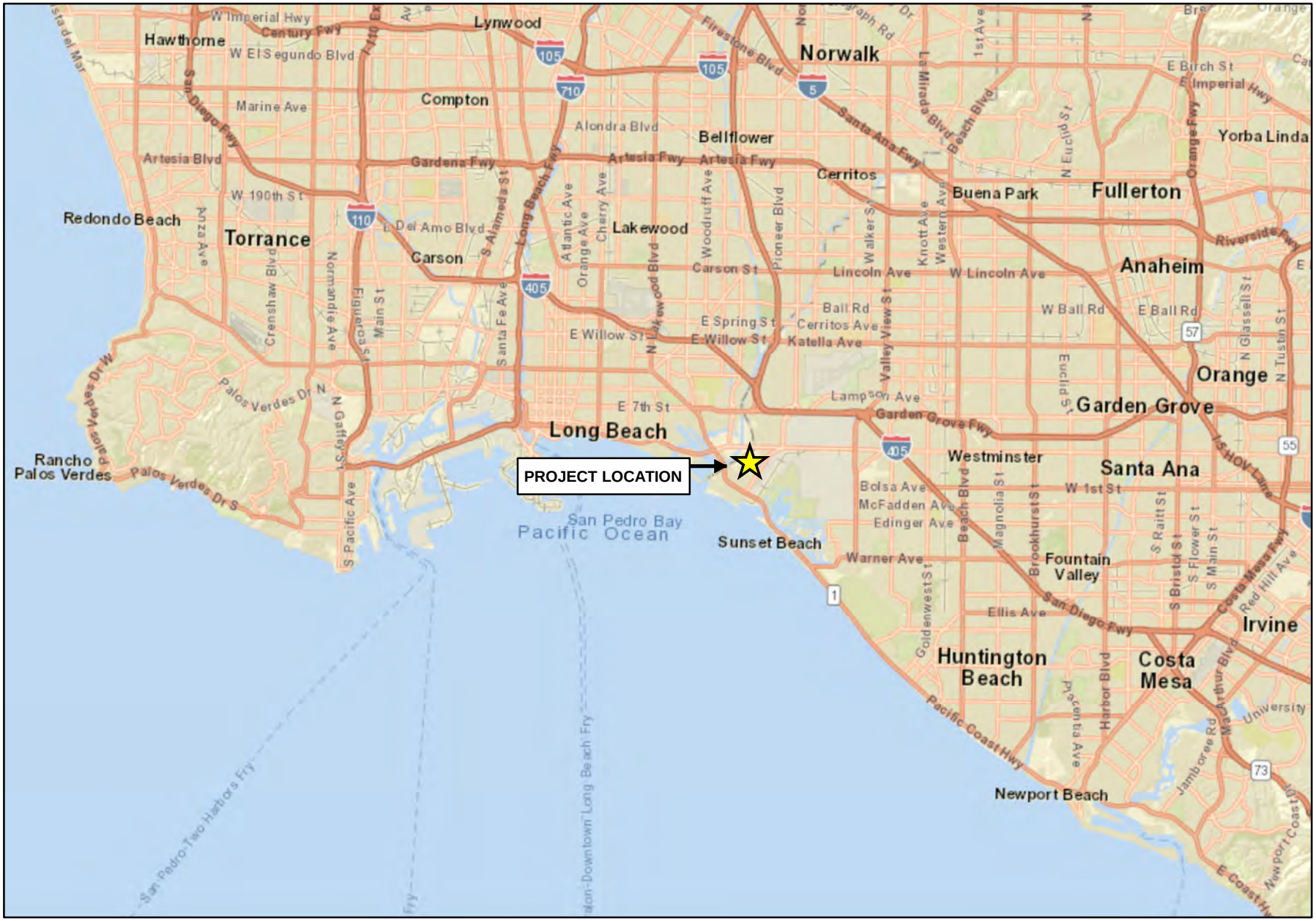


HELLMAN PROPERTY
SOLAR PANEL ARRAY

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

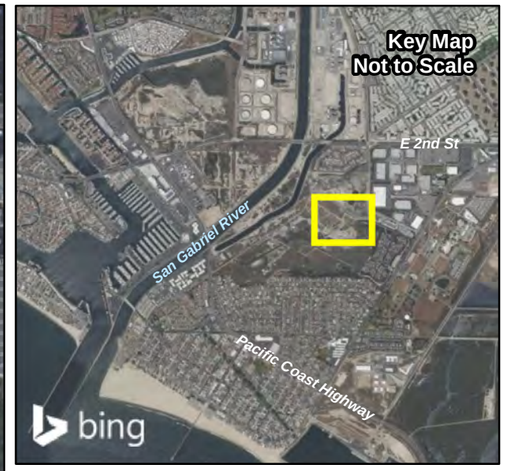
Adapted from USGS Los Alamitos, CA quadrangle

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



Study Area

Permanent Impacts

Temporary Impacts

100' Buffer of Permanent Impacts

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: January 4, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

Site Plan

GLENN LUKOS ASSOCIATES

Exhibit 3

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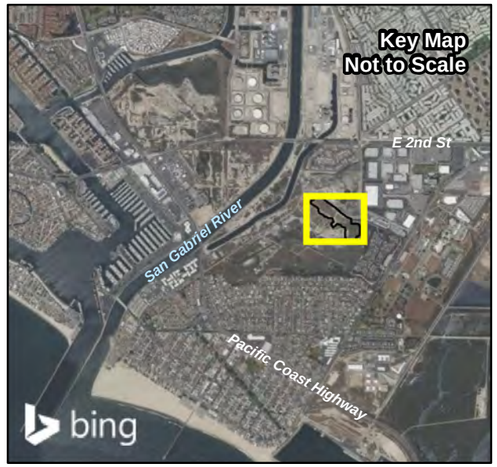

Study Area

Western Field

Eastern Field

Heron Pointe
Water Quality Basin

Non-Wetland Ponded Area

Data Point

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 15, 2023

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Jurisdictional Determination Map

GLENN LUKOS ASSOCIATES

Exhibit 4

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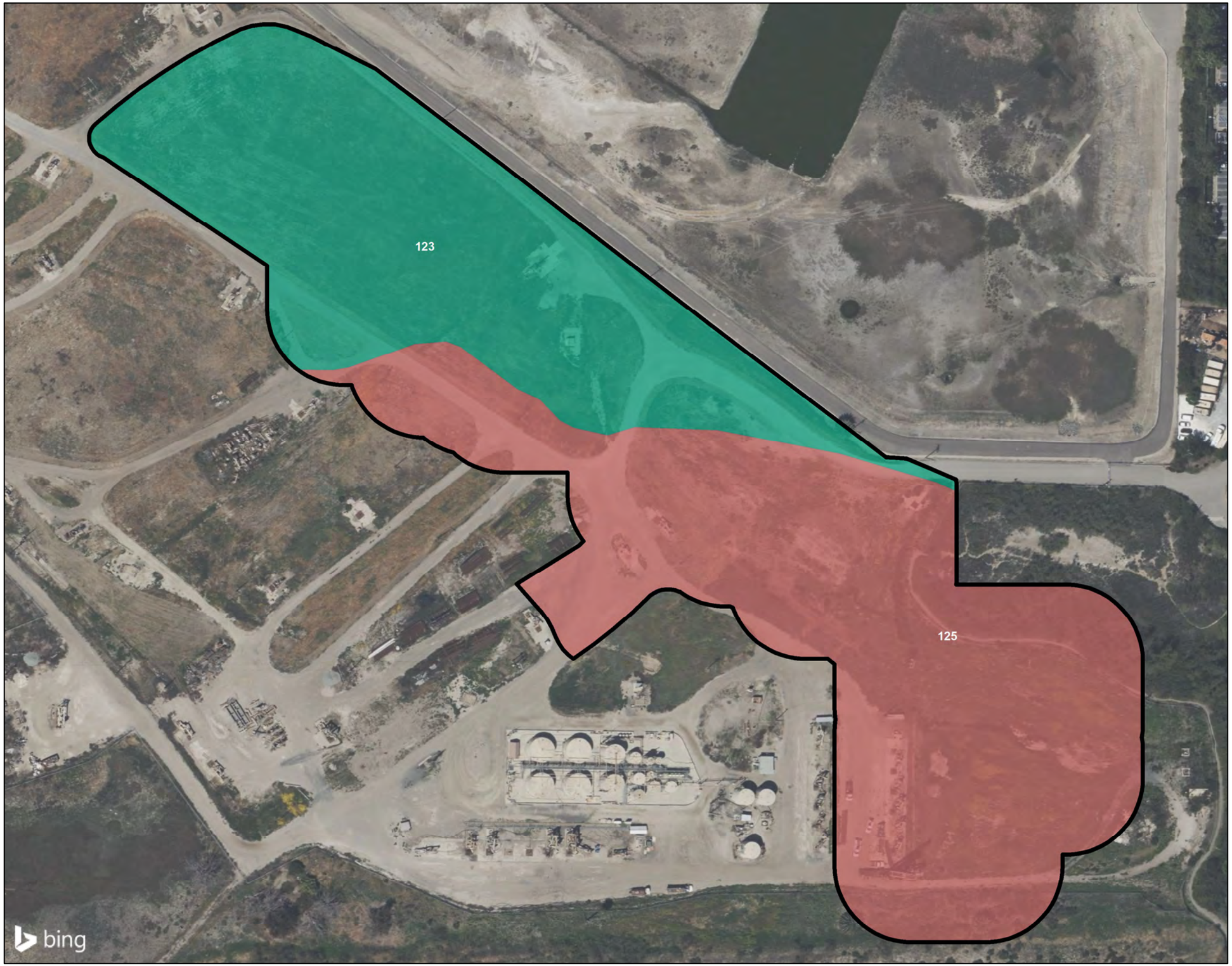

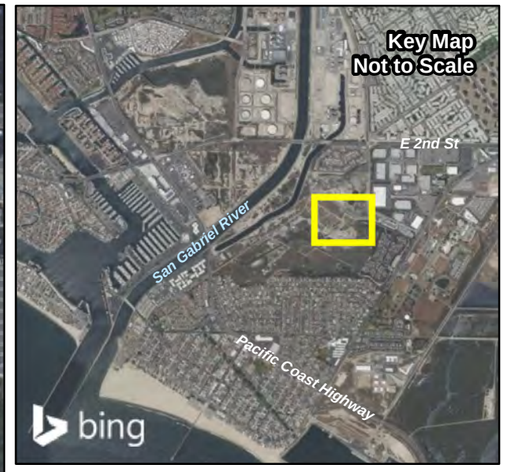

Study Area

123 Bolsa Silt Loam, Drained

125 Bolsa Silty Clay Loam, Drained

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: January 4, 2023

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 5

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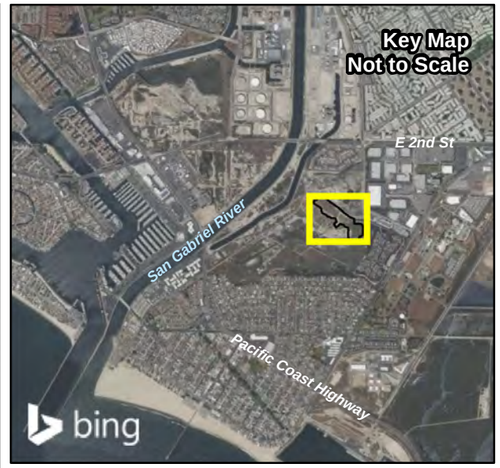

Study Area

Existing
Fuel Modification Zones

N

0 62.5 125 250
Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 28, 2023

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Vegetation Map

GLENN LUKOS ASSOCIATES

Exhibit 6A

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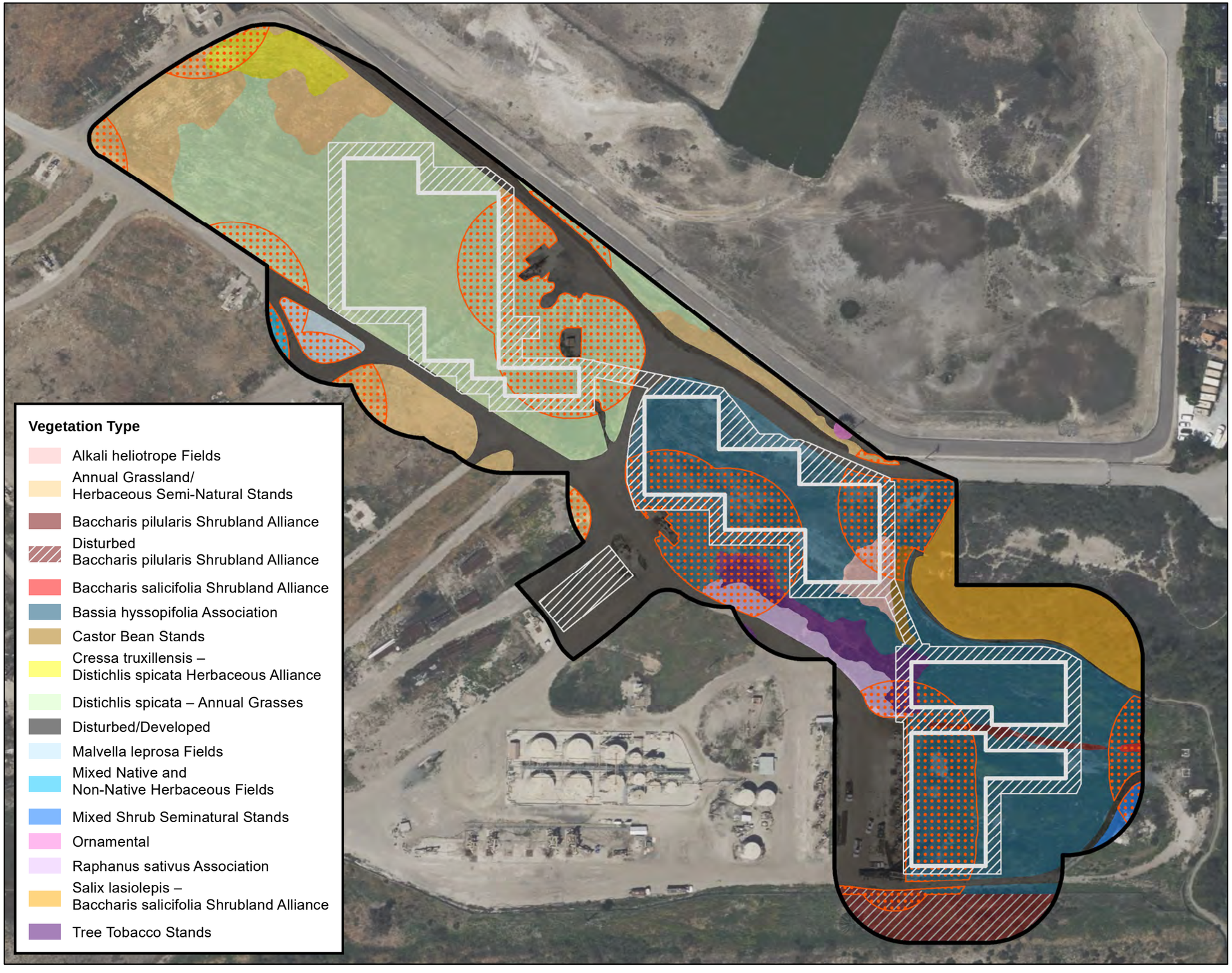

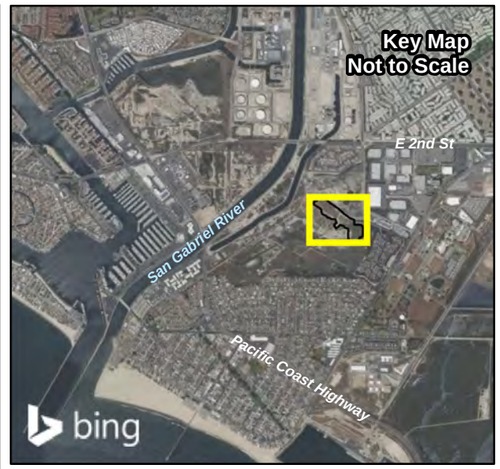

Study Area

Permanent Impacts

Temporary Impacts

Existing
Fuel Modification Zones

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 28, 2023

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Vegetation Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 6B

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Photograph 1: West-facing view of easternmost area of the Project site. Note the high level of disturbance. Plant species in this area include alkali heliotrope, five-hook bassia, summer mustard, and perennial pepperweed. August 25, 2022.

Photograph 2: West-facing view of easternmost area of the Project site showing coyote brush growing along an oilfield pipeline. August 25, 2022.

Photograph 3:West-facing view of central portion of the Project site. Note the general lack of vegetation. August 25, 2022

Photograph 4: North-facing view of the easternmost portion of the Project site. The large patch of vegetation in the center of the photo is alkali heliotrope (*Heliotropium curassavicum*). August 25, 2022.

GLENN LUKOS ASSOCIATES

Exhibit 7 – Page 1

HELLMAN PROPERTY SOLAR PANEL ARRAY

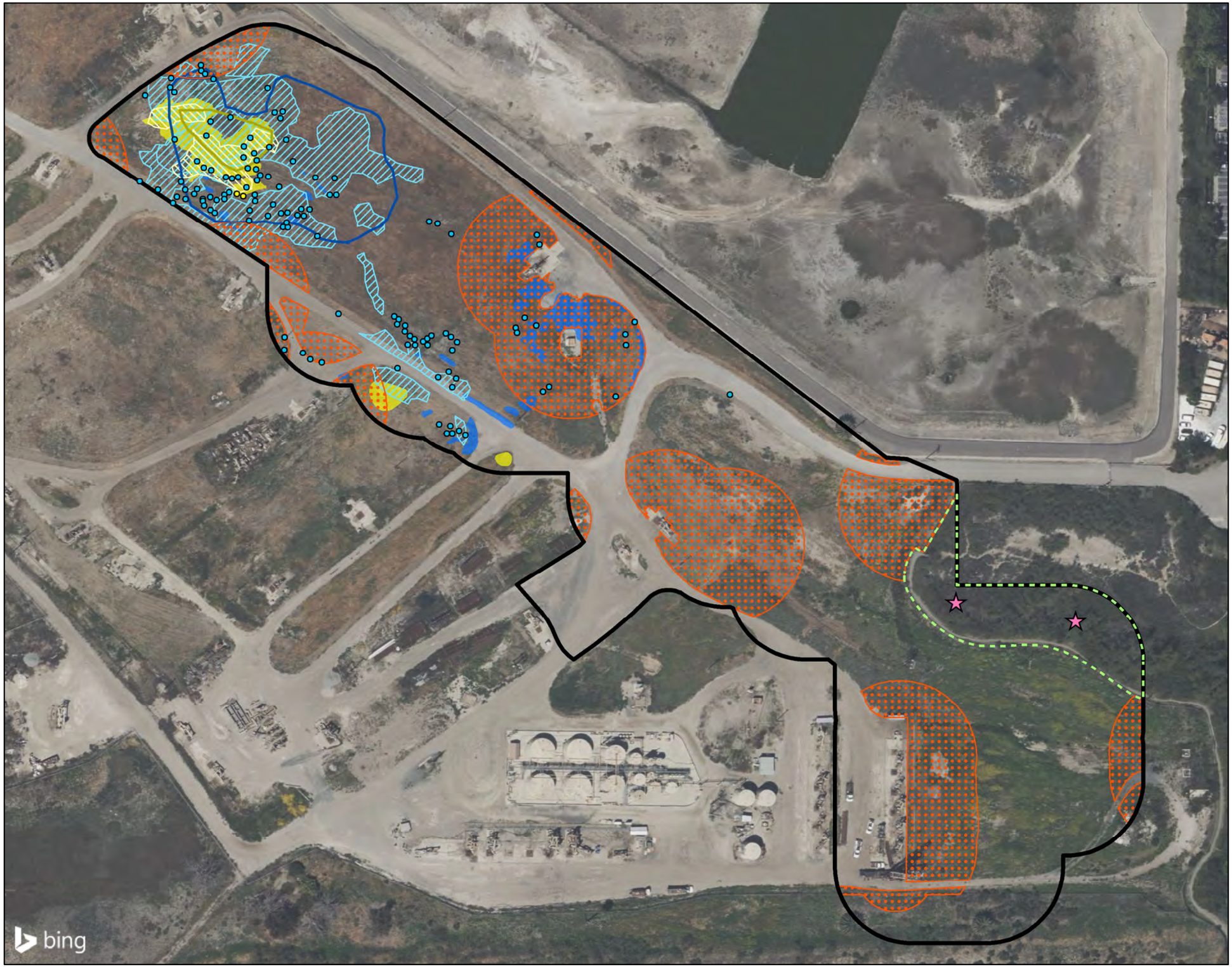
Site Photographs

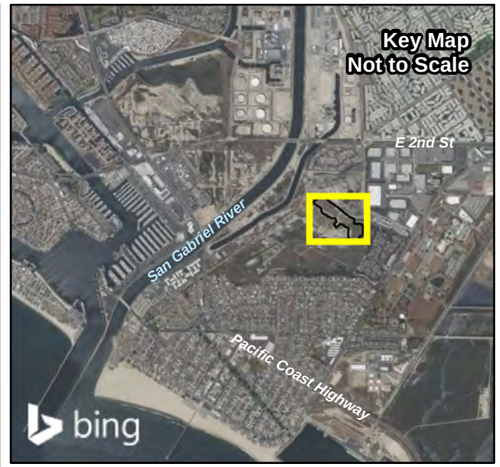
Photograph 5: West-facing view of western portion of the Project. This area is vegetated with the *Distichlis spicata*-annual grasses association, with a few small isolated patches of alkali heath (*Frankenia salina*) that do are not large enough to comprise a mapping unit. July 29, 2022.

Photograph 6:View of *Cressa truxillensis* association in the northwest portion of the Study Area. This area will not be impacted by the proposed Project. August 25, 2022

Photograph 7: Southern tarplant growing in the *Distichlis spicata* – annual grasses alliance in the westernmost portion of the Project site. Note the high level of disturbance and lack of vegetatative cover. July 29, 2022

Photograph 8: West-facing view of southern tarplant growing on the edge of a road. July 29, 2022





Study Area

Existing Fuel Modification Zones

Heron Pointe Water Quality Basin

Least Bell's Vireo Location

2009 Rare Plants

Coulter's Goldfields

Southern Tarplant

2010 Rare Plants

Coulter's Goldfields

Southern Tarplant

2022 Rare Plants

Southern Tarplant (1,072)

2023 Rare Plants

Coulter's Goldfields

0 62.5 125 250

Feet

1 inch = 125 feet

N

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 28, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

Special-Status Species Map

GLENN LUKOS ASSOCIATES

Exhibit 8A

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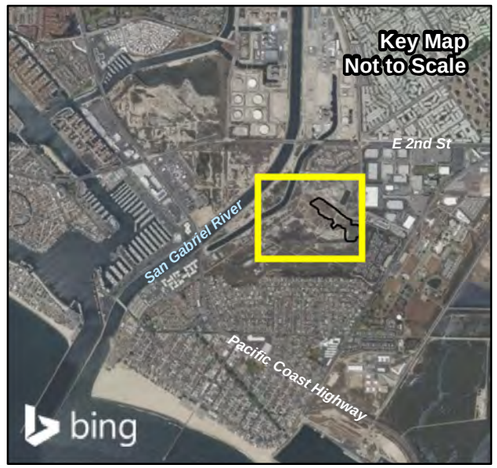

Study Area

Southern Tarplant (2022)

Historical Southern Tarplant (2006-2010)

0 112.5 225 450

Feet

1 inch = 225 feet

N

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: April 3, 2023

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Southern Tarplant Locations Map

GLENN LUKOS ASSOCIATES

Exhibit 8B

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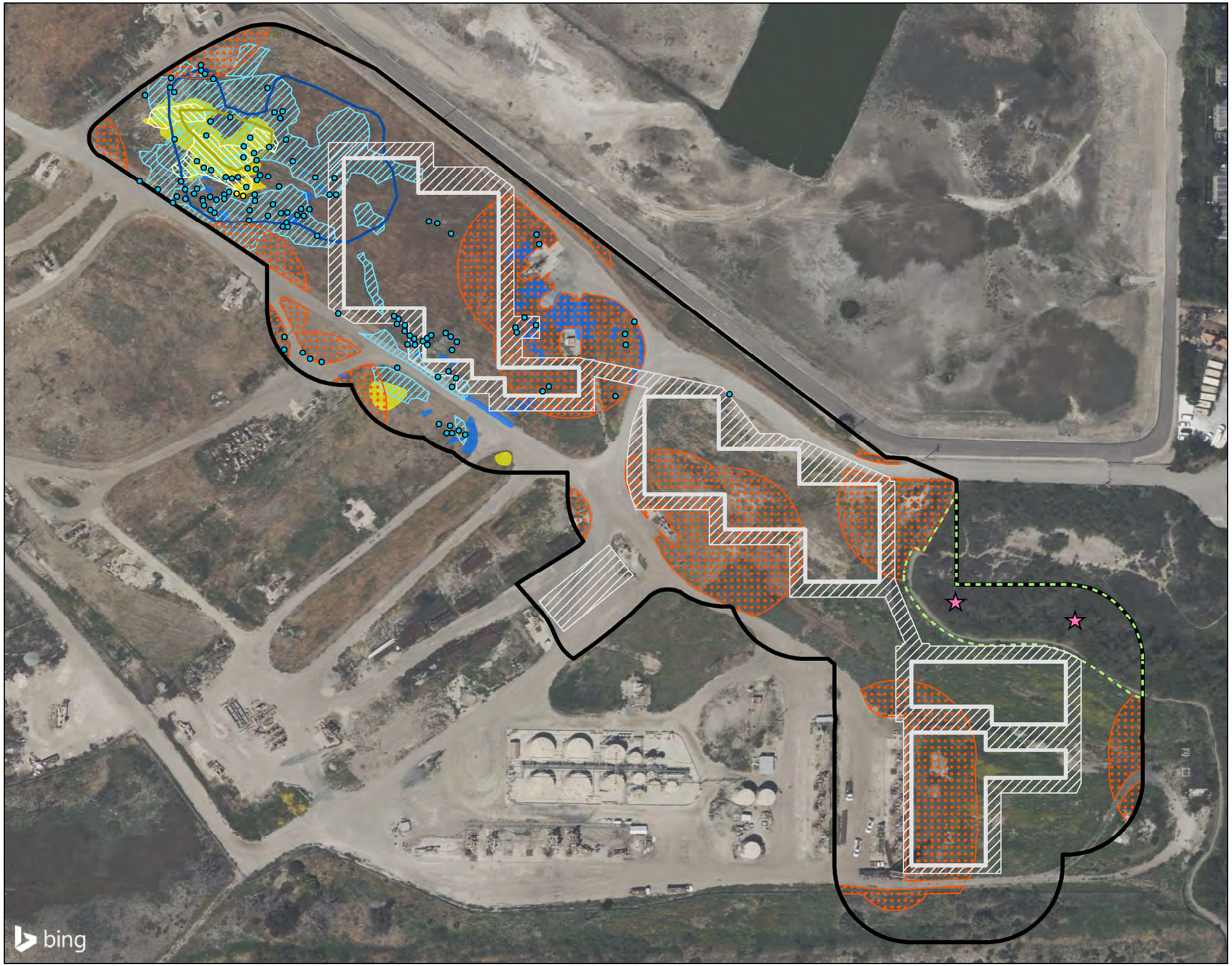

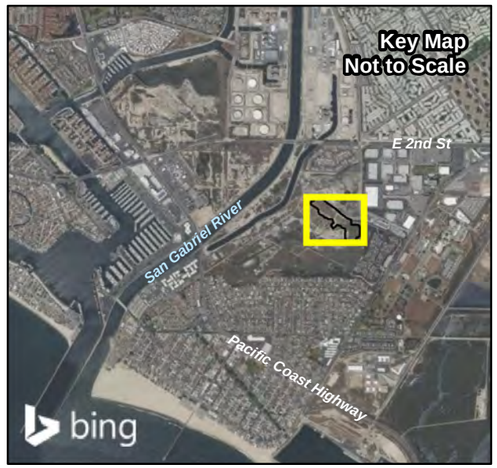

Study Area

Permanent Impacts

Temporary Impacts

Existing Fuel Modification Zones

Heron Pointe Water Quality Basin

Least Bell's Vireo Location

2009 Rare Plants

Coulter's Goldfields

Southern Tarplant

2010 Rare Plants

Coulter's Goldfields

Southern Tarplant

2022 Rare Plants: Southern Tarplant (1,072)

2023 Rare Plants: Coulter's Goldfields

0 62.5 125 250

Feet

1 inch = 125 feet

N

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: April 3, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

Special-Status Species Impacts Map

GLENN LUKOS ASSOCIATES

Exhibit 9

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APPENDIX A

FLORAL COMPENDIUM

The floral compendium lists species identified within the Study Area. Taxonomy follows Jepson (Baldwin et al. 2012) and, for sensitive species, the California Native Plant Society's Rare Plant Online Inventory (CNPS 2022). Common names are taken from Baldwin et al. (2012), Munz (1974), and Roberts (1998). An asterisk (*) denotes a non-native species. Also included are species that were observed by GLA in the Study Area in previous years for other biological surveys on the Hellman Property.

SCIENTIFIC NAME	COMMON NAME
MONOCOTS	
ARACACEAE	**PALM FAMILY**
Phoenix canariensis	Canary Island date palm
EUDICOTS	
AMARANTHACEAE	**AMARANTH FAMILY**
**Amaranthus albus*	tumbling pigweed
ASTERACEAE	**SUNFLOWER FAMILY**
Baccharis pilularis	coyote brush
Baccharis salicifolia	mule fat
* *Centaurea melitensis*	tocalote
Centromadia parryi ssp. *australis*	southern tarplant
Conyza canadensis	common horseweed
* *Dittrichea graveolens*	stinkwort
* *Glebionis coronaria*	crown daisy
Helianthus annuus	western sunflower
Heterotheca grandiflora	telegraph weed
**Lactuca serriola*	prickly lettuce
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields
**Pulicaria paludosa*	Spanish sunflower
**Silybum marianum*	milk thistle
**Sonchus oleraceus*	common sow-thistle
Stephanomeria virgata ssp. *virgata*	tall wreath-plant
AIZOACEAE	**FIG-MARIGOLD FAMILY**
* *Mesembryanthemum crystallinum*	crystalline iceplant
BORAGINACEAE	**BORAGE FAMILY**
Heliotropium curassavicum	alkali heliotrope
BRASSICACEAE	**MUSTARD FAMILY**
* *Brassica nigra*	black mustard
* *Brassica rapa*	field mustard

* *Hirschfeldia incana*	summer mustard
* *Lepidium latifolium*	broad-leaved peppergrass
* *Raphanus sativus*	wild radish
* *Sisymbrium irio*	London rocket
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
* *Atriplex suberecta*	serrate-leaved saltbush
* *Bassia hyssopifolia*	five-hook bassia
* *Chenopodium album*	lamb's quarters
* *Salsola tragus*	Russian thistle
CONCOLVULACEAE	**MORNING GLORY FAMILY**
Cressa truxillensis	Alkali weed
EUPHORBIACEAE	**SPURGE FAMILY**
* *Ricinus communis*	castor bean
FABACEAE	**PEA FAMILY**
* *Melilotus albus*	white sweet clover
* *Melilotus indica*	yellow sweet clover
* *Medicago polymorpha*	bur-clover
FRANKENIACEAE	**FRANKENIA FAMILY**
Frankenia salina	alkali heath
GERANIACEAE	**GERANIUM FAMILY**
* *Erodium botrys*	long-beaked filaree
* *Erodium cicutarium*	red-stemmed filaree
* *Erodium moschatum*	white-stemmed filaree
LAMIACEAE	**MINT FAMILY**
* *Marrubium vulgare*	horehound
MALVACEAE	**MALLOW FAMILY**
* *Malva parviflora*	cheeseweed
Malvella leprosa	alkali-mallow
POACEAE	**GRASS FAMILY**
* *Cortaderia selloana*	pampas grass
Distichlis spicata	salt grass
* *Avena barbata*	slender wild oat
* *Bromus diandrus*	ripgut brome
* *Hordeum marinum* ssp. *gussoneanum*	Mediterranean barley
* *Hordeum murinum* ssp. *leporinum*	hare barley
* *Festuca perennis*	Italian rye grass

POLYGONACEAE	**BUCKWHEAT FAMILY**
* *Polygonum arenastrum*	common knotweed
* *Rumex crispus*	curly dock
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura wrightii	jimsonweed
**Nicotiana glauca*	tree tobacco
URTICACEAE	**NETTLE FAMILY**
Urtica urens	annual stinging nettle

APPENDIX B

FAUNAL COMPENDIUM

The faunal compendium lists species that were either observed within or adjacent to the Study Area. Also included are species that were observed by GLA in previous years for other biological surveys on the Hellman Property. Taxonomy and common names are taken from AOS (2022) for birds; Collins and Taggart (2009) and CDFW (2016) for reptiles and amphibians; and CDFG (2016) for mammals. Also included are species that were observed by GLA in and around the Study Area in previous years for other biological surveys on the Hellman Property.

SCIENTIFIC NAME	COMMON NAME
BIRDS	
COLUMBIDAE	**PIGEONS AND DOVES**
Columbia livia	rock dove
Zenaida macroura	mourning dove
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
CHARADRIIDAE	**PLOVERS AND RELATIVES**
Charadrius vociferus	killdeer
CATHARTIDAE	**NEW WORLD VULTURES**
Cathartes aura	turkey vulture
PANDIONIDAE	**OSPREYS**
Pandion haliaetus	Osprey
ACCIPITRIDAE	**HAWKS AND HARRIERS**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Circus cyaneus	northern harrier
Elanus leucurus	white-tailed kite
FALCONIDAE	**FALCONS**
Falco sparverius	American kestrel
TYRANNIDAE	**TYRANT FLYCATCHERS**
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus verticalis	western kingbird

LANIIDAE	**SHRIKES**
Lanius ludovicianus	loggerhead shrike
VIREONIDAE	**VIREOS AND RELATIVES**
Vireo bellii pusillis[1]	least Bell's vireo
CORVIDAE	**JAYS, MAGPIES, AND CROWS**
Corvus brachyrhynchos	American crow
Corvus corax	common raven
HIRUNDINIDAE	**SWALLOWS**
Hirundo rustica	barn swallow
MIMIDAE	**MOCKINGBIRDS AND TRASHERS**
Mimus polyglottos	northern mockingbird
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European starling
PASSERELLIDAE	**NEW WORLD SPARROWS**
Passerculus sandwichensis	savannah sparrow
Melozone crissalis	California towhee
Zonotrichia leucophrys	white-crowned sparrow
FRINGILLIDAE	**FINCHES**
Carduelis psaltria	lesser goldfinch
Haemorhous mexicanus	house finch
MAMMALS	
GEOMYIDAE	**POCKET GOPHERS**
Thomomys bottae	Botta's pocket gopher
CANIDAE	**FOXES, WOLVES, AND RELATIVES**
Canis familiaris	feral dog
Canis latrans	coyote
PROCYONIDAE	**RACOONS**
Procyon lotor	raccoon

[1] Observed in the Heron Pointe Water Quality Basin only. Does not occur in the Project site.

APPENDIX C

GLENN LUKOS ASSOCIATES

Regulatory Services

October 11, 2023

Devon Shay
Business Manager
Hellman Properties LLC
P.O. Box 2398
Seal Beach, California 90740

SUBJECT: Jurisdictional Delineation for the 12.46-Acre Hellman Property Solar Panel Array Study Area, Seal Beach, Orange County, California

Dear Ms. Shay:

This letter report summarizes our preliminary findings of U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), California Department of Fish and Wildlife (CDFW) jurisdiction for the above-referenced property.[1] The report also addresses the potential presence of wetlands as defined under the California Coastal Act (CCA).

The Solar Panel Array Site (Project site) at the Hellman Property, Orange County [Exhibit 1] contains no blue-line streams as depicted on the U.S. Geological Survey (USGS) topographic map Los Alamitos, California [Exhibit 2]. On July 29, August 25, and October 25, 2022, and March 6, 2023, regulatory specialists of Glenn Lukos Associates, Inc. (GLA) examined the Project site and a 100-foot buffer area surrounding the Project site, which comprise a 12.46 acre Study Area, to determine the presence and limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), (2) Regional Board jurisdiction pursuant to Section 401 of the CWA and Section 13260 of the California Water Code (CWC), and (3) CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. Enclosed is an 80-scale map [Exhibit 3] that depicts the areas evaluated for Corps, Regional Board and CDFW jurisdiction and wetlands defined by the CCA. A soil map is attached as Exhibit 4. For purposes of this report, the Study Area is separated into a western field and eastern field, which are depicted on Exhibit 3. Photographs to document the topography, vegetative communities, and areas evaluated for jurisdiction are provided as Exhibit 5. A map depicting the results of the National Wetland Inventory database search is enclosed as Exhibit 6. Data sheets are attached as Appendix A.

[1] This report presents our best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries.

There are no areas of Corps jurisdiction at the site, including wetlands as defined under Section 404 of the Clean Water Act.

There are no areas of Regional Board jurisdiction at the site, including wetlands as defined under the Porter Cologne Act as set forth in the State Board Wetland Definition and Procedures.

There are no areas of CDFW jurisdiction at the site, including streams, lakes, wetlands, or riparian habitat pursuant to Section 1602 of the Fish and Game Code.

The site contains no areas of potential wetlands as defined under the California Coastal Act. The site does not contain indicators for hydric soils, nor does it contain indicators for wetland hydrology. The site does have small, localized areas with a predominance of wetland indicator plants; however, the overall composition of vegetation does not support a finding of hydrophytic vegetation. The site also has areas that exhibited localized ponding for greater than 14 days in Spring 2023; however, this ponding was due to well above average rainfall and frequent storms that constantly refilled the ponded areas, which does not support a finding of wetland hydrology, as discussed in the Results section below.

I. METHODOLOGY

Prior to beginning the field delineation, a color aerial photograph, a topographic base map of the property, the previously cited USGS topographic map, a soils map, and National Wetland Inventory "Wetland Mapper" website[2] were examined to determine the locations of potential areas of Corps, Regional Board, and CDFW jurisdiction and wetlands defined under the CCA. Suspected jurisdictional and/or wetland areas were field checked for evidence of stream activity and/or wetland vegetation, soils and hydrology. Potential wetland areas were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[3] (Wetland Manual) and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement).[4] Reference was also made to the 2019 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Board Wetland Definition and Procedures) to identify suspected State wetland habitats as regulated by the Regional Board.[5] While in the field, the

[2] https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/
[3] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.
[4] U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
[5] State Water Resources Control Board. 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.

locations where data was collected were recorded with a sub-meter Trimble GPS device in conjunction with a color aerial photograph using visible landmarks.

In order to eliminate sampling bias, data collection points for potential wetland hydrology, soils, and vegetation in the western field were located along four transects in a rough grid pattern. The spacing between of each of the points and between the four transects was determined using a random numbers generator [Exhibit 3].

The National Cooperative Soil Survey (NCSS) has mapped the following soil types as occurring in the general vicinity of the project site:

Bolsa Silty Clay Loam

The Bolsa series consists of somewhat poorly drained soils on alluvial fans. These soils formed in mixed alluvium. Slopes are from 0 to 2 percent. In a typical profile, soil from 0 to 12 inches consists of light brownish gray (10YR 6/2) silty clay loam that becomes dark grayish brown (10YR 4/2) when moist. Soil from 12 to 18 inches consists of light brownish gray (10YR 6/2) silty clay loam, which becomes dark grayish brown (10YR 4/2) when moist and exhibits few, faint mottles. These soils are typically used for row and field crops, as well as urban development.

The Bolsa series is not identified as hydric in the SCS's publication, Hydric Soils of the United States or in the Hydric Soil List for Orange County and Western Part of Riverside County, California.

II. JURISDICTION

A. <u>Army Corps of Engineers</u>

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term “waters of the United States” is defined in Corps regulations at 33 CFR Part 328.3(a) as:

(1) Waters which are:

(i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(ii) The territorial seas; or

(iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraphs (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

Corps regulations at 33 CFR Part 328.3(b) exclude the following from being "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5) above:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(c)(4) as:

> ...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

"Adjacent" wetlands are defined by 33 CFR 328.3(c)(2) as those wetlands "having a continuous surface connection" to other waters of the United States.

1. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(c)(1) as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In 1987 the Corps published the Wetland Manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the Wetland Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Wetland Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be hydrophytic in nature as published in the most current national wetland plant list;

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the Wetland Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

B. Regional Water Quality Control Board

The State Water Resource Control Board and each of its nine Regional Boards regulate the discharge of waste (dredged or fill material) into waters of the United States[6] and waters of the State. Waters of the United States are defined above in Section II.A and waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]).

Section 401 of the CWA requires certification for any federal permit or license authorizing impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as Section 404 of the CWA and Section 10 of the Safe Rivers and Harbors Act, to ensure that the impacts do not violate state water quality standards. When a project could impact waters outside of federal jurisdiction, the Regional Board has the authority under the Porter-Cologne Water Quality Control Act to issue Waste Discharge Requirements (WDRs) to ensure that impacts do not violate state water quality standards. Clean Water Act Section 401 Water Quality Certifications, WDRs, and waivers of WDRs are also referred to as orders or permits.

1. State Wetland Definition

The State Board Wetland Definition and Procedures define an area as wetland as follows: "An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2)

[6] Therefore, wetlands that meet the current definition, or any historic definition, of waters of the U.S. are waters of the state. In 2000, the State Water Resources Control Board determined that all waters of the U.S. are also waters of the state by regulation, prior to any regulatory or judicial limitations on the federal definition of waters of the U.S. (California Code or Regulations title 23, section 3831(w)). This regulation has remained in effect despite subsequent changes to the federal definition. Therefore, waters of the state includes features that have been determined by the U.S. Environmental Protection Agency (U.S. EPA) or the U.S. Army Corps of Engineers (Corps) to be "waters of the U.S." in an approved jurisdictional determination; "waters of the U.S." identified in an aquatic resource report verified by the Corps upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of "waters of the U.S." or any current or historic federal regulation defining "waters of the U.S." under the federal Clean Water Act.

the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation."

The following wetlands are waters of the State:

1. Natural wetlands;
2. Wetlands created by modification of a surface water of the state; and
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):
        i. Industrial or municipal wastewater treatment or disposal,
        ii. Settling of sediment,
        iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
        iv. Treatment of surface waters,
        v. Agricultural crop irrigation or stock watering,
        vi. Fire suppression,
        vii. Industrial processing or cooling,
        viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
        ix. Log storage,
        x. Treatment, storage, or distribution of recycled water, or
        xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
        xii. Fields flooded for rice growing.

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic

feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

C. California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as "a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators."

It is important to note that the Fish and Game Code defines wildlife to include "all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities, including the habitat upon which they depend for continued viability" (FGC Division 0.5, Chapter 1, section 89.5. Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

D. Wetlands Defined Under California Coastal Act

In accordance with definitions in the Coastal Act, wetlands are defined as follows:

> WETLAND - is defined by Section 30121 of the Coastal Act as lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. The definition of wetland is further detailed by Section 13577 (b)(1) of the California Code of Regulations as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to vegetated wetlands or deep-water habitats.

According to the Coastal Commission, the presence of any one of three wetland indicators (hydrology, hydrophytes, or hydric soils) qualifies an area as a wetland under this definition. Furthermore, the Coastal Commission establishes the upland limit of a wetland as:

a. the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover
b. the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or
c. in the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation, and land that is not (14 CCR Section 13577).

The Commission's determination of the presence of a "One Parameter Wetland" typically follows the methods contained U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[7] (Wetland Manual) and more recently, the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (AWS v.2.0).[8] It should be noted, however, that the Army Corps of Engineers and the Wetland Manual requires the presence of all three factors—wetlands hydrology, hydric soils, and a predominance of hydrophytic vegetation—to determine the presence and delineate the boundaries of a federal wetland. While the Commission relies on the federal manuals to establish the presence of any of the three parameters, according to Commission staff typically the presence of a single parameter (e.g., a predominance of wetland vegetation) is sufficient to demonstrate the presence of a wetland and for the Commission to make a presumptive finding for the presence of wetlands.

III. RESULTS

A. Site Description

The proposed solar panel array Project site is located along the northern and eastern boundaries of the Hellman Property as depicted on Exhibit 3. The Project site spans two distinct areas, referred to here as the western field and eastern field, each of which consists of a generally flat

[7] Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

[8] U.S. Army Corps of Engineers. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

field that supports herbaceous vegetation; however, the two areas exhibit differing mixes of herbaceous species.

The western field is characterized by a mosaic of upland grasses and forbs such as ripgut (*Bromus diandrus*, UPL), wild oats (*Avena fatua*, UPL), five-hook bassia (*Bassia hyssopifolia*, FACU), and seaside heliotrope (*Heliotropium curassavicum*, FACU), mixed with plants with an indicator status of FAC or wetter such as saltgrass (*Distichlis spicata*, FAC), with limited amounts of alkali heath (*Frankenia salina*, FACW), and southern tarplant (*Centromadia parryi* ssp. *australis*, FACW).

The eastern field supports only upland vegetation and is notably completely lacking saltgrass (*Distichlis spicata*, FAC), southern tarplant (*Centromadia parryi* ssp. *australis*, FACW), and alkali weed (*Cressa truxillensis*, FACW). The eastern area is dominated by upland grasses and forbs including five-hook bassia (*Bassia hyssopifolia*, FACU), seaside heliotrope (*Heliotropium currassavicum*, FACU), wild radish (*Raphanus sativus*, UPL), stinkwort (*Dittrichia graveolens*, UPL) and upland shrubs such as coyote brush (*Baccharis pilularis*, UPL). Areas of coyote brush include a few individuals of mulefat (*Baccharis salicifolia*, FAC); however, the mulefat is not a dominant species and as such does not function as a wetland indicator in this area.

A portion of the 100-foot buffer adjacent to the eastern field extends into a water quality basin associated with the Heron Pointe residential development [Exhibit 3]. This basin is vegetated with riparian vegetation and may contain areas with wetland hydrology and/or hydric soil indicators. However, because it is a constructed water quality basin, is not part of the Hellman Property, and would not be impacted by the proposed project, it is not addressed in this analysis.

In 2022, a total of 15 soil pits were excavated within the western field as depicted on Exhibit 3, and no hydric soils were detected. Soils uniformly exhibited a chroma of 2.5Y3/3, except for one pit with a chroma of 2.5Y3/2, with no redoximorphic features or other hydric soil indicators. Similarly, the site did not exhibit any indicators for wetland hydrology.

It should be noted that rainfall in 2022 was below average. The National Weather Service cooperative observer station in Long Beach, CA recorded rainfall at 62 percent of average for the 2021-2022 water year.[9] Nevertheless, germination of FACW species such as southern tarplant and alkali weed was observed, indicating that extreme drought conditions were not present. While the reduced rainfall may have resulted in reduced germination of the southern tarplant seedbank, it was noted that the tarplant generally occurred in the same locations mapped in 2009 and 2010, when rainfall at the Long Beach station was at 73 and 121 percent of average,

[9] https://www.cnrfc.noaa.gov/monthly_precip_2022.php

respectively.[10] Tarplant data collected in 2009 and 2010 showed similar distribution as 2022 indicating suitable conditions for assessing the presence or absence of wetland indicator plants.

On March 6, 2023, a ponded area was observed in the western field that remained ponded for longer than 14 days. However, this ponding was due to a series of high rainfall total storm events, and not indicative of wetland hydrology. As of April 2, 2023, rainfall during the 2022-2023 water year totaled 20.46 inches, which is 185 percent of normal. February rainfall totaled 2.90 inches and March rainfall totaled 6.91 inches.[11] It is noteworthy that indicators for hydric soils were not detected within the western field, including the area with ponding, suggesting that sufficient ponding has not occurred over the years that has resulted in the formation of hydric indicators. Additionally, a review of historic aerial photography[12] shows oil field work in 2013 that included trenching through the subject area, which modified the local topography, creating a topographic low spot that collects runoff from the surrounding field and adjacent road during significant rain events. Additionally, the Tank Farm Relocation Project, which was constructed in 2010-2011, included authorizations to use excess fill material generated during construction to raise the elevations of the oil field roads, which further contributes runoff to areas of shallow seasonal ponding in the adjacent fields.

In the eastern field, because of the almost complete lack of plants with an indicator status of FAC or wetter, only one soil pit was excavated to characterize the soil as depicted on Exhibit 3.

B. Corps Jurisdiction

As noted above, the western field supports a mosaic of upland species and species with an indicator status of FAC or FACW. Of the 15 locations where data was collected, six supported a predominance of plants with an indicator status of FAC or wetter; however, of these six points, three points failed the Prevalence Index (PI) test. Furthermore, the collective PI score for all 15 data collection points was 3.91, which is clearly in the upland range. Combined with the complete lack of hydric soil indicators and complete absence of indicators for wetland hydrology, the western field does not meet the thresholds for wetlands in accordance with the criteria in the AWS v 2.0.

The eastern field, unlike the western field, is completely dominated by upland species, so only one soil pit was excavated. This pit was located in an area of monocultural seaside heliotrope (*Heliotropum curassavicum*, FACU) that lacked indicators for both hydric soils and wetland

[10] 2009 data: https://www.cnrfc.noaa.gov/monthly_precip_2009.php; 2010 data: https://www.cnrfc.noaa.gov/monthly_precip_2010.php
[11] Data from the LGB Long Beach Airport weather station. Monthly and water year data available at https://www.cnrfc.noaa.gov/monthly_precip.php and https://www.cnrfc.noaa.gov/awipsProducts/RNORR4RSA.php
[12] Source: Google Earth

hydrology. Therefore, the eastern area does not meet the thresholds for wetlands in accordance with the criteria in the AWS v 2.0.

B. Regional Water Quality Control Board Jurisdiction

Based on the determination for Corps jurisdiction stated above, the Project site does not support wetlands in accordance with the State Board Wetland Definition and Procedures defined in Section II.B above.

C. CDFW Jurisdiction

The Project site does not contain any aquatic features including wetlands, streams, lakes, or riparian habitat that would be subject to the Notification requirements pursuant to Section 1602 of the California Fish and Game Code.

D. Coastal Act Wetlands

Western Field

Vegetation

As noted above for Corps wetlands, the western field supports a mosaic of upland species and species with an indicator status of FAC or FACW. The most common species with an indicator of FAC or wetter was salt grass (*Distichlis spicata*, FAC), which was common in substantial portions of the site. Saltgrass is a well-documented phreatophyte that exhibits the ability to reach ground water or moist soils at 11 feet below ground surface and as such is not a reliable indicator of wetland conditions (saturation in the upper 12 inches), especially in the absence of any indicators for wetland hydrology and hydric soils.

Of the 15 locations in the western field where data was collected, six supported a predominance of plants with an indicator status of FAC or wetter. Of these six locations, in five instances, saltgrass was one of the dominant species, and three locations failed the Prevalence Index (PI) test. It is notable that the collective PI for all 15 data collection points in the western field scored 3.91, which is clearly in the upland range. A collective PI of 3.91 is well above the threshold for the presence of a hydrophytic plant community. Ralph Tiner addresses the problem of basing any wetland determination on Facultative (FAC) vegetation alone and the importance of using a tool with more accurate measurement capabilities (i.e., the Prevalence Index):

> A plant community with a weighted average index (prevalence index) of 3.0 (±0.5) therefore is equivalent to a FAC species that occurs equally in wetlands

> and non-wetlands. Such communities (2.5 through 3.5) are inconclusive regarding their wetland status as assessed by vegetation analysis alone; in other words, other features [hydrology and soils] must be examined to determine whether they are wetland or not.[13]

In addition, the Arid West Supplement has a note regarding the presence of phreatophytes that is relevant to this site. As noted, saltgrass is a well-documented phreatophyte with a root structure that can reach up to 11 feet below the surface to reach the groundwater table or moist soil conditions. On page 91, the Arid West Supplement cautions the reader regarding riparian species that have similarly deep roots:

> Examples of species that occur in these situations include cottonwoods (e.g., *Populus deltoides*, *P. fremontii*) and tree-forming willows (e.g., *Salix gooddingii*, *S. laevigata*). These areas may have a high frequency of phreatophytic species that, when mature, are able to exploit groundwater that is too deep to support wetlands. In such situations, there may be a hydrophytic overstory and a non- hydrophytic understory. If the soils are Entisols lacking hydric soil features and/or wetland hydrology is problematic, more emphasis should be placed on the understory, which may be more indicative of current wetland or non-wetland conditions.[14]

Functionally, the saltgrass behaves like the riparian trees noted in the excerpt from the Arid West Supplement. Given the predominance of upland grasses such as Brome species it is reasonable to assume that the saltgrass is not functioning as a wetland indicator, which is consistent with the lack of hydric soils and apparent lack of hydrology.

Hydrology

The ponded area depicted on Exhibit 5 ponded for greater than 14 days as described above, due to well above average rainfall. In 2022, no primary or secondary indicators of wetland hydrology were detected at any of the 15 data points sampled in the western field.

It should also be noted that regular plowing or disking of the soil, as has been typical for the western portion of the site for decades, impacts soil characteristics. Specifically, it is well documented in the scientific literature that plowing or disking eliminates the soil pores that occur in undisturbed soils. Elimination of the soil pores alters the drainage characteristics of the soil

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[13] Tiner, Ralph W. 1999. *Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping*. Lewis Publishers, New York, pp. 111-113.

[14] U.S. Army Corps of Engineers. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center, p 91.

such that plowed soils tend to pond water much more readily and hold water at the surface than do unplowed soils. [15,16] Because the disking prevents water from moving through the soil profile, it would also preclude saturation within the soil column retarding or preventing formation of hydric soil indicators. Thus, the ponding observed in the western field occurs for longer durations that would occur should such disking not be implemented for weed control as required by the Orange County Fire Authority.

Soils

As discussed above, no hydric soils were detected in the 15 soil pits excavated in the western field. Soils uniformly exhibited a chroma of 2.5Y3/3, except for one pit with a chroma of 2.5Y3/2, with no redoximorphic features or other hydric soil indicators.

Given the complete lack of hydric soil indicators, absence of indicators for wetland hydrology that are not associated with ponding due to rainfall totaling 185 percent of normal, and a plant community with a collective prevalence index of 3.91, the western field does not meet the thresholds for Coastal Act wetlands in accordance with the criteria established in the AWS v 2.0.

Eastern Field

In the eastern field, data was collected at only one point due to the lack of wetland indicator plant species. The one soil pit excavated lacked any indicators of hydric soils or wetland hydrology, and was dominated by seaside heliotrope (*Heliotropium currassavicum*, FACU). Together with the upland plant community, the overall lack of indicators for wetland hydrology and hydric soils across the eastern field indicate that it does not meet the thresholds for Coastal Act wetlands in accordance with the criteria established in the AWS v 2.0.

E. U.S. Fish and Wildlife Service National Wetland Inventory

As noted in the methodology section, the National Wetland Inventory "Wetland Mapper" categorizes much of the western field and the western portion of the eastern field as wetland with the classification code *PEM1Ax*. The U.S. Fish and Wildlife Service includes the following on the National Wetland Inventory website regarding Wetlands Data Limitations, Exclusions and Precautions

> *The U.S. Fish and Wildlife Service's (Service) objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the*

[15] https://crops.extension.iastate.edu/encyclopedia/frequent-tillage-and-its-impact-soil-quality
[16] https://extension.umn.edu/soil-management-and-health/soil-compaction

> *analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.*
>
> *The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.*
>
> *Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.*

Most of the western area and the western portion of the eastern field are mapped on the Wetland Mapper as follows.

a) Classification code: PEM1Ax [Excerpted from Wetland Mapper][17]

*System **Palustrine (P)**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.*

*Class **Emergent (EM)**: Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. Subclass **Persistent (1)**: Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.*

[17] https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

> *Water Regime **Temporary Flooded (A)**: Surface water is present for brief periods (from a few days to a few weeks) during the growing season, but the water table usually lies well below the ground surface for most of the season.*
>
> *Special Modifier **Excavated (x)**: This Modifier is used to identify wetland basins or channels that were excavated by humans.*

The Wetlands Mapper assessment is not accurate, as shown by the on-the-ground assessment recommended by the Limitations, Exclusions, and Precautions for the tool. As noted above, neither the western field nor the eastern field contain wetlands; only a few limited areas exhibit a predominance of wetland indictor plants with an indictor status of FAC or wetter, and these areas lack wetland hydrology and hydric soils. Overall, the western field is dominated by herbaceous upland vegetation mixed with wetland indicator species, and the eastern field supports only upland vegetation while lacking wetland hydrology and hydric soils.

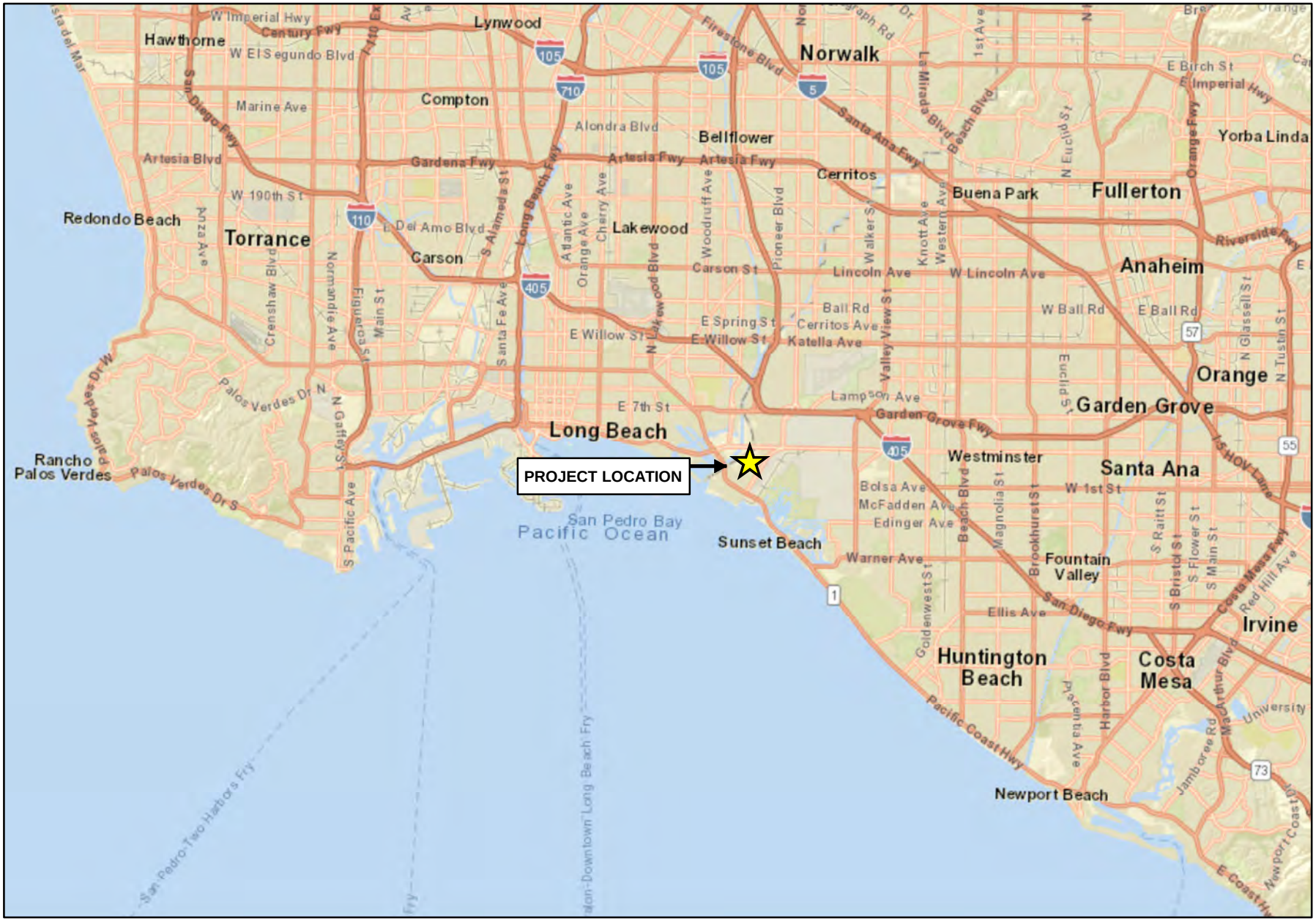
If you have any questions about this letter report, please contact Tony Bomkamp at (949) 929-1651 or Erin Trung at etrung@wetlandpermitting.com.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Tony Bomkamp
Senior Regulatory Specialist

p:0200-8c.JD



HELLMAN PROPERTY
SOLAR PANEL ARRAY

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

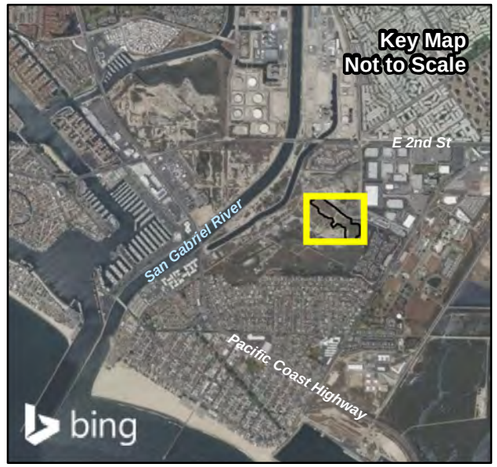
Adapted from USGS Los Alamitos, CA quadrangle

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



Study Area

Western Field

Eastern Field

Heron Pointe
Water Quality Basin

Non-Wetland Ponded Area

Data Point

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 15, 2023

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Jurisdictional Determination Map

GLENN LUKOS ASSOCIATES

Exhibit 3

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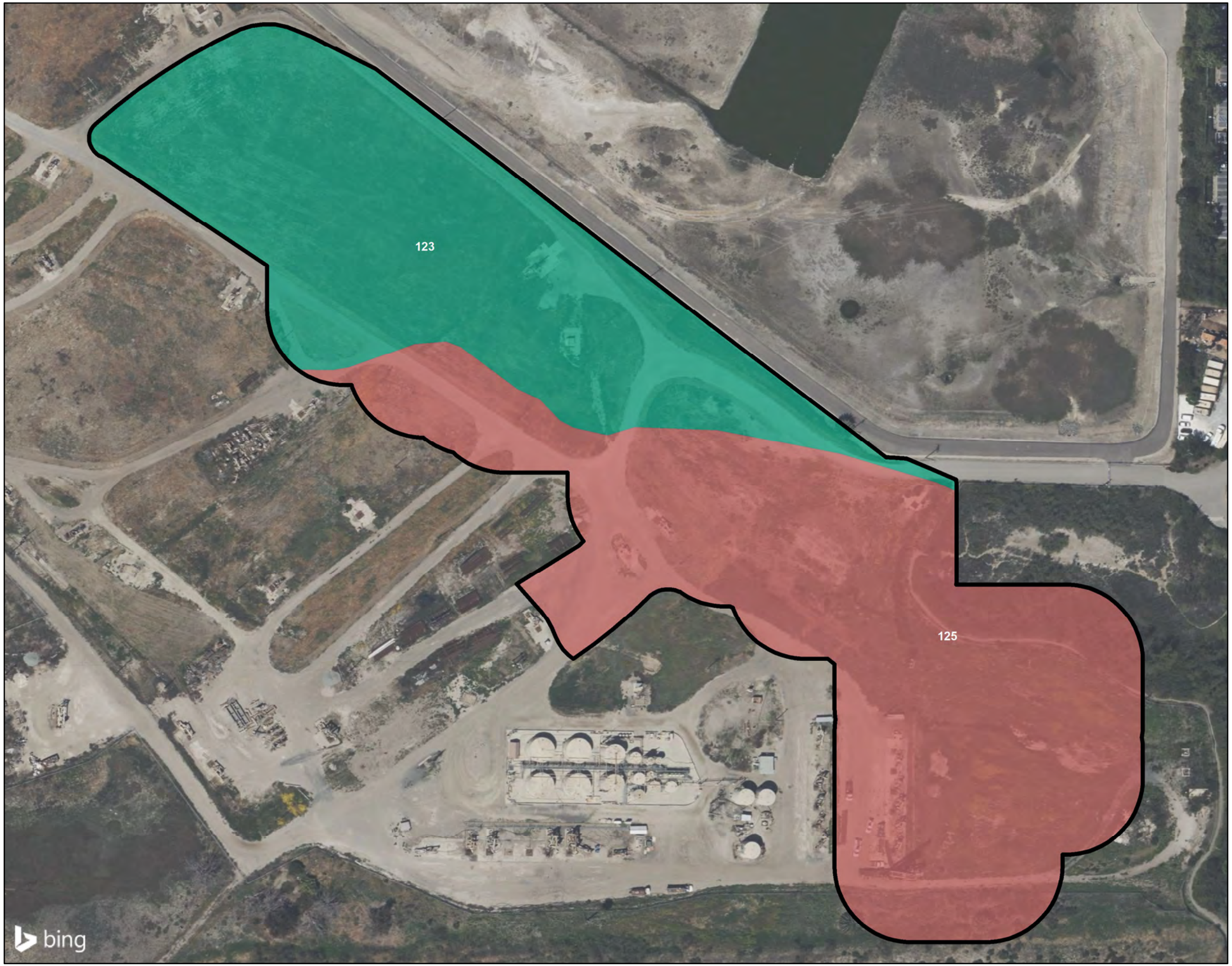
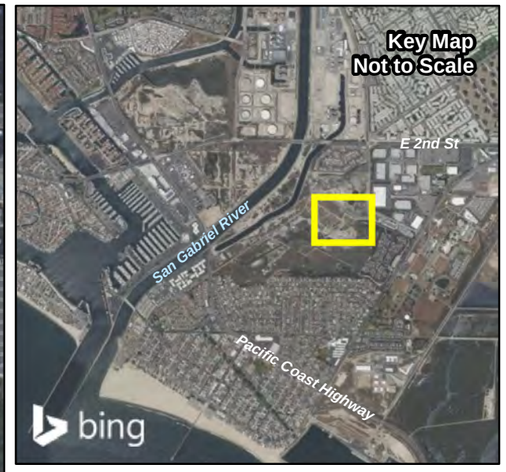




Study Area

123 Bolsa Silt Loam, Drained

125 Bolsa Silty Clay Loam, Drained

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: January 4, 2023

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 4

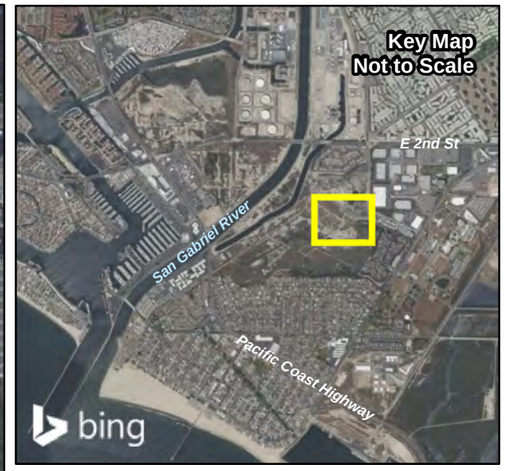
X:\00 - 0362 ONLY\0200-08SOLA\GIS\SoilsGIS\200-8_Soils.mxd

Photograph 1: West-facing view in the eastern field area of the Project site. Note the high level of disturbance. Plant species in this area include alkali heliotrope, five-hook bassia, summer mustard, and perennial pepperweed. August 25, 2022.

Photograph 2: North-facing view of the eastern field portion of the Project site. Data Point #16 is located in the large patch of alkali heliotrope (*Heliotropium currasavicum*). in the center of the photo. August 25, 2022.

Photograph 3: West-facing view of western field portion of the Project. This area is vegetated with the *Distichlis spicata*-annual grasses association with a few small patches of alkali heath (*Frankenia salina*). There is no wetland hydrology or hydric soils, and the overall prevalence index of the western field is >3. July 29, 2022.

Photograph 4. View of *Cressa truxillensis* area in the northwest portion of the western field. This area will not be impacted by the proposed Project and is almost entirely outside of the 100-foot buffer.. August 25, 2022 :



Study Area

Freshwater Emergent Wetland

Freshwater Pond

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: January 5, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

National Wetland Inventory Map

GLENN LUKOS ASSOCIATES

Exhibit 6

X:\00 - 0362 ONLY\0200-08SOLA\GIS\NWI_GIS\200-8_NWI.mxd

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-1

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Distichlis spicata	50	Y	FAC
2. Bassia hyssopifolia	5	N	FACU
3. Centromadia parryi australis	1	N	FACW
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 34 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species 1	x 2 =	2
FAC species 50	x 3 =	150
FACU species 5	x 4 =	20
UPL species _____	x 5 =	_____
Column Totals: 56 (A)		172 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-2

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Distichlis spicata	20	Y	FAC
2. Centromadia parryi australis	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 70 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 10	x 2 = 20
FAC species 20	x 3 = 60
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 30 (A)	80 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

✔ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-3

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Distichlis spicata	30	Y	FAC
2. Bassia hyssopifolia	2	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 70 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 30	x 3 =	90
FACU species 2	x 4 =	8
UPL species	x 5 =	
Column Totals: 32 (A)		98 (B)

Prevalence Index = B/A = 3.06

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: DP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-4

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Cressa truxillensis	25	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 25	x 2 = 50
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 25 (A)	50 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

✔ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-5

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	60	Y	UPL
2. Bassia hyssopifolia	3	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	63 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 37 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 3	x 4 =	12
UPL species 60	x 5 =	300
Column Totals: 63 (A)		312 (B)

Prevalence Index = B/A = 4.95

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-6

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	40	Y	UPL
2. Distichlis spicata	40	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 40	x 3 = 120
FACU species _____	x 4 = _____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	320 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/2	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-7

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	20	Y	UPL
2. Distichlis spicata	45	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 45	x 3 =	135
FACU species	x 4 =	
UPL species 20	x 5 =	100
Column Totals: 65 (A)		235 (B)

Prevalence Index = B/A = 3.61

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-8

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	50	Y	UPL
2. Distichlis spicata	2	N	FAC
3. Frankenia salina	5	N	FACW
4.			
5.			
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 5	x 2 = 10
FAC species 2	x 3 = 6
FACU species _____	x 4 = _____
UPL species 50	x 5 = 250
Column Totals: 57 (A)	266 (B)

Prevalence Index = B/A = 4.67

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-9

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	30	Y	UPL
2. Bassia hyssopifolia	20	Y	FACU
3. Hordeum marinum gussoneanum	15	Y	FAC
4.			
5.			
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 15	x 3 =	45
FACU species 20	x 4 =	80
UPL species 30	x 5 =	150
Column Totals: 65 (A)		275 (B)

Prevalence Index = B/A = 4.23

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: DP-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-10

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	40	Y	UPL
2. Avena fatua	10	N	UPL
3. Frankenia salina	3	N	FACW
4. Distichlis spicata	2	N	FAC
5.			
6.			
7.			
8.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 3	x 2 = 6
FAC species 2	x 3 = 6
FACU species _____	x 4 = _____
UPL species 50	x 5 = 250
Column Totals: 55 (A)	262 (B)

Prevalence Index = B/A = 4.76

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-11

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes _____ No ✔	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	20	Y	UPL
2. Distichlis spicata	10	Y	FAC
3. Frankenia salina	10	Y	FACW
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 10	x 2 = 20
FAC species 10	x 3 = 30
FACU species _____	x 4 = _____
UPL species 20	x 5 = 100
Column Totals: 40 (A)	150 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: DP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-12

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	40	Y	UPL
2. Distichlis spicata	10	N	FAC
3. Frankenia salina	3	N	FACW
4.			
5.			
6.			
7.			
8.			
	53 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 47 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 3	x 2 = 6
FAC species 10	x 3 = 30
FACU species _____	x 4 = _____
UPL species 40	x 5 = 200
Column Totals: 53 (A)	236 (B)

Prevalence Index = B/A = 4.45

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-13

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Raphanus sativus	90	N	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 90	x 5 =	450
Column Totals: 90 (A)		450 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-14

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca perenne	10	N	FAC
2. Distichlis spicata	40	Y	FAC
3. Frankenia salina	40	Y	FACW
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 40	x 2 = 80
FAC species 50	x 3 = 150
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 90 (A)	230 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

✔ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: DP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 08-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-15

Investigator(s): T Bomkamp/E Trung Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Heliotropium currasavicum	30	Y	FACU
2. Bassia hyssopifolium	10	Y	FACU
3. Centromadia parryi australis	2	N	FACW
4.			
5.			
6.			
7.			
8.			
	42 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 58 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 2	x 2 = 4
FAC species _____	x 3 = _____
FACU species 40	x 4 = 160
UPL species _____	x 5 = _____
Column Totals: 42 (A)	164 (B)

Prevalence Index = B/A = 3.90

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hellman Ranch City/County: Orange Sampling Date: 10-25-22

Applicant/Owner: Hellman Properties LLC State: CA Sampling Point: DP-16

Investigator(s): E Trung/B Gale Section, Township, Range: Unsectioned, T4S, R12W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <2%

Subregion (LRR): LRR C Lat: 33.754663 Long: -118.090589 Datum: NAD 83

Soil Map Unit Name: Bolsa Silty Clay Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Heliotropium curassavicum	50	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 50	x 4 =	200
UPL species	x 5 =	
Column Totals: 50 (A)		200 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: DP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None	0.0	NA	NA	SCL	No Redox or other indicators

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): NA

Hydric Soil Present? Yes _____ No ✔

Remarks:

No soil color assessed. Soil is mixed fill material with broken concrete pieces and small rocks. No hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators. Review of historic aerials shows no evidence of ponding or saturation during wetter than normal years.

SOUTHERN TARPLANT
MITIGATION AND MONITORING PLAN

FOR

HELLMAN PROPERTY SOLAR PANEL ARRAY

LOCATED IN THE CITY OF SEAL BEACH, ORANGE COUNTY, CALIFORNIA

Prepared For:

Hellman Properties LLC
P.O. Box 2398
Seal Beach, California 90740
Contact: Devon Shea
Phone: (562) 431-6022 ext. 101

Prepared By:

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1940 E. Deere Avenue, Suite 250
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October 12, 2023

INFORMATION SUMMARY

A. Restoration Plan Date: October 12, 2023

B. Report Title: Southern Tarplant Mitigation and Monitoring Plan for Hellman Property Solar Panel Array

C. Project Site Location: Seal Beach, Orange County

D. Owner/Applicant:
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Devon ShayBusiness Manager
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E. Principal Investigator:
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Santa Ana, California 92705
Phone: (949) 837-0404
Report Preparer: Erin Trung

F. Individuals Conducting Fieldwork: Tony Bomkamp, Erin Trung, Brittany Gale, David Moskovitz

TABLE OF CONTENTS

Page #

1.0 INTRODUCTION 1
1.1 Background and Scope of Work 1
1.2 Project Location 1
1.3 Project Description 1
2.0 METHODOLOGY FOR RARE PLANT SURVEYS 2
2.1 Botanical Resources 3
3.0 SPECIES SUBJECT TO IMPACTS AND MITIGATION 4
3.1 Southern Tarplant (*Centromadia parryi* ssp. *australis*) 4
3.1 Impacts to Southern Tarplant 5
4.0 HABITAT MITIGATION AND MONITRING PLAN 5
4.1 Existing Conditions for Project Area Occupied by Southern Tarplant 6
4.2 Existing Conditions for Area Subject Southern Tarplant Translocation 6
4.3 Seed Collection from Donor/Impact Population 6
4.4 Preparation of Translocation Site 7
4.5 Plant Palette for Translocation Site 7
4.6 Broadcasting Seed at Translocation Site 7
4.7 Five-Year Maintenance Program 8
4.8 Five-Year Monitoring Program 8
4.8 Annual Monitoring Reports 11
5.0 COMPLETION OF COMPENSATORY MITIGATION 11
5.1 Notification of Completion 11
5.2 Final Performance Standards Resolution 11
6.0 CONTINGENCY MEASURES 12
6.1 Initiating Procedures 12
6.2 Alternative Locations for Contingency Mitigation 12
6.3 Funding Mechanism 12
6.4 Responsible Parties 13
7.0 LONG-TERM MANAGEMENT PLAN AND ASSOCIATED FUNDING 13
7.1 Monitoring Tasks 13
7.2 Funding and Prioritizing Tasks 14
7.0 REFERENCES 15

TABLES

Table 2-1. Summary of Focused Botanical Surveys for the Project Site.....2
Table 4.2: Plant Palette for Translocation Area.....7

EXHIBITS

Exhibit 1 Regional Map
Exhibit 2 Vicinity Map
Exhibit 3 Site Plan
Exhibit 4 Special-Status Plants Map
Exhibit 5 Vegetation Map
Exhibit 6 Site Photographs
Exhibit 7 Soils Map
Exhibit 8 Special-Status Plants Impact Map
Exhibit 9 Southern Tarplant Translocation Area

1.0 INTRODUCTION

1.1 Background and Scope of Work

This document provides the results of focused biological surveys for southern tarplant (*Centromedia parryi* ssp. *australis*), quantifies potential impacts, and sets forth proposed mitigation for impacts associated with the approximately 4.57-acre Solar Panel Array project (the Project) located in the City of Seal Beach, Orange County, California. This Habitat Mitigation and Monitoring Plan (HMMP) identifies and evaluates impacts and proposed mitigation to southern tarplant in the context of the California Environmental Quality Act (CEQA), and State regulations such as the California Coastal Act (CCA) and the California Fish and Game Code.

The scope of this plan includes a discussion of existing conditions for the approximately 4.57-acre Project site that is contained with a larger 12.46-acre Study Area. All methods employed regarding the focused southern tarplant surveys, an analysis of impacts to southern tarplant and proposed methods for reestablishment of southern tarplant on the Hellman Property are addressed in more detail below.

1.2 Project Location

The Project site covers approximately 4.57 acres in the City of Seal Beach, Orange County, California [Exhibit 1 – Regional Map] and is located within Sections 11 and 12 of Township 5 South, Range 12 West of the U.S. Geological Survey (USGS) 7.5-minute quadrangle map Los Alamitos, California [Exhibit 2 – Vicinity Map]. The Project site is located on the Hellman Property, which is an active oil field with a network of earthen roads, active oil wells, oil and gas storage tanks, and associated infrastructure. The Project site is located in the northeastern portion of the Hellman Property and is bordered by the Los Alamitos Retarding Basin to the north, a water quality basin associated with the Heron Pointe residential development to the east, and active oil fields to the south and west. A portion of the Los Cerritos Wetlands, which was formerly part of the Hellman Property, is located to the south and west beyond the active oil field.

1.3 Project Description

The proposed project consists of the installation of a 1.5MW fixed-tilt ground mounted solar photovoltaic system. This system will interconnect with the Hellman Property's electrical infrastructure and operate in parallel with the utility grid to provide sustainable clean energy in support of the facilities operations. The system features three arrays with a total of 56 low profile table structures supported by piles with concrete foundations.

For this report, the term “Project site” is defined as that area proposed for direct impact by the proposed Project and totals 4.57 acres [Exhibit 3]. The 4.57-acre Project site includes a 2.66-acre permanent impact area and a 1.91-acre temporary impact area consisting of staging and temporary work areas. The term “Study Area” is defined as all portions of the Project site, a 100-foot buffer beyond the Project site that was included in the analysis in accordance with the

requirements of the Coastal Act and the Seal Beach Local Coastal Program (LCP), and additional areas beyond the 100-foot buffer that support sensitive biological resources [Exhibit 3]. The Study Area totals 12.46 acres.

It should be noted that an access road for and a portion of the Los Alamitos Retarding Basin are located within the 100-foot buffer as depicted by Exhibit 3; however, the biological resources in these areas were not mapped or surveyed for this analysis, and these areas are not included in the Study Area.

2.0 METHODOLOGY FOR RARE PLANT SURVEYS

To adequately identify special-status plants in accordance with the requirements of CEQA, Glenn Lukos Associates (GLA) assembled biological data consisting of the following components:

- Performance of vegetation mapping for the Project site
- Evaluation of Soil Surveys for the Project site
- Review of previous special-status plant survey data for the Project site
- Performance of habitat assessments and site-specific biological surveys to evaluate the potential presence/absence of special-status plants in accordance with the requirements of CEQA
- Performance of focused surveys for special-status plants.

The focus of the special-status plant surveys was determined through initial site reconnaissance, review of previous special-status plant survey data, a review of the California Natural Diversity Database (CNDDB, CDFW 2022), CNPS 9th edition online inventory (CNPS 2022), Natural Resource Conservation Service soil data (NRCS 2022), other pertinent literature, knowledge of the region, and GLA's extensive knowledge of the Hellman Property. Site-specific general surveys within the Project site and the surrounding buffer area were conducted on foot in the proposed development areas for special-status plant species. Table 2-1 provides a summary list of survey dates, survey types and personnel.

Table 2-1. Summary of Focused Botanical Surveys for the Project Site

Survey Type	Survey Dates	Biologist(s)
Vegetation Mapping	July 29, August 4, August 25, October 25 2022	TB, ET, BG
Focused Botanical Surveys	July 29 and August 4, 2022 February 17 and March 7, 2023	TB, ET, DM

TB = Tony Bomkamp, ET = Erin Trung, BG = Brittany Gale, DM = David Moskovitz

2.1 Botanical Resources

A site-specific survey program was designed to accurately document the botanical resources within the Project site, and consisted of five components: (1) a literature search; (2) preparation of a list of target special-status plant species and sensitive vegetation communities that could occur within the Project site; (3) general field reconnaissance survey(s); (4) vegetation mapping according to the List of Vegetation Alliances and Associations; and (5) habitat assessments and focused surveys for special-status plants. As will be discussed below, two special-status plants were detected in the Study Area including southern tarplant and Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), both of which had been documented in the Study Area during past surveys by GLA [Exhibit 4 – Special Status Plants Map]. The proposed project fully avoids and provides a buffer for the Coulter's goldfields ranging from approximately 36 to 73 feet.

2.1.1 Literature Search

Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. A thorough archival review was conducted using available literature and other historical records. These resources included the following:

- California Native Plant Society, Rare Plant Program. Inventory of Rare and Endangered Plants of California (online edition, v-9.5, CNPS 2023)
- CNDDB for the Los Alamitos, California USGS 7.5-minute quadrangle and surrounding six quadrangles (CDFW 2022)

The literature review also included biological studies previously conducted for the Hellman Property and adjacent Los Cerritos Wetlands:

- Biological Technical Report, Hellman Ranch Tank Farm Relocation Project (GLA 2006)
- Biological Technical Report for Proposed Hellman Gas Plant Project (GLA 2018)
- Los Cerritos Wetlands Habitat Assessment Report: Habitat Types & Special Status Species (Tidal Influence 2012)

2.1.2 Vegetation Mapping

Vegetation communities within the Project site were mapped according to the "Membership Rules" of the List of Vegetation Alliances and Associations (or California Natural Communities List). The list is based on A Manual of California Vegetation, Second Edition or MCVII, which is the California expression of the National Vegetation Classification. Where necessary, deviations were made when areas did not fit into exact vegetation descriptions (membership rules). Non-conforming vegetation alliances or cover types were named based on the dominant plant species present. Plant communities were mapped in the field directly onto a 100-scale (1″=100′) aerial photograph as depicted on Exhibit 5.

2.1.3 Special-Status Plant Species and Habitats Evaluated for the Project Site

Based on the information compiled from the literature search, vegetation profiles and a list of target sensitive plant species and habitats that could occur within the Project site were developed and incorporated into a mapping and survey program to achieve the following goals: (1) characterize the vegetation associations and land use; (2) prepare a detailed floristic compendium; (3) identify the potential for any special-status plants that may occur within the Project site; and (4) prepare a map showing the distribution of any sensitive botanical resources associated with the Project site, if applicable.

2.1.4 Botanical Surveys

GLA biologists Tony Bomkamp and Erin Trung visited the site on July 29, and August 4, 2022, and Erin Trung and David Moskovitz visited the site on February 17 and March 6, 2023, to conduct general and focused plant survey(s). Southern tarplant was censused and mapped during 2022 surveys, and Coulter's goldfields was mapped during 2023 surveys. Survey(s) were conducted in accordance with accepted botanical survey guidelines (Nelson 1984, USFWS 2000, CNPS 2001, CDFW 2018). As applicable, survey(s) were conducted at appropriate times based on precipitation and flowering periods. An aerial photograph, a soil map, and/or a topographic map were used to determine the community types and other physical features that may support sensitive and uncommon taxa or communities within the Project site. Survey(s) were conducted by following meandering transects within target areas of suitable habitat. All plant species encountered during the field survey(s) were identified and recorded following the above-referenced guidelines. Scientific nomenclature and common names used in this report follow Baldwin et al. (2012) and Munz (1974).

3.0 SPECIES SUBJECT TO IMPACTS AND MITIGATION

3.1 Southern Tarplant (*Centromadia parryi* ssp. *australis*)

Southern tarplant has a California Rare Plant Rank ("CRPR") of 1B.1, indicating that it is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California. This species is an annual herb in the sunflower family that blooms from May to November. It is adapted to and thrives in disturbed areas, and it also occurs in alkali playas, alkali grasslands, and along the margins of salt marshes. This species is very distinctive and flowers as early as June and sometimes into October or November.

Southern tarplant is typically associated with a variety of mesic (not typically wetland) habitats including alkali grasslands, alkali meadows, and the fringes of alkali marshes as well as the fringes of coastal salt marshes. Native habitats for this species support a suite of grasses, sedges, and rushes that are adapted to slightly to moderately alkaline soils (though GLA has documented this species occurring occasionally in neutral and even slightly acidic soils). Southern tarplant can tolerate, and even thrive, with moderate levels of disturbance including regular mowing or disking if the mowing and/or disking occur in the late fall or early winter after seed set. The ability to tolerate disturbance allows this species to persist in highly disturbed or degraded

landscapes such as some of the most highly disturbed areas on the Project site, which is subject to disking or mowing of weeds to reduce fuel loads as required by the Orange County Fire Authority (OCFA), because, as noted, the Hellman Property is an active oil field. This ability to tolerate such disturbance also makes translocation of this species very easy, as long as receptor sites have suitable soils and competition from weedy competitors is limited.

Because this species has declined across its range, mitigation for impacts is appropriate; however, determination of Environmentally Sensitive Habitat Area (ESHA) as defined by the California Coastal Act for areas occupied by this species is not always warranted due to the ability of this species to colonize highly disturbed areas as shown in Photographs 1 and 2 of Exhibit 6. Southern tarplant can colonize areas that are highly disturbed and generally would not support native vegetation, such as areas with a gravel substrate and cracks in concrete. It can also occur with non-native halophytes such as small-flowered iceplant. Such areas are themselves in need of rehabilitation in order to reestablish native habitat that could include southern tarplant as a component. As such, determination of ESHA for areas occupied by this species should consider the specific habitat types that the species is associated with

A population of approximately 1,072 individuals was detected during focused surveys in the Study Area in 2022, of which 457 were in established fuel modification zones for oil field operations, and 615 were not within fuel modification zones. Exhibit 4 depicts the locations of southern tarplant within the Study Area, and also includes the locations of southern tarplant observed in 2009 and 2010.

3.1 Impacts to Southern Tarplant

The project would result in direct impacts to southern tarplant due to installation of the solar array. Of the 615 tarplant in the Study Area not located in established fuel modification zones, a total of 83 southern tarplant covering 0.03 acre would be impacted, of which 57 are located in the temporary impact area and 29 in the permanent impact area.

4.0 HABITAT MITIGATION AND MONITRING PLAN

This section sets forth the components of the southern tarplant Habitat Mitigation and Monitoring Plan (HMMP) including:

- Existing conditions within Project Site area occupied by southern tarplant
- Existing conditions within proposed translocation site
- Seed collection from donor/impact population
- Preparation of translocation site
- Plant palette for translocation site
- Broadcasting seed at translocation site
- Five-year maintenance program
- Five-year monitoring program
- Five-year reporting requirements

4.1 Existing Conditions for Project Area Occupied by Southern Tarplant

The Study Area is located within the Hellman Property oil field and consists of disturbed land with existing oil wells, and pipes, and associated infrastructure, internal roads, and open fields. The vegetation communities are generally disturbed with a substantial component of non-native species. The topography is flat, with elevations ranging from 2 feet above mean sea level (AMSL) in the southeast portion of the Study Area to 8 feet AMSL in the northwest portion of the study area. Soils within the Study Area consist of Bolsa silty clay loam [Exhibit 7 – Soil Map]. The Project site consists of adjacent flat fields separated by an oil access road.

The westerly portion of the field that is occupied by the southern tarplant consists entirely of ***Distichlis spicata*** **herbaceous alliance (salt grass flats)** ***Distichlis spicata*** **– annual grasses (41.200.13).** The area occupied by southern tarplant is dominated by *Distichlis spicata* but with a substantial component of annual grasses ranging from 5 to 45 percent relative cover, including ripgut, wild oat, hare barley, and Mediterranean barley. Southern tarplant is also present as individuals, small clumps and larger clumps. This area also has a few small, isolated patches of alkali heath that are not large enough to comprise a separate mapping unit. The membership rules for this alliance require that *Distichlis spicata* have greater than 50 percent relative cover in the herbaceous layer, and higher cover than any other grass species. The *Distichlis spicata* – annual grasses association has no state rarity rank; however, the alliance has an S4 rarity rank.

4.2 Existing Conditions for Area Subject Southern Tarplant Translocation

A candidate tarplant translocation mitigation area within the Hellman Property is shown on Exhibit 9, and totals approximately 1.27 acre. The candidate southern tarplant translocation area has flat topography similar to the impact area and supports a mix of non-native grasses and forbs including black mustard (*Brassica nigra*), summer mustard (*Hirschfeldia incana*), wild radish (*Raphanus sativus*) and non-native grasses such as rip gut, slender wild oats, and hare barley. The area occupied by southern tarplant to be impacted by the Project totals 0.03 acre, and therefore a portion of the candidate translocation area covering at least 0.12-acre (4:1 mitigation to impact ratio) will ultimately be identified as the mitigation site depending on site-specific conditions. Prior to selection of the final translocation area, additional site-specific analysis of soils will be conducted to determine the most suitable area for tarplant translocation.

4.3 Seed Collection from Donor/Impact Population

As noted, southern tarplant is an annual plant that tolerates disturbance including mowing and disking which help to distribute seed within such disturbed habitats. In most years, this species begins flowing in June or July and can flower into October or November with seed set typically occurring between August and late November. Seed would be collected from all plants to be impacted, which would require several seed collection visits as seed ripens. To collect seed, flowering heads with ripe seed are cut with pruning shears and collected in paper bags or cardboard file boxes. It is not necessary to clean or otherwise process the collected material. The collected seed heads would be stored in a cool, dry environment until introduction to the translocation site.

To ensure that all available seed is collected, a qualified biologist will monitor the existing localities of southern tarplant to determine when the seeds are ready for collection. The seed will be collected by personnel with experience in the collection of seeds. As noted, by removing all seed heads from plants to be impacted by hand using pruning shears, all available seed would be collected for distribution at the mitigation site. Additional seed collection for subsequent years from the extant population would be limited to no more than five percent of the existing population in any single year.

4.4 Preparation of Translocation Site

As noted, the translocation site is dominated by non-native grasses and forbs. To prepare the site for introduction of tarplant, the non-native weeds will be removed through a grow-and-kill program that will require two to three grow-and-kill cycles. The grow and kill cycles will depend on natural rainfall and/or irrigation based on the amount and timing of the rainfall. The grow-and-kill cycle would begin with winter rains and extend into spring and early summer as determined necessary by the project biologist. If determined necessary, the grow-and-kill programs could be extended into a second season based on the judgment of the Project Biologist.

As discussed above, additional soils analysis will be conducted prior to selection of the final mitigation site. Based on the soils map for the site, the translocation site and the impact site exhibit similar soils. Southern tarplant prefers heavier soils with a clay component, and as such, if the top layer of soil is determined to be unsuitable, then site preparation will include excavation of the top layer of soil to expose the underlying soils which would be suitable.

4.5 Plant Palette for Translocation Site

In addition to the southern tarplant, other native plants would be incorporated into the translocation site to enhance the habitat value and to reduce weed cover over the long term.

Table 4-2: Plant Palette for Translocation Area

Species Latin Name	Species Common Name	Seed Amount/Acre
Malvella leprosa	Alkali sida	4 lbs/acre
Cressa truxillensis	Alkali weed	4 lbs/acre
Centromadia parryi ssp. *australis*	Southern tarplant	Hand-Collected Seed

4.6 Broadcasting Seed at Translocation Site

Seed introduction will occur before the rainy season between October 1 and October 15. Should seed collection occur past October 15, such seed would be distributed at the time of collection. The southern tarplant seed heads would be distributed by hand broadcasting collected plant material across the translocation site and raking in using a hand rake. Additional seed would be hand broadcast across the site and raked in along with the southern tarplant seed.

4.7 Five-Year Maintenance Program

Maintenance Activities

The purpose of this program is to ensure the success of the mitigation planting. Maintenance will occur over the five-year life of the project. Once reintroduction is completed the habitat restoration specialist will schedule a meeting with key members of the landscape maintenance crew to identify proper maintenance procedures. The following tasks will be performed as general maintenance duties:

Weeding

Because southern tarplant does not emerge until late spring and does not flower until June or July, the potential for removing this species accidentally during weeding is high. Therefore, no weeding will be performed in areas where southern tarplant is introduced until the area is surveyed by the project biologist to determine whether southern tarplant has germinated and emerged in vegetative form. If southern tarplant has emerged, individuals will be flagged and the project biologist will review the site with maintenance crews to identify the southern tarplant to ensure they are not affected during weeding. Weeding will be done by hand and no herbicides will be used within the southern tarplant reintroduction areas once southern tarplant is present. As noted above, herbicides can be used during the grow-and-kill cycle but will be terminated once seeding of the tarplant and native plant palette occurs. In addition, devices such as weed whips can be used to remove heavy weed infestations in the vicinity of the tarplant under the supervision of the project biologist.

Trash Removal

All debris of human origin will be removed from the mitigation area on a regular basis. The appearance of the mitigation area will be well maintained to deter vandalism and dumping.

Responsible Parties

Hellman Properties will be responsible for financing and carrying out maintenance activities and may assign the maintenance responsibilities to an appropriate contractor but will retain ultimate responsibility for maintenance of the mitigation site.

Schedule

Maintenance visits will be scheduled as necessary to ensure that the mitigation site is maintained free of trash and is not disturbed by other maintenance activities. The maintenance schedule provides for 12 visits for the first year, and six visits per year for the second through fifth years to maintain the site.

4.8 Five-Year Monitoring Program

Performance Criteria

The goal of the mitigation program is to establish southern tarplant within a 0.12-acre portion of the 1.27-acre candidate translocation site, such that the site supports a minimum of 332 individuals (4:1 mitigation ratio for impacts to 83 individuals) during at least two seasons during the five-year monitoring period. In addition, non-native cover within the translocation site will be maintained at less than 25-percent throughout the five-year monitoring period.

First-Year Monitoring
Southern tarplant typically flowers between July and October with peak flowering typically occurring in August or September. Monitoring of the translocated population will begin in June and will be conducted every two weeks until peak flowering occurs. When peak flowering occurs, as determined by the project biologist, counts will be obtained for the reintroduced populations.

Success Standard: 1) Reintroduced populations to achieve 332 individuals.
2) Translocation site to exhibit less than 25-percent non-native cover.

If the reintroduced populations do not achieve 332 individuals, additional seed will be collected from the existing populations (not to exceed five percent of donor population) at Hellman Properties and the seed introduced in the mitigation area. A yearly report will be submitted by December 31 to the City of Seal Beach and California Department of Fish and Wildlife (CDFW) that summarizes the performance of the reintroduction program for southern tarplant. In addition, the report will include recommendations for improving the success of the program and will also include potential remedial measures, such as increased maintenance, as potential problems are noted.

Second-Year Monitoring
Monitoring of the translocated population will begin in June and will be conducted every two weeks until peak flowering occurs. When peak flowering occurs, as determined by the project biologist, counts will be obtained for the reintroduced populations.

Success Standard: 1) Reintroduced populations to achieve 332 individuals.
2) Translocation site to exhibit less than 25-percent non-native cover.

If the reintroduced populations do not achieve 332 individuals, additional seed will be collected from the existing populations (not to exceed five percent of donor population) at Hellman Properties and the seed introduced in the mitigation area. A yearly report will be submitted by December 31 to the City of Seal Beach and California Department of Fish and Wildlife (CDFW) that summarizes the performance of the reintroduction program for southern tarplant. In addition, the report will include recommendations for improving the success of the program and will also include potential remedial measures, such as increased maintenance, as potential problems are noted.

Third-Year Monitoring
Monitoring of the translocated population will begin in June and will be conducted every two weeks until peak flowering occurs. When peak flowering occurs, as determined by the project biologist, counts will be obtained for the reintroduced populations.

Success Standard: 1) Reintroduced populations to achieve 332 individuals.
2) Translocation site to exhibit less than 25-percent non-native cover.

If the reintroduced populations do not achieve 332 individuals, additional seed will be collected from the existing populations (not to exceed five percent of donor population) at Hellman Properties and the seed introduced in the mitigation area. A yearly report will be submitted by

December 31 to the City of Seal Beach and California Department of Fish and Wildlife (CDFW) that summarizes the performance of the reintroduction program for southern tarplant. In addition, the report will include recommendations for improving the success of the program and will also include potential remedial measures, such as increased maintenance, as potential problems are noted.

Fourth-Year Monitoring

Monitoring of the translocated population will begin in June and will be conducted every two weeks until peak flowering occurs. When peak flowering occurs, as determined by the project biologist, counts will be obtained for the reintroduced populations.

Success Standard: 1) Reintroduced populations to achieve 332 individuals.
2) Translocation site to exhibit less than 25-percent non-native cover.

If the reintroduced populations do not achieve 332 individuals, additional seed will be collected from the existing populations at Hellman Properties and the seed introduced in the mitigation area. A yearly report will be submitted by December 31 to the City of Seal Beach and California Department of Fish and Wildlife (CDFW) that summarizes the performance of the reintroduction program for southern tarplant. In addition, the report will include recommendations for improving the success of the program and will also include potential remedial measures, such as increased maintenance, as potential problems are noted.

Fifth-Year Monitoring

Monitoring of the translocated population will begin in June and will be conducted every two weeks until peak flowering occurs. When peak flowering occurs, as determined by the project biologist, counts will be obtained for the reintroduced populations.

Success Standard: 1) Reintroduced populations to achieve 332 individuals.
2) Translocation site to exhibit less than 25-percent non-native cover.

If the reintroduced populations do not achieve 332 individuals, additional seed will be collected from the existing populations at Hellman Properties and the seed introduced in the mitigation area. A yearly report will be submitted by December 31 to the City of Seal Beach and California Department of Fish and Wildlife (CDFW) that summarizes the performance of the reintroduction program for southern tarplant. In addition, the report will include recommendations for improving the success of the program and will also include potential remedial measures, such as increased maintenance, as potential problems are noted.

If performance standards are not achieved during the five-year monitoring program, Hellman Properties will consult with CDFW to determine whether corrective measures and an extension of the five-year monitoring program will be necessary.

4.8 Annual Monitoring Reports

An annual report shall be submitted to the City of Seal Beach and CDFW by January 1 of each year for 5 years after planting. Photos from designated photo stations shall be included.

At the end of each of the five-monitoring period growing seasons, for the duration of the monitoring period, an annual report will be prepared for submittal to the City of Seal Beach and CDFW. The first annual report shall be delivered on January 1st of the year following the first quantitative monitoring. These reports shall include the number of southern tarplant during each of the five monitoring seasons as well as the non-native cover. These reports will assess both attainment of yearly target success criteria and progress toward final success criteria. These reports will also include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities for that year;
- A vicinity map indicating location of the mitigation site(s);
- A mitigation site map identifying habitat types, transect locations, photo station locations, etc. as appropriate;
- Description and evaluation and any and all of maintenance performed;
- Description of additional seeding performed as necessary including location of source population(s) and per
- Copies of all monitoring photographs from designated photo stations;
- Copies of all completed field data sheets; and
- An analysis of all qualitative and quantitative monitoring data.

5.0 COMPLETION OF COMPENSATORY MITIGATION

5.1 Notification of Completion

The Project Biologist should notify Hellman Properties, the City of Seal Beach, and CDFW in writing when the monitoring period is complete and the City-approved success criteria have been met.

5.2 Final Performance Standards Resolution

If the project meets performance standards at the end of the five-year monitoring period, the translocation be considered a success. If not, the maintenance and monitoring program will be extended one full year at a time, and a specific set of remedial measures approved by the City of Seal Beach and CDFW will be implemented until the standards are met. This process will continue until year-five standards are met or until the City of Seal Beach and CDFW determine that other mitigation measures are appropriate.

Should the translocation efforts meet all goals prior to the end of the five-year monitoring period, the City of Seal Beach and CDFW, at their discretion, may terminate the monitoring effort and release the bond. At that time the Applicant/Permittee will be released from further maintenance and monitoring requirements of the mitigation area.

5.3 Agency Confirmation

Following receipt of the final annual monitoring report, the City of Seal Beach and CDFW will contact the permittee as soon as possible to schedule a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation will not be considered complete without an onsite inspection by CDFW and written confirmation that approved performance standards have been achieved.

It is therefore critical that agency staff review annual reports on a timely basis and provide comments throughout the maintenance and monitoring program so that any project deficiencies they note can be addressed prior to the expected end of the program.

6.0 CONTINGENCY MEASURES

6.1 Initiating Procedures

If a performance standard is not met at the termination of the mitigation project or if the approved success criteria are not met, the Project Biologist will prepare an analysis of the cause(s) of failure and, if determined necessary by the City of Seal Beach and CDFW propose remedial actions for approval. If the compensatory mitigation site has not met one or more of the performance standards, the permittee's maintenance and monitoring obligations shall continue until the City of Seal Beach and CDFW gives final approval the mitigation obligations have been satisfied. It is therefore incumbent upon the Project Biologist to foresee project deficiencies as part of the monitoring program and take appropriate steps to address the situation.

6.2 Alternative Locations for Contingency Mitigation

Sufficient area for establishment of the mitigation site is available so alternative locations would be unnecessary. Although this plan is expected to be successful, both onsite and off-site alternative locations may be used in the event that revegetation cannot be achieved.

6.3 Funding Mechanism

The Applicant/Permittee will fund planning, implementation, maintenance, and monitoring of any contingency measures that may be required to achieve mitigation goals through an up-front payment to the Contractor. Thereafter, all expenses in implementing this mitigation plan are to be borne by the Contractor.

6.4 Responsible Parties

The Applicant/Permittee will be responsible for implementing, maintaining, and monitoring any contingency procedures.

7.0 LONG-TERM MANAGEMENT PLAN AND ASSOCIATED FUNDING

Upon completion of and acceptance by the City of Seal Beach and CDFW that the five-year performance standards have been achieved, implementation of a Long-Term Management Plan (LTMP) will begin. With the successful completion of the mitigation and the achievement of the performance standards, it is expected that the tarplant area will require only limited management activities that would include the following:

(1) Ongoing Monitoring,
(2) Ongoing Non-Native Invasive Vegetation Control,
(3) Trash and Debris Removal.

7.1 Monitoring Tasks

A qualified Biological Monitor shall be retained to assist in implementing the LTMP and to monitor the status of the LTMP for tarplant mitigation area. The activities to be conducted by the Biological Monitor are as follows.

Activity: Annual Monitoring. Conduct annual monitoring of the Long Term Management Area to determine what management activities are needed and where to focus those activities.

Activity: Work Planning. Prepare an annual work plan and coordinate with the maintenance contractor(s) to carry out the management activities including the need for non-native species removal, trash and debris removal, or other management activities.

Activity: Data Collection. Document qualitative and quantitative data related to the implementation of management activities.

Activity: Annual Reporting. At the end of the first year, and then every other year, a management report will be prepared by the Biological Monitor and will be submitted to the City of Seal Beach and CDFW. These reports will include:

(a) A description of the maintenance activities conducted during that calendar year;

(b) The date of and location where the management activities were undertaken;

(c) Information regarding weed eradication/abatement, including the amount removed and treated, frequency and timing of removal and treatment, and disposal specifics; and

(d) Photos from designated photo stations.

7.2 Funding and Prioritizing Tasks

7.1.1. Funding

Prior to impacts associated with the project, the amount of a non-wasting endowment will be determined that will be necessary to fund the annual cost of carrying out the LTMP activities described above, if approved by the City of Seal Beach and CDFW. If approved by the City of Seal Beach and CDFW, the endowment will fund all management and monitoring activities associated with the LTMP. No further monetary obligations will be required of the Manager or any future long-term manager.

The endowment shall be approved by the City of Seal Beach and CDFW or designee. If a designee is approved to hold the endowment, the Agencies will require the entity to enter into an agreement that contains terms relating to management of the endowment, the periodic auditing and reporting of expenditures, earnings and other pertinent information, and provisions for the transfer of the endowment and unspent earnings to the Agencies, or a successor owner/manager under certain conditions. If approved by the Agencies, the Manager will transfer the total non-wasting endowment fund to the designee approved by the City of Seal Beach and CDFW within one year after commencement of construction.

The endowment will be placed in an interest-bearing security for the sole purpose of carrying out the management activities described above. The Manager will have access to the interest generated by the endowment and will be able to draw on the funds throughout the year to carry out the management activities.

7.1.2. Prioritizing Tasks

The anticipated that the activities to be conducted annually will include monitoring, trash and debris removal, invasive plant control and management reporting. Invasive vegetation removal is the activity that will occur in perpetuity, but because of the dynamic nature of biological systems, is an activity that may not need to occur every single year. Other management activities might be added as part of the adaptive management of the LTMA, but these activities are not anticipated at this time.

Each year the Manager and Biological Monitor will develop a Work Plan that prioritizes the mandatory management activities and other adaptive management activities based on natural resource conditions for that year. How the annual draw on the endowment will be spent will be determined based on this prioritized Work Plan.

Because the management needs will vary from year to year, any unspent interest would be left in the interest-bearing security and could be utilized the following year(s). This adaptive funding mechanism provides the necessary flexibility for the Manager to allocate funds toward those management activities that require attention for that particular year and to plan ahead for implementation of management activities that become necessary in the future.

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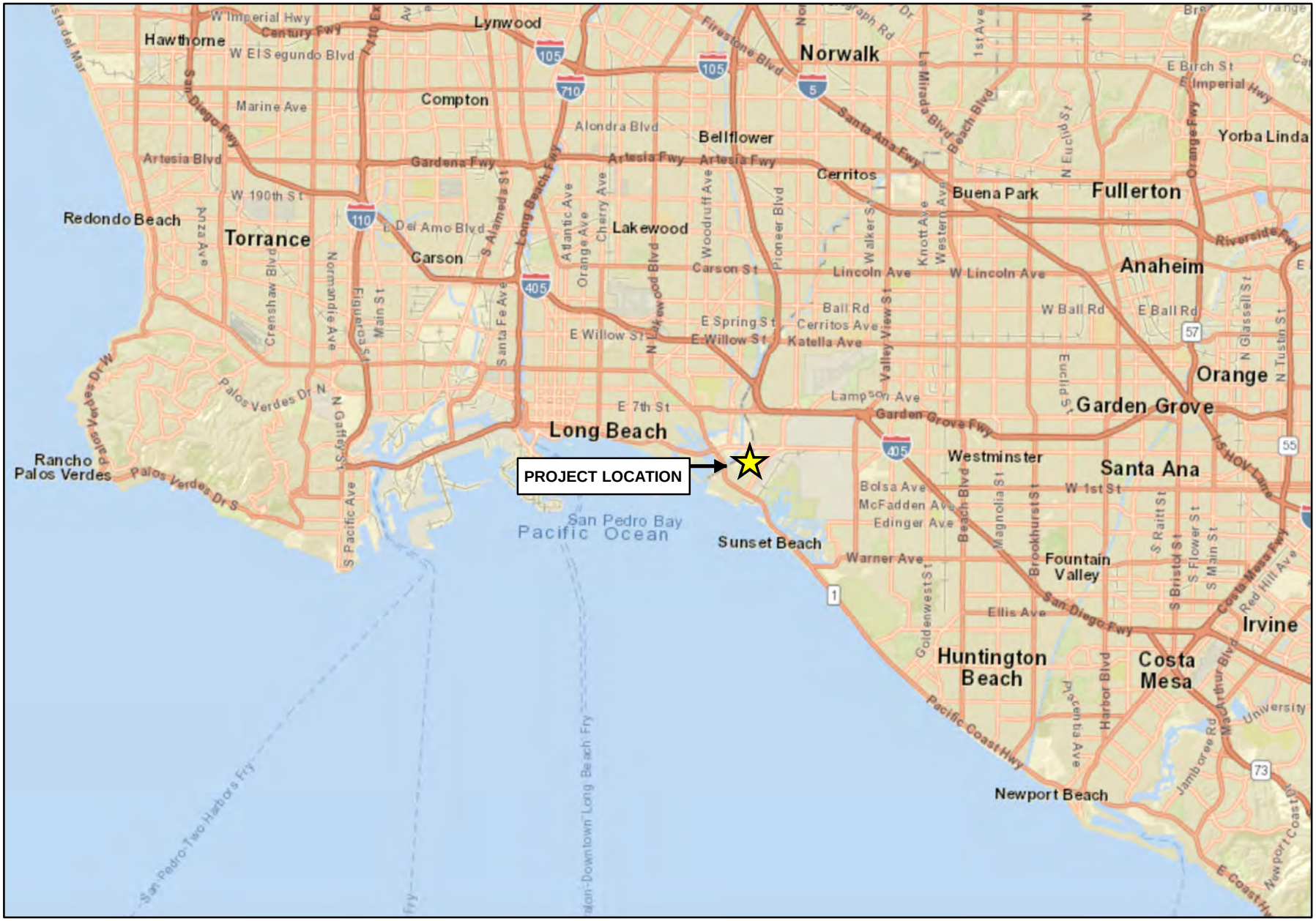


HELLMAN PROPERTY
SOLAR PANEL ARRAY

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

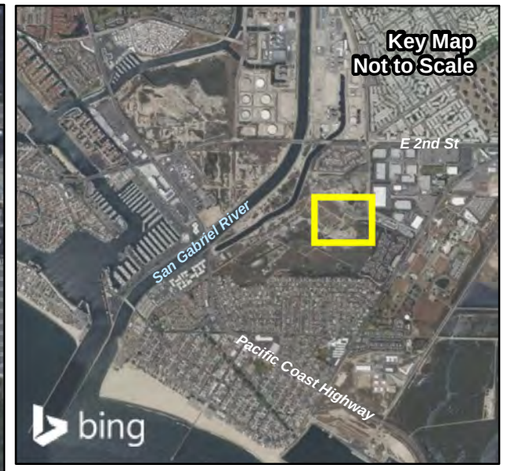
Adapted from USGS Los Alamitos, CA quadrangle

HELLMAN PROPERTY
SOLAR PANEL ARRAY

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



Study Area

Permanent Impacts

Temporary Impacts

100' Buffer of Permanent Impacts

N

0 62.5 125 250

Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: January 4, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

Site Plan

GLENN LUKOS ASSOCIATES

Exhibit 3

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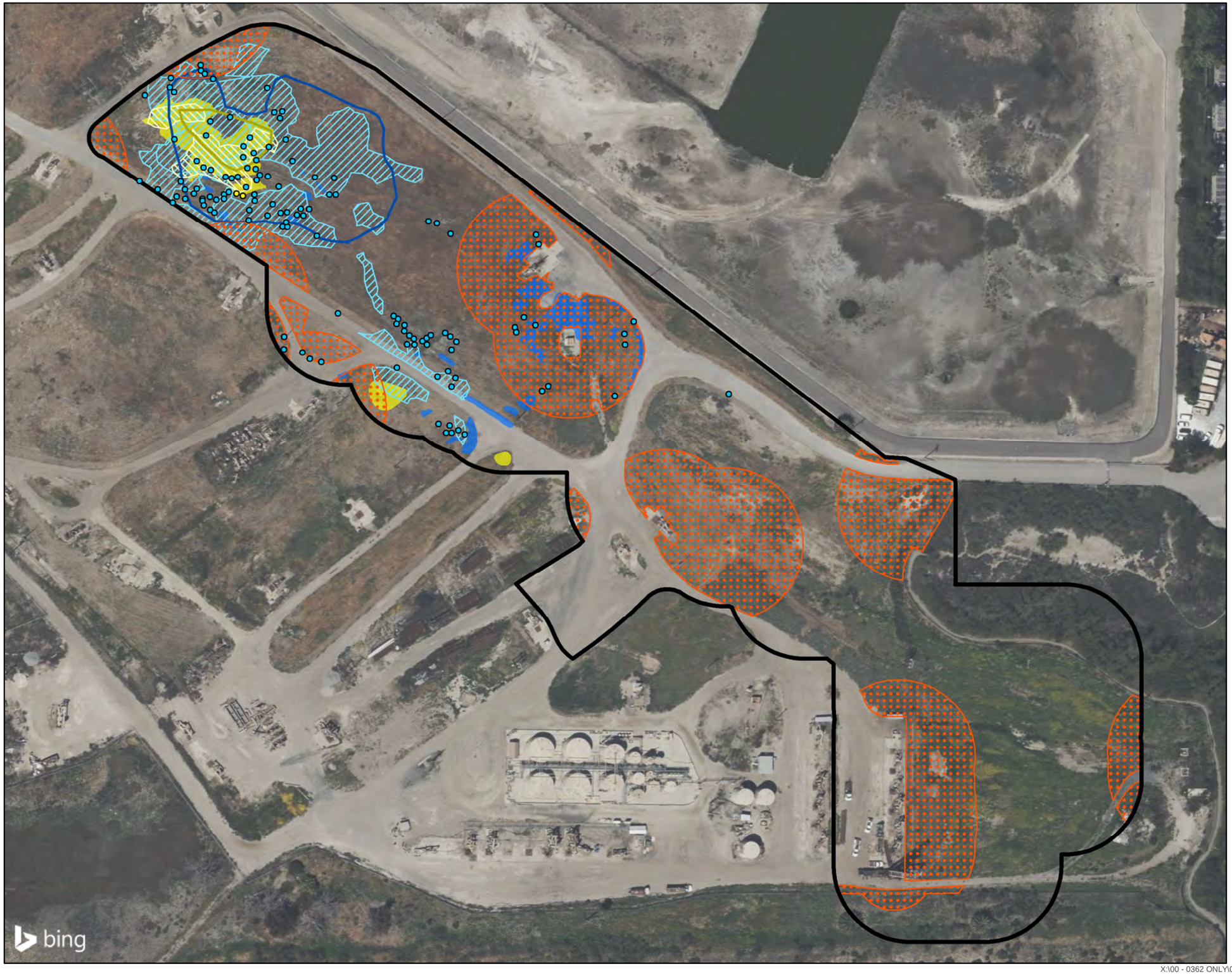

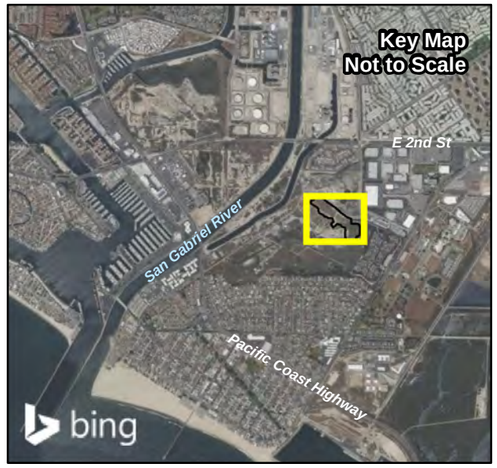

Study Area

Existing Fuel Modification Zones

2009 Rare Plants

Coulter's Goldfields

Southern Tarplant

2010 Rare Plants

Coulter's Goldfields

Southern Tarplant

2022 Rare Plants

Southern Tarplant (1,072)

2023 Rare Plants

Coulter's Goldfields

0 62.5 125 250

Feet

1 inch = 125 feet

N

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 28, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

Special-Status Species Map

GLENN LUKOS ASSOCIATES

Exhibit 4

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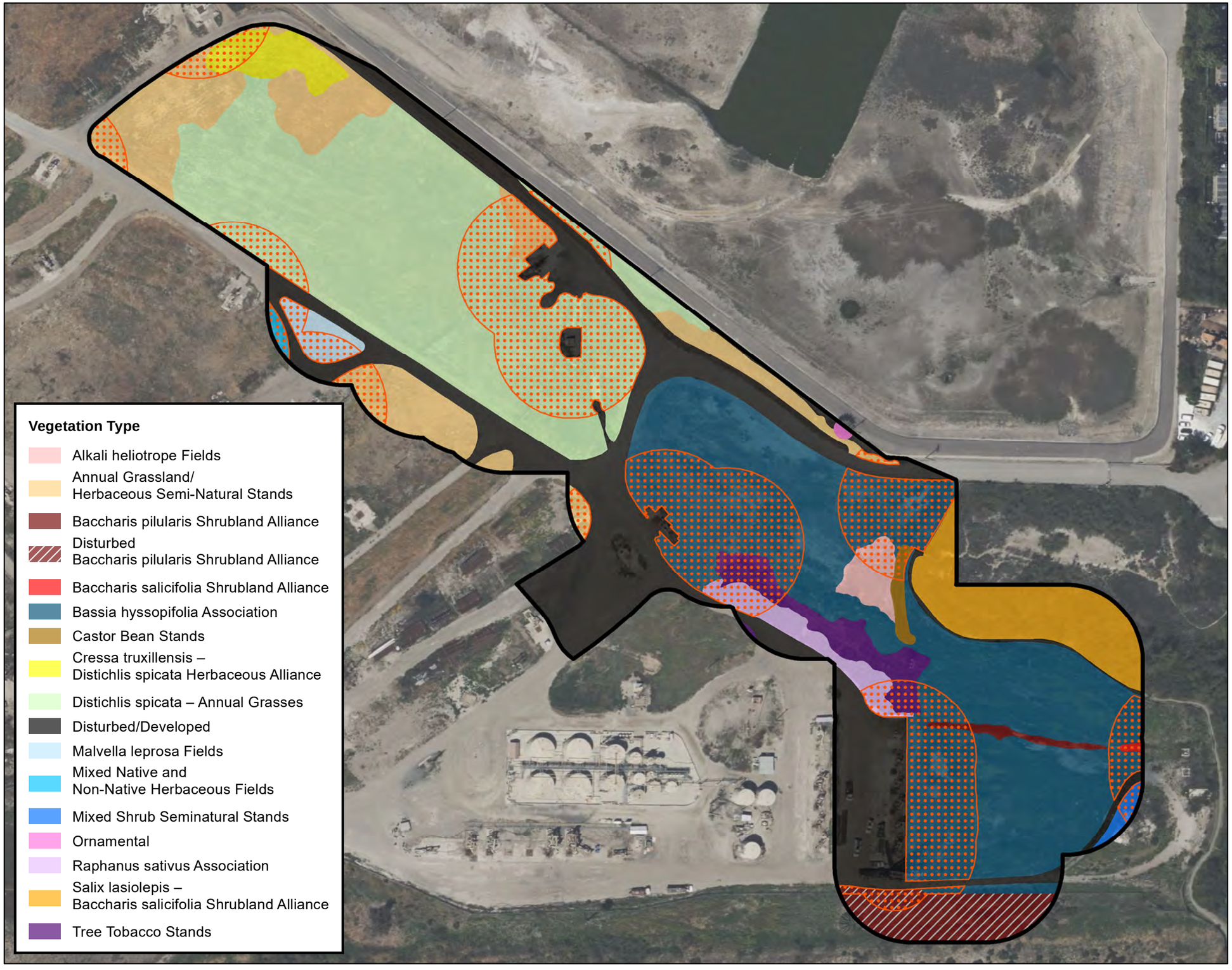
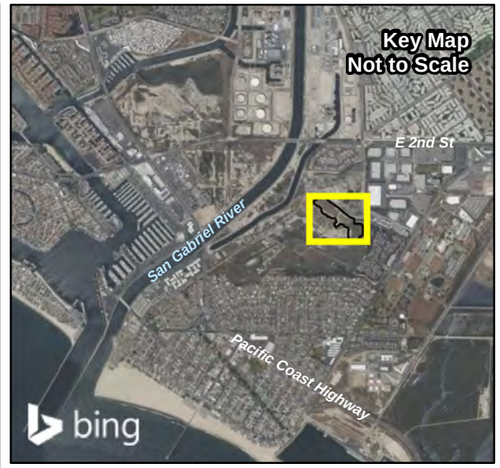




Study Area

Existing
Fuel Modification Zones

N

0 62.5 125 250
Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 28, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

Vegetation Map

GLENN LUKOS ASSOCIATES

Exhibit 5

X:\00 - 0362 ONLY\0200-08SOLA\GIS\VegetationGIS\200-8_Vegetation.mxd

Photograph 1: West-facing view of southern tarplant growing on the edge of a road. July 29, 2022.

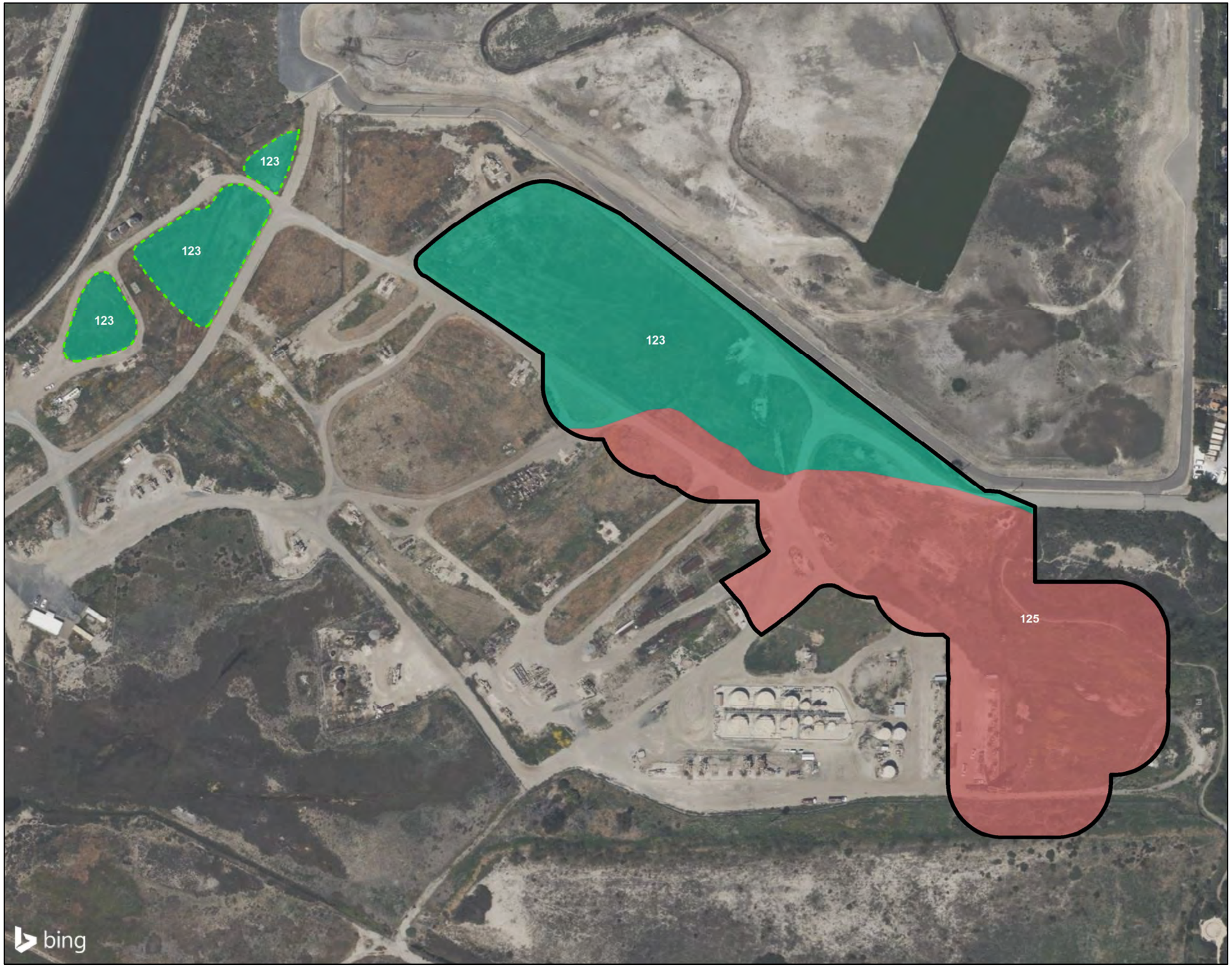
Photograph 2: Southern tarplant growing in a highly disturbed roadside area. July 29, 2022.

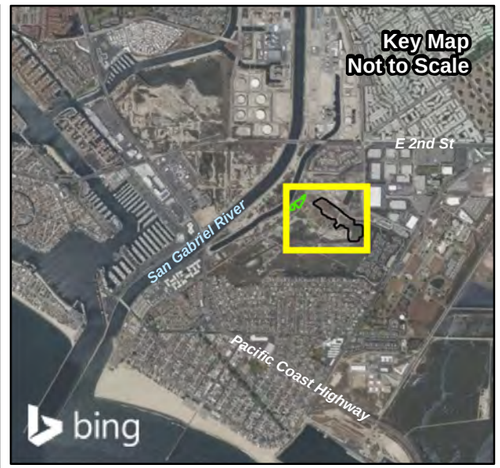
GLENN LUKOS ASSOCIATES

Exhibit 6

HELLMAN PROPERTY SOLAR PANEL ARRAY

Site Photographs





Study Area

Southern Tarplant Translocation Area

123 Bolsa Silt Loam, Drained

125 Bolsa Silty Clay Loam, Drained

N

0 87.5 175 350

Feet

1 inch = 175 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 29, 2023

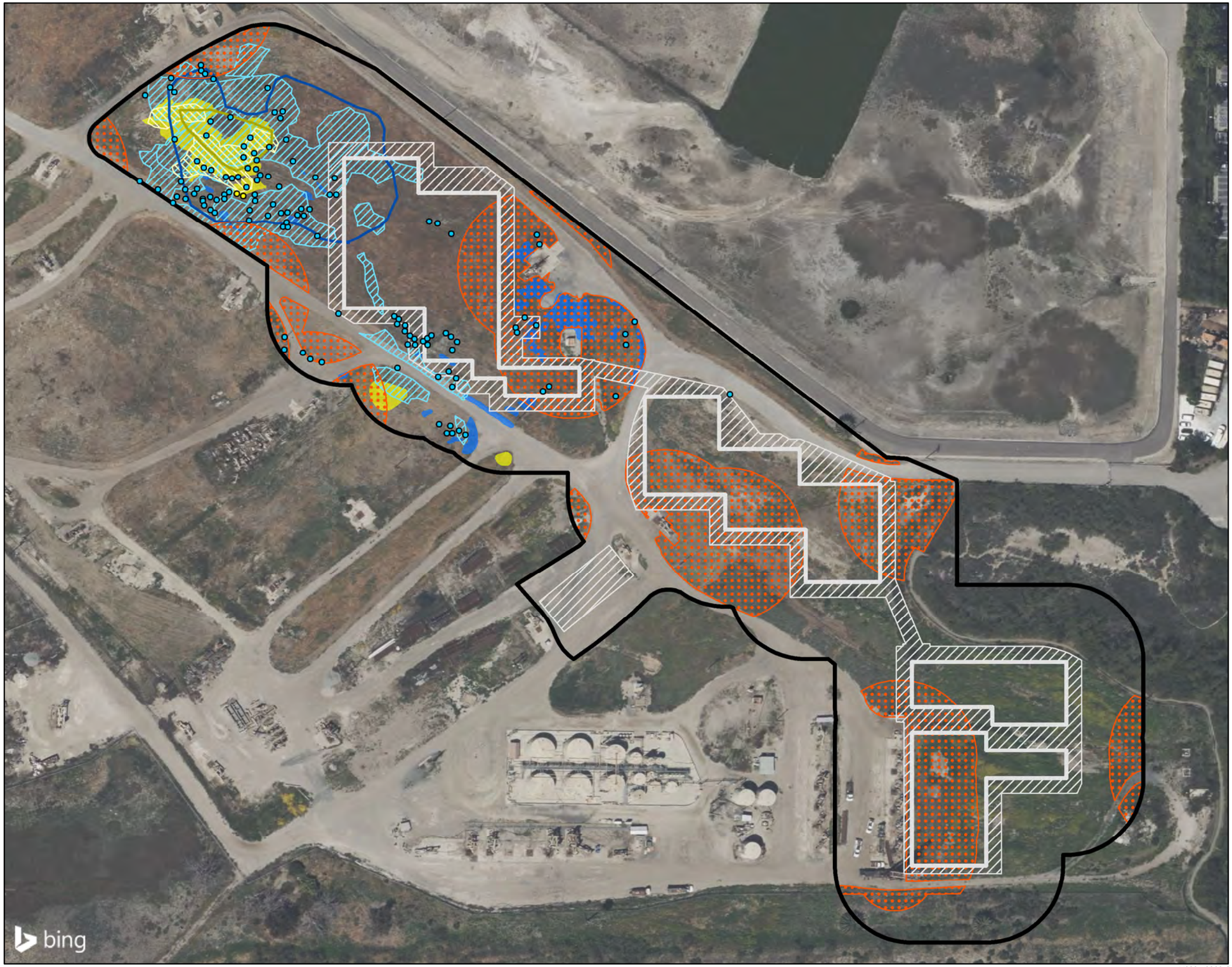
HELLMAN PROPERTY SOLAR PANEL ARRAY

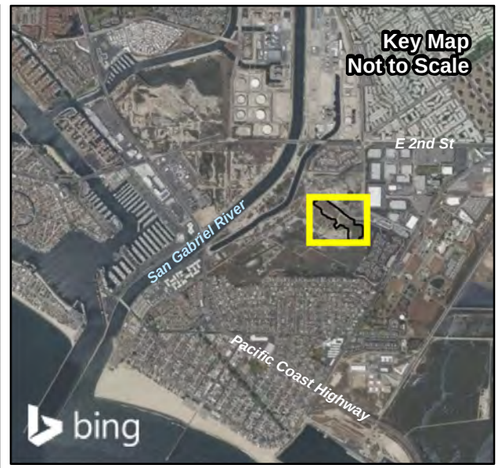
Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 7

X:\00 - 0362 ONLY\0200-08SOLA\GIS\SoilsGIS\200-8_Soils_HMMP.mxd





Study Area

Permanent Impacts

Temporary Impacts

Existing Fuel Modification Zones

2009 Rare Plants

Coulter's Goldfields

Southern Tarplant

2010 Rare Plants

Coulter's Goldfields

Southern Tarplant

2022 Rare Plants:

Southern Tarplant (1,072)

2023 Rare Plants:

Coulter's Goldfields

0 62.5 125 250

Feet

1 inch = 125 feet

N

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 28, 2023

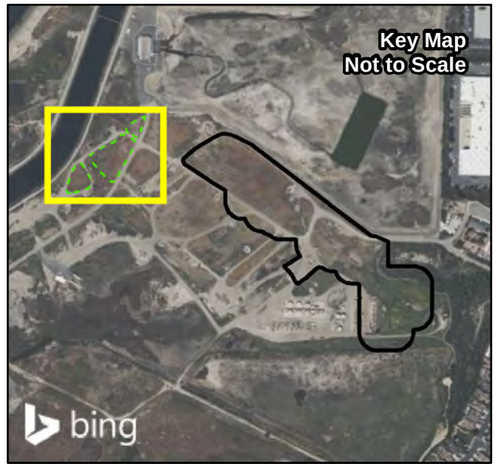
HELLMAN PROPERTY SOLAR PANEL ARRAY

Special-Status Species Impacts Map

GLENN LUKOS ASSOCIATES

Exhibit 8

X:\00 - 0362 ONLY\0200-08SOLA\GIS\ImpactsGIS\200-8_SpecialStatusSpecies_Impacts_HMMP.mxd



Study Area

Southern Tarplant Candidate Translocation Area (1.27 ac.)

N

0 25 50 100

Feet

1 inch = 50 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: March 28, 2023

HELLMAN PROPERTY SOLAR PANEL ARRAY

Southern Tarplant Translocation Area

GLENN LUKOS ASSOCIATES

Exhibit 9

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