Preliminary Jurisdictional Report

Heber 1 Parasitic Solar Energy Project

Prepared for Ormat

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SECTION 1 Introduction

OrHeber 3, LLC (a subsidiary of Ormat Technologies, Inc. [Ormat]), proposes to develop a new 11-megawatt (MW; net generation) solar energy facility that will provide parasitic load to the existing Heber 1 geothermal energy facility (Heber 1 Plant) via a medium voltage cable. As a behind-the-meter parasitic solar facility, the proposed solar field would serve as an extension of the existing Heber 1 Plant. The solar facility would be developed on APN 054-250-31 which is owned by Ormat.

1.1 Purpose of Report

Catalyst Environmental Solutions (Catalyst) conducted an investigation of potentially jurisdictional features for the proposed project footprint. This Preliminary Jurisdictional Delineation (PJD) Report provides the methods and results of the delineation and serves as guidance in establishing baseline conditions for resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the Colorado River Basin Regional Water Quality Control Board (RWQCB) for the Project. Specifically, the purpose of the Preliminary Jurisdictional Delineation was to determine the location and extent of waters and/or wetlands subject to potential jurisdictional authority within the proposed project survey area. Being situated in an agricultural area, the Project site and surrounding areas are traversed by a network of drains, canals, and other irrigation infrastructure administered by the Imperial Irrigation District (IID), some of which constitute potentially jurisdictional features. As part of the investigation, the entire Project site along with areas in the immediate vicinity represent the survey area for this PJD report.

1.2 Project Location

The proposed project is situated in Township 17 South, Range 14 East of the U.S. Geographical Survey (USGS) Heber 7.5-minute topographic quadrangle. The proposed 11 MW solar energy facility would be located on APN 059-020-001, approximately 602 Dogwood Road (**Figure 1**). There are three route options proposed for the medium voltage cable to connect the new 1 solar facility to the existing Heber 1 geothermal power plant, located on APN 054-250-036, approximately 895 Pitzer Road. The proposed project footprint as available at the time of this field survey is shown in **Figure 2**.

1.2.1 Driving Directions

Interstate 8 (I-8; Kumeyaay Highway), located approximately 4 miles directly north, provides primary highway access to the Project site. Dogwood Road stems off of I-8 and provides immediate site access to the west. Additionally, West Cole Boulevard, which runs perpendicular to Dogwood Road, provides immediate site access to the south.

1.3 Project Description

Ormat is proposing the following actions in Imperial County, California:

- An eleven (11) megawatt (MW) solar photovoltaic field dedicated to providing parasitic load to the existing Heber 1 geothermal plant.
- Medium voltage cable from solar facility to the Heber 1 geothermal plant. Three possible route alternatives from the solar facility to the geothermal plant.
- Demolition of a single-family home for solar development.

The Heber 1 Parasitic Solar Energy Project (proposed project) will provide parasitic load to the existing Heber 1 geothermal complex. These solar facilities are considered as behind-the-meter and would provide supplemental energy directly to the Heber 1 geothermal units (OEC), this energy would not enter the transmission grid. The solar facility would effectively reduce the margin between gross and net geothermal energy generation, allowing for the more efficient generation of geothermal energy and to allow more geothermal energy to enter the grid.

The energy generated by the solar facility would be collected at an on-site XMD and switch and transmitted along a medium voltage cable. There are three route options proposed to connect the solar facility to the Heber 1 Plant (**Figure 2**). The XMD switch would be located on either the northwest or northeast corner of the Project Site, depending on which cable route is selected.

Route 1 – the medium voltage cable would exit the northeast corner of the solar site and travel north along an existing raised berm via monopoles. The cable would span the Central Main Canal and Willoughby Road and continue along Ware Road for approximately a third of a mile where it would meet an existing pipeline alignment that runs to the Heber 1 Plant. All road, canal, and rail crossings would be overhead via 30' monopoles.

Route 2 – the medium voltage cable would cross Dogwood Road and be attached via trays to the existing pipeline that runs west before turning north to cross the Beech Drain and Main Canal at the existing above-ground pipeline span. The cable would continue to follow the existing pipeline alignment to the Heber Geothermal Energy Complex and travel along the northern boundary to exit the HGEC's northeast corner. The cable would not connect to any HGEC energy facilities, simply pass through the site. The cable would then cross back over Dogwood Road and continue down an existing pipeline alignment to the Heber 1 Plant. All road, canal, and rail crossings would be overhead via 30' monopoles.

Route 3 – the medium voltage cable would exit the northeast corner of the solar site and travel north along an existing raised berm via monopoles. Before Willoughby Road, the cable would turn west for approximately 0.15 miles and then span Willoughby Road and the Central Main Canal to an existing geothermal well pad. The cable would run east along an existing pipeline alignment and then turn north along the same pipeline alignment along Ware Road for approximately a third of a mile where it would meet an existing pipeline alignment that runs to the Heber 1 Plant. All road, canal, and rail crossings would be overhead via 30' monopoles.

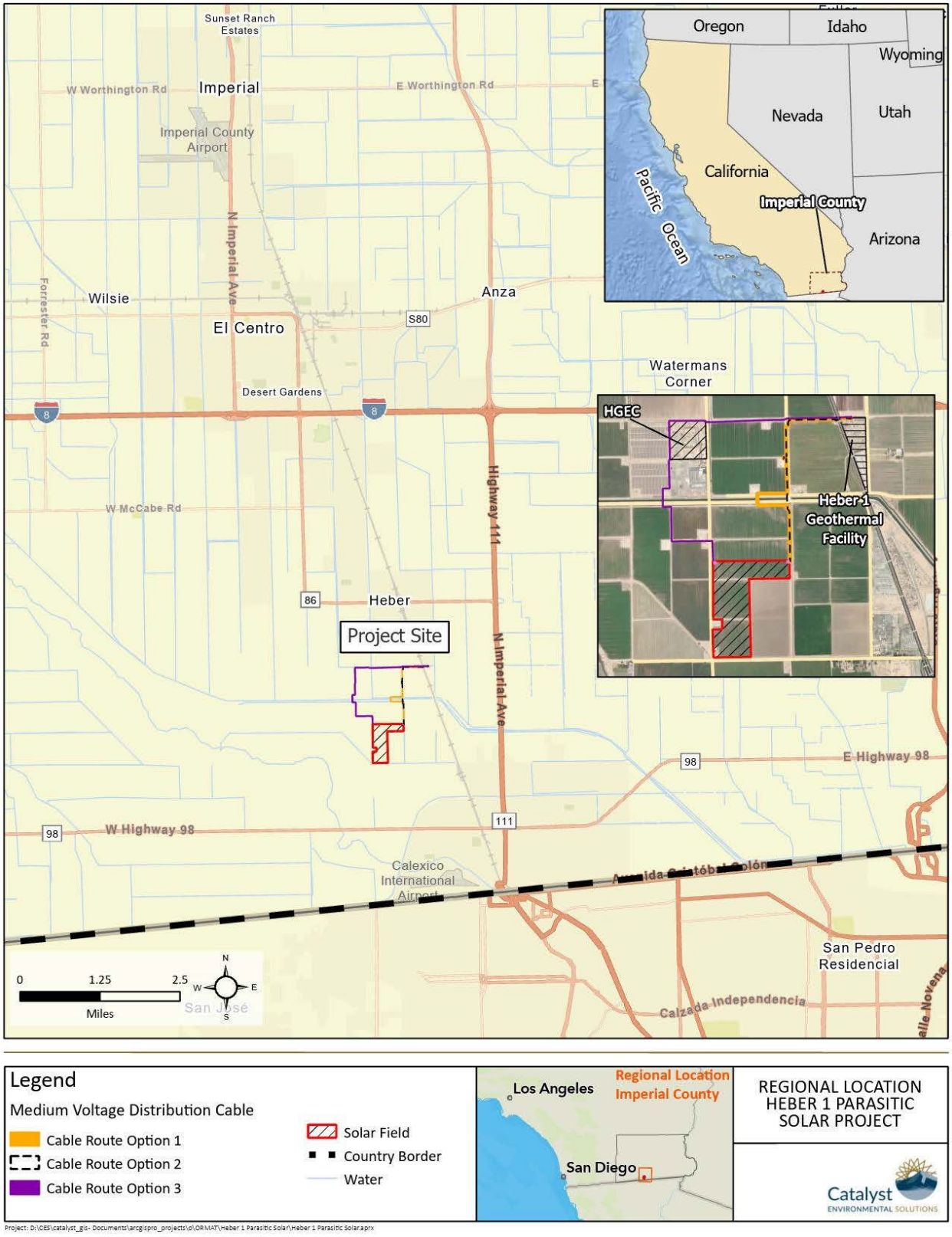

Figure 1. Regional map showing location for the Heber 1 Parasitic Solar Project.

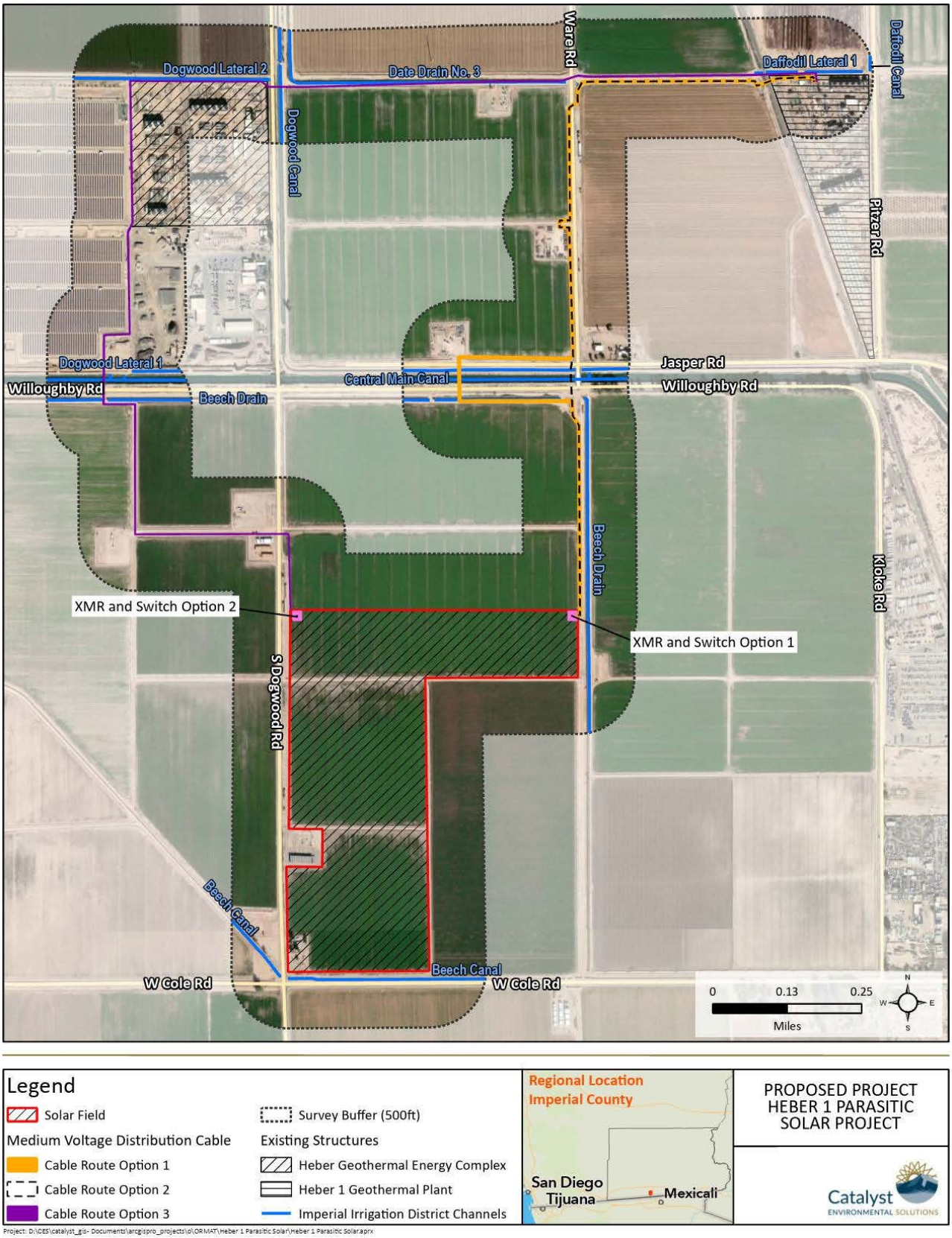

Figure 2. Proposed project facilities.

SECTION 2 Existing Conditions

2.1 Topography and Surrounding Land Uses

The Project is located within the Imperial Valley south of the Salton Sea in the Colorado Desert. The topography within the survey area is generally flat with an elevation of -7 feet below mean sea level (msl). The surrounding lands support solar facilities, agricultural cultivation, a construction/aggregates company, and geothermal well pads and pipelines present throughout the local vicinity. Unpaved and paved roads, irrigation ditches, and other farming infrastructure are present throughout. Lands within the survey area are zoned General Agricultural within the Heber geothermal unit and Imperial County renewable energy overlay zone (A-2-GU).

2.2 Vegetation

Plant community descriptions generally follow the MCV II classification system which is described in the second edition of *A Manual of California Vegetation* (Sawyer et al. 2009). The survey area supports five land cover types: agricultural land, developed/disturbed land, arrow weed thickets, tamarisk thickets, and annual grasses.

2.2.1 Agricultural Land

This land cover type is not described within A Manual of California Vegetation (Sawyer et al. 2009). At the time of survey, this land cover type was observed to contain primarily active alfalfa (*Medicago sativa*) cultivation and harvest and associated irrigation canals were present adjacent to and bisecting fields.

2.2.2 Developed/Disturbed Land

This land cover type is not described within A Manual of California Vegetation (Sawyer et al. 2009) but includes developed areas like roads and existing solar/geothermal facilities. These areas are predominantly devoid of vegetation, but can support ruderal herbaceous scrub, including non-native grasses and other weed species and ornamental or landscape trees/shrubs. A small area of annual grasses (sprangletop [*Leptochloa fusca]*) is present along the berm just north of Date Drain No.3. This annual grass species is not assigned an alliance in the MCV. Since it is growing in the disturbed, presently dry v-ditch, we have included in within the developed/disturbed community type.

2.2.3 Arrow Weed Thicket

Arrow weed (*Pluchea sericea*) is the dominant vegetation on the steep banks of Beech Drain, Date Drain No. 3, and the Dogwood Canal. Other species such as cattails (*Typha* spp.) and saltcedar (*Tamarisk ramosissima*) are also present but less dominant. The *Pluchea sericea* Shrubland Alliance (arrow weed thickets) occur around springs, seeps, irrigation ditches, canyon bottoms, stream borders, and seasonally flooded washes (Sawyer et al. 2009). Vegetation is dense in some areas along the canals and very sparse in others. Arrow weed thickets are recognized by CDFW as a sensitive vegetation type. The

canals fall within the 500-foot biological survey buffer of the project footprint and thus within the survey area. Most of the mapped arrow weed thickets that occur within the survey area are located outside the presumed Project area disturbance footprint. However, a narrow area along the proposed gen tie line in the vicinity of the Heber 1 substation overlaps a portion of this vegetation type and would be removed or disturbed by project activities. Representative photos of vegetated areas are provided in **Appendix A**.

2.2.4 Tamarisk Thicket

The *Tamarix* spp. Shrubland Semi-natural Alliance (tamarisk thickets) occur along arroyo margins, lake margins, ditches, washes, rivers, and other watercourses. This community was observed along a portion of Date Drain No. 3 adjacent to the proposed gen tie line. Additionally, an area of both tamarisk and arrow weed was observed along Dogwood Lateral 1 near Dogwood Rd.

2.3 Climate

The region experiences a desert climate characterized by hot, dry summers and warm winters. Average annual high temperatures range from 69 degrees Fahrenheit (°F) in December to 106°F in July, and average annual low temperatures range from 40°F in December to 76°F in August. The average annual precipitation measures 2.9 inches (U.S. Climate Data 2023).

2.4 Hydrology and Geomorphology

The Project area is within the Colorado River Basin and is within the Imperial Hydrologic Unit (HUC8 18100204) (USGS 2023). Irrigation water is supplied to the surrounding agricultural fields by an engineered system of canals operated and maintained by the Imperial Irrigation District (IID). Water that flows through the Project area originates at Imperial Dam located north of Yuma, Arizona. Water diverted at Imperial Dam for use in the Imperial Valley passes through three desilting basins and is then delivered to the Imperial Valley via the All-American Canal.

The 80-mile-long All-American Canal distributes water to three main canals, East Highline, Central Main, and Westside Main. These three main canals then distribute water to smaller lateral canals throughout the Imperial Valley. Farmers receive water in private ditches from the lateral canals. The lateral drain system operates by gravity flow drainage (IID 2023a). When a field is irrigated, water is allowed to flow from the IID delivery canal to a smaller earthen or concrete-lined v-ditch (e.g., a “head ditch”), which then distributes the water evenly across the field. At the opposite and lower elevation end of the field, excess water is collected in another ditch (e.g., a “tail ditch”) and directed back into an IID drain (e.g., Beech Drain in the survey area). Some tail ditches are unlined and plowed over/filled in and then re-dug as needed for irrigation. All waters in the project area ultimately drain to the Salton Sea via the New River (e.g., Beech Drain) or the Alamo River (e.g., Date Drain No. 3).

The Central Main Canal and several smaller IID canals and drains pass through the survey area. The alfalfa fields in the project area are graded for flood irrigation, but most were not undergoing irrigation during the survey. The hay field north of the proposed gen-tie line had some standing water present. Both concrete-lined and unlined v-ditches are present in the solar energy field.

The National Wetlands Inventory (NWI) of surface waters and wetlands (USFWS 2023) has mapped and classified several of the waterways in or adjacent to the project area (**Figure 3**). The Central Main Canal

is classified as Riverine (R2UBHx: Lower Perennial, Unconsolidated Bottom Permanently Flooded Excavated). The Central Main Canal is a manmade channel excavated in previously upland areas and has a natural sediment bottom. The proposed buried transmission line would cross the Central Main Canal at one of two potential locations, along existing bridges located at Dogwood Road and Ware Road. West of Dogwood Road, the Dogwood Lateral 1 canal parallels the Central Main Canal for a short distance. The project disturbance area does not otherwise intersect the Central Main Canal.

Dogwood Canal and Beech Drain are both classified as Riverine (R4SBCx: Intermittent Streambed Seasonally Flooded Excavated). Both feature natural sediment bottoms and varying densities of riparian vegetation below the top of bank. Beech Drain has steep banks estimated to be approximately 15 feet from top-of-bank to the bottom of the channel. Beech Drain flows parallel to the eastern extent of the proposed solar energy field footprint but is separated from the solar field (presently planted with alfalfa) by an unpaved access road. Date Drain No. 3 is not mapped in the NWI, but also features a natural bottom. Daffodil Lateral 1 is concrete-lined and is located north of the existing Heber 1 Geothermal Facility. Daffodil Lateral 1 is not mapped in the NWI, but the larger canal it runs perpendicular to, Daffodil Canal, is classified as Riverine (R4SBCx: Intermittent Streambed Seasonally Flooded Excavated). Daffodil Canal is located just within the eastern extent of the study area.

Beech Canal is located south of the proposed solar field, which is currently an active agricultural field. Beech Canal is classified as Riverine habitat (R4SBCx: Intermittent Streambed Seasonally Flooded Excavated) (USFWS 2023). The NWI maps also show a canal mapped as Riverine (R4SBCx) that is connected and perpendicular to Beech Canal, which runs north for 0.5 mile parallel to Beech Drain and then ends; this feature is not mapped by IID (IID 2023b).

The unnamed concrete lined v-ditches that run east-west through the proposed solar energy facilities are not mapped or classified by the NWI. These likely function as head ditches and tail ditches and contain water only when ordered for irrigation.

The ground disturbance footprint for the solar facility is adjacent to but does not overlap the NWI-mapped canals and drains. The proposed gen-tie routes cross several NWI-mapped canals and drains. Where these overlap, the gen-tie line would be excavated below the canal and/or drain, to avoid any impacts on the IID infrastructure. All canals, drains, and ditches are manmade and excavated in upland areas. These canals are primarily used for agricultural irrigation.

Figure 3. USFWS National Wetland Inventory mapped features.

2.5 Soils

Soil data were obtained from the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) using the Web Soil Survey. These data were used to determine potential soil types, including where hydric soils have historically occurred. **Figure 4** shows the mapped extent of soils and **Table 1** provides a summary of the characteristics of soils which occur within the survey area. The full NRCS report is provided as **Appendix B**.

Table 1. Soil Units within the Survey Area

Map Unit Symbol	Map Unit Name	Description	Hydric Soil Rating
110	Holtville silty clay, wet	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 200 feet; parent material consists of alluvium derived from mixed sources; low runoff; silty clay (0 to 17 inches), clay (17 to 24 inches), silt loam (24 to 35 inches), loamy very fine sand (35 to 60 inches)	No
114	Imperial silty clay, wet	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 200 feet; parent material consists of clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed sources; silty clay (0 to 12 inches), silty clay loam (12 to 60 inches)	No
115	Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 200 feet; parent material consists of Clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed sources; low runoff; silty clay loam (0 to 60 inches)	No
116	Imperial-Glenbar silty clay loams, 2 to 5 percent slopes	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 200 feet; parent material consists of clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed sources; low runoff; silty clay loam (0 to 13 inches), clay loam (13 to 60 inches)	No
145	Water	NA	NA

Source: NRCS 2023

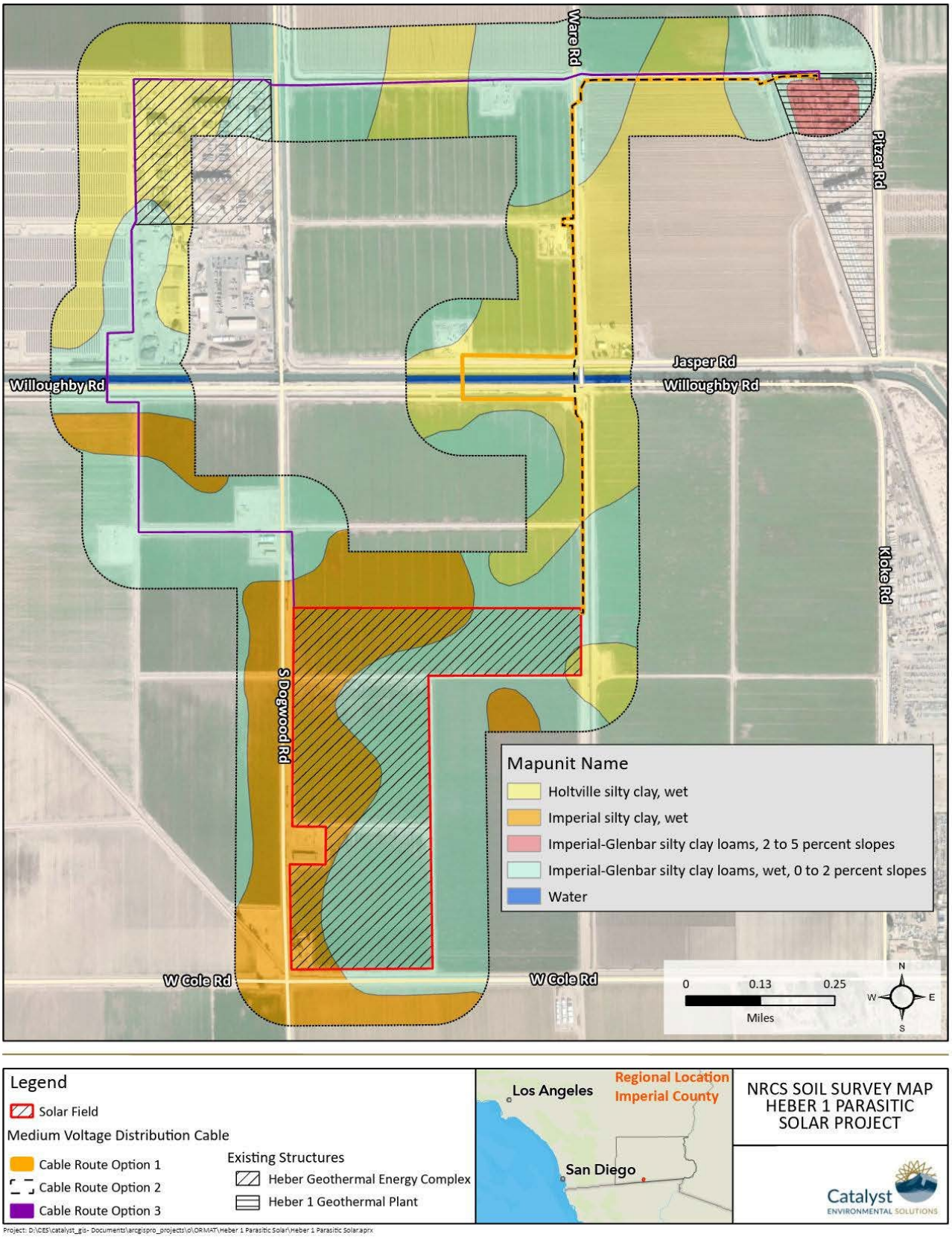

Figure 4. NRCS soil survey map of project vicinity.

SECTION 3 Regulatory Background

3.1 Federal

3.1.1 Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA) establishes a program which regulates the discharge of dredged or fill material into "waters of the United States" (WoUS), including wetlands. Section 404 of the CWA is jointly administered and enforced by the USACE and the U.S. Environmental Protection Agency (EPA). Activities in waters of the U.S. regulated under Section 404 include dredge or fill for development, water resources projects (i.e., dams and levees), infrastructure development (i.e., highways and airports), and mining projects. Except for certain farming and forestry activities that are exempt from Section 404 regulation, a Section 404 permit is required before any dredged or fill material may be discharged into waters of the U.S. The Section 404 program prohibits discharge of dredged or fill material if waters of the U.S. would be significantly degraded or a practical alternative exists that is less damaging to the aquatic environment. For the Project region, a Section 404 permit would be obtained from the Los Angeles District of the USACE.

3.1.2 Definition of "Waters of the United States" Updated in 2023

"Waters of the United States" is not defined by the CWA. Rather, the CWA provides authority for the USACE and EPA (the agencies) to define "waters of the United States" in regulations. Most recently, on August 29, 2023, the agencies announced the final "Revised Definition of 'Waters of the United States'; Conforming" rule. The final rule was published in the Federal Register on September 8, 2023[1]. The agencies' definition of WoUS provides jurisdiction over waterbodies that Congress intended to protect under the CWA.

In this rule, the agencies are exercising their authority to interpret ''waters of the United States'' to mean the waters defined by the familiar 1986 regulations, with amendments to reflect the agencies' determination of the statutory limits on the scope of the ''waters of the United States'' informed by the text of the relevant provisions of the Clean Water Act and the statute as a whole, the scientific record, relevant Supreme Court precedent, and the agencies' experience and technical expertise after more than 45 years of implementing the longstanding pre-2015 regulations defining ''waters of the United States.''

The categories of WoUS are generally described in **Table 2** below. Exclusions from WoUS were also codified in the final rule and briefly described in **Table 3**. The full text describing these waters and wetlands can be found in the final rule.

[1] Federal Register Vol 88, No. 173/Friday September 8, 2023/Rules and Regulations (https://www.govinfo.gov/content/pkg/FR-2023-09-08/pdf/2023-18929.pdf)

Table 2. Categories of "Waters of the United States"

Types of Waters	Examples and Features
Traditional Navigable Waters	Large rivers and lakes that could be used in interstate or foreign commerce. Waterbodies affected by the tides.
Territorial Seas	Territorial seas that extend three miles out to sea from the coast.
Impoundments	Impounded bodies of water created in or from WoUS like reservoirs and beaver ponds.
Tributaries	Branches of creeks, streams, rivers, lakes, ponds, ditches, and impoundments that flow into traditional navigable waters, the territorial seas, interstate waters, or impoundments of jurisdictional WoUS. Tributaries are jurisdictional if they meet the relatively permanent standard[1].
Adjacent Wetlands[2]	These wetlands can be next to, abutting, or near other jurisdictional waters or behind certain natural or constructed features. They are most often within a few hundred feet of jurisdictional waters. Adjacent wetlands are jurisdictional if they meet either relatively permanent standard or where the wetland is adjacent to a traditional navigable water, the territorial seas, or an interstate water.
Additional Waters	These lakes, ponds, streams, or wetlands do not fit into the above categories. They are jurisdictional if they meet the relatively permanent standard.

[1] The ''relatively permanent standard'' means relatively permanent, standing or continuously flowing waters connected to paragraph (a)(1) waters, and waters with a continuous surface connection to such relatively permanent waters or to paragraph (a)(1) waters.

[2] Adjacent is defined as "having a continuous surface connection".

Table 3. Exclusions from "Waters of the United States"

Types of Waters	Description
Prior converted cropland	Adopting USDA's definition and generally excluding wetlands that were converted to cropland prior to December 23, 1985
Waste treatment systems	Treatment ponds or lagoons that are designed to meet the requirements of the CWA
Ditches	Ditches, including roadside ditches, excavated entirely in and draining only dry land, and that do not carry a relatively permanent flow of water
Artificially irrigated areas	Irrigated areas that would revert to dry land in the absences of persistent irrigation
Waterfilled depressions	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 operation is abandoned and the resulting water body meets the definition of WoUS
Swales and erosional features	Areas characterized by low volume, infrequent, or short duration flow (e.g., gullies, small washes)

3.2 State

3.2.1 Section 401 of the Clean Water Act

The CWA Section 401 Water Quality Certification (WQC) provides states and authorized tribes an opportunity to address the aquatic resources impacts of federally issued permits and licenses in pursuit of protecting water quality. In California, Section 401 Water Quality Certifications are issued by RWQCBs located throughout the state. The Colorado River Basin RWQCB issues Section 401 WQCs for projects in Imperial County. Under Section 401 of the CWA, any person applying for a federal permit or license, which may discharge pollutants into WoUS, must obtain a State WQC. This certification is required to ensure the activity complies with all applicable water quality standards, limitations, and restrictions.

Pursuant to the California Porter–Cologne Water Quality Control Act (California Water Code, Division 7 §13000 et seq.) the State reserves the right to regulate activities that could affect the quantity and/or quality of surface and/or ground waters, including isolated wetlands, within the State. If impacted, waters of the State (WoS) determined to be jurisdictional for these purposes have Waste Discharge Requirements (WDRs) and a 401 Certification (in the case of the required USACE permit) must be obtained. The federal CWA Section 404 permit is dependent on and subject to the terms of the Section 401 Certification. Therefore, under Section 401, a federal agency cannot issue a permit or license for an activity that may result in discharge into WoUS until the RWQCB has granted or waived the Section 401 Certification. Section 401 Certification is limited to federally jurisdictional waters and wetlands.

3.2.2 Definition of Waters of the State Updated in 2021

In 2019, the State Water Resources Control Board (SWRCB) adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures; California Water Boards 2019, revised 2021). The Procedures contain a wetland definition that strengthens protections of waters of the state beyond those already granted by the CWA definitions described above in Section 3.1.1.1. Waters of the state includes all “waters of the U.S.” as well as “any surface water or groundwater, including saline waters, within the boundaries of the state”. These include natural wetlands, wetlands created by modification of surface waters of the state, and artificial wetlands that meet certain criteria. Exclusions from the definition of WoS include wetland areas that qualify as prior converted cropland, wetlands in rice cultivation, certain ditches used for agricultural purposes, and artificial waterbodies created in dry land for agricultural purposes (e.g., stock watering, settling pond, irrigation pond).

3.2.3 Section 1600-1616 of the California Fish and Game Code

The CDFW asserts jurisdiction over the bed and bank of a stream and associated wildlife and habitats as established in California Fish and Game Code §§ 1600–1616. Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any project that may “substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit or dispose of debris, waste, or other materials containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.”

Generally, notification to CDFW is required for any project that occur in or near a river, stream, lake, or their tributaries. In CDFW's definition, "any river, stream, or lake" includes those that are dry for periods of time (ephemeral or episodic) as well as those that flow year-round (perennial). This includes rivers or streams that flow at least periodically (e.g., may be dry for periods of time) or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses that have a surface or subsurface flow which supports or has supported riparian vegetation. This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. Permits may also apply to work undertaken within the flood plain of a body of water.

If CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) will be required (§ 1603). Prior to issuance of an LSAA, California Environmental Quality Act (CEQA) documentation must be submitted to CDFW.

SECTION 4 Methods

This section describes the methods employed by Catalyst during the survey conducted to determine the extent of potentially jurisdictional wetlands and/or waters that occur within the survey area. The survey area included the proposed project footprint for ground-disturbing activities and a 500-foot buffer to capture the general conditions of the project vicinity because surveys included both waters and biological resources.

Prior to conducting the field assessment, Catalyst reviewed current and historic aerial photographs, topographic maps, soil maps, IID canal maps, and NWI maps to evaluate the potential active channels and wetland features that occur within the survey area. During the field assessment, vegetation and hydrology were mapped using a Juniper Systems Geode External GNSS Receiver global positioning system (GPS) and data were collected in Arc Field Maps. Field data were processed using Global Information Technology (GIS) and total jurisdictional area for each survey area was calculated based on mapped data.

The established survey area was larger than the eventual impact area to capture potential design options and included a buffer to examine watershed and habitat characteristics as a reference beyond the impacted areas. Jurisdictional non-wetland WoUS (USACE and RWQCB) include areas within onsite drainages below the plane of the ordinary high-water mark (OHWM), while CDFW jurisdictional areas extend from bank to bank, and include the landward edge of riparian vegetation, where present. Within the survey area, the CDFW jurisdictional boundary of the IID canals and drains is not wider than the OHWM; therefore, the total acreage of CDFW jurisdictional waters is the same as the total acreage for federal jurisdictional waters.

Jurisdictional non-wetland WoUS were delineated based on the limits of the OHWM as described in the USACE Field Guide to the Identification of the Ordinary High Water Mark in the Arid West (USACE 2008a). The OHWM is determined by changes in physical/biological features such as bank erosion, deposited vegetation/debris, and vegetative characteristics. The top of bank indicator and change in vegetation were the only OHWM indicators present within the survey area. Ordinary High Water Mark Data Forms are included in **Appendix C**.

Jurisdictional wetlands are delineated using a routine determination in accordance with the methods outlined in the USACE Wetland Delineation Manual (USACE 1987) and the Arid West Supplement (USACE 2008b) based on three wetland parameters: wetland hydrology, hydric soils, and dominant hydrophytic vegetation. No wetlands were present in the survey area.

4.1.1 Soils

Soils data from the NRCS was referenced to determine if hydric soils have been previously documented and/or historically occurred in or near the survey area (**Appendix B**). Based on this review hydric soils were not expected to occur within the survey area. Hydric soil indicators for the Arid West are described in detail in USACE (2008a).

4.1.2 Vegetation

Sporadic vegetation was present in the survey area along the edges of disturbed areas and below the top of bank of canals. Agricultural crops (e.g., alfalfa) are grown in the fields surrounding the canals and ditches. Species identified in the survey area and their indicator status are shown in **Table 4**. Wetland indicator status for each species was sourced using the Wetland Plants of Specialized Habitats in the Arid West (USACE 2007) and the Arid West Region of the National Wetland Plant List (USACE 2012; USACE 2020).

Table 4. Plant Species Observed within the Survey Area and Wetland Indicator Status

Common Name	Scientific Name	Plant Indicator Status[1]
Trees		
Eucalyptus spp.*	*Eucalyptus spp.*	FAC
Mesquite spp.	*Prosopis spp.*	FAC/FACU
Shrubs, Forbs, and Grasses		
Prostrate pigweed, tumbleweed*	*Amaranthus albus*	FACU
Careless weed	*Amaranthus palmeri*	FACU
Big saltbush	*Atriplex lentiformis*	FACU
Bindweed, orchard morning-glory*	*Convolvulus arvensis*	NA
Purple flat sedge*	*Cyperus rotundus*	FAC
Jungle rice*	*Echinochloa colona*	FAC
Sprangletop	*Leptochloa fusca*	NA
Alfalfa*	*Medicago sativa*	UPL
Alkali mallow	*Malvella leprosa*	FACU
Date palm*	*Phoenix dactylifera*	NA
Arrow weed	*Pluchea sericea*	FACW
Purslane, little hogweed*	*Portulaca oleracea*	FAC
White horse-nettle*	*Solanum elaeagnifolium*	NA
Sorghum spp.*	*Sorghum spp.*	FACU
Saltcedar*	*Tamarix ramosissima*	FAC
PunctureVine, goat head*	*Tribulus terrestris*	NA
Cattail	*Typha spp.*	OBL
Mexican fan palm*	*Washingtonia robusta*	FACW

[1] National Wetland Plant List (USACE 2020), FAC = Facultative, FACW = Facultative Wetland, OBL = Obligate Wetland, UPL = Upland, NA = no indicator status assigned.

*Denotes non-native species

4.1.3 Hydrology

Wetland hydrology is assessed by documenting the presence of primary and secondary hydrology indicators. These indicators are helpful in determining whether an area has a high probability of being inundated or saturated long enough during the growing season to develop anaerobic conditions in the surface soil environment (USACE 1987). The three primary (Group A) indicators are surface water, high water table, and saturation. No indicators of wetland hydrology were present in the survey area. Hydrology in the survey area is highly regulated and controlled by IID and no natural floodplains are present.

SECTION 5 Results

As no indicators of wetland hydrology or soils were present in the survey area, the delineation consisted of identifying the geomorphic and vegetative indicators of the OHWM; primarily the break in bank slope associated with the maximum extent of the canals and drains and the presence of hydrophytic vegetation. All features examined are man-made, constructed entirely within uplands, and used solely for agricultural irrigation. The earthen and concrete-lined head and tail ditches are typically dry and convey water only during periodic and infrequent irrigation events. They do not support riparian vegetation/habitat. These ditches do not meet the definition of a relatively permanent water as described in Section 3.1.1 and would not be considered federally or state jurisdictional. The larger, IID-administered canals (supply) and drains (drainage), however, generally do convey water all year and ultimately flow to the Salton Sea, which is considered a Traditionally Navigable Water, and would likely be considered federally and state jurisdictional. Based on these indicators and watershed information, the following jurisdictional features were observed within the survey area: *federal non-wetland waters and state waters*. Representative photos are provided in **Appendix A**.

As previously described, the project footprint plus a 500-foot buffer was surveyed for this project. However, for the purposes of calculating potential impacts to waters, a 25-foot buffer was applied to each linear feature at its respective water crossings. **Tables 5-7** identify the linear feet and total acreages of waters within the 25-foot buffer for each cable route that are potentially subject to the permitting authority of the USACE, the Colorado River Basin RWQCB, and CDFW for each surveyed waterbody. The delineation resulted in a total of 0.47 acres for cable route 1, 0.11 acres for cable route 2, and 1.14 acres for cable route 3 considered potential jurisdictional WoUS and WoS. As there is no riparian area associated with these water bodies, the CDFW jurisdictional area is the same as the WoUS.

Figures 5 and 6 depict the location of WoUS and WoS within the survey area. Land cover, including mapped waters, is shown in **Figure 7**. **Appendix C** contains the OHWM Data Forms completed during the assessment.

Table 5. Acreage of Jurisdictional Waters within the Survey Area for Cable Route 1.

Feature ID	Description	OHWM (feet)	Distance (linear feet)	USACE/RWQCB/CDFW Jurisdictional Waters (acres)
Dogwood Canal	Partially concrete-lined, partially earthen canal operated by IID	20-44	51.71	0.02
Dogwood Lateral 1	Manmade earthen canal operated by IID	25	0	0
Dogwood Lateral 2	Concrete lined canal operated by IID	25	0	0
Beech Drain	Manmade earthen drain operated by IID	40-48	909.05	0.36
Date Drain No. 3	Manmade earthen drain operated by IID	43	0	0

Feature ID	Description	OHWM (feet)	Distance (linear feet)	USACE/RWQCB/CDFW Jurisdictional Waters (acres)
Central Main Canal	Manmade earthen canal operated by IID	105	51.75	0.09
Beech Canal	Manmade earthen canal operated by IID	15	0	0
Daffodil Canal	Concrete lined canal operated by IID	11	0	0
Daffodil Lateral 1	Concrete lined canal operated by IID	12	0	0
		TOTAL	**1,012.51**	**0.47**

Table 6. Acreage of Jurisdictional Waters within the Survey Area for Cable Route 2.

Feature ID	Description	OHWM (feet)	Distance (linear feet)	USACE/RWQCB/CDFW Jurisdictional Waters (acres)
Dogwood Canal	Partially concrete-lined, partially earthen canal operated by IID	20-44	48.65	0.02
Dogwood Lateral 1	Manmade earthen canal operated by IID	25	0	0
Dogwood Lateral 2	Concrete lined canal operated by IID	25	0	0
Beech Drain	Manmade earthen drain operated by IID	40-48	0	0
Date Drain No. 3	Manmade earthen drain operated by IID	43	0	0
Central Main Canal	Manmade earthen canal operated by IID	105	54.11	0.09
Beech Canal	Manmade earthen canal operated by IID	15	0	0
Daffodil Canal	Concrete lined canal operated by IID	11	0	0
Daffodil Lateral 1	Concrete lined canal operated by IID	12	0	0
		TOTAL	**102.76**	**0.11**

Table 7. Acreage of Jurisdictional Waters within the Survey Area for Cable Route 3.

Feature ID	Description	OHWM (feet)	Distance (linear feet)	USACE/RWQCB/CDFW Jurisdictional Waters (acres)
Dogwood Canal	Partially concrete-lined, partially earthen canal operated by IID	20-44	42.54	0.05
Dogwood Lateral 1	Manmade earthen canal operated by IID	25	54.47	0.01
Dogwood Lateral 2	Concrete lined canal operated by IID	25	1,194.97	0.16
Beech Drain	Manmade earthen drain operated by IID	40-48	9.62	0.003
Date Drain No. 3	Manmade earthen drain operated by IID	43	1,852.17	0.78
Central Main Canal	Manmade earthen canal operated by IID	105	33.05	0.05
Beech Canal	Manmade earthen canal operated by IID	15	0	0
Daffodil Canal	Concrete lined canal operated by IID	11	0	0
Daffodil Lateral 1	Concrete lined canal operated by IID	12	487.91	0.09
		TOTAL	**4,790**	**1.72**

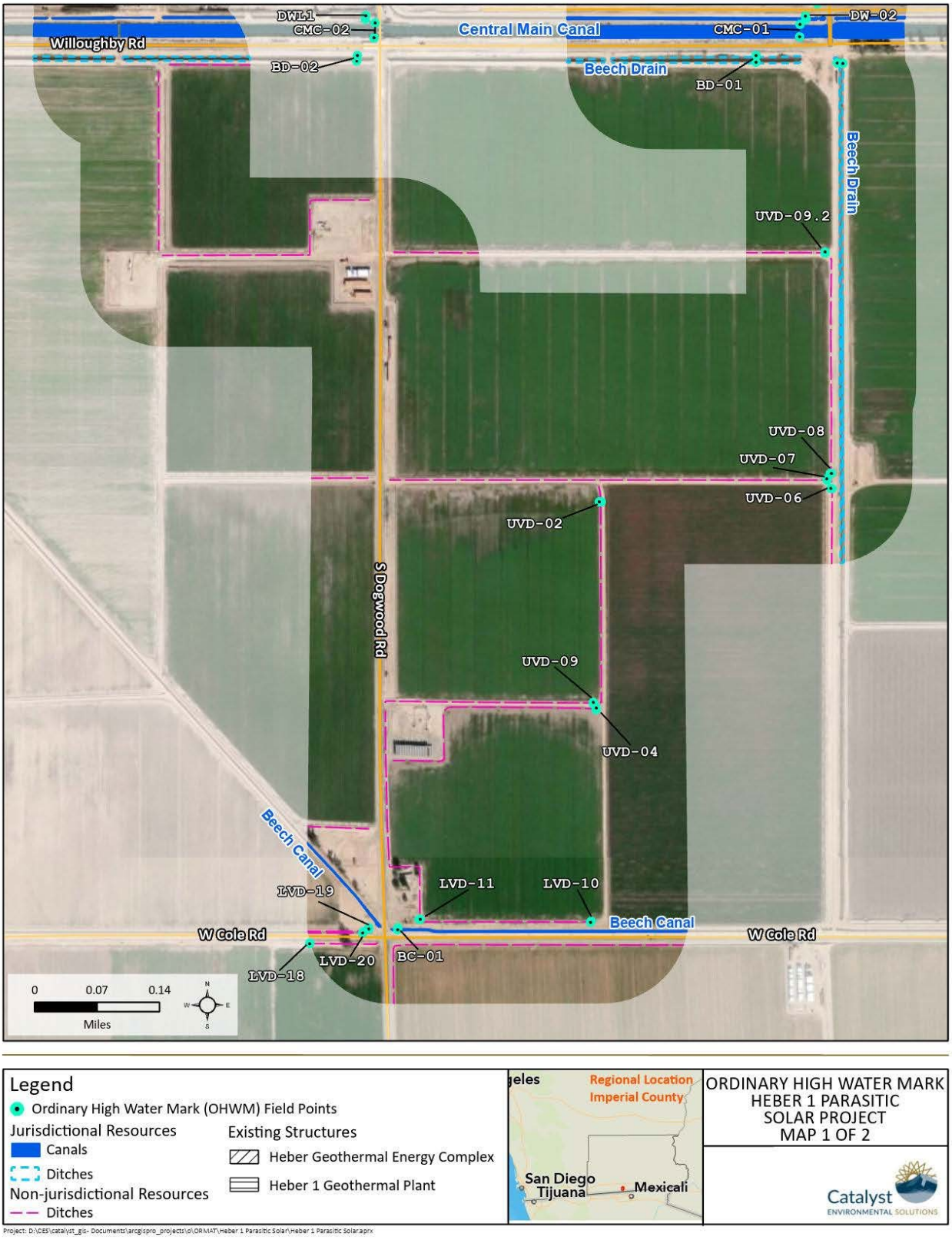

Figure 5. Ordinary high water mark data collection points (1 of 2)

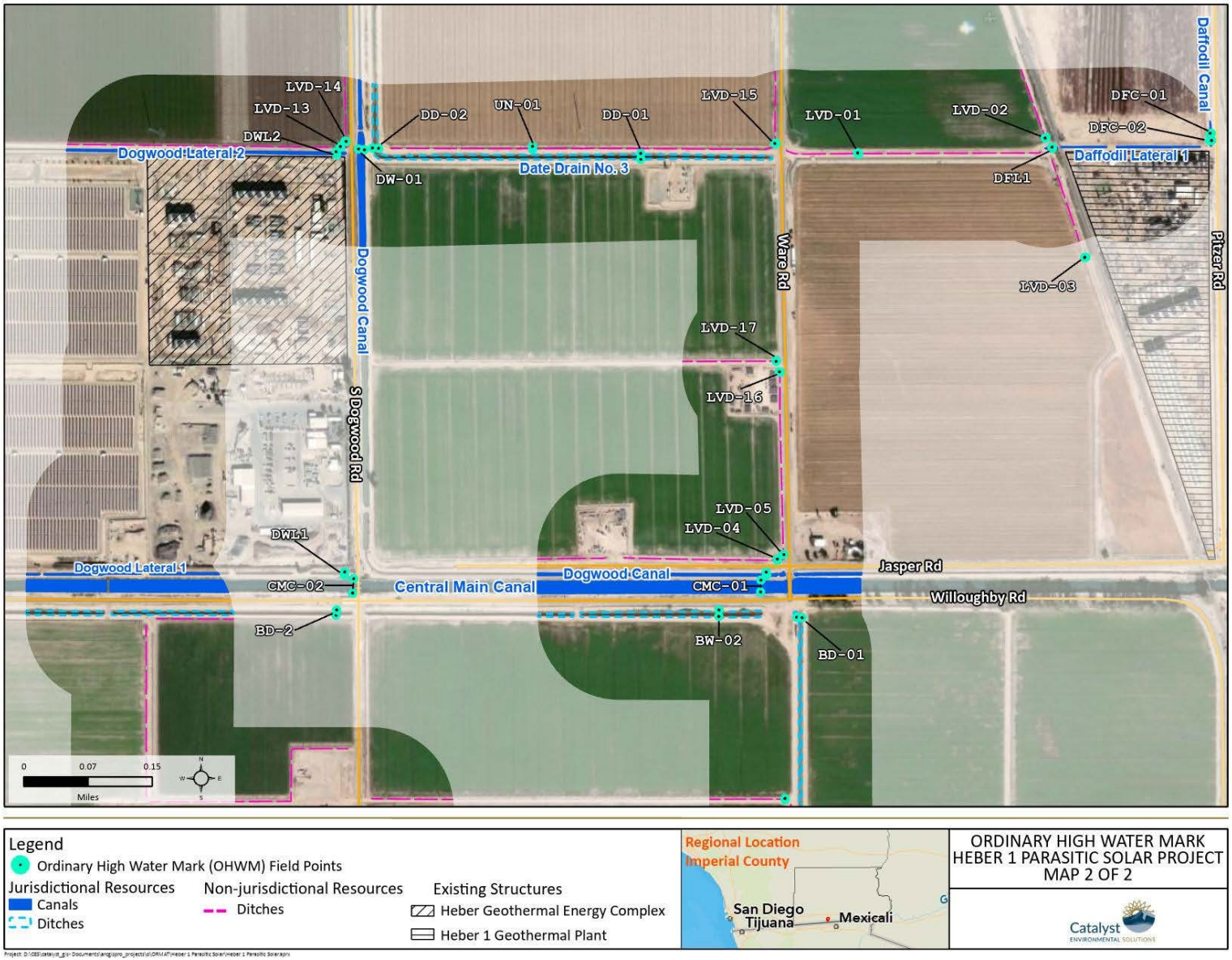

Figure 6. Ordinary high water mark data collection points (2 of 2)

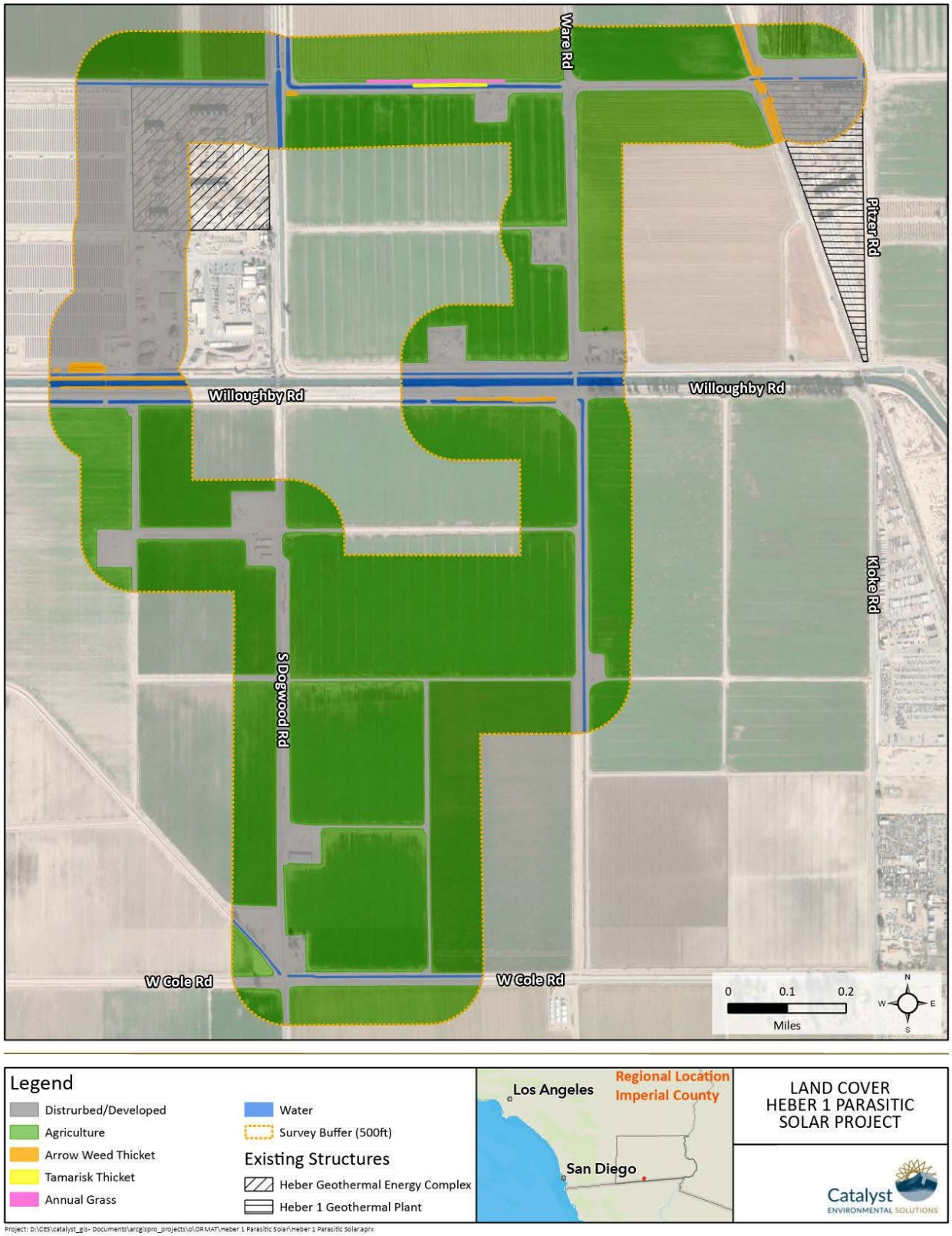

Figure 7. Land cover in the survey area.

SECTION 6 Summary and Recommendations

The survey area supports the presence of USACE non-wetland WoUS, RWQCB WoS, and CDFW jurisdictional waters. The earthen IID canals and drains listed in **Tables 5-7** were actively flowing during the delineation and supported riparian vegetation sporadically. The lined channels were also flowing but did not generally support vegetation below top of bank. These channels exhibited indicators of the OHWM and were mapped as jurisdictional non-wetland WoUS. All riparian vegetation present was at or below the top of bank and therefore, the same delineation applies to CDFW jurisdictional waters within the survey area. Lined and unlined v-ditches were mapped and photographed but were classified as non-jurisdictional due to not meeting the relatively permanent waters standard.

Crossing potentially jurisdictional features will result in temporary or permanent impacts. As the project design progresses, project temporary and permanent impact areas will be refined and a final cable route will be selected. At the time of writing this report, all jurisdictional features mapped are within the 25-foot survey buffer for proposed linear features.

When establishing staging areas adjacent to potentially jurisdictional features, appropriate best management practices (BMPs) should be utilized to prevent erosion of work areas or stockpiles that could result in soils entering waterways. Additionally, BMPs to prevent and address minor leaks, drips, or spills of oils, lubricants, and fuels from construction equipment should be in place. No riparian vegetation should be removed. Arrow weed thickets are a sensitive vegetation type. Where canals must be crossed by project features, such as new transmission lines, Catalyst recommends spanning canals to avoid in-water work. Currently, other transmission line infrastructure spans or parallels IID canals and drains. Catalyst recommends that, if possible, Ormat utilize the same or similar footprint as existing crossings to minimize disturbance.

If the final project design would have temporary or permanent impacts on WoUS or WoS, Ormat would need to prepare permit applications for submission to the USACE, RWQCB, and CDFW quantifying those impacts as described previously in Section 3 (Regulatory Background).

The conclusions presented above represent Catalyst's professional opinion based on our knowledge and experience with USACE and CDFW, including their regulatory guidance documents and manuals. These acreages represent a calculated estimation of the jurisdictional area within the survey area; however, USACE and CDFW have final authority in determining the status and presence of jurisdictional wetlands and waters and the extent of their boundaries.

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Appendix A Photo Log

Legend

Jurisdictional Resources
- Canals
- Ditches

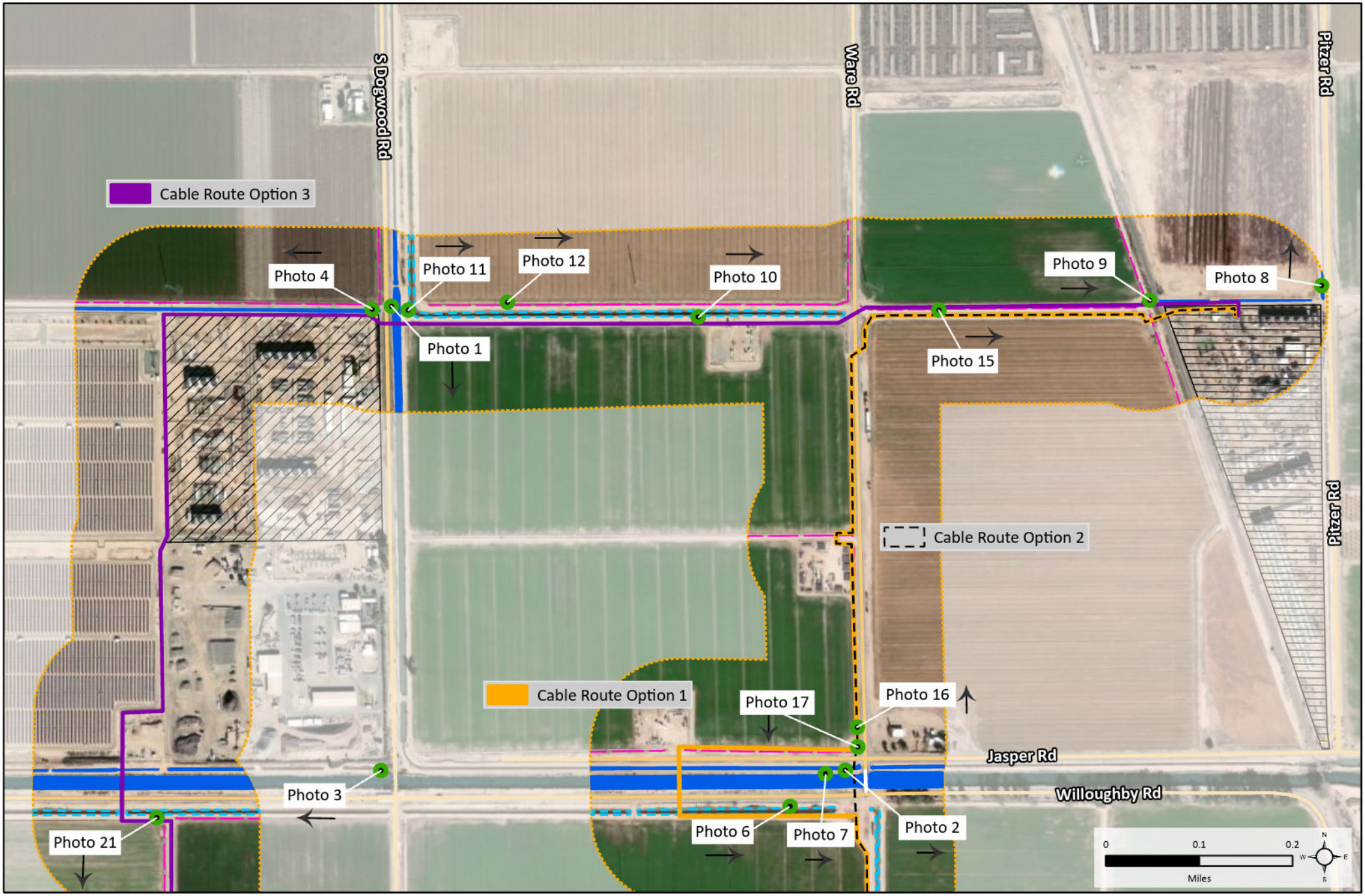
Non-jurisdictional Resources
- Ditches

- Survey Buffer (500ft)
- Photo Point
- Photo Direction

PHOTOLOG
HEBER 1 PARASITIC
SOLAR PROJECT
MAP 1 OF 2

Catalyst
ENVIRONMENTAL SOLUTIONS

Project: D:\CES\catalyst_gis- Documents\arcgispro_projects\o\ORMAT\Heber 1 Parasitic Solar\Heber 1 Parasitic Solar.aprx



Legend

Jurisdictional Resources

- Canals
- Ditches
- Survey Buffer (500ft)

Existing Structures

- Heber Geothermal Energy Complex
- Heber 1 Geothermal Plant

- Photo Point
- Photo Direction

PHOTOLOG
HEBER 1 PARASITIC SOLAR PROJECT
MAP 2 OF 2

Catalyst
ENVIRONMENTAL SOLUTIONS

Project: D:\GBS\catalyst_gis- Documents\arcgispro_projects\o\ORMAT\Heber 1 Parasitic Solar\Heber 1 Parasitic Solar.aprx

Appendix A Photo Log

Photo 1: Dogwood Canal, unlined portion. View looking south. Dogwood Rd to the right.

Photo 2. Dogwood Canal, concrete-lined section, photographed looking east towards Pitzer Rd. bridge.

Photo 3. Dogwood Lateral 1, looking west. Photographed west of Dogwood Rd.

Photo 4. Looking west down Dogwood Lateral 2. Existing geothermal infrastructure on the left.

Photo 5. Beech Canal, looking east from near intersection of Dogwood Rd. and Cole Rd.

Photo 6. Beech Drain, looking east. Willoughby Rd on left of photo. Proposed gen-tie line would cross within this frame.

Photo 7. Central Main Canal, looking east towards Pitzer Rd. bridge crossing. The proposed gen-tie line would cross this frame.

Photo 8. Daffodil Canal, looking north. Pitzer Rd. to the right.

Photo 9. Daffodil Lateral 1 (perpendicular to Daffodil Canal) located north of proposed gen-tie line, with arrow weed thickets present in vicinty, looking east toward Heber 1 Geothermal Facility and railroad tracks.

Photo 10. Date Drain No. 3, looking east. Hay field to the north, existing geothermal pipeline to the south.

Photo 11: Date Drain No. 3, looking east. Dogwood Rd behind photographer. This is the approximate crossing location for the proposed gen-tie line.

Photo 12: Proposed gen-tie route would follow this unlined v-ditch. Photo looking east. Date Drain No. 3 parallels this unlined v-ditch across the unpaved road.

Photo 13: Unlined v-ditch running north-south along eastern edge of proposed solar field, currently planted with alfalfa. View looking south.

Photo 14. Unlined v-ditch crossing proposed solar field, currently planted with alfalfa. Looking west towards Dogwood Rd.

Photo 15: Concrete-lined v-ditch, looking east toward Heber 1 Geothermal Facility

Photo 16: Concrete-lined v-ditch looking north. Ware Rd to the right. Proposed gen-tie line would parallel this ditch.

Photo 17. Concrete-lined v-ditch in proposed gen-tie line path. Looking south along Ware Rd/Pitzer Road bridge.

Photo 18. Representative photo of the concrete-lined v-ditches crossing the alfalfa fields where the proposed solar facility would be built.

Photo 19. Concrete-lined v-ditches fed by Beech Canal. Looking west.

Photo 20: Dogwood Lateral 1, looking east.

Figure 21. Concrete-lined v-ditch and existing pipeline, looking south.

Appendix B NRCS Soils Information

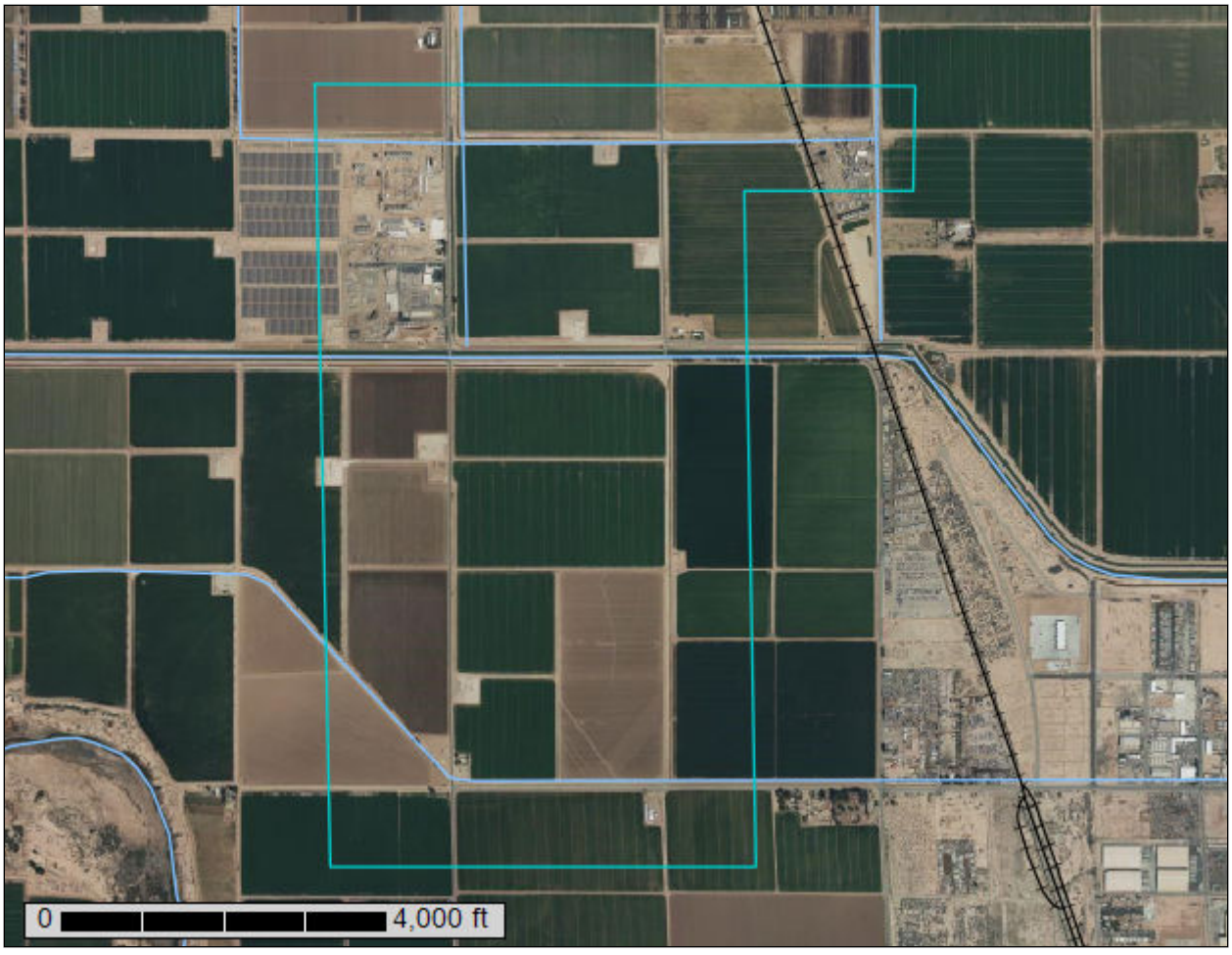
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Imperial County, California, Imperial Valley Area



October 2, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

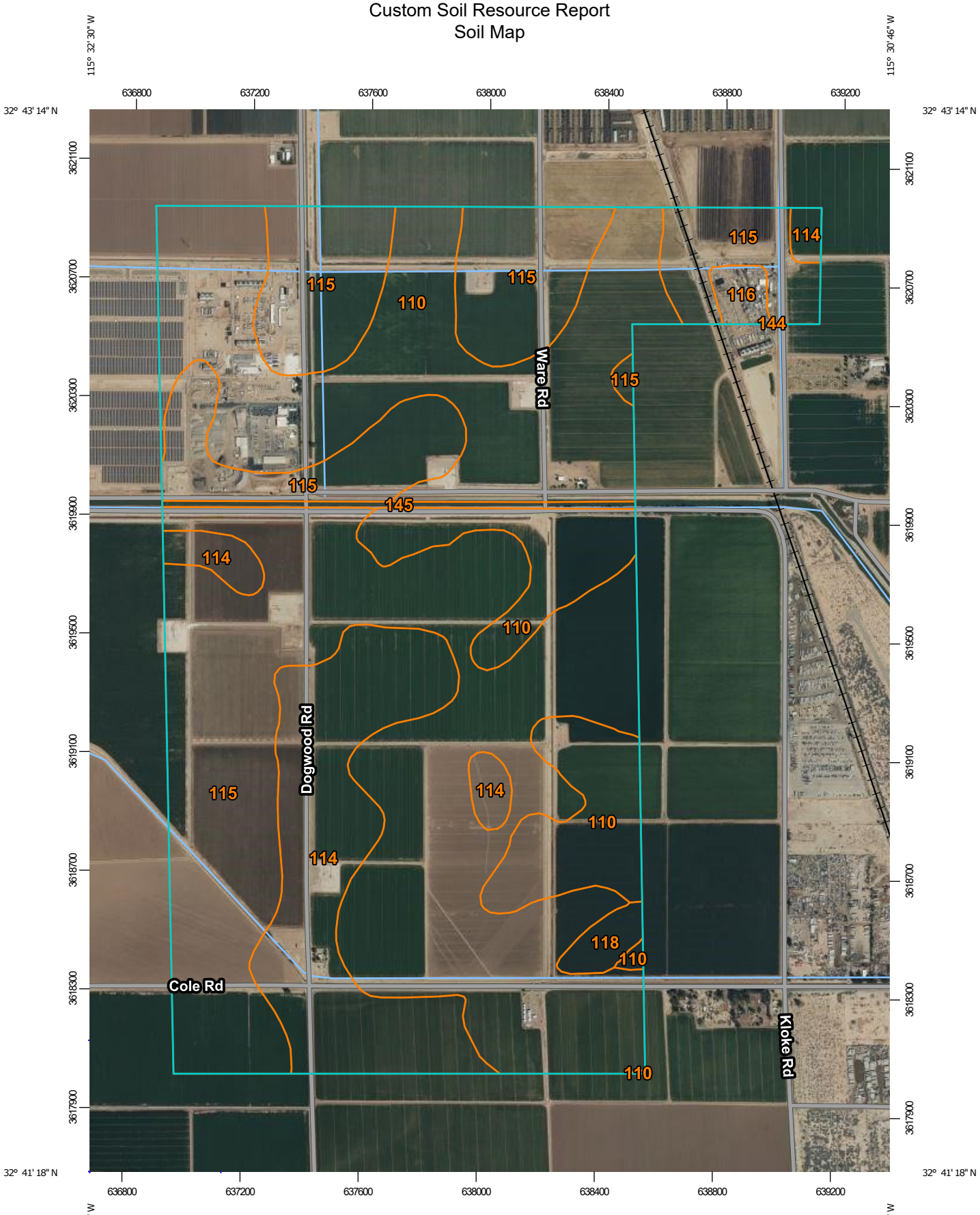
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:17,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2021—May 22, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
110	Holtville silty clay, wet	347.8	28.4%
114	Imperial silty clay, wet	169.8	13.9%
115	Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes	678.7	55.5%
116	Imperial-Glenbar silty clay loams, 2 to 5 percent slope s	8.6	0.7%
118	Indio loam, wet	10.1	0.8%
144	Vint and Indio very fine sandy loams, wet	0.0	0.0%
145	Water	8.6	0.7%
Totals for Area of Interest		**1,223.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Imperial County, California, Imperial Valley Area

110—Holtville silty clay, wet

Map Unit Setting

National map unit symbol: h8zj
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Holtville, wet, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holtville, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 17 inches: silty clay
H2 - 17 to 24 inches: clay
H3 - 24 to 35 inches: silt loam
H4 - 35 to 60 inches: loamy very fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Minor Components

Imperial
Percent of map unit: 5 percent
Hydric soil rating: No

Glenbar
Percent of map unit: 5 percent
Hydric soil rating: No

Indio
Percent of map unit: 3 percent
Hydric soil rating: No

Vint
Percent of map unit: 2 percent
Hydric soil rating: No

114—Imperial silty clay, wet

Map Unit Setting
National map unit symbol: h8zn
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Imperial, wet, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Imperial, Wet

Setting
Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed

Typical profile
H1 - 0 to 12 inches: silty clay
H2 - 12 to 60 inches: silty clay loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups
Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Minor Components

Meloland
Percent of map unit: 4 percent
Hydric soil rating: No

Glenbar
Percent of map unit: 4 percent
Hydric soil rating: No

Holtville
Percent of map unit: 4 percent
Hydric soil rating: No

Niland
Percent of map unit: 3 percent
Hydric soil rating: No

115—Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: h8zp
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Imperial, wet, and similar soils: 41 percent
Glenbar, wet, and similar soils: 40 percent
Minor components: 19 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Imperial, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: silty clay loam
H2 - 12 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Description of Glenbar, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

H1 - 0 to 13 inches: silty clay loam
H2 - 13 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 15.0
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Minor Components

Meloland

Percent of map unit: 10 percent
Hydric soil rating: No

Holtville

Percent of map unit: 9 percent
Hydric soil rating: No

116—Imperial-Glenbar silty clay loams, 2 to 5 percent slope s

Map Unit Setting

National map unit symbol: h8zq
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Imperial and similar soils: 41 percent
Glenbar and similar soils: 40 percent
Minor components: 19 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Imperial

Setting

Landform: Basin floors
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed

Typical profile

H1 - 0 to 13 inches: silty clay loam
H2 - 13 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Description of Glenbar

Setting

Landform: Basin floors
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

H1 - 0 to 13 inches: silty clay loam
H2 - 13 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Minor Components

Meloland
Percent of map unit: 10 percent
Hydric soil rating: No

Holtville
Percent of map unit: 9 percent
Hydric soil rating: No

118—Indio loam, wet

Map Unit Setting
National map unit symbol: h8zs
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition
Indio, wet, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Indio, Wet

Setting
Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile
H1 - 0 to 12 inches: loam
H2 - 12 to 72 inches: stratified loamy very fine sand to silt loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Minor Components

Vint

Percent of map unit: 6 percent
Hydric soil rating: No

Glenbar

Percent of map unit: 3 percent
Hydric soil rating: No

Meloland

Percent of map unit: 3 percent
Hydric soil rating: No

Holtville

Percent of map unit: 3 percent
Hydric soil rating: No

144—Vint and Indio very fine sandy loams, wet

Map Unit Setting

National map unit symbol: h90m
Elevation: -230 to 300 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Vint, wet, and similar soils: 50 percent
Indio, wet, and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vint, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources and/or eolian deposits derived from mixed sources

Typical profile

H1 - 0 to 10 inches: very fine sandy loam
H2 - 10 to 40 inches: loamy fine sand
H3 - 40 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Description of Indio, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: very fine sandy loam
H2 - 12 to 40 inches: stratified loamy very fine sand to silt loam
H3 - 40 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Ecological site: R040XD007CA - Lacustrine Basin and Large RIver Floodplain
Hydric soil rating: No

Minor Components

Meloland

Percent of map unit: 5 percent
Hydric soil rating: No

Rositas

Percent of map unit: 5 percent
Hydric soil rating: No

145—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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Appendix C Ordinary High Water Mark Data Forms

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Beech Drain East
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~530ft SE of Willoughby Rd junction with Ware Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7082165, -115.5268627; pt2 32.7083271, -115.5268609°

Potential anthropogenic influences on the channel system:
IID man-made earthen drain constructed in uplands. Adjacent to unpaved roads and parallel to Willoughby Rd. North of ag field for proposed of solar site.

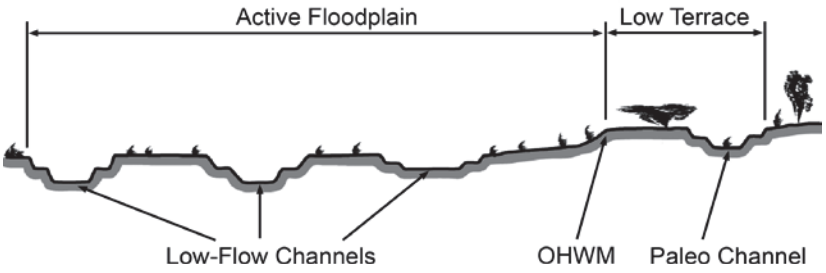
Brief site description:
Earthen drain operated by IID. OHWM = ~48'. Arrowweed thickets along north side of the drain, vegetation on south side. South of Willoughby Rd ~530ft before Willoughby Rd intersects with Pitzer/Ware Rd. East of Dogwood Rd.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

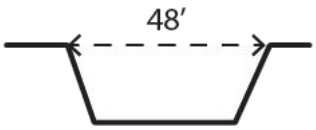


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** BD-01 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Arrowwhead thickets on north bank to top of bank. Some water present. Vegetation on south side of the drain below top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Beech Drain West
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~130ft SE of Willoughby Rd junction with Dogwood Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
IID man-made earthen drain constructed in uplands. West of Dogwood Rd intersection with Willoughby Rd. South of Willoughby Parallels Willoughby Rd and unpaved agricultural road.

pt1 32.7082362, -115.5345359;
pt2 32.7083260 115.5345231°

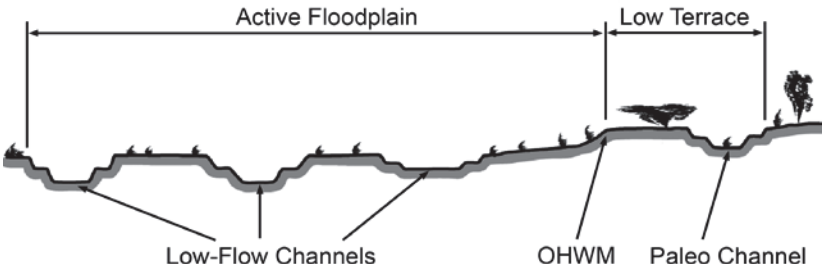
Brief site description:
Earthen drain operated by IID. OHWM = ~40'. SW of Dogwood Rd and intersection with Willoughby Rd. Vegetation below top of bank. West of Dogwood Rd and South of Willoughby Rd before Main Central Canal.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

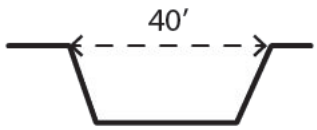


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** BD-02 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Vegetation below top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Central Main Canal "1"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~178t west of bridge at Willoughby Rd junction with Pitzer/Ware Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made earthen irrigation supply canal. Runs parallel to Willoughby Rd. West of Pitzer/Ware Rd bridge. Adjacent to unpaved road and ~230 ft SW of residence/commercial building.

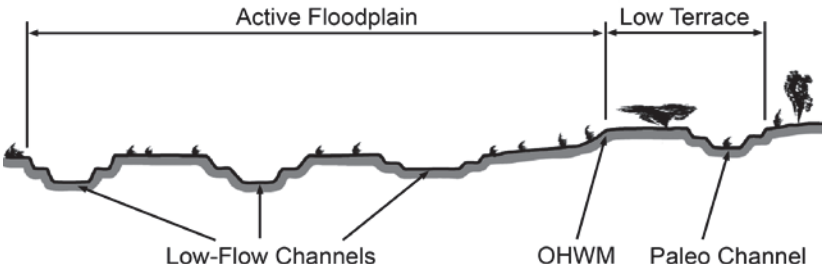
pt1 32.7088309, -115.5260185°
pt2 32.7086299, -115.52605254°

Brief site description:
Earthen canal operated by IID. OHWM = ~90'. Adjacent to the Pitzer/Ware Rd bridge ~90ft from residence/company near Bridge. Main regional canal.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

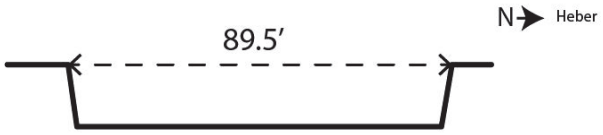


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** CMC-01 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Spare vegetation, tamarisk and other vegetation below top of bank. Regional distribution canal. Riprap canal banks.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Central Main Canal
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~30ft north of Willoughby Rd at junction with Dogwood Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made earthen irrigation supply canal. North end of Dogwood Rd bridge at intersection with Willoughby Rd.

pt1 32.7086128, -115.5342026°
pt2 32.7088542, -115.5341809°

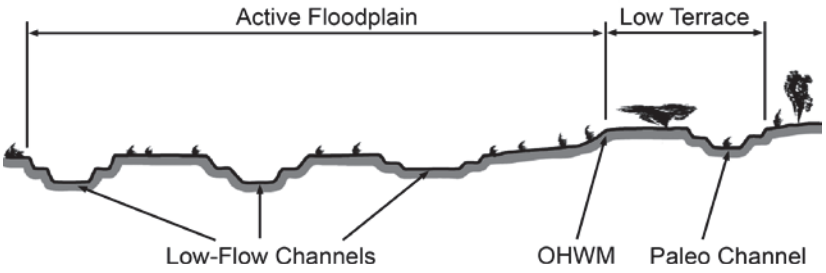
Brief site description:
Earthen canal operated by IID. OHWM = ~105'. Adjacent to the Dogwood Rd bridge north of the intersection with Willoughby Rd. South of Dogwood Lateral 1. ~90ft from aggregates company near Heber 2 Geothermal Energy Complex

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

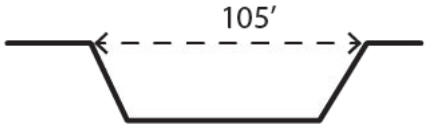


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** CMC-02 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Arroweed thickets, and other vegetation below top of bank. Regional distribution canal. Armored or buttressed canal banks at Dogwood bridge

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Date Drain 3 E-W section
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ .6 miles south of Heber, CA. West .1 mi of Ware Rd between two ag fileds

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt2 32.7160511, -115.5284310; pt1 32.7159520, -115.5284270

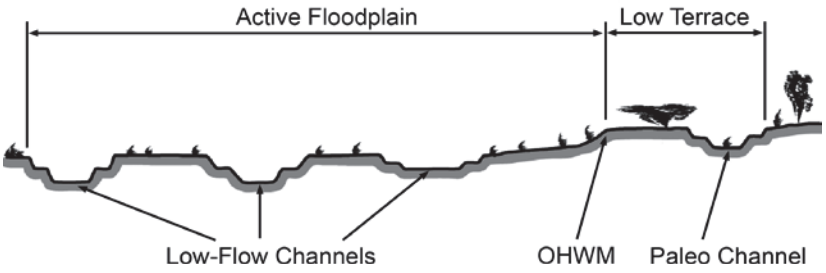
Potential anthropogenic influences on the channel system:
Man-made earthen irrigation supply drain constructed in uplands.

Brief site description:
Earthen drain operated by IID. OHWM = 43'

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

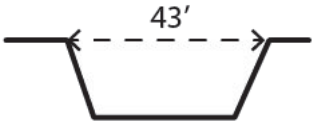


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DD-01 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Vegetated, mostly tamarisk below top of bank. Spare presence of arrow weed thickets. Water present.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Date Drain 3 N-S section
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ .6 miles south of Heber,CA. Junction of Dogwood Canal and Date Drain

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made earthen irrigation supply drain constructed in uplands.

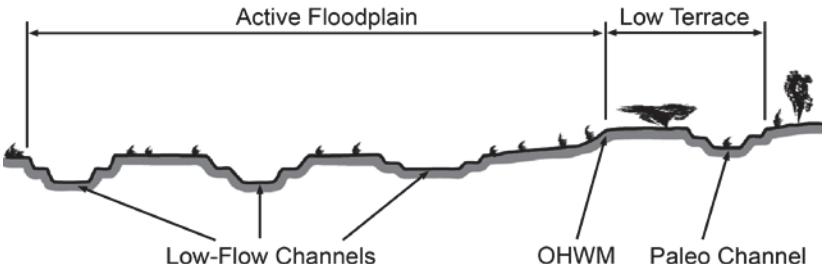
pt1 32.7161429, -115.5338053;
pt2 32.7161386, -115.5336829

Brief site description:
Earthen drain operated by IID. OHWM = 43'

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

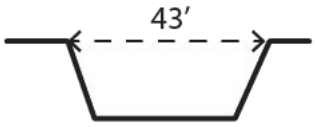


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DD-02 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Vegetated, mostly tamarisk below top of bank. Spare presence of arrow weed thickets.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Daffodil Canal "Main"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~143ft N of Heber 1 Geothermal Site NE boundary

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:
pt1: 32.7163926, -115.5169919°
pt2: 32.7163914, -115.5170174°

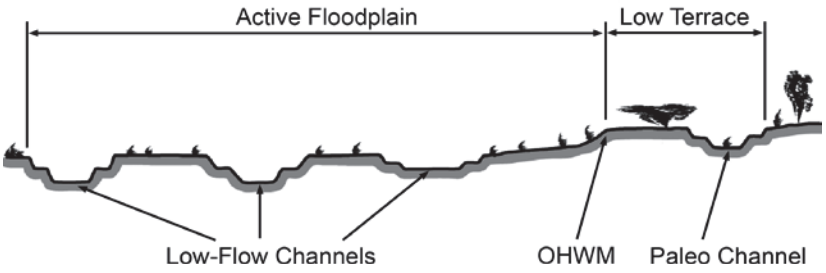
Potential anthropogenic influences on the channel system:
IID concrete-lined irrigation supply canal adjacent to agricultural activities
an unpaved road and Pitzer Rd.
N of the Heber 1 Geothermal facility.

Brief site description:
Concrete lined canal operated by IID. OHWM = 11'. No vegetation. Water present. Parallels Pitzer Rd and north of the Heber 1 geothermal facility (~143ft).

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☒ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

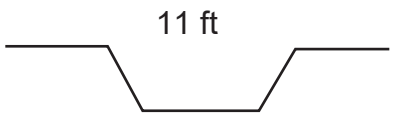


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DFC-01 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Unvegetated.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Daffodil Canal "Wide"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~81ft N of Heber 1 Geothermal Site NE boundary

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:
pt1: 32.7162734, -115.5170306
pt2: 115.5169871°W 32.7162706°N

Potential anthropogenic influences on the channel system:
IID concrete-lined irrigation supply canal adjacent to agricultural activities
an unpaved road and Pitzer Rd.
N of the Heber 1 Geothermal facility.

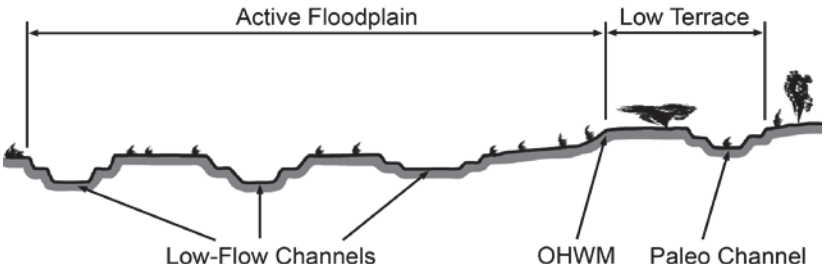
Brief site description:
Concrete lined canal operated by IID. OHWM = 15'. No vegetation. Water present. Parallels Pitzer Rd and north of the Heber 1 geothermal facility (~81ft).

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ■ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DFC-02 **Date:** 10/12/2023 **Time:**

Cross section drawing:

OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Unvegetated.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Daffodil Lateral 1
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~182ft NW of Heber 1 Geothermal Site NW boundary

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:
pt1: 32.7161349, -115.5201800
pt2: 32.7161586, -115.5201849

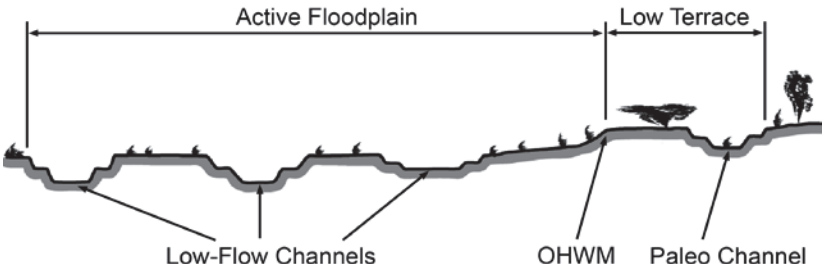
Potential anthropogenic influences on the channel system:
IID concrete-lined irrigation supply canal adjacent to agricultural activities
an unpaved road, adjacent to the Union Pacific Railroad.
NW of the Heber 1 Geothermal facility. Near geothermal brine pipeline

Brief site description:
Concrete lined canal operated by IID. OHWM = 12'. Arrowweed and tamarisk thickets on top of bank. Water present. Adjacent to the Union Pacific Railroad and NW of Heber 1 geothermal facility (~182ft).

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ■ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

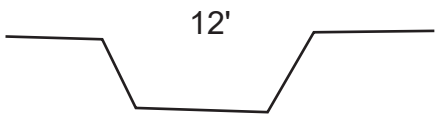


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DFL1 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Arrowweed thickets and tamarisk on top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Dogwood Canal
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~140-ft Across NE corner of the HGEC

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made earthen irrigation supply canal.

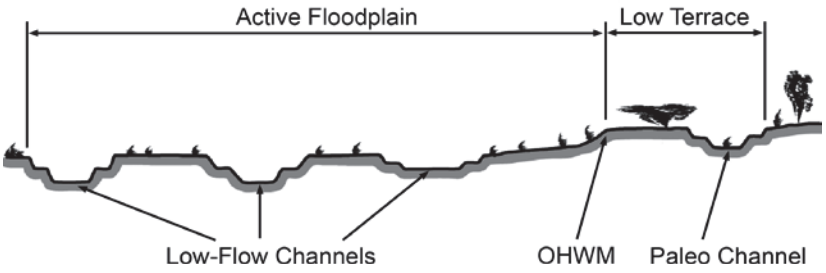
pt1 32.7161247, -115.5340856;
pt2 32.7161123, -115.5339668

Brief site description:
Earthen canal operated by IID. OHWM = ~44'

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

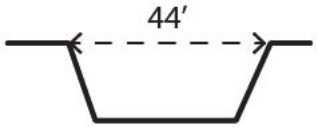


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DW-01 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Arroweed thickets present below top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Dogwood Canal "2"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~145ft west Pitzer/Ware Rd at Bridge with Willoughby Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7089163, -115.5259037°; pt2 32.7089658, -115.5259141°

Potential anthropogenic influences on the channel system:
Concrete-lined irrigation supply canal. Between two unpaved roads. ~145ft west of Pitzer/Ware Rd bridge. South of ag field.

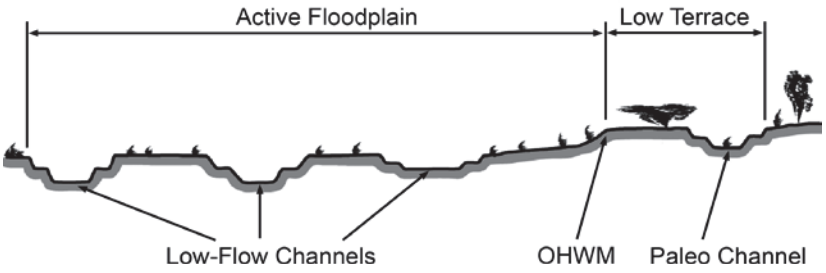
Brief site description:
Concrete-lined canal operated by IID. OHWM = ~20'. Between two unpaved roads, west of the Pitzer/Ware Rd bridge along E Jasper Rd. ~110ft south of agricultural fields. 40 ft north of the Central Main Canal

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

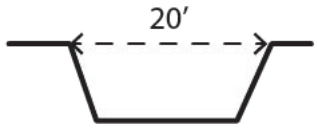


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DW-02 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Unvegetated.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Dogwood Lateral 1
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~230-ft NW of intersection of Dogwood Rd. and Willoughby Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7089199, -115.5343693;
pt2 32.7089700, -115.5343608

Potential anthropogenic influences on the channel system:
Man-made earthen irrigation supply canal.

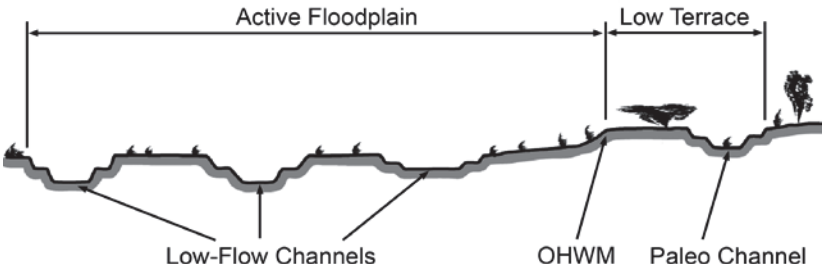
Brief site description:
Earthen canal operated by IID. OHWM = ~25'. Directly south of an aggregates company. North of the Central Main Canal near the Dogwood Rd Bridge before the intersection with Willoughby Rd.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

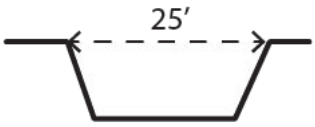


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DWL1 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Tamarisk and arrowweed on banks and bass within the canal.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: Dogwood Lateral 2
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~.7 miles south of Heber, CA. 30ft north of HGEC northern boundary

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made concrete-lined irrigation supply canal.

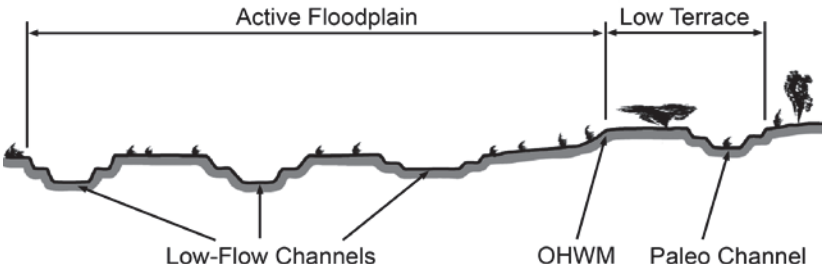
pt1 32.7160231, -115.5344182
pt2 32.71660785, -115.5344299

Brief site description:
Concrete-lined canal operated by IID. OHWM = ~25'. ORMAT Heber 2 Geothermal Energy Complex northern boundary is 30-ft directly south of the canal.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

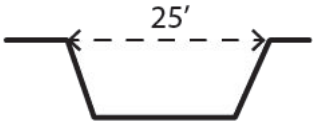


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** DWL2 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Spare vegetation above top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "1"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~.1mi east of Ware Rd & ~.57mi north of Jasper Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities
an unpaved road in between IID Date Drain No.3 and Daffodil Lateral
1. North of a geothermal brine pipeline.

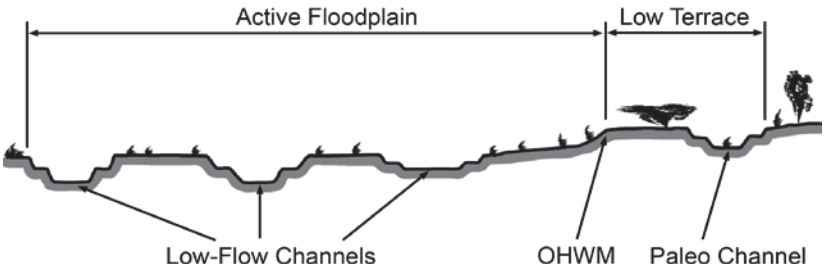
pt1:32.7160411, -115.5240610
pt2: 32.7160604, -115.5240801

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs E-W. Concrete lined v-ditch, 7.5' wide, approximately 3' deep and sparse vegetation on top of bank.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☒ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-01 **Date:** 10/12/2023 **Time:**

Cross section drawing:

OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Vegetation on top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "2"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~245ft NW of Heber 1 Geothermal Site NW boundary

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:
pt1: 32.7163208, -115.5203044°
pt2: 132.7163117, -15.5203236°

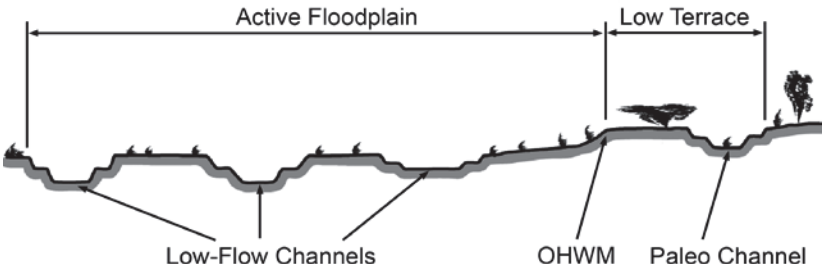
Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities
an unpaved road and runs parallel to the Union Pacific Railroad
NW of the Heber 1 Geothermal facility.

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs E-W. Concrete lined v-ditch, 7.5' wide, approximately 3' deep and arrowweed thickets on top of bank. Water present. Parallels the Union Pacific Railroad

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☒ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-02 **Date:** 10/12/2023 **Time:**

Cross section drawing:

OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Arrowweed thickets on top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V-ditch "3"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~.5mi NW of Calexico and west of Heber 1 Geothermal Site

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:
pt1: 32.7142958, -115.5195067°
pt2: 32.7142924, -115.5195300°

Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities
an unpaved road, parallels the Union Pacific Railroad.
Directly west of the Heber 1 Geothermal facility.

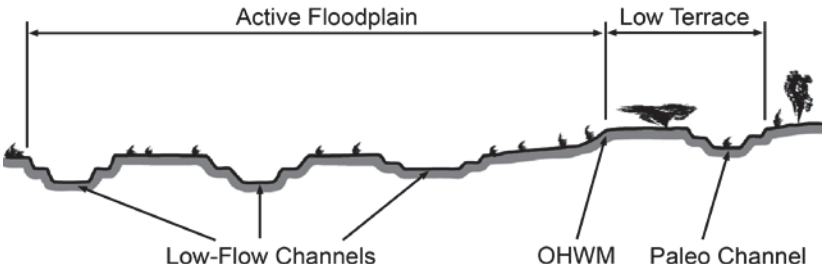
Brief site description:
Concrete lined v-ditch provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S, 7.5' wide, approximately 3' deep and arrowweed and tamarisk thickets on top of bank. Parallels the Union Pacific Railroad and west of Heber 1 geothermal facility (~130ft).

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ■ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-03 **Date:** 10/12/2023 **Time:**

Cross section drawing:

OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. This is outside of survey are. Arrowweed thickets and tamarisk on top of bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "4"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ 50-ft NW from the intersection of Jasper Rd and Ware Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made concrete-lined v-ditch adjacent to agricultural activities and paved road (Ware Rd) and unpaved road (Jasper Rd). Near Pitzer/Ware Rd Bridge

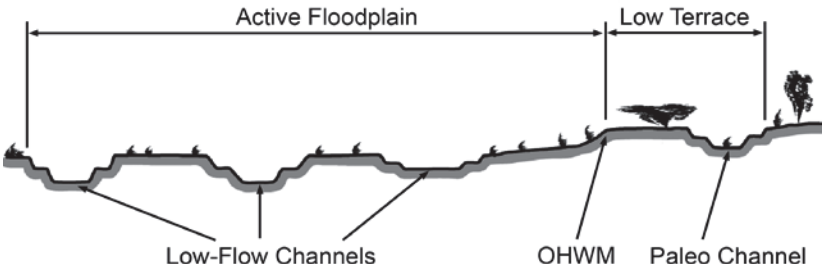
pt1 32.7091675, -115.5256894°
pt2 32.7091875, -115.5256903°

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs E-W. 7.5' wide, approximately 3' deep and unvegetated. ~270 ft west of commercial/residence near Pitzer/Ware Rd bridge. Runs parallel to Dogwood Canal

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

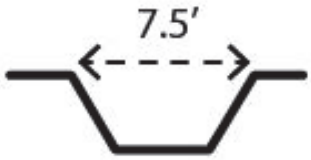


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-04 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Largely unvegetated, some growth in cracks of canal.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "5"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ 135-ft north from Pitze/Ware Bridge. ~20 West of Ware RD

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7092650, -115.5255805°
pt2 32.7092649, -115.5255585°

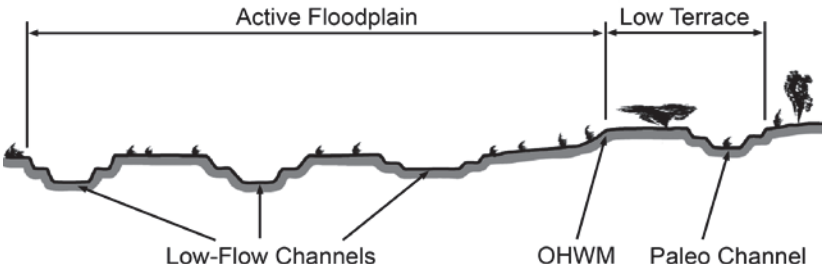
Potential anthropogenic influences on the channel system:
Man-made concrete-lined v-ditch adjacent to agricultural activities and paved road (Ware Rd) and unpaved road (Jasper Rd). Near Pitzer/Ware Rd Bridge

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S. 7.5' wide, approximately 3' deep and unvegetated. ~210 ft west of commercial/residence near Pitzer/Ware Rd bridge. Runs parallel to Dogwood Canal

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

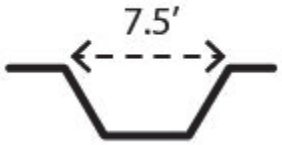


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-05 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Largely unvegetated, some growth in cracks of canal, and sparse vegetation top of bank..

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "6"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ .7 miles west of Calexico. NE corner of proposed solar field

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7012939, -115.5254011° pt2 32.7012962, -115.5254250°

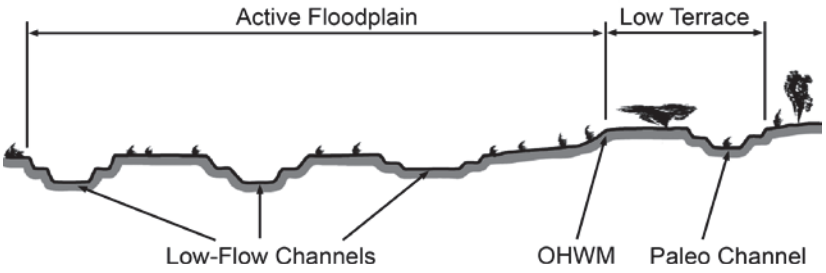
Potential anthropogenic influences on the channel system:
Man made concrete v-ditch adjacent to agricultural activities and unpaved road. Between multiple ag fields. In NE corner of area sited for proposed solar field.

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S. 7.5' wide, approximately 3' deep. Unvegetated ~.6 miles east of Dogwood Rd and ~.6 miles North of Cole. Within the proposed solar field. Positioned near V-ditch 8 and V-ditch 7. Runs parallel to the Beech Drain.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-06 **Date:** 10/12/2023 **Time:**

Cross section drawing:

OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. No vegetation.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "7"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ .7 miles west of Calexico. NE corner of proposed solar field

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7014341, -115.5254680° pt2 32.7014544, -115.5254744°

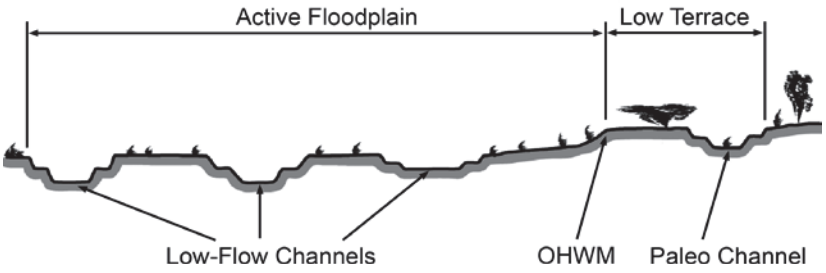
Potential anthropogenic influences on the channel system:
Man made concrete v-ditch adjacent to agricultural activities and unpaved road. Between multiple ag fields. In NE corner of area sited for proposed solar field.

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs E-W. 7.5' wide, approximately 3' deep. Unvegetated ~.6 miles east of Dogwood Rd and ~.61 miles North of Cole. Within the proposed solar field

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

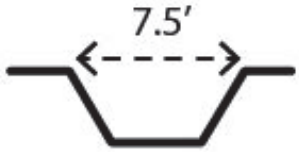


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-07 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. No vegetation.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "8"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~ .7 miles west of Calexico. NE corner of proposed solar field

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7014831, -115.5254360° pt2 32.7014857, -115.5254118°

Potential anthropogenic influences on the channel system:
Man made concrete v-ditch adjacent to agricultural activities and unpaved road. Between multiple ag fields. In NE corner of area sited for proposed solar field.

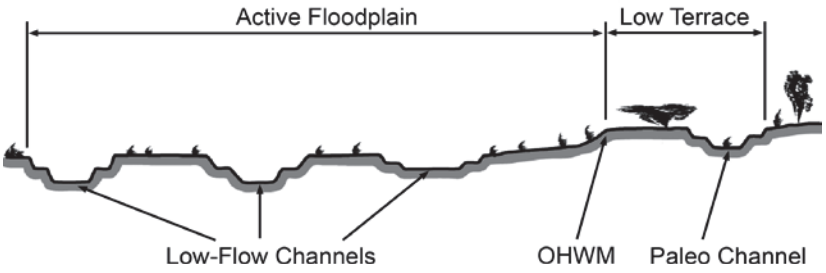
Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S. 7.5' wide, approximately 3' deep. Unvegetated ~.6 miles east of Dogwood Rd and ~.61 miles North of Cole. Within the proposed solar field. Positioned near V-ditch 7 and V-ditch 6. Runs parallel to the Beech Drain.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

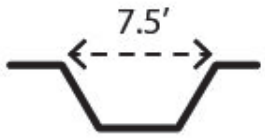


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-08 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Sparse vegetation in concrete cracks below bank.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "9"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~ .8mi NE of E. Cole Rd intersection w/ dogwood rd. Within proposed solar field

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man made v-ditch adjacent to agricultural activities and unpaved road. Between two ag fields sited for proposed solar field. Earthen v-ditch ~26 ft south.

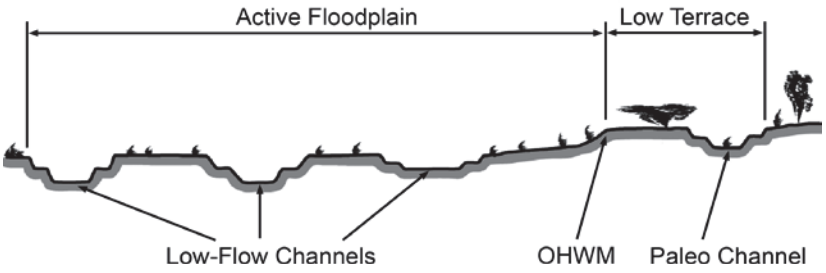
pt1 32.6978048, -115.5299872°
pt2 32.6978234, -115.5299882°

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs E-W. ~7.5' wide, approximately 3' deep, and unvegetated. ~.30miles east of Dogwood Rd and ~.31miles North of Cole.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

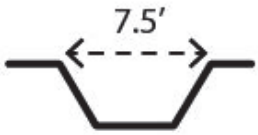


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-09 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. No vegetation.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "9.2"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~ .7 miles west of Calexico. N of proposed solar field

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7051170, -115.5255349° pt2 32.7051373, -115.5255369°

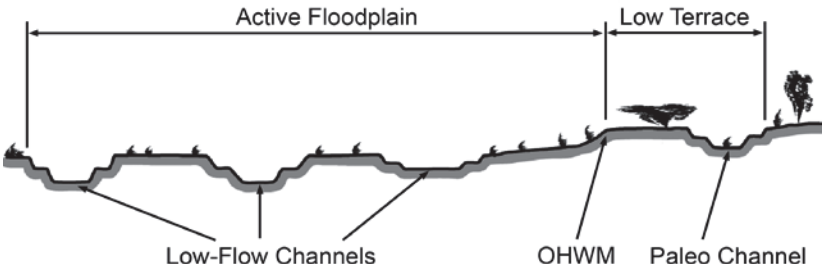
Potential anthropogenic influences on the channel system:
Man made concrete v-ditch adjacent to agricultural activities and unpaved road. Between multiple ag fields. In north of area sited for proposed solar field, east side of the field.

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S. 7.5' wide, approximately 3' deep. Unvegetated ~.3 miles south of Willoughby Rd and ~.59 miles east of Dogwood Rd. North of the proposed solar field. Positioned south of the Willoughby Ware/Pitzer Rd junction. Runs parallel to the Beech Drain.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

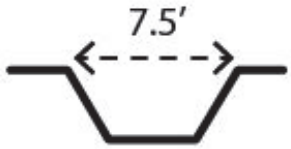


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-09.2 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. No vegetation.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "10" east of Dogwood ,Cole Rd intersection. East side of solar ag field
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ■ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
~ 0.27 miles east of E. Cole Rd intersection w/ dogwood rd. N of beech canal

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.6942694, -115.5300272° pt2 32.6942505, -115.5300402°

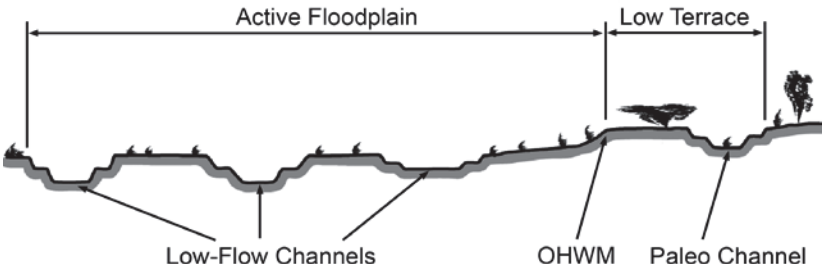
Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities and unpaved roads

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs E-W. 7.5' wide, approximately 3' deep and unvegetated. ~55 ft north of Beech Canal and ~100 -ft north of E. Cole Rd.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

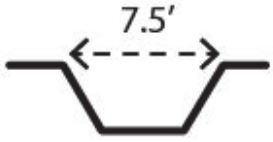


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-10 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. No vegetation dry.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "11"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ 271ft NE of E. Cole Rd intersection w/ dogwood rd. N of beech canal

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.6942995, -115.5333357°
pt2 32.6942994, -115.53333131°

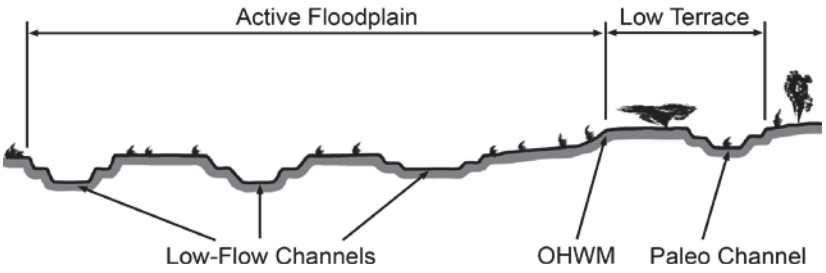
Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities and unpaved road. North of Beech drain, adjacent to ag field for proposed solar field and south of a residence.

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S. 7.5' wide, approximately 3' deep, vegetation on top of bank none below. ~69 ft north of Beech Canal and ~271 -ft NE of Cole and Dogwood Rd intersection.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-11 **Date:** 10/12/2023 **Time:**

Cross section drawing:

OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Vegetation on top of bank none below.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "13", NE of HGEC, north of Dogwood Lat. 2
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ 0.6 miles south of Heber, CA. Northeast corner of the HGEC near Dogwood Lat 2

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7161468, -115.5344474°; pt2 32.7161679, -115.5344496°

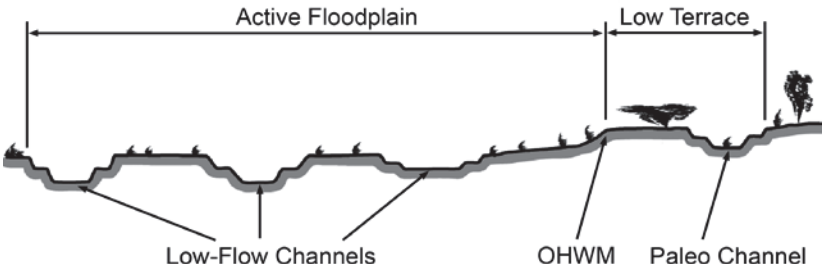
Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities and unpaved road (close to Dogwood road)

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs E-W, 7.5' wide, approximately 3' deep and sparse tamarisk. ~70 ft north of the Heber 2 Geothermal Energy Complex and 62 feet east of Dogwood Rd.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

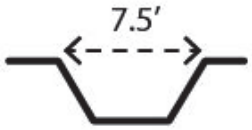


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-13 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Spare tamarisk below top of bank, mostly unvegetated.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "14", NE of HGEC, north of Dogwood Lat. 2
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~ 0.6 miles south of Heber, CA. Northeast corner of the HGEC near Dogwood Rd

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates: pt1 32.7162317, -115.5343544° pt2 32.7162329, -115.5343325°

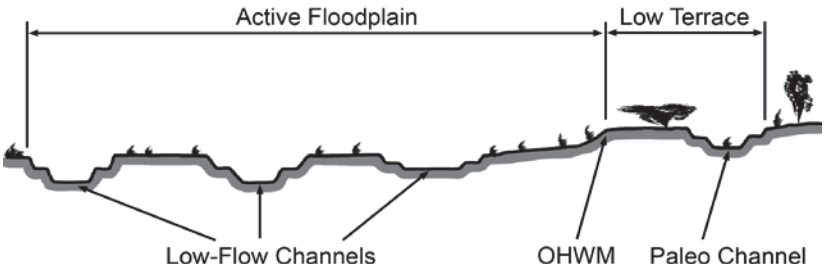
Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities and paved road (Dogwood road)

Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S. 7.5' wide, approximately 3' deep and unvegetated. ~130 ft north of the Heber 2 Geothermal Energy Complex and adjacent to Dogwood Rd.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

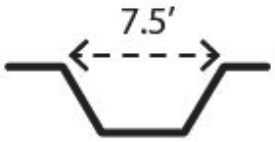


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-14 **Date:** 10/12/2023 **Time:**

Cross section drawing:



OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Spare tamarisk below top of bank

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Heber 1 Parasitic Solar
Project Number:
Stream: V ditch "15"
Investigator(s): Emily Merickel, Hannah Donaghe

Date: 10/12/2023
Town: Heber
Photo begin file#:

Time:
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
~.6mi east Heber 2 Geothermal Complex ~.41mi west of Heber 1

Projection: Lambert Conformal Conic
Datum: NAD 1983 (2011)
Coordinates:

Potential anthropogenic influences on the channel system:
Man-made concrete v-ditch adjacent to agricultural activities
an unpaved road and runs parallel to IID Date Drain No. 3.
Wes of the Heber 1 Geothermal facility and east of the Heber 2 Complex.

pt1: 32.7162223, -115.5257152°
pt2: 32.7162203, -115.5257407°

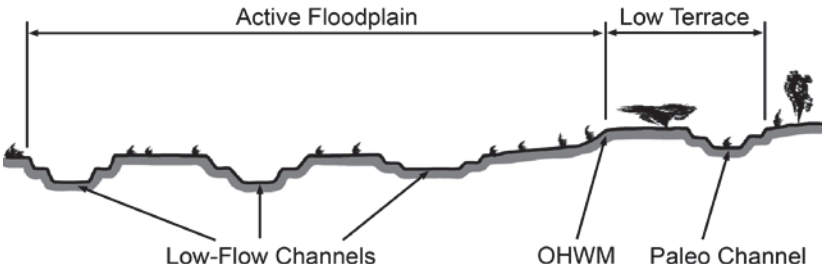
Brief site description:
Provides irrigation water to alfalfa and hay fields in vicinity. Runs N-S. Concrete lined v-ditch, 7.5' wide, approximately 3' deep and sparse vegetation in cracks of concrete. Parallels Date Drain No. 3.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☒ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: Heber 1 **Cross section ID:** LVD-15 **Date:** 10/12/2023 **Time:**

Cross section drawing:

OHWM

GPS point: See Report

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Agricultural irrigation canal constructed in uplands. Sparse vegetation in cracks of cement of ditch and on top of the banks.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No floodplain is present