APPENDIX B

AQUATIC RESOURCES DELINEATION REPORT

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Aquatic Resources Delineation Report

USMCA Mitigation of Contaminated Transboundary Flows Project

Prepared for:



United States Environmental Protection Agency Office of Wastewater Management 1200 Pennsylvania Avenue, NW Washington DC 20460

Prepared by:



PG Environmental An ERG sister company

PG Environmental, LLC (Subcontractor to ERG)

31 May 2022 Final Report

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

CCACalifornia Coastal ActCCCCalifornia Coastal CommissionCDFWCalifornia Department of Fish and WildlifeCDPCoastal Development Permitcfscubic feet per secondCWAClean Water ActEPAUnited States Environmental Protection AgencyERGEastern Research Group, Inc.FACFacultative UplandFACUFacultative WetlandFACFacultative WetlandFACGoat Canyon Sediment BasinGPSGlobal Positioning SystemHUCHydrologic Unit CodeUSIBWCUnited States Section of the International Boundary and Water CommissionITPSouth Bay International Wastewater Treatment PlantLCPLocal Coastal ProgramMLRAMajor Land Resource AreaNRCSNatural Resources AreaNRCSNatural Resources Conservation ServiceNWIordinary high water markOHWordinary high water markOHWordinary high water MarkPEMPalustrine ForestedPGPG EnvironmentalPSSPalustrine Scrub-ShrubRPOResional Water Quality Control BoardSWRCBState Water Resources Control BoardSWRCBState Water Resources Control BoardSWRCBState Water Resources Control BoardSWRCBState Water Resources Control BoardSWRCBState Steps Elopartment of AgricultureUSDAUnited States Department of AgricultureUSDAUnited States Scological Survey	CBP	United States Customs and Border Protection
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EXECUTIVE SUMMARY

This report presents the results of a delineation of aquatic resources, including wetlands and waters of the United States (WOTUS), wetlands and waters of the state, and wetlands in the coastal zone. The delineation was conducted on an approximately 336-acre area (Delineation Area) of land in San Diego County, California, which encompasses lands owned by the County of San Diego, the City of San Diego, and the U.S. International Boundary and Water Commission (USIBWC). The delineation was conducted by PG Environmental (PG) (under subcontract to Eastern Research Group, Inc. [ERG]) to assist the United States (U.S.) Environmental Protection Agency (EPA) in evaluating the environmental impacts of the United States–Mexico–Canada Agreement (USMCA) Mitigation of Contaminated Transboundary Flows Project (Project). Based on the field investigations and supporting desktop analyses, PG identified 11 non-wetland waters as defined by the ordinary high water mark (OHWM) (covering 122.09 acres and 12,431 linear feet), seven wetland features (8.56 acres), and 0.05 acres of other features in the Delineation Area. These features may be subject to several jurisdictions (and their authorities).

1. INTRODUCTION

PG Environmental (PG) conducted an aquatic resources survey (under subcontract to Eastern Research Group, Inc. [ERG]) to assist the United States (U.S.) Environmental Protection Agency (EPA) in evaluating the environmental impacts of the United States-Mexico-Canada Agreement (USMCA) Mitigation of Contaminated Transboundary Flows Project (Project), located in San Diego County, California (Figure 1-1). EPA is evaluating multiple project options to support a forthcoming analysis of the Project in accordance with the National Environmental Policy Act. To support the alternatives analysis and impact assessment, PG delineated aquatic resources on a combined 336 acres (Delineation Area, Figure 1-2 and Figure 1-3), situated north of the U.S.-Mexico border, within the Tijuana River Valley. This aquatic resource delineation report describes the location and setting of the Delineation Area, methods, and findings on the identification and mapping of wetlands and non-wetland waters principally subject to the following jurisdictions (and their authorities): U.S. Army Corps of Engineers (USACE) (Clean Water Act [CWA] Section 404); Regional Water Quality Control Board (RWQCB) (CWA Section 401 and the Porter-Cologne Water Quality Control Act); and California Coastal Commission (CCC) (California Coastal Act [CCA]). Aquatic resources subject to California Department of Fish and Wildlife (CDFW) jurisdiction pursuant to Section 1600 of the California Fish and Game Code were not mapped as part of the assessment, which does not preclude such resources from CDFW regulatory authority.

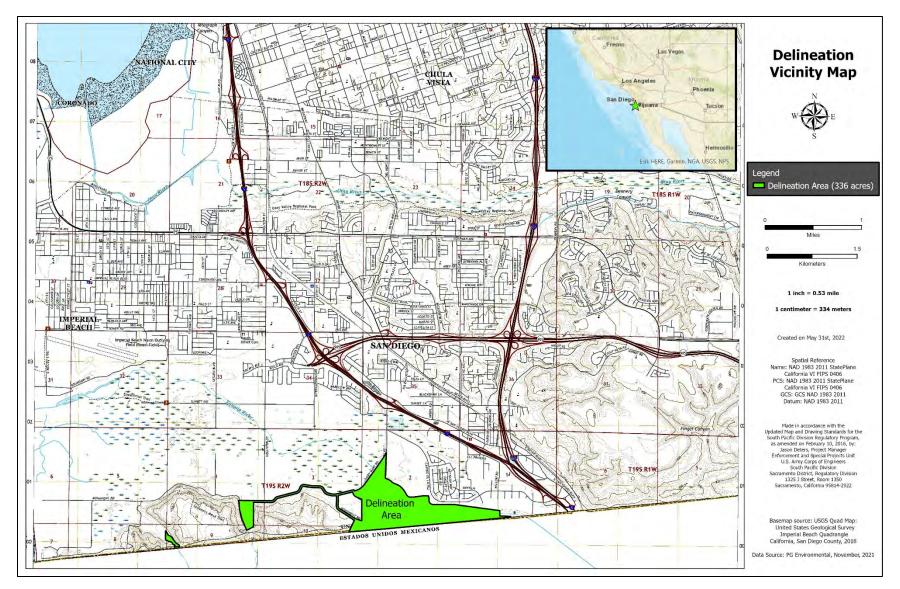


Figure 1-1. Delineation Area Vicinity



Figure 1-2. Delineation Area Site Map (East)

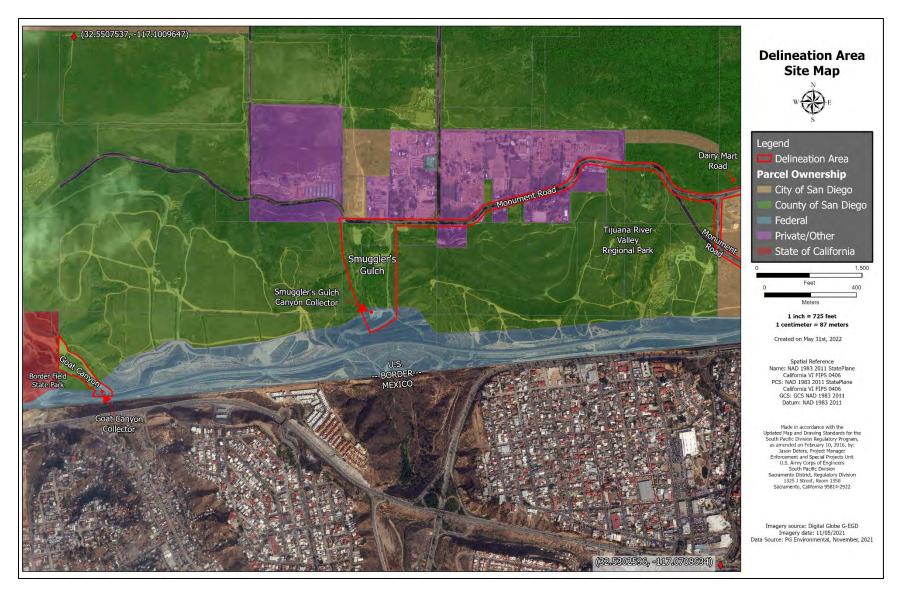


Figure 1-3. Delineation Area Site Map (West)

2. LOCATION AND SETTING

2.1 Location

The Delineation Area is located in Sections 2, 3, 4, 9, 10, 11 Township 19 South, Range 2 West in San Diego County, California (Figure 1-2), and ranges in elevation between 30 and 100 feet above sea level. The approximate center is located in UTM Zone 11S, NAD 83; 493031m E, 3600960m N; (Latitude: 32.545991, Longitude: -117.074225). The entirety of the Delineation Area falls within the U.S. Geological Survey (USGS) Imperial Beach, California Quadrangle (Figure 1-1). The Delineation Area falls under multiple land ownerships—including the County of San Diego, City of San Diego, and the U.S. International Boundary and Water Commission (USIBWC). Generally, the Delineation Area is located roughly 2 miles inland of the Pacific Ocean and encompasses the Tijuana River Floodway (TRF) and adjacent South Bay International Wastewater Treatment Plant (ITP), as well as areas adjacent to Dairy Mart Road, Monument Road, Smuggler's Gulch (north of Mexico), and the lower portion of Goat Canyon north of the U.S.-Mexico border (Figure 1-2).

The surrounding vicinity includes the Tijuana River Valley Regional Park and the Tijuana River Estuary to the north, the district of San Ysidro to the east, Spooners Mesa and Border Field State Park to the west, and the City of Tijuana, Mexico to the south. Portions of federally designated critical habitat for the federally listed endangered species least Bell's vireo (*Vireo belli pusillus*) overlap a portion of the Delineation Area and extends north into the Tijuana River Valley Regional Park.

2.2 <u>Climate</u>

The Delineation Area falls within the Southern California Coastal Plain—Major Land Resource Area (MLRA); the southern portion of this MLRA, near San Diego, contains narrow coastal plain between the Pacific Ocean and the Vallecito Mountains. This area is characterized by a semi-arid climate with warm, dry summers and cool winters. Elevations in the area range from sea level to 1,970 feet. Average precipitation in this area is 10 to 29 inches, with most rainfall occurring as low-or moderate-intensity Pacific frontal storms during winter. Temperature and rainfall patterns vary based on elevation, distance from the coast, and other factors. Average annual temperature is 55 to 66 degrees Fahrenheit (NRCS 2006). The normal average annual precipitation in the vicinity of the Delineation Area, as characterized by the Natural Resources Conservation Service (NRCS) Climate Analysis for Wetlands Tables (WETs), is 9.94 inches (NRCS 2021a). Average annual rainfall, as measured at the USIBWC facilities, between 2000 and 2020, is 8.93 inches. The San Diego County Water Authority¹ reports that current (2021) rainfall totals are below normal, following two years of above-normal rainfall totals (San Diego County Water Authority 2022). The Palmer Drought Severity Index² for the Delineation Area vicinity during October 2021 was rated as -1.0 and -2.0 or "abnormally dry" (Abatzoglou et al. 2022).

2.3 <u>Watershed</u>

The Delineation Area falls entirely within the Tijuana River Watershed (Hydrologic Unit Code [HUC] 8: 18070305), which drains over 1,750 square miles (1,120,000 acres) of land with

¹ See https://www.sdcwa.org/your-water/reservoirs-rainfall/rainfall/.

² See https://wrcc.dri.edu/wwdt/index.php?region=ca.

approximately 27 percent of the watershed in the U.S., and 73 percent in Mexico (USACE 2018a). The Tijuana River originates in Mexico, formed by its major tributaries the Río de las Palmas and the Cottonwood-Alamar system before crossing into the U.S. The watershed is bounded by the Laguna Mountains in the northeast, the Sierra Juárez Mountains in the south, and the Pacific Ocean to the west.

The U.S. portion of the Tijuana River was historically intermittent, characterized by prolonged dry periods of very low to zero surface water flows—particularly during the dry season—and flows mainly occurring during the rainy season, which begins as early as October and ends as late as April (Safran et al. 2017). Major storm events resulted in high and flashy flows that inundated much of the river valley, resulting in highly variable channel morphology and channel positions. The flashy nature of the river is also partially attributed to high infiltration rates in the sandy and porous riverbed, which precludes persisting surface flows.

Major alterations of flows in the watershed began during the late 1800s with the expansion of agricultural practices in the Tijuana River Valley that led to groundwater pumping for irrigation and in the early 1900s with the construction of dams and water storage reservoirs (Safran et al. 2017). Five dams regulate flow in the Tijuana River tributaries, including Barrett Dam and Morena Dam on Cottonwood Creek in the U.S. and Rodriguez Dam, Las Auras Dam, and El Carrizo Dam in Mexico., all of which control flows from approximately 73 percent of the watershed. The Rodriguez Dam in Mexico controls flows from approximately 56 percent of the watershed and provides the primary water supply for the City of Tijuana (Safran et al. 2017).

The volume and frequency of water flowing through the Tijuana River Valley has been and continues to be influenced by wastewater releases, in addition to agricultural and urban runoff. Following completion of the Tijuana River Flood Control Project in 1979, which channelized flows through 10 miles of concrete-lined levees extending from downstream of the Rodriguez Dam to the U.S.-Mexico border, portions of the Tijuana River became increasingly perennial from urban runoff and sewage releases. The Tijuana River hydrology became more intermittent during the early 1990s with the implementation of wastewater treatment and management, including construction of a diversion system upstream of the U.S.-Mexico border, which diverts river water during low flows to the Tijuana sewer system. Flow volumes and the downstream extent of flows are further driven by underlying geology, groundwater, surface vegetation, and climate. Low flows may be entirely infiltrated before reaching the Tijuana River Estuary, while at other times, an unconfined aquifer below the river valley may contribute to groundwater seepage into the Tijuana River, sustaining periods of flow even during periods of low rain (Parsons 2005).

2.4 Vegetation and Wetland Habitats

The landscape of the Delineation Area consists of a broad floodplain associated with the Tijuana River Valley, high mesas and deep canyons that support a mixture of native and non-native vegetation communities, and a moderate density of roads and development. Stillwater Sciences evaluated the vegetation community alliances within the Delineation Area during reconnaissance surveys conducted in April 2021. During this effort, Stillwater mapped areas where vegetation data were not previously available and updated existing vegetation mapping (i.e., Vegetation Classification and Mapping Program [VegCAMP] from 2016 and Vegetation Classification Manual for Western San Diego County from 2011). The Delineation Area primarily consists of vegetation alliances common to coastal southern California including chaparral, sage scrub, grasslands, and ruderal vegetation communities. Riparian and wetland habitats are confined to natural and humaninfluenced waterways, which include the Tijuana River and several unnamed tributaries and dry washes. The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping program identifies riverine habitats associated with the Tijuana River and its tributaries (i.e., Smuggler's Gulch and Goat Canyon Creek) and wetland habitats associated with the Tijuana River, as shown in Figure 2-1 and Figure 2-2.



Figure 2-1. Tijuana River Floodplain NWI Data



Figure 2-2. Smuggler's Gulch and Goat Canyon NWI Data

2.5 <u>Soils</u>

The U.S. Department of Agriculture (USDA) NRCS mapped 11 soil series within the Delineation Area, as summarized below in Table 2-1 and shown in Figure 2-3, Figure 2-4, and Figure 2-5 (NRCS 2021b).

Location	Soil Map Symbol	Map Unit Name	Slope Class	Drainage	Runoff
ITP and adjacent to	VbB	Visalia gravelly sandy loam	2-5%	Well drained	Very low
Dairy Mart Road and Monument	ChA	Chino fine sandy loam	0-2%	Moderately well drained	Medium
Road	OhC	Olivenhain cobbly loam	2-9%	Well drained	Very high
	OhE	Olivenhain cobbly loam	9-30%	Well drained	Very high
	OhF	Olivenhain cobbly loam	30-50%	Well drained	Very high
	VaA	Visalia sandy loam	0-2%	Well drained	Very low
Tijuana River main	ChA	Chino fine sandy loam	0-2%	Moderately well drained	Medium
channel (upstream	CkA	Chino silt loam, saline	0-2%	Moderately well drained	Low
of Dairy Mart Road)	TuB	Tujunga sand	0-5%	Somewhat excessively drained	Negligible
Smuggler's Gulch	Rm	Riverwash	0-4%	Excessively drained	Negligible
	VaA	Visalia sandy loam	0-2%	Well drained	Very low
	TeF	Terrace escarpments	N/A	N/A	N/A
Goat Canyon	Rm	Riverwash	0-4%	Excessively drained	Negligible
	CkA	Chino silt loam, saline	0-2%	Moderately well drained	Low
	TeF	Terrace escarpments	N/A	N/A	N/A

Source: NRCS, 2021b.



Figure 2-3. Tijuana River Floodplain Soil Data



Figure 2-4. Smuggler's Gulch and Monument Road Soil Data



Figure 2-5. Goat Canyon Soil Data

3. **REGULATORY FRAMEWORK**

3.1 U.S. Army Corps of Engineers

Section 404 of the CWA is a federal law administered by the USACE and the EPA to protect the physical, biological, and chemical integrity of waters of the U.S. (WOTUS). USACE is the primary Regulatory Program authority and enforces Section 404 of the CWA. Under Section 404, a permit is required for the discharge or dredge of fill material into WOTUS. The EPA and USACE (collectively the "agencies"), under order of the U.S. District Court for the District of Arizona vacating and remanding the Navigable Waters Protection Rule in the case of Pascua Yaqui Tribe v. U.S. Environmental Protection Agency (2021), are currently interpreting the definition of WOTUS consistent with pre-2015 regulatory rulings until further notice. Under pre-2015 regulatory definition and practice, the statutes under the CWA that define the jurisdictional limits of federal wetlands and waters are interpreted by Supreme Court rulings Solid Waste Agency of Northern Cook County v. USACE (2001), Rapanos v. United States (2006), and Carabell v. United States (2006) (the latter two of which are jointly referred to as the *Rapanos* decision). Under these rulings, and as summarized in a guidance document, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States (2008) which is commonly referred to as the 2008 Guidance (USACE and EPA 2008), the agencies assert jurisdiction over the following waters:

- Traditional Navigable Waters (TNW).
- Wetlands adjacent to TNW.
- Non-navigable tributaries of TNW that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months).
- Wetlands that directly abut such tributaries.

Further, the agencies will decide jurisdiction on a case-by-case basis to determine if they have a significant nexus with a TNW:

- Non-navigable tributaries that are not relatively permanent.
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent.
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

Wetlands are defined as "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include marshes, swamps, bogs, and similar areas" (Environmental Laboratory 1987). "Adjacent" in the rulings means bordering, contiguous, or neighboring. Wetlands separated from other WOTUS by man-made dikes or barriers, natural river berms, or beach dunes are considered "adjacent wetlands."

Navigable waters of the U.S. are defined as "those Waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce" (33 CFR § 329.4). Navigable waters include the open ocean, tidal bays, salt marshes, and some large rivers and lakes. The upstream limit of a navigable river is the head of navigation as designated by USACE (33 CFR § 329.4).

Further, as outlined in the 2008 Guidance, USACE generally will not assert jurisdiction over the following features: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands, as these features are generally not considered tributaries, or they do not have a significant nexus to a downstream navigable waters. In applying the significant nexus standard, the agencies may consider the flows and functions of a tributary together with the functions performed by adjacent wetlands adjacent to a tributary.

3.2 <u>California Water Quality Control Boards</u>

The Porter-Cologne Water Quality Control Act (Water Code, Section 13000 et seq.) charges the State Water Resources Control Board (SWRCB) and the nine RWQCBs with protecting water quality throughout California. The SWRCB and the RWQCBs, in conjunction with USACE, administer Section 401 of the CWA (33 United States Code 1341) in relation to permitting fill of federally jurisdictional waters. Additionally, beyond the federal jurisdiction delegated under the CWA, the SWRCB and the RWQCBs may exert regulatory authority over waters of the state, which are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." This definition may include isolated wetlands and other waters that may be outside of federal jurisdiction, which may be subject to waste discharge requirements.

Under the State Policy for Water Quality Control: State Wetland Definition and Procedures for the Discharges of Dredged or Fill Material to Waters of the State (SWRCB Procedures) (SWRCB 2021), SWRCB defines a wetland as follows: (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The following wetlands are considered "waters of the state":

- 1. Natural wetlands,
- 2. Wetlands created by modification of a surface water of the state, and
- 3. Artificial wetlands that meet the following criteria:
 - a. Approved by an agency as compensatory mitigation for impacts to other waters of the state except where the approving agency explicitly identifies the mitigation as being of limited duration;
 - b. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the landscape; or
 - c. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more purposes (wastewater treatment, sediment ponds, stormwater detention subject to regulation under municipal, construction, or industrial permitting programs, agricultural crop or stock watering, fire suppression, industrial processing/cooling, active surface mining.

The SWRCB Procedures describe a jurisdictional framework for aquatic features that meet the current, or any historic definition, of a wetland. The SWRCB relies on wetland area determinations that are verified by USACE following the methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and regional supplements. The methods described are accepted for delineation of wetlands but modified only to allow for the fact that the

lack of vegetation does not preclude the determination of an area meeting the definition of a wetland. Aquatic features that do not meet the definition of a wetland may still be regulated as a non-wetland water of the state (e.g., lakes, streams, and ocean waters) but the SWRCB Procedures do not include guidance for jurisdictional determinations for other waters of the state.

3.3 <u>California Department of Fish and Wildlife</u>

The CDFW is responsible for protecting and conserving fish and wildlife resources, and the habitats upon which they depend. Under Sections 1600-1607 of the Fish and Game Code, the Lake and Streambed Alteration Program reviews projects that would alter any river, stream, or lake. Under Fish and Game Code Section 1602, any person, state or local government, or public utility must notify CDFW prior to beginning any activity that would: 1) divert or obstruct natural flow of any river, stream, or lake, 2) change bed, channel, or bank of any river, stream, or lake, 3) use material from any river, stream, or lake, or 4) deposit or dispose of material into any river, stream, or lake. Areas within CDFW jurisdiction include riparian habitats associated with watercourses, where "riparian habitat" is not defined in the statute (Title 14, Section 1.72) but typically refers to vegetation associated with a stream channel. The limits of jurisdiction include ephemeral, intermittent, and perennial watercourses and include the outermost edge of riparian vegetation or the top of bank of streams or lakes, whichever is wider, Generally, CDFW jurisdiction is often extended to include areas that exhibit any one of the three wetland indicators (vegetation, soils, or hydrology).

3.4 California Coastal Commission

Waters that occur within the "coastal zone" are regulated under the CCA and the federal Coastal Zone Management Act of 1972 and are within the jurisdiction of the CCC. The CCC administers the Coastal Development Permit (CDP) program, for any portion of a proposed project located on tidelands, submerged lands, public trust lands, or lands located within the Coastal Zone where a Local Coastal Program (LCP) has not been certified. A key provision of the CCA is the requirement that local governments draft LCPs to guide coastal zone development, conservation, and planning. Once an LCP is approved by the CCC, the review authority for new development transfers from the CCC to the local authority, with the exception of certain geographic areas including submerged lands and public trust lands (County of San Diego 2018). The CCC also retains appellate authority over specified categories of development. The primary tool for implementing the LCP is the CDP. Development within the coastal zone generally may not commence until a CDP has been issued either by the CCC or—if the LCP has been approved—by the local authority. The entirety of the Delineation Area falls within the Coastal Zone and is within the City of San Diego LCP.

3.5 <u>County of San Diego</u>

The County of San Diego asserts jurisdiction over wetland areas based upon the County's Resource Protection Ordinance (RPO). Wetlands are defined under the RPO as lands having one or more of the following characteristics (San Diego County Code Section 86.602): 1) at least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places); 2) the substratum is predominantly undrained hydric soil; or 3) an ephemeral or perennial stream is present, whose substratum is predominantly non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

4. METHODS

4.1 Desktop Investigations

Prior to visiting the Delineation Area, PG reviewed USFWS NWI maps, USGS topographical maps, the National Hydrography Dataset, aerial imagery (Google Earth and Digital Globe), rainfall data, WETS Tables, streamflow data reported from the USIBWC, and prior studies and reports which include the following:

- Tijuana River Vegetation Control Draft Environmental Assessment (USBP 2017)
- Phase 1 Hydrology, Floodplain and Sediment Transport Report, Final (USACE 2018a)
- Tijuana River Valley Needs and Opportunities Assessment Flood Technical Memorandum (HDR 2020)
- Environmental Impact Statement and Environmental Impact Report for the Goat Canyon Enhancement Project (SWIA 2001)
- Environmental Assessment for Rehabilitation of the Levee System in the Tijuana River Flood Control Project (IDEALS AGEISS 2016)
- Addendum to the Regional General Permit 53 Initial Study/Mitigated Negative Declaration (HELIX 2021)

The frequency and volume of flows within the Tijuana River are largely driven by upstream human controls and modifications within the Tijuana River watershed, including the construction and/or management of upstream dams, channelization, and flow diversions. These impacts, in addition to vegetation management practices within the Tijuana River floodplain influence the development and persistence of ordinary high water mark (OHWM) geomorphic and vegetation indicators. Further, the reliance on OHWM indicators for delineation of ephemeral and intermittent waters in arid systems can be problematic, as described by Lichvar et al. (2006) and Lichvar and McColley (2008) due to the transitory nature of indicators following different discharge events. A characteristic random distribution of OHWM indicators within the active floodplain of arid west channels is particularly evident in systems driven by flashy discharges; moderate (five- to 10-year, or larger) events may form the limits of the active floodplain, whereas smaller, more frequent events (one- to three-year events) are typically confined to the low-flow/bankful channel. Consequently, geomorphic ordinary high water (OHW) indicators may form across the active floodplain following more frequent, smaller events and then be removed following moderate events with new ones forming as water recedes (Lichvar et al. 2006).

Procedures for delineation of OHWM in the Arid West are outlined in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (OHWM Field Guide) (Lichvar and McColley 2008), which include preliminary delineation steps for gaged and un-gaged streams in the arid west. For gaged streams, the preliminary delineation process involves using a statistic software program to conduct a flood frequency analysis (FFA) and developing a stage discharge rating curve to correlate stage height to a specific discharge event. The statistically derived probabilities are then used to guide field delineation efforts by aligning the stage height associated with the most recently recorded discharge exceeding a five-year event. The USIBWC manages a stream gage in the Tijuana River in the U.S. (located near the U.S.-Mexico border), which records daily discharges within the floodplain. Streamflow data are available for the period 1962 through 2022, and flow stage data are available from 2000 through 2022. For the Tijuana River, the availability of long-term flow data from USIBWC and hydrologic modeling results from a USACE study. *Phase 1 Hydrology, Floodplain and Sediment Transport Report* (Phase 1 Hydrological Study) (2018) allowed PG to implement a combined analysis using hydrologic modeling, review of aerial imagery, and field observations to delineate the lateral extents of waters in the Tijuana River floodplain.

As part of a Phase 1 Hydrological Study, USACE acquired annual peak flow data from USIBWC recorded from 1962 through 2015 (2008 through 2015 are corrected values) (USACE 2018a). USACE calculated discharge volumes using the statistical software, HEC-SSP, to implement a FFA using the Bulletin 17B procedures and generated inundation maps using a 1D-2D HEC-RAS model for two-year through 100-year flood events (USACE 2018a). PG used the same annual maximum peak flow values from the Phase 1 Hydrological Study period of record and incorporated annual peak flow data from the USIBWC gage for 2016 through 2021. Using the statistical software HEC-SSP (Version 2.3) developed by USACE (USACE 2021), PG performed an annual peak FFA following Bulletin 17B guidelines to determine discharge frequencies for two-, five-, 10-, and 20-year events (USGS 1982). PG compared the resulting discharge volumes by recurrence interval and the discharge frequency curve to the Phase 1 Hydrological Study findings and found that the computed probability flow for a two-, five-, 10-, and 20-year event were reasonably similar (Table 4-1).

n-Year Flood Event	Computed Probability Flow (cfs)			
II-fear Flood Event	Phase 1 Hydrological Study ^a	PG Analysis		
2-Year	1,070	1,315		
5-Year	4,710	5,376		
10-Year	10,300	10,952		
20-Year	19,700	19,530		
50-Year	41,100	37,101		
100-Year	67,100	56,703		

Table 4-1. Computed Discharge Frequency	Relationship for Tijuana River
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a – (USACE 2018).

In the absence of stage height data for the period of record, PG relied on flood inundation modeling from the 2018 USACE study to approximate stage height (by feet of inundation) for a five-year and 10-year discharge event. Using a five-year event inundation model as a baseline to support field delineation efforts, PG georeferenced the five-year inundation map and approximated the extents of the active floodplain on aerial imagery. PG also reviewed available aerial imagery from Google Earth and Digital Globe to identify imagery that was captured immediately following a two-year, five-year, or 10-year discharge event. Lastly, PG reviewed the USIBWC gage flow hydrographs from the past 10 years, which shows that cycles of alternating small discharge events (one- to two-year) and higher discharge events (five-, 10-, and 20-year) are occurring on more frequent intervals over the past 20 years.

There are no gages on Smuggler's Gulch or Goat Canyon Creek; therefore, PG relied on field indicators of an OHWM to delineate the limits of non-wetland waters at these locations, which is described in Section 4.3 (Basis of Jurisdiction).

4.2 <u>Field Investigations</u>

PG staff Esa Crumb, Zak Erikson, and Abraham Margo visited the Delineation Area on November 3 and 4, 2021 (2021 survey) to identify and delineate the limits of aquatic resources, including wetlands and non-wetland waters under federal, state, and/or local jurisdiction. During field investigations, PG collected information on site conditions and representative site photos throughout the Delineation Area to characterize the range of aquatic resources, water infrastructure, vegetation communities, uplands, and soil features observed.

4.2.1 Wetland Determination

PG delineated wetlands following the guidance provided in the *Corps of Engineers Wetlands Delineation Manual* (USACE Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Regional Supplement) (USACE 2008). Potential wetlands as defined by the USACE Manual (1987) were evaluated using a three-parameter approach: dominance of hydrophytic vegetation, hydric soils, and wetland hydrology. The indicator status for vegetation was determined by the most current National Wetland Plant List (USACE 2018b) and using the nomenclature offered in the USDA NRCS PLANTS Database (NRCS 2021c). Vegetation communities were determined in areas present within the OHWM and/or bed and bank boundary, and the outer limits of adjacent riparian vegetation, following the classifications under Holland (1986) and Sawyer et al. (2009). Hydric soil determinations followed the guidance provided by the Regional Supplement (2008) and indicators described in *Field Indicators of Hydric Soils in the United States* (NRCS 2018).

Within the Tijuana River floodplain, PG collected wetland data points along three transect lines, following the protocol for delineation of areas greater than 5 acres in size (Environmental Laboratory 1987). Placement of transect lines were selected to be representative of the diversity of plant communities present within the river corridor that falls within the Delineation Area (Appendix A). A data point was recorded along a transect at each perceptible change in vegetation community type. Parameters including vegetation, soils, and hydrology were characterized and recorded onto data forms and the location was captured using a sub-meter global positioning system (GPS) unit. Additional wetland data points were collected for aquatic features in the Delineation Area to demonstrate presence or absence of wetland indicators and to assist with determination of wetland classification.

4.2.2 OHWM Determination

The limits of non-wetland waters were determined following the methods outlined in the OHWM Field Guide (as described above in Section 4.1 [Desktop Investigations]), which involved desktop investigations and statistical analyses to support the field delineation of waters within the Tijuana River floodplain and use of field indicators for other tributaries. The OHWM, defined by USACE as the "line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area." PG evaluated all linear water features for OHWM indicators to assist with delineation of the lateral extents of potential waters. Within the Tijuana River floodplain, PG staff walked the entirety of the floodplain and recorded OHWM indicators associated with the primary low-flow channel and floodplain onto OHWM datasheets at representative cross-sections. A similar approach was applied for the stream channels within Goat Canyon and Smuggler's Gulch—cross-sections were selected that best represented the overall characteristics of the channel and associated hydrogeomorphic indicators were recorded onto OHWM datasheets. Further, where indicators were apparent, PG recorded GPS points at the transition line between the low-flow channel, active floodplain, and low terrace for all linear aquatic features in the Delineation Area.

4.3 Basis of Jurisdiction

Federal jurisdictional status was evaluated following the 2008 Guidance issued under the pre-2015 regulatory definition and practice which include: 1) TNWs (i.e., (a)(1) waters) and their adjacent wetlands, 2) Relatively Permanent Non-Navigable Tributaries of Navigable Waters and Wetlands with a Continuous Surface Connection with Such Tributaries, and 3) Certain Adjacent Wetlands and Non-Navigable Tributaries that are not Relatively Permanent. In applying this guidance, PG evaluated the significant nexus of wetlands and non-wetland waters with TNWs, including identification of adjacent wetlands and characterization of flow and functions of a tributary and its effects on the chemical, physical, and biological integrity of downstream TNW. Other factors considered in this evaluation included documentation of volume, duration, and frequency of flows in a tributary and proximity to a TNW.

Waters of the state, under jurisdiction of the RWQCBs, were delineated considering the definitions offered under the Porter-Cologne Water Quality Control Act and the SWRCB Procedures, which include elements of the CWA Section 404(b)(1) guidelines. In the SWRCB Procedures, the RWQCBs direct that the methodologies used to determine federal jurisdiction (i.e., the USACE Manual [1987] and Regional Supplement [2008]) may be used to determine whether an area meets the state definition of a wetland. The methods can be modified to allow for the fact that lack of vegetation does not preclude the determination of area as meeting the definition of wetland.

Wetlands under potential jurisdiction of the CCC were delineated as defined in Section 30121 of the California Coastal Act and in CCC regulations at Title 14 Division 5.5 (15 California Code of Regulations § 13577). Wetlands are defined as "land where the water is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes." As such, the CCC's definition is based on the presence of two characteristics – wetland hydrology and either the presence of hydrophytic vegetation or formation of hydric soils. Further, CCC may assert jurisdiction based on the presence of one indicator unless there is evidence demonstrating that the indicator is not valid.

5. RESULTS

PG delineated seven wetland water features and 11 non-wetland water features within the Delineation Area, which are illustrated in Figure 5-1 and in the figures provided in Appendix A. Approximately 122.09 acres and 11,897 linear feet of non-wetland waters as determined by the OHWM extent were mapped within the Delineation Area. Approximately 8.56 acres of wetlands were delineated within the Delineation Area. Table 5-1 summarizes the wetlands and non-wetland water feature identified within the Delineation Area by Cowardin classification (Cowardin et al. 1979). For descriptive purposes – aquatic resource names are described in the table below based on the dominant water feature(s), which include the following categories: TRF, Smuggler's Gulch, Goat Canyon, unnamed tributaries to the Tijuana River, and other waters. Hydrologic data and figures are provided in Appendix B. Representative site photographs and their locations are provided in Appendix C. A total of 30 wetland data forms (Appendix D) and 11 OHWM forms (Appendix E) were completed to document the limits and characteristics of aquatic resources throughout the Delineation Area.

Name ^a	Cowardin Classification	Size (acres)	Length (linear feet)	Average Width (feet)	Jurisdiction
Wetland Waters					
PEM Wetland 1	Palustrine Emergent	1.00	N/A	N/A	USACE, state, CCC
PSS Wetland 2	Palustrine Scrub-Shrub	1.58	N/A	N/A	CCC
PFO Wetland 3	Palustrine Forested	2.56	N/A	N/A	CCC
PSS Wetland 4	Palustrine Scrub-Shrub	2.14	N/A	N/A	CCC
PEM Wetland 5	Palustrine Emergent	0.23	N/A	N/A	CCC
PSS Wetland 6	Palustrine Scrub-Shrub	0.07	N/A	N/A	CCC
SG Wetland	Palustrine Scrub-Shrub	0.98	N/A	N/A	USACE, state, CCC
Total Wetlands		8.56	N/A	N/A	
Non-Wetland Wate	rs and Other Waters				
TRF	Riverine-Intermittent (R4)	117.85	7,899	444.8	USACE, state, CCC
Stewart's Drain	Riverine-Intermittent (R4)	1.63	609	177.3	USACE, state, CCC
SG Waters	Riverine-Intermittent (R4)	1.40	1,342	44.0	USACE, state, CCC
GC Main	Riverine-Intermittent (R4)	0.73	694	50.2	USACE, state, CCC
GC Trib 1	Riverine-Intermittent (R4)	0.01	32	3.0	USACE, state, CCC
MR Trib 1	Riverine-Intermittent (R4)	0.01	27	3.5	USACE, state, CCC
MR Trib 2	Riverine-Intermittent (R4)	0.01	26	7.5	USACE, state, CCC
Clearwater Swale 1	Riverine-Intermittent (R4)	0.08	213	15.8	USACE, state, CCC
Clearwater Ditch 1	Riverine-Intermittent (R4)	0.01	23	6.5	State, CCC
BS Ditch 1	Riverine-Intermittent (R4)	0.34	152	18.8	State, CCC
BS Ditch 2	Riverine-Intermittent (R4)	0.02	880	4.5	State, CCC
Total Waters		122.09	11,897		
Other Features					
Concrete channels	N/A	0.05	N/A	2	N/A
Total Other Feature	Total Other Features			2	

Table 5-1. Summary of Wetlands and Non-Wetland Waters in the Delineation Area

a – PEM = Palustrine emergent, PSS = Palustrine scrub-shrub, PFO = Palustrine forested, TRF = Tijuana River floodway, GC = Goat Canyon, SG = Smuggler's Gulch, MR = Monument Road, BS = border swale.

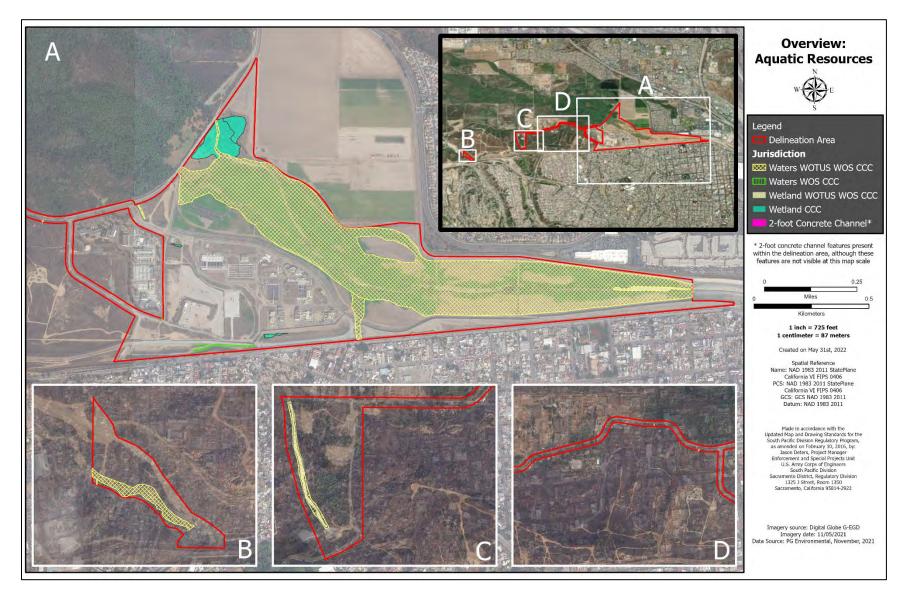


Figure 5-1. Aquatic Resources within the Delineation Area – Overview

5.1 <u>Tijuana River Floodway</u>

The Tijuana River segment of the Delineation Area encompasses the river and associated floodplain extending from the U.S.-Mexico Border and downstream to Dairy Mart Road and contained within flood control levees to the north and south. The entirely of the TRF within the Delineation Area is owned by the USIBWC and maintained by U.S. Customs and Border Protection (CBP). NWI mapping of this area identifies riverine intermittent (R4) habitats associated with the mainstem of the Tijuana River, and freshwater forested/scrub shrub and freshwater emergent wetlands mainly upstream of the Dairy Mart Road Bridge (Figure 2-1). These habitats were photograph interpreted using sub-meter true color imagery from 2005 (USFWS 2021). PG field staff field observations of aquatic resource characteristics and hydrologic data interpretation are described below.

5.1.1 Vegetation

Vegetation within the TRF is managed by CBP to preserve line of sight and improve visibility in accordance with a 1980 Memorandum of Understanding between CBP and USIBWC (CBP 2017). Vegetation clearing activities include mechanical removal methods such as disking, mowing, cutting of vegetation, and occasional use of heavy equipment to extract roots and non-native vegetation. Significant flood events within the TRF also contribute to surface disturbances – including vegetation clearing, scouring, and sediment deposition. Areas which undergo frequent vegetation clearing were dominated by non-native ruderal herbaceous/emergent species or were barren and devoid of vegetation cover at the time of the 2021 field survey. Vegetation clearing activities are restricted within an area immediately east of Dairy Mart Road, which is designated as critical habitat for least Bell's vireo. This area supports mature riparian forest and scrub-shrub communities, as described below.

The *Non-native grassland* community type dominates the floodplain terrace and areas that are managed for vegetation control. Dominant species include primarily annual ruderal species and non-native grasses including perennial rye grass (*Lolium perenne*, facultative [FAC]), Bermuda grass (*Cynodon dactylon*, facultative upland [FACU]), wild radish (*Raphanus sativas*, upland [UPL]), bull mallow (*Malva nicaeensis*, UPL), crown daisy (*Glebionis coronaria*, UPL), and sporadic occurrences of giant reed (*Arundo donax*, facultative wetland [FACW]) and castor bean (*Ricinus communis*, FACU). Generally, areas supporting this vegetation community type did not meet the hydrophytic vegetation indicators and lacked indicators of hydric soils. Perennial rye grass, a facultative species common to lowland areas with periodic flooding, disked fields, and uplands, was found throughout the floodplain. All other co-dominant species were common ruderal upland species of disturbed habitats in this region.

The *Coastal and Valley Freshwater Marsh* community type is confined to areas dominated by stands of giant reed (FACW) or other naturalized wetland plants and would be characterized as a palustrine emergent wetland by the Cowardin classification system (Cowardin et al. 1979). Areas supporting this vegetation community type are limited to a low terrace, situated below OHW, on the upstream end of the river (PEM Wetland 1, 1.00 acre). Soils at this location failed to meet hydric indicators (see transect [T] data point [DP] T1-DP3 in Appendix D). However, PG field staff delineated the wetland feature based on other characteristics including dominance of obligate and facultative wetland vegetation, primary hydrologic indicators, and geomorphic position (i.e., below OHW). Given the location of the wetland feature within the active/low-flow channel, wetland vegetation has likely established on recently deposited sediments that have not yet developed hydric soil indicators as discussed below in Section 5.1.4 (Difficult Wetland Situations in the Arid West). It is also likely that the extents of PEM Wetland 1 are temporal, as is true for other emergent

wetlands that may form within the active/low-flow channel of the Tijuana River within the Delineation Area.

The *Southern Willow Scrub* community type encompasses the riparian woodland east of Dairy Mart Road and adjacent to the main stem of the Tijuana River that is not actively managed for vegetation control. The dominant overstory cover consists of mature stands of Gooding's black willow (*Salix gooddingii*, FACW), with a sparse understory cover consisting mainly of mulefat (*Baccharis salicifolia*, FAC), giant reed (FACW), and castor bean (FACU). Debris, including trash and plant thatch, was dense throughout the understory which may preclude establishment of herbaceous cover. Soil evaluations yielded a lack of hydric indicators (see T3-DP3, T3-DP5 in Appendix D) and active primary hydrologic indicators were absent. This area may flood during a 10-year event based on inundation modeling and review of aerial imagery (see discussion below in Section 5.1.2 [Soils]). This area was classified as palustrine forested (PF0 Wetland 3, 2.56 acres) by Cowardin classification based on dominant vegetation cover but was not identified as WOTUS and is discussed further in Section 5.1.4 (Difficult Wetland Situations in the Arid West). Based on dominance by wetland trees and shrubs, this feature is likely subject to CCC jurisdiction.

The *Mulefat Scrub* community type is limited to areas dominated by mulefat (FAC) and young black willow saplings (FACW) near Dairy Mart Road Bridge that are not actively managed for vegetation control. These areas were classified as palustrine scrub-shrub by Cowardin classification based on dominant vegetation cover (PSS Wetland 2, 1.58 acres and PSS Wetland 4, 2.14 acres) but were not identified as WOTUS due to lack of hydric soil and hydrologic indicators (see T3-DP2, T3-DP4, T3-DP7 in Appendix C). Based on dominance by wetland shrubs, these features are likely subject to CCC jurisdiction and may be subject to other jurisdictions (e.g., CDFW).

5.1.2 Soils

Soils within the TRF are mapped as Chino fine sandy loam and Chino silt loam, neither of which are rated as hydric soils by NRCS (NRCS 2021b). Soil evaluations along transects documented disturbed soils due to disking and included Entisols (i.e., soils with no diagnostic horizons) in depositional areas. Soil textures ranged from sands to loams, which are consistent with soil mapping of the area. Soil matrix colors were identified using Munsell Soil Color classifications and were typically 10YR 3/2 or 10YR 4/2 and lacked redoximorphic features (Appendix D).

5.1.3 Waters

The mainstem of the Tijuana River flows across the U.S.-Mexico border though a concrete-lined trapezoidal channel and levee system for approximately 1,100 feet and then transitions to an earthen-bottom channel with buried grouted riprap side slopes (extending roughly 0.9 miles from the border) that passes through two drop/check dam structures and ultimately into the natural earthen-bottom braided alluvial channel system within a wide floodplain. The TRF is entirely contained within levees to the north and south which were constructed by USACE in 1979 to contain a 100-year flood event. Under current flow management practices, the Tijuana River is considered ephemeral and the low-flow channel downstream of the U.S.-Mexico border is typically dry from late spring through early fall as dry-weather flows (consisting of mainly wastewater) are diverted before reaching the border for treatment. Generally, all dry-season flows upstream of the border are diverted in Tijuana, Mexico to the San Antonio de los Buenos Treatment Plant or to the ITP; however, planned and unplanned shutdowns of the diversion infrastructure result in releases of dry-season transboundary flows. During the wet season, flows in the river exceed the capacity of the diversion system and are allowed to cross the border into the U.S. and ultimately into the Tijuana River Valley (ERG 2021).

As discussed in Section 4 (Methods), PG performed a combined desktop and field investigation to support delineation of jurisdictional non-wetland waters in the TRF. This multi-step process involved evaluation of flow discharges reported by USIBWC for the period of record, review of available stage height data, conducting a FFA to determine discharges associated with a range of return periods, review of USACE inundation models and aerial imagery to correlate surface flooding with discharge events, and field investigations to identify OHWM indicators within the floodplain. The procedures outlined in the OHWM Field Guide include development of a stage-discharge rating curve; however, as discussed in Section 4 (Methods), stage data is unavailable for the entire period of record. Further, PG noted multiple instances of inconsistency in reported flow discharge volume and stage height (see Appendix B), which included cases of reported stage height of water that would result in overbank flows without an associated flow discharge and similar volumes of moderate flow discharges with inconsistent stage heights. Therefore, PG relied on the inundation model developed by USACE (2018a) to approximate the discharge-stage relationship for flows within the TRF. PG selected a five-year return interval as an anticipated baseline for evaluating the limits of the active floodplain, as suggested in the OHWM Field Guide and upon guidance from EPA Region 9 (Lichvar and McColley 2008; EPA personal communication, January 14, 2022).

PG's 2021 field investigations were conducted roughly one week following a rain event that resulted in 0.16 inches (4 mm) of rainfall (reported at San Ysidro) within a 24-hour period and corresponded with an USIBWC gage reported discharge of 580 cubic feet per second (cfs) which PG classified as a small (less than two-year) event. A larger rain event on October 4, 2021, resulted in a 5,721 cfs discharge, classified as a moderate (five-year) event. During the 2021 site visit, PG staff observed sporadic hydrologic indictors in the floodplain in addition to an incised and well-defined low-flow channel and a series of high-flow channels, which were generally indicative of a floodplain condition without a recent effective (floodplain defining) discharge (Lichvar and McColley 2008) (see Appendix B). Generally, the distribution of OHWM indicators did not entirely align with the 2018 USACE five-year inundation model. PG attributed this to several factors: the low magnitude of the recent discharge event resulted in development of primarily low-flow channel indicators and few floodplain indicators; rapid revegetation of the floodplain by weedy species which masked indicators from the most recent five-year event; and a trend of aggrading conditions from sediment deposits throughout the TRF (see Appendix B).

PG reviewed historic imagery to assist in identifying areas in the floodplain that are likely defined by moderate to large discharge events (e.g., evidence of surface and vegetation scour, high-flow channels, presence of inundation). Historic imagery illustrates that the location and distribution of high-flow channels are highly transient, which is typical of wide floodplain channel systems in the arid Southwest but also likely influenced by high rates of sedimentation within the TRF that promotes channel infilling and migration (see Appendix B). Though the locations of high-flow channels are predominantly transitory, understanding the geographic extents in which they form is useful in defining the limits of the active floodplain. PG looked for imagery that was captured immediately following a five- or 10-year event to discern locations and extents of surface inundation. In addition to this review, PG overlaid the 2021 site visit observation points onto the georeferenced USACE five-year inundation map and identified locations where hydrogeomorphic indicators of OHW (e.g., changes in vegetation cover/species, break in slope) and of the active floodplain (e.g., mudcracks, drift/debris, benches) aligned with inundation mapping.

Using this information, PG mapped the lateral limits of non-wetland waters in the TRF based on the modeled extent of inundation shown on the USACE five-year inundation map, which PG refined by excluding areas where field investigation documented clear indicators of a low terrace and/or OHWM transition. This includes the areas upstream of Dairy Mart Road Bridge, which currently

support mature riparian vegetation. Other areas were excluded based on vegetation characteristics, clear upland field indicators (e.g., active squirrel burrows), and lack of apparent inundation on aerial imagery following a five-year flood event. Supporting data and figures used for the hydrologic analyses for delineation of the OHWM in the TRF are provided in Appendix B. Based on these methods, PG staff delineated a total of 117.85 acres and 7,899 linear feet of USACE, state, and CCC non-wetland waters associated with the Tijuana River, as shown in figures in Appendix A. PG staff delineated 1.63 acres and 609 linear feet of non-wetland waters associated with Stewart's Drain, a stormwater outlet located near the center of the TRF and near the U.S.-Mexico border.

5.1.4 Difficult Wetland Situations in the Arid West

Wetlands in the arid west can be difficult to identify due to regionally specific natural phenomena such as variable climate conditions, alkali soils, seasonal hydrology and/or recent human activities or natural events. In such cases, it may be necessary to base a determination on other field characteristics and/or supplemental information. Several aspects of the TRF within the Delineation Area contribute to atypical situations including managed/altered hydrology, vegetation management, and frequent sediment depositional events. Due to extensive vegetation management and soil disturbances (e.g., tilling), it was not possible to map all depressional features on the floodplain that may support seasonal wetland vegetation during wetter years. Such features are likely temporal in nature and shift or disappear following large floods due to scouring or as a result of abnormally dry years. The riparian habitats in the TRF lacked hydric soil indicators, which may be due in part to the occurrence of Entisol soils influenced by frequent depositional events or water table fluctuations below the primary root zone. PG field staff evaluated the riparian areas associated with the Tijuana River and determined that these areas are dominated by mature phreatophytic trees and shrubs with an understory primarily consisting of facultative upland species littered by trash and debris. Further, these areas lacked active hydrologic indicators and did not show evidence of surface inundation or ponding on aerial imagery following a five-year flood event, and therefore PG did not characterize them as wetland WOTUS.

5.2 <u>Smuggler's Gulch</u>

Smuggler's Gulch is a steep-walled canyon that crosses the U.S.-Mexico border and conveys flows from a subwatershed of roughly 5.88 square miles (3,762 acres) via an ephemeral tributary to the Tijuana River (HDR 2020). A section of the tributary channel, extending from an USIBWC-managed canyon collector system located near the border and downstream/north to Monument Road, is included in the Delineation Area. This segment is primarily under management and ownership of San Diego County; however, a portion of the upstream channel below the canyon collector system is under federal ownership. The canyon collector system includes a detention basin, drain/inlet, and pump system that conveys dry-weather flows back to the ITP for treatment before being discharged through the South Bay Ocean Outfall. The section of the Smuggler's Gulch channel in the Delineation Area is routinely dredged by the County to remove sediment and trash following large rain events (Helix 2021). NWI mapping based on 2005 imagery identifies riverine intermittent (R4) habitats (Figure 2-2) associated with the Smuggler's Gulch drainage.

5.2.1 Vegetation

Vegetation communities associated with Smuggler's Gulch are influenced by the steep-walled canyon that constrains the floodplain and contribute to the near-vertical channel banks. Native-dominated riparian woodland/scrub-shrub communities occur in the channel bed and above the OHWM (i.e., top of bank) along the tributary channel. The dynamic nature of flows and sediment

transport into Smuggler's Gulch support development of in-channel wetland habitats which establish on alluvial deposits in the streambed.

Southern Willow Scrub and Mulefat Scrub community types occur at, above, and below the OHWM of the Smuggler's Gulch channel within the Delineation Area. On the upstream segment of the channel, mature riparian woodland and shrublands, consisting mainly of black willow (FACW) and mulefat (FAC), occur on high terraces and channel banks, and generally define the OHWM transition. Mature riparian plants occur sporadically on the downstream end of the channel, closer to Monument Road. Throughout the channel bottom, black willow and mulefat seedlings and small saplings along with herbaceous wetland plants occur in varying combined cover densities (5 to 40 percent) on alluvial deposits. It is likely that these habitats are supported primarily by surface flows that persist due to a restrictive surface layer of cobbles, gravels, and fine sediments contained in the streambed as opposed to being supported by groundwater. Though soils were not evaluated in the channel bed, the presence of hydrophytic vegetation and hydrologic indicators suggests that this habitat would meet the USACE definition of a wetland. However, annual maintenance and dredging activities along with floodwater scouring would cause these features to be temporal in extent and cover and thus it would be difficult to quantify the area. Based on field conditions at the time of the 2021 survey, PG mapped 0.98 acres of USACE, state, and CCC wetland waters (SG Wetland) that are located below the OHWM of the Smuggler's Gulch drainage (Appendix A). Mature riparian communities located above the OHWM that lacked wetland indicators may be subject to other jurisdictions (e.g., CDFW).

5.2.2 Soils

Soils underlying the Smuggler's Gulch drainage are mapped as Terrace escarpments (non-hydric), Riverwash (hydric), and Visalia sandy loam (hydric) (NRCS 2021b). Three wetland data points were collected along the Smuggler's Gulch drainage (see SG-DP1, SG-DP2, and SG-DP3 in Appendix D); however, soils were not evaluated within the streambed, which predominantly contained cobbles and gravels and transitions to finer materials at the channel toe. Soils were evaluated on a low terrace, adjacent to the active/low-flow channel, which consisted of dry sandy loams with a soil matrix color of 10YR 3/2 and lacked hydric soil indicators.

5.2.3 Waters

The Smuggler's Gulch drainage is an ephemeral tributary to the Tijuana River that originates in the highly urbanized subwatershed primarily located in Tijuana, Mexico (HDR 2020). Dry season flows are captured by a diversion structure associated with the canyon collector system located at the U.S.-Mexico border. During large storm events, flows typically will exceed the capacity of the collector system and flow north through the drainage channel. A 52-inch corrugated metal culvert conveys flows under Monument Road, which continue north to the confluence with the Tijuana River pilot channel within the Tijuana River Valley Regional Park, roughly 0.5 miles (0.8 kilometers) north of Monument Road. HDR (2020) modeled likely flow return intervals for the Smuggler's Gulch watershed, which estimated a two-year peak discharge of 1,572 cfs. Flows are mostly confined within the Smuggler's Gulch canyon north of the U.S.-Mexico border though large storm events routinely result in flows in the channel downstream of the canyon collector system, which eventually reach the Tijuana River confluence. PG delineated the OHWM of the Smuggler's Gulch channel within the Delineation Area, mapping a total of 1.40 acres of USACE and state nonwetland waters below the OHWM. A total of three OHWM data points (see Appendix E) were collected along the 1,342 linear feet of channel. Common geomorphic indicators used to discern OHW included break in slope, litter and drift deposits, exposed roots, and change in particle size

distribution. Vegetation indicators included increased vegetation thickness and maturation and presence of late-successional species. As described below, the low-flow channel and channel bed supports varying densities of pioneer tree and shrub seedlings and sporadic patches of facultative and facultative wetland herbaceous species. It is likely that the vegetation on the channel bottom fluctuates due to scouring events following big storm events and due to channel management and maintenance.

5.3 Goat Canyon

Goat Canyon Creek is an ephemeral tributary of the Tijuana River that originates in Tijuana, Mexico and that receives flows primarily as runoff from a subwatershed area spanning 4.59 square miles (2,941 acres). A short section (694 linear feet) of the channel was included in the Delineation Area, which extends from the canyon collector system on the U.S.-Mexico Border north to the southern boundary of Border Field State Park. This area is under management and ownership of San Diego County, with the exception of the area immediately adjacent and south of the canyon collector system which is under federal land ownership. Historically, Goat Canyon Creek flowed into the U.S. from Mexico where it then followed one of two flow paths—one northward into the Tijuana River Estuary, and a second flowing south and west along the base of coastal bluffs. Sedimentation has filled both historic paths resulting in flows continuing northwest through the Goat Canyon Sediment Basin (GCSB) complex managed by California State Parks and ultimately into wetland complexes associated with the Tijuana River Estuary. Dry weather flows are captured by the canyon collector system and are conveyed to the ITP. Wet-weather (e.g., storm-driven) flows continue through the channel to the GCSB which was constructed by State Parks in 2005 to reduce sediment and trash transport into the Tijuana River Estuary (HDR 2020). NWI mapping based on 2005 imagery identifies riverine intermittent (R4) habitats (Figure 2-2) associated with Goat Canvon Creek.

5.3.1 Vegetation

Under current conditions, Goat Canyon Creek receives significant flows only during large storm events. Some dry-weather transboundary flows exceed the canyon collector system capacity and reach the creek; however, the frequency of such events has not been formally documented. Mature riparian trees and shrubs occur at or above the OHWM along the channel and limited vegetation, mainly seedlings and/or saplings and ruderal/xeric herbaceous plants occur in the channel bed.

The Southern Willow Scrub community type occurs at or above the OHWM of the Goat Canyon Creek channel within the Delineation Area. The steep cutbanks of the channel limit riparian vegetation establishment; therefore, mature trees and shrubs, mainly consisting of black willow (FACW), mulefat (FAC), rosinbush (*Baccharis sarothroides*, FACU), castor bean (FACU), laurel sumac (*Malosma laurina*, UPL), and tree tobacco (*Nicotiana glauca*, FAC), occur sporadically and primarily on stable banks and lower terraces, and on alluvial deposits in the channel bed. Herbaceous species associated with the riparian communities include mainly ruderal weedy species such as stinkwort (*Dittrichia graveolens*, UPL), horseweed (*Erigeron canadensis*, FACU), and Russian thistle (*Salsola tragus*, FACU). Based on the lack of dominant cover by facultative or wetter species and absence of hydric soils and active hydrologic indicators, these habitats were not mapped as USACE wetlands; however, they may be subject to other jurisdictions (e.g., CDFW).

5.3.2 Soils

Soils underlying Goat Canyon Creek within the Delineation Area are mapped as Riverwash by NRCS, which is rated as hydric and is flanked by terrace escarpments (NRCS 2021b). PG field staff did not

excavate soil pits within the Goat Canyon Creek but generally observed that soils associated with the drainage consist of fine sands and mixed cobbles and gravels in the channel bed.

5.3.3 Waters

PG delineated waters associated with Goat Canvon Creek based on the limits of the OHWM using geomorphic indicators including change in slope, presence of bed and bank, exposed root hairs, and changes in bed material. Vegetative indicators included dominance by mature pioneer species and late-successional species. Within the Delineation Area downstream of the canyon collector system, Goat Canyon Creek is a wide single channel characterized by significant bank and channel erosion. In the absence of flow gage data, it is not possible to estimate recurrence intervals for this system. PG field staff did not observe evidence that high flows have exceeded the channel banks in recent periods, based on maturity of riparian vegetation adjacent to the channel and absence of debris above OHWM. Further, review of aerial imagery from the past 10 years indicates that the channel location and general extents have remained stable. PG evaluated an erosional feature located above/south of the left descending bank of the Goat Creek channel, which conveys runoff from a roughly 60-inch metal culvert located on the U.S.-Mexico border. The erosional feature exhibits signs of flows, including rills, sediment deposits, and sparse vegetation, but lacked a defined bed and bank. A short segment of incised channel on the downstream end of the debris flow area connects to Goat Canyon Creek and was mapped as USACE and state non-wetland waters based on presence of a bed and bank. PG delineated a total of 0.74 acre (726 linear feet) of USACE, state, and CCC waters within the Delineation Area (Appendix A). A total of three OHWM data points were collected along Goat Canyon Creek (Appendix E).

5.4 Other Waters

PG evaluated five unnamed tributaries that cross through the Delineation Area and exhibited characteristics of an OHWM and/or bed and bank (see figures in Appendix A). Further, PG mapped manmade features and other erosional features that may not be subject to USACE jurisdiction but are potentially subject to other (state and/or CCC) jurisdictions.

MR Trib 1 and MR Trib 2

The segment of MR Trib 1 within the Delineation Area is located on San Diego County owned lands and is part of an ephemeral tributary that conveys flows under Monument Road (Appendix A). The tributary originates on the hillslope south of Monument Road within a steep-sided and narrow valley and likely conveys overland flows from storm events. Based on review of aerial imagery, the segment of the tributary within the Delineation Area formed in the last two years; the prior channel alignment was directly west and may have moved due to natural phenomena or from human influences. PG delineated 0.01 acre (27 linear feet) of non-wetland waters, potentially subject to USACE, state, and CCC jurisdictions based on geomorphic OHWM indicators and bed and bank characteristics. The waters of the tributary are believed to flow over Monument Road and are conveyed to a black willow (FACW) dominated woodland that lacks hydric soils and was not characterized as USACE wetland waters; however, this area may be subject to other jurisdictions (e.g., CCC, CDFW).

The segment of MR Trib 2 within the Delineation Area is located on San Diego County-owned lands and is a narrow, ephemeral tributary that conveys flows under Monument Road, east of Tijuana River Valley Regional Park. Review of aerial imagery indicates that the tributary conveys stormflows from an outfall located to the south on the U.S.-Mexico border, which continue north and under Monument Road via a culvert and through a channel that appears to dissipate within riparian woodlands/wetland communities associated with the Tijuana River to the north. Based on OHWM indicators, PG delineated 0.01 acre (26 linear feet) of non-wetland waters that may be subject to USACE, state, and CCC jurisdictions (Appendix A).

Clearwater Swale and Clearwater Ditch 1

Clearwater Swale is located on USIBWC-owned lands and is situated south of Dairy Mart Road and east and west of Clearwater Way (Appendix A). The ephemeral tributary conveys stormwater flows via USIBWC-managed stormwater infrastructure from south to north and under Dairy Mart Road, where they are ultimately conveyed into wetlands/habitats associated with the Tijuana River. Only a short segment of the tributary channel exhibited OHWM indicators, which included geomorphic indicators such as a break in slope and benching, and vegetative indicators such as change in vegetation community composition. PG delineated 0.08 acre (213 linear feet) of USACE and state non-wetland waters associated with the tributary. Upstream of Clearwater Way, the tributary lacks active hydrologic indicators and consists of a vegetated non-wetland swale. A portion of the swale is vegetated by primarily mulefat (FAC) and was characterized as a CCC wetland (PSS Wetland 6, 0.07 acre) based on presence of a single wetland indicator (vegetation) and an assumed indicator (hydrology).

Clearwater Ditch 1 is a short section of earthen channel adjacent to Monument Road on City of San Diego-owned lands. Based on field observations and review of aerial imagery, the channel segment dissipates a short distance downstream and does not appear to connect with upstream or downstream drainages. The ephemeral channel likely conveys stormwater which flows overland and infiltrates downstream. The channel exhibited characteristics of an OHWM (0.01 acre, 23 linear feet) but does not appear to connect to a downstream jurisdictional water and was not characterized as a USACE non-wetland waters; however, the feature may be subject to other jurisdictions (e.g., state, CCC).

BS Ditch 1 and BS Ditch 2

BS Ditch 1 is an ephemeral channel located on federally owned lands, which conveys stormwater and wastewater discharges from the Silva Drain canyon collector near the U.S.-Mexico border. Flows originating from Mexico pass through a double box concrete culvert which discharges into a steep gradient and incised channel, adjacent to a dirt access road. Flows appear to dissipate at the base of the hillslope and may enter a large swale feature ("border swale"). A second erosional feature connects with BS Ditch 2; flows within the erosional feature originate from a concrete outlet structure, and flow downhill as sheet flow before entering a narrow and incised channel. Segments of the channels that exhibited characteristics of an OHWM and/or bed and bank were mapped as non-wetland waters. Flows from the feature are captured by USIBWC stormwater infrastructure or are contained by the border swale, and do not appear to have a direct surface or subsurface connection to a USACE jurisdictional water. PG delineated 0.36 acre (1,032 linear feet) of nonwetland waters potentially subject to state and CCC jurisdictions.

Border Swale

PG evaluated an earthen swale located south of the ITP facilities and north of the U.S.-Mexico border, which captures flows from *BS Ditch 1*, multiple stormwater culverts, and surface runoff. The swale was likely constructed for the purposes of capturing stormwater and runoff and lacked indicators of persistent ponding or channel forms (such as bed and bank or OHWM). Vegetation within the swale feature consists primarily of weedy ruderal species, including Bermuda grass (FACU), perennial rye grass (FAC), white clover (*Trifolium repens*, FACU), bull mallow (UPL), and

redstem filaree (*Erodium cicutarium*, UPL). Three wetland data points were recorded within the swale (BS-DP1, BS-DP2, and BS-DP3). All three wetland parameters were identified at BS-DP3, within a low point on the west end of the swale. This area is dominated by perennial rye grass and was mapped as an isolated emergent wetland (PEM Wetland 5, 0.23 acre) potentially subject to state and CCC jurisdictions. The swale feature and associated wetlands were constructed wholly within uplands and do not connect to or convey flows to a USACE jurisdictional resource.

Manmade Features

Manmade features within the Delineation Area include several V-shaped concrete drainages that convey roadside and surface runoff from adjacent upland areas. These features were constructed entirely within uplands, drain only uplands, and lack indicators of soils, hydrology, or vegetation and were therefore classified as non-jurisdictional.

6. POTENTIAL JURISDICTIONAL RESOURCES

PG field staff mapped aquatic resources within the 336-acre Delineation Area on November 3 and 4, 2021. The results presented in this report are based on field conditions at the time of the survey and are supported by review of historic imagery. The findings here are assumed current as of the date of the report; however, due to intensive vegetation management practices within the Delineation Area and natural phenomena that contribute to temporal shifts, minor changes in the extents of aquatic resources are possible year to year. Large flood events or substantial changes in upstream water management or diversion practices may result in more significant alterations of aquatic resource locations and extents.

A summary of aquatic resources within the Delineation Area by potential agency jurisdiction is provided in Table 6-1 and shown in figures in Appendix A.

Agency	Size (acres)	Length (linear feet)	
Wetland Waters			
USACE, CWA Section 404/Section 401 waters of the U.S. ^a	1.98	N/A	
RWQCB, waters of the state ^b	1.98	N/A	
ССС	8.56	N/A	
Non-Wetland Waters and Other Waters			
USACE, CWA Section 404/Section 401 waters of the U.S. ^a	121.72	10,842	
RWQCB, waters of the state ^b	122.09	11,897	
CCC	122.09	11,897	

Table 6-1. Potentially Jurisdictional Resources in Delineation Area

a – In the state of California, the SWRCB and RWQCBs have the authority to regulate discharges under CWA Section 401; however, only those waters defined as WOTUS under federal jurisdiction are regulated under the CWA Section 401.

b – Includes waters under federal jurisdiction (WOTUS) and other waters of the state.

6.1 <u>Waters of the U.S.</u>

Based on the findings of the aquatic resource delineation, which included field surveys and aerial photograph interpretation, PG delineated 1.98 acres of wetland waters and 121.72 acres (10,842 linear feet) of non-wetland waters potentially subject to USACE jurisdiction as WOTUS that would be subject to CWA Section 404 and Section 401 regulations. Potentially jurisdictional non-wetland WOTUS include the mainstem of the Tijuana River, the Smuggler's Gulch drainage, Goat Canyon Creek, and three unnamed tributaries (i.e., Monument Road [MR] Trib 1, MR Trib 2, and Clearwater Swale 1). All features delineated as potential WOTUS are perceived (based on field observations and/or aerial imagery interpretation) to have a surface connection to the Tijuana River Estuary, a TNW. Potential wetland WOTUS were restricted to a palustrine emergent wetland located below the OHWM of the Tijuana River and palustrine scrub-shrub wetlands located below the OHWM of the Smuggler's Gulch drainage; based on the location of the wetlands within a potential nonwetland WOTUS, the wetlands are believed to be WOTUS. In light of recent court decisions and agency actions vacating and remanding the Navigable Waters Protection Rule, the basis of USACE jurisdiction was determined following the pre-existing rules and guidance offered under the pre-2015 Clean Water Rule (e.g., Rapanos decision, and the 2008 Guidance) as promulgated by 33 CFR Part 328.

6.2 <u>Waters of the State</u>

Waters of the state include all areas delineated by PG as WOTUS. Additional areas mapped as potential waters of the state include isolated surface water features (other waters) that contained a bed and bank and/or OHWM but lack a surface connection to a TNW, jurisdictional tributary of a TNW, impoundment of a jurisdictional water, or wetland adjacent to a jurisdictional water. These additional potential other waters of the state would be subject to RWQCB jurisdiction under the Porter-Cologne Water Quality Act but may not be subject to CWA Section 401 regulations. PG delineated 1.98 acres of wetland waters and 122.09 acres (11,897 linear feet) of non-wetland waters that are potentially under the jurisdiction of the state.

6.3 <u>California Coastal Commission Wetlands</u>

The aquatic resources contained within the Delineation Area are within the limits of the City of San Diego LCP; in this report, wetlands were defined as "CCC" resources but permitting authority has been transferred to the City of San Diego. Potential CCC jurisdictional features (waters and wetlands) were determined based on a "one-parameter" definition of a wetland, meaning that resources exhibiting indicators of wetland vegetation, soils, or hydrology were characterized as a CCC "wetland." PG mapped a total of 130.65 acres of features potentially under CCC jurisdiction within the Delineation Area.

6.4 San Diego County Wetlands

County of San Diego Wetlands include those areas that meet the USACE definition of a "wetland" and are located on private lands. All wetlands and non-wetland waters delineated within the Delineation Area are located on county or federal lands, and thus would be excluded from county jurisdiction.

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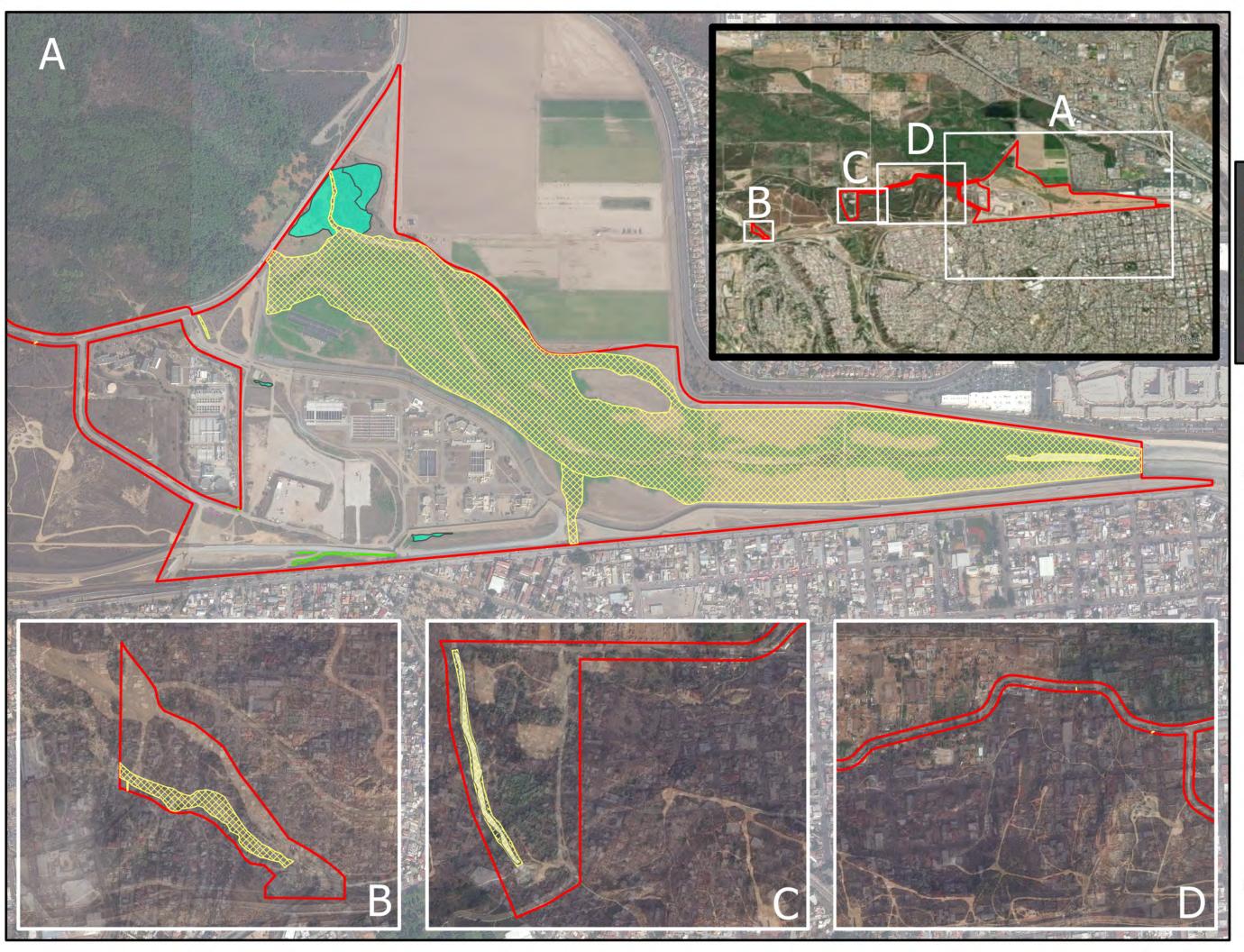
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APPENDIX A: AQUATIC RESOURCES FIGURES

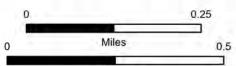


Overview: Aquatic Resources



Legend
Delineation Area
Jurisdiction
Waters WOTUS WOS CCC
Waters WOS CCC
Wetland WOTUS WOS CCC
Wetland CCC
2-foot Concrete Channel*

* 2-foot concrete channel features present within the delineation area, although these features are not visible at this map scale



Kilometers

1 inch = 725 feet 1 centimeter = 87 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS: GCS NAD 1983 2011 Datum: NAD 1983 2011

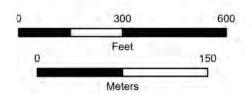
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Tijuana River Floodplain Aquatic Resources



Legend
Delineation Area
Data Points
Jurisdiction
Waters WOTUS WOS CCC
Wetland WOTUS WOS CCC



1 inch = 277 feet

1 centimeter = 33 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS: GCS NAD 1983 2011 Datum: NAD 1983 2011

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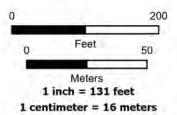
Waters WOTUS WOS CCC



Tijuana River Floodplain Aquatic Resources



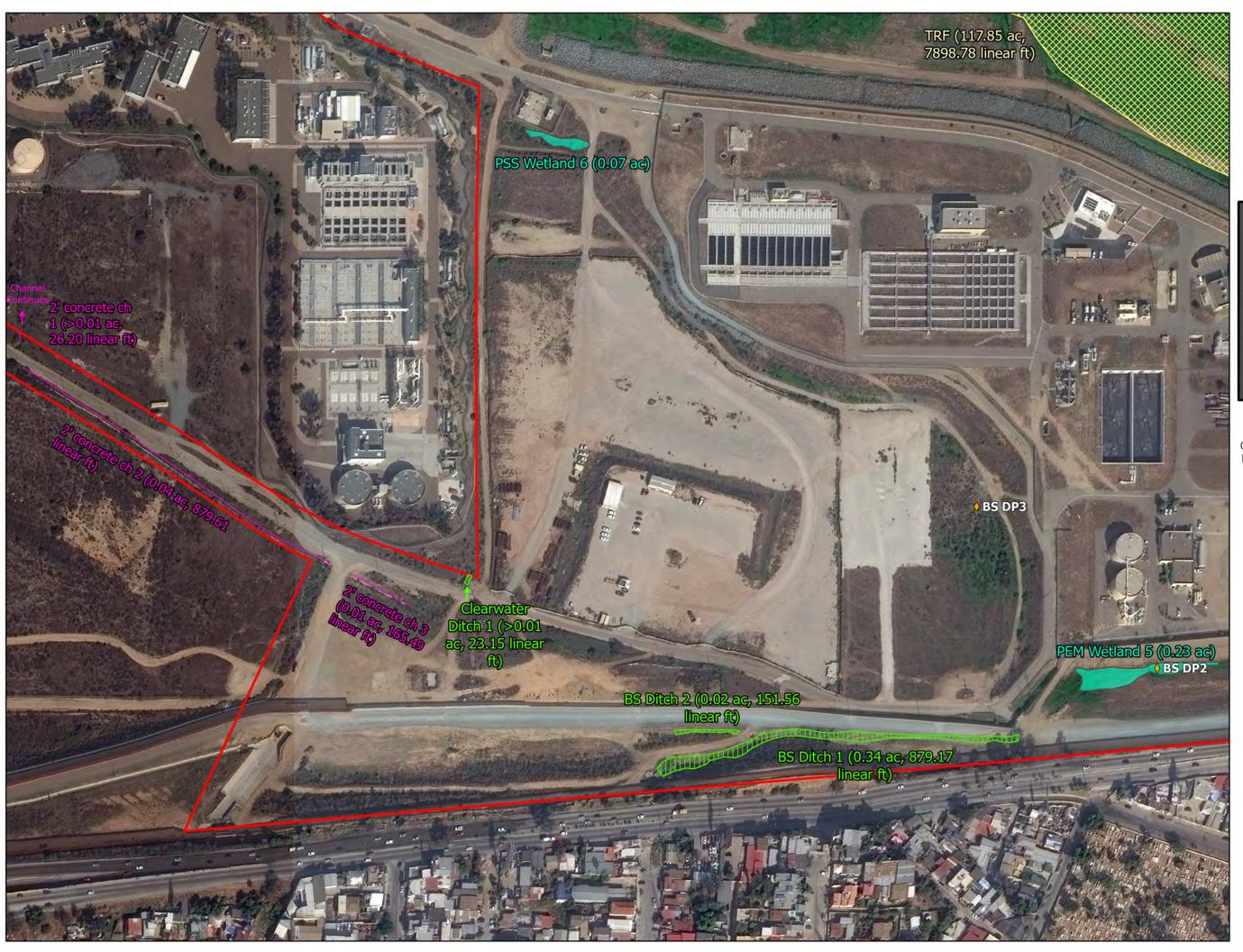
Legend
Legend
Delineation Area
Data Points
Jurisdiction
Waters WOTUS WOS CCC
Wetland CCC



Created on May 31st, 2022

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Border Swale/ Clearwater Road Aquatic Resources



Legend
Delineation Area
Data Points
Durisdiction
Waters WOTUS WOS CCC
Waters WOS CCC
Wetland CCC
2-foot Concrete Channel

Meters

150

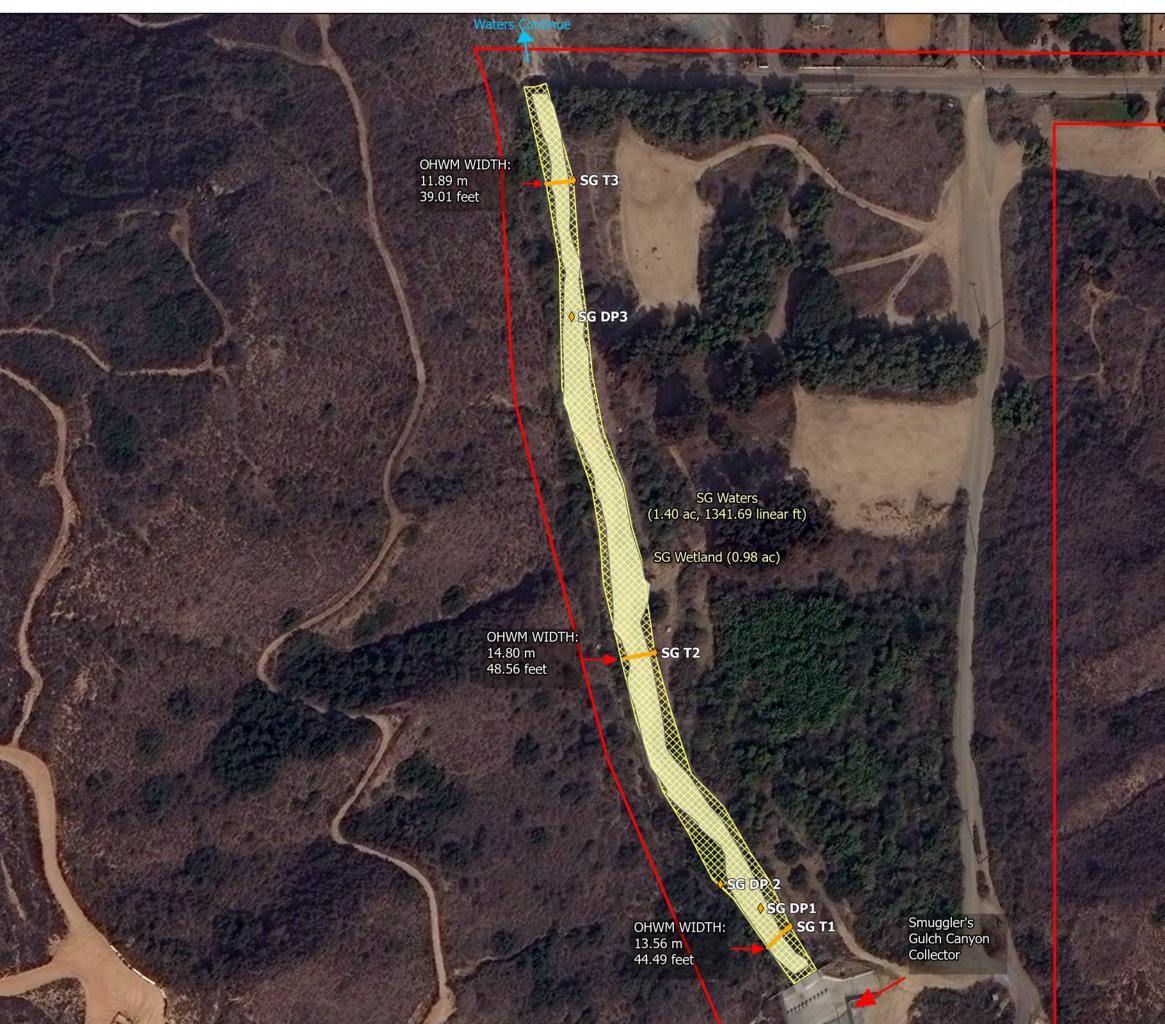
Feet

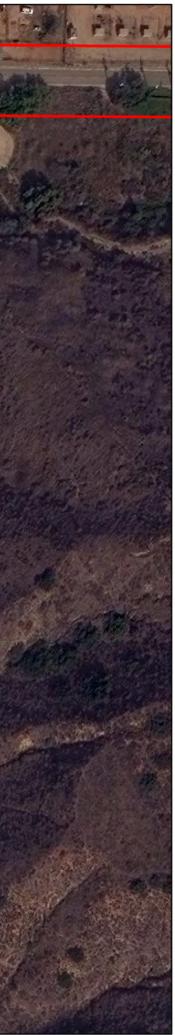
1 inch = 208 feet 1 centimeter = 25 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS: GCS NAD 1983 2011 Datum: NAD 1983 2011

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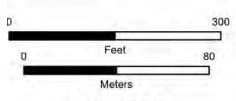




Smuggler's Gulch Aquatic Resources



Legend
Delineation Area
Data Points
Durisdiction
Waters WOTUS WOS CCC
Wetland WOTUS WOS CCC



1 inch = 136 feet 1 centimeter = 16 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS: GCS NAD 1983 2011 Datum: NAD 1983 2011

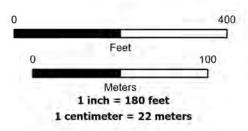
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Monument Road / **Dairy Mart Road Aquatic Resources**



Legend Delineation Area Jurisdiction 🗱 Waters WOTUS WOS CCC 2-foot Concrete Channel*



ft)

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS: GCS NAD 1983 2011 Datum: NAD 1983 2011

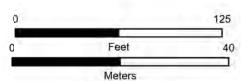
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Goat Canyon Aquatic Resources



Legend
Delineation Area
Data Points
Jurisdiction
Waters WOTUS WOS CCC



1 inch = 58 feet 1 centimeter = 7 meters

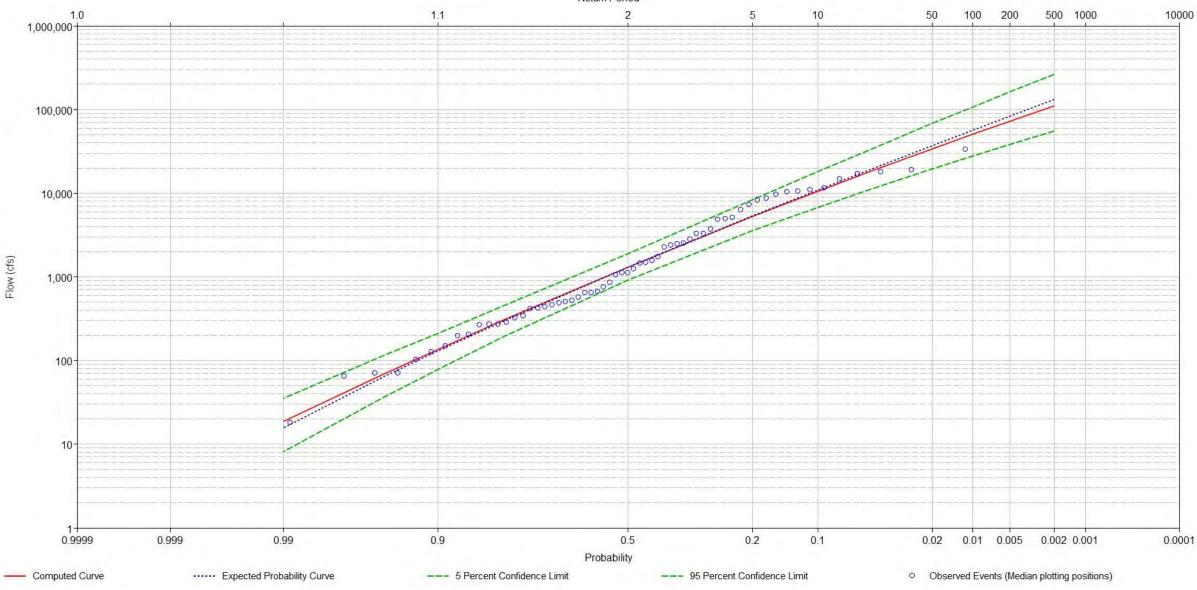
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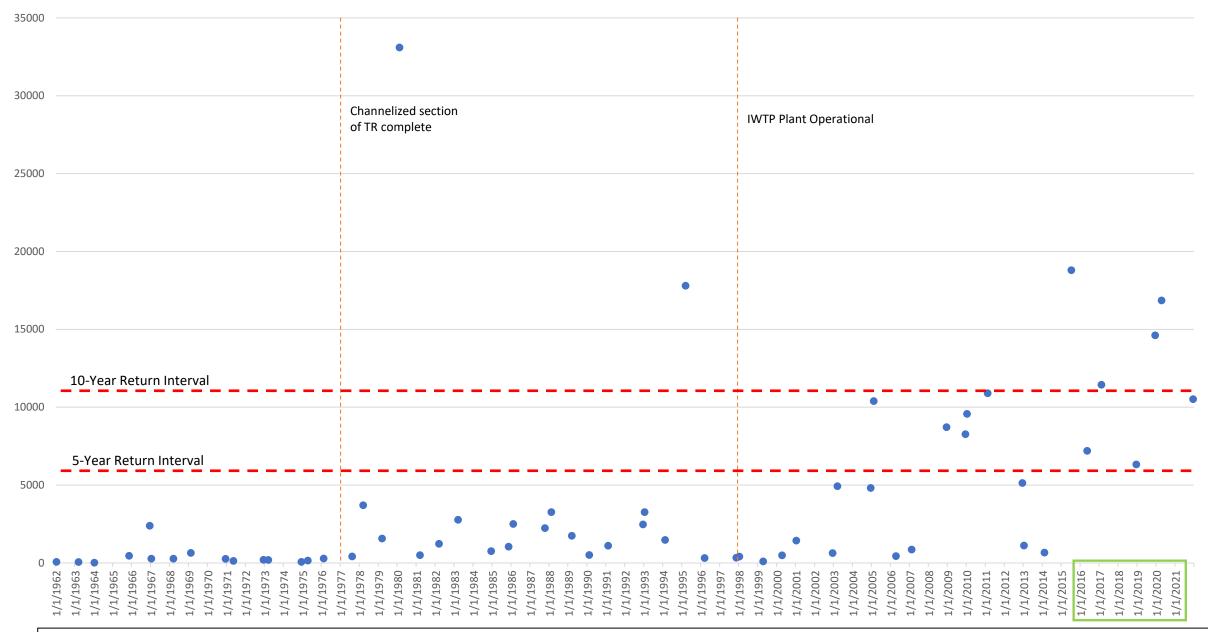
APPENDIX B: SUPPLEMENTAL HYDROLOGIC DATA AND FIGURES

Bulletin 17 Plot for Bulletin 17B Flow Analysis Return Period

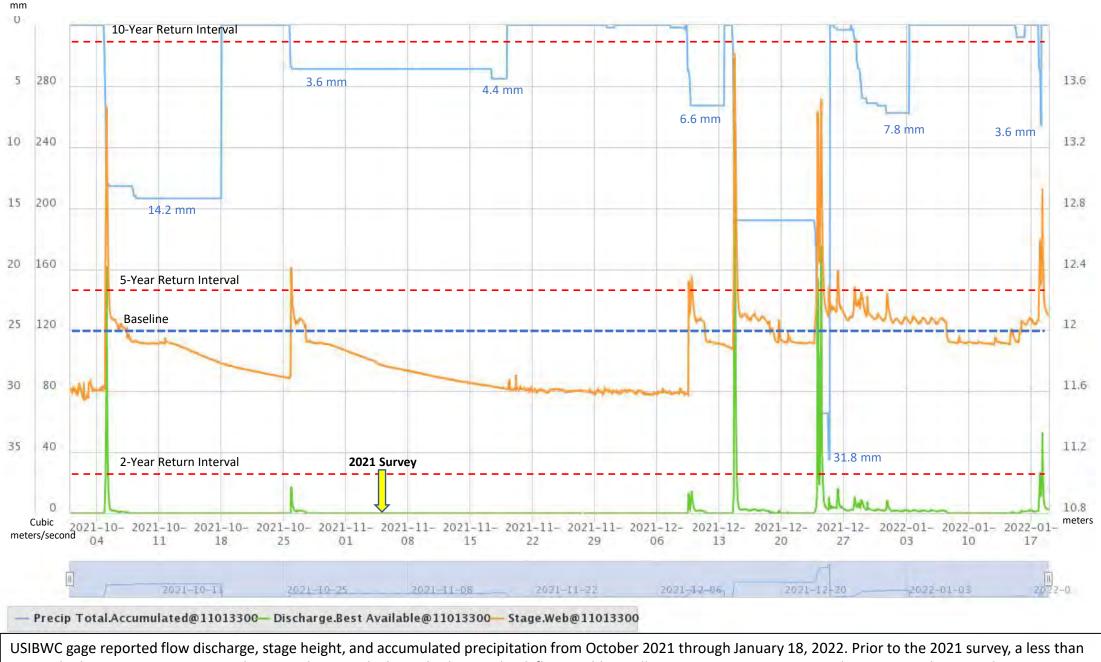


Discharge frequency curve of computed flows for period of record (1962 – 2021) produced by HEC-SSP in accordance with Bulletin 17B for the Tijuana River. Peak annual flow data acquired from USIBWC; 2008 through 2015 annual peak flows are based on corrected values reported by USIBWC.

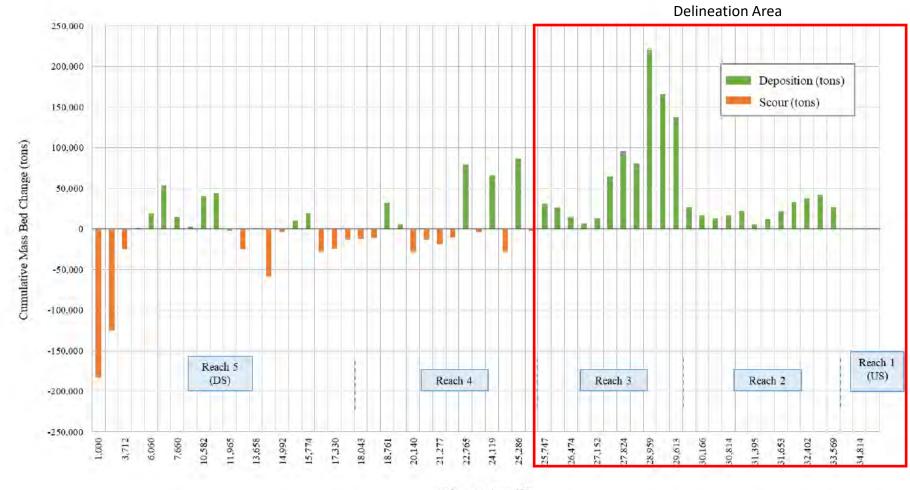
Tijuana River Annual Peak Flow (cfs) 1962-2021



Peak annual discharge values for period of record (1962-2021) from the USIBWC gage. Dates in green box include newly acquired data from USIBWC. Horizontal lines identify the positions of a 5- and 10-Year recurrence interval. The frequency of annual peak flows exceeding a 5-year return interval have increased in the last 20-years of recorded flows.



2-year discharge event was reported one-week prior, which resulted in overbank flows. Additionally, a 5-year event was reported approximately 1-month prior. Horizontal Lines indicate flood intervals; baseline refers to stage height at approximate floodplain elevation.

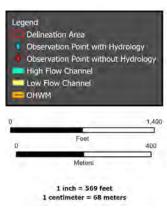


River Stations (ft)

Cumulative mass bed change along the reach in tons (100-year event)

USACE completed a sediment transport simulation using HEC-RAS to model the characteristics of sediment flow in the river, including deposition and scour. The model output characterizes aggradating conditions within the Delineation Area – study reach (red box). Using a Yang's unit stream power equation, it was estimated that a 5-year event would result in a sediment flow capacity of 56,000 tons per day within Reach 3. Field observations and review of aerial imagery align with the model characteristics, which generally suggest that significant sediment transport and aggradating conditions result in rapid infilling and migration of high flow channels and over bank deposition.





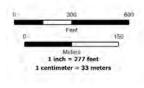
n-Year Flood Event	2018 USACE	2021 PG	
n-fear Flood Event	Computed Probability Flow (cfs)		
2-Year	1,070	1,315	
5-Year	4,710	5,376	
10-Year	10,300	10,952	
20-Year	19,700	19,530	
50-Year	41,100	37,101	
100-Year	67,100	56,703	

The figure above illustrates the USACE (2018a) 1D-2D HEC-RAS model output for a 5-year flood event illustrating potential inundation boundaries and flow depths and PG 2021 site visit field observation points. The model incorporates calculated discharge probability flow, surface roughness coefficients (Mannings n values) based on 2016 and 2018 field reconnaissance, flood hydrographs, and bridge modeling assumptions. The outer limits of the inundation boundaries for a 5-year event were used to guide the delineation of the lateral extents of waters.PG excluded areas from the limits of non-wetland waters where inundation is likely due to backwater conditions and where field observations from the 2021 survey indicated that the parameters of the inundation model did not accurately reflect surface inundation following a 5-year event.



Legend Delineation Area Observation Point with Hydrology Observation Point without Hydrology Low Flow Channel OHWM

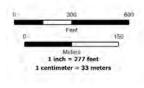
Correlation of floodplain inundation and discharge volume was completed through review of high-resolution Digital Globe imagery from 2018 through 2021. Aerial imagery was captured on 11/21/2021 following a 5- to 10-year flood event (7,124 cfs reported discharge by the USIBWC gage), as shown on the left. The image on the right was captured two days after the 2021 field survey and 10 days after a storm event that resulted in a reported discharge volume of 587 cfs.





Legend Delineation Area Observation Point with Hydrology Observation Point without Hydrology Low Flow Channel OHWM

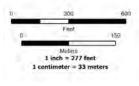
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Legend Delineation Area Observation Point with Hydrology Observation Point without Hydrology Low Flow Channel OHWM

Correlation of floodplain inundation and discharge volume was completed through review of high-resolution Digital Globe imagery from 2018 through 2021. Aerial imagery was captured on 11/21/2021 following a 5- to 10-year flood event (7,124 cfs reported discharge by the USIBWC gage), as shown on the left. The image on the right was captured two days after the 2021 field survey and 10 days after a storm event that resulted in a reported discharge volume of 587 cfs.



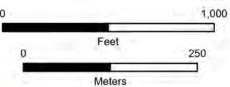
APPENDIX C: REPRESENTATIVE SITE PHOTOS



Tijuana River Floodplain Photo Points



Legend Delineation Area Photo Points



1 inch = 453 feet 1 centimeter = 54 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS: GCS NAD 1983 2011 Datum: NAD 1983 2011

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Tijuana River Floodplain Photo Points



Legend Delineation Area Photo Points

600

150

Meters

Feet

1 inch = 234 feet 1 centimeter = 28 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS; GCS NAD 1983 2011 Datum: NAD 1983 2011

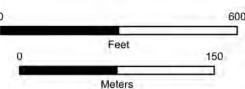
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Monument/ Dairy Mart Road Photo Points



Legend Delineation Area Photo Points



1 inch = 243 feet 1 centimeter = 29 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS; GCS NAD 1983 2011 Datum: NAD 1983 2011

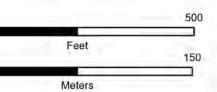
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Smuggler's Gulch Photo Points



Legend Delineation Area Photo Points



1 inch = 206 feet 1 centimeter = 25 meters

Created on May 31st, 2022

Spatial Reference Name: NAD 1983 2011 StatePlane California VI FIPS 0406 PCS: NAD 1983 2011 StatePlane California VI FIPS 0406 GCS; GCS NAD 1983 2011 Datum: NAD 1983 2011

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Goat Canyon Photo Points



Legend Delineation Area Photo Points

Meters

Feet

1 inch = 94 feet 1 centimeter = 11 meters

Created on May 31st, 2022

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Appendix C



TRF-P1: Upstream near TR1



TRF-P1: View downstream near TR1



TRF-P2: View downstream, main channel



TRF-P2: View upstream, main channel



TRF-P3: View upstream, top of low flow channel/mainstem



TRF-P3: View downstream, top of low flow channel/mainstem

Appendix C



T1-DP3: soil pit



TRF-P4: View upstream near confluence with Stewart's Drain swale



TRF-P4: View downstream near confluence with Stewart's Drain swale



TRF-P5: view downstream, overgrown relic high flow channel



TRF-P5: view upstream, overgrown relic high flow channel



TRF-P6: Sod farm east of Delineation Area



TRF-P7: View north, berm near transect 2



TRF-P8: Transect 2-DP2, view downstream



TRF-P8: Transect 2-DP2, view upstream



TRF-P9: Transect 2, view upstream of low flow/mainstem channel



TRF-P9: Transect 2, view downstream of low flow/mainstem channel



TRF-P10: View east of floodplain berm



TRF-P10: View west of transect (3) line



TRF-P11: Soil pit on transect 3, DP3



TRF-P12: View southwest, garbage and plastic waste on T3 between DP4 and DP5



TRF-P13: View facing north/upstream of main channel



TRF-P13: View downstream of main Tijuana River channel, from right bank



TRF-P14: View southwest/upstream of second low flow channel – Tijuana River



TRF-P14: View southwest/upstream of second low flow channel – Tijuana River



TRF-P15: View west/downstream, overview of floodplain near Diary Mart Rd bridge



TRF-P15: View east/upstream, overview of floodplain near Dairy Mart Rd bridge



TRF-P16: Main channel of Tijuana River facing downstream



TRF-P16: Main channel of Tijuana River facing upstream



TRF-P17: View south of Stewart's Drain box culverts



TRF-P17: View north of swale extending from Stewart's Drain



MR-P1: View north of MR-Trib 1



MR-P2: View south of MR-Trib 1



MR-P3: View south of MR-Trib 2



BS-P1: View west of border swale near BS-DP1



BS-P2: View east/downstream of BS-Ditch 2



BS-P3: Box culverts of Silva Drain



BS-P4: View east/downstream of BS-Ditch 1



BS-P5: View from upstream of BS-Ditch 2



BS-P6: View south of Canyon Drain 1



BS-P7: View west of concrete v-ditch near Canyon Drain 1



BS-P8: View east of BS-Ditch 1



View southwest near BS-DP3



BS-P9: View north of Clearwater Ditch 1



BS-P10: View northwest of v-ditch adjacent to Monument Road



SG-P1: View of Smuggler's Gulch drain at the border



SG-P2: View North facing downstream



SG-P2: View South of drain at border



SG-P3: low flow channel indicator, exposed roots



SG-PG4: Ordinary high water mark indicator, change in vegetation and sediments



SG-P5: View upstream/south of drainage channel



SG-P5: View downstream/north of drainage channel



SG-P6: View east of access road intersecting channel/drainage



SG-P6: View west near road crossing, benching and vegetation in channel



SG-P7/P8: View south of culvert under Monument Road and downstream channel



SG-PG8: View north of Smuggler's Gulch drainage downstream of Monument Rd.



GC-P1: View south of border wall and canyon collector



GC-P1: View downstream/north of Goat Canyon Creek below canyon collector



GC-P2: View north, mid-channel near GC-Transect 2



GC-P2: View south, upstream of Goat Canyon Creek near GC-Transect 2



GC-P3: View of access road/ATV track on river left



GC-PG4: View of tributary to Goat Canyon Creek (GC-Trib 1)



CS-P1: View upstream/southwest of culvert (Clearwater Swale 1)



CS-P1: View downstream/north of Clearwater Swale 1



CS-P2: View south/upstream of Clearwater Swale 1, mid-channel



CS-P2: View north/downstream of Clearwater Swale 1 toward Dairy Mart Rd culverts

APPENDIX D: ARID WEST REGION WETLAND DELINEATION DATA FORMS

Project/Site: Border Swale	_ City/County: <u>San Diego County</u> Sampling Date: <u>11/04/202</u>	21
Applicant/Owner: Federal/US Border Patrol	State: <u>CA</u> Sampling Point: <u>BS-DP1</u>	
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	_ Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South), R
Landform (hillslope, terrace, etc.): <u>Swale</u>	_ Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0.1</u>	5
Subregion (LRR): C-19 Lat: 32	2.540527 Long: <u>-117.058244</u> Datum: <u>NAD83</u>	
Soil Map Unit Name: <u>Chino Fine Sandy Loam</u>	NWI classification: N/A	
Are Vegetation, Soil, or Hydrology naturally pr	y disturbed? Are "Normal Circumstances" present? Yes No _	
Hydrophytic Vegetation Present? Yes No _✓ Hydric Soil Present? Yes No _✓ Wetland Hydrology Present? Yes No _✓ Remarks: Outlet of two 3 foot concrete culverts, stormwate	within a Wetland? Yes No	

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC:0 (A)
2				Total Number of Dominant
3				Species Across All Strata: 1 (B)
4				Percent of Dominant Species
		_ = Total Co	ver	That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:)				Development to develop the to a fe
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total Co	ver	FACU species x 4 =
Herb Stratum (Plot size: 5 X 5)		_		UPL species x 5 =
1. <u>Cynodon dactylon</u>	95	Y	FACU	Column Totals: (A) (B)
2. <u>Ricinus communis</u>	2	N	FACU	、/
3. <u>Rumex crispus</u>	5	N	FAC	Prevalence Index = B/A =
4. <u>Echinochloa crus-galli</u>	1	N	FACW	Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)				
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		T () O	ver	Hydrophytic
		-		Vegetation
% Bare Ground in Herb Stratum % Cove	r of Biotic C	rust		Present? Yes No √
Remarks:				

SOIL

Depth	Matrix			ox Feature	s	0				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-1	10YR 3/2	100					Loam	Roots		
1-12	10YR 2/1	99	7.5YR 4/6	<1	RM	Μ	Loam	Faint redox 4%		
					<u> </u>					
Type: C=0	Concentration, D=De	pletion, R	M=Reduced Matrix, C	S=Covere	d or Coate	ed Sand G	Grains. ² Lc	ocation: PL=Pore Lining, M=Matrix.		
lydric Soi	I Indicators: (Applie	cable to a	II LRRs, unless othe	rwise no	ted.)			s for Problematic Hydric Soils ³ :		
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D) Depleted Below Dark Surface (A11)			Sandy Red Stripped M Loamy Mud Loamy Gle Depleted M Redox Dar Depleted D	atrix (S6) cky Minera yed Matrix latrix (F3) k Surface park Surfa	(F2) (F6) ce (F7)		 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (Explain in Remarks) 			
Sandy	Dark Surface (A12) Mucky Mineral (S1)		Redox Dep Vernal Poo		(F8)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present,			
-	Gleyed Matrix (S4) a Layer (if present):						uniess	disturbed or problematic.		
Type:										
Depth (i	nches):						Hydric Soi	il Present? Yes No _√		
Remarks:										
Very fair	nt redox.									
IYDROL	OGY									
Wetland H	ydrology Indicators	:								
Primary Inc	dicators (minimum of	one requii	ed; check all that app	ly)			Seco	ondary Indicators (2 or more required)		
	e Water (A1)		Salt Crust	: (B11)			\	Water Marks (B1) (Riverine)		
-	Vater Table (A2)		Biotic Cru	. ,			Sediment Deposits (B2) (Riverine)			
Satura	_ Saturation (A3) Aquatic Invertebrates (B13)						Drift Deposits (B3) (Riverine)			

- ____ Hydrogen Sulfide Odor (C1)
 - _____ Hydrogen Sulfide Odor (C1)
 _____ Drainage Patterns (B10)

 _____ Oxidized Rhizospheres along Living Roots (C3)
 _____ Dry-Season Water Table (C2)
- Presence of Reduced Iron (C4) ____ Recent Iron Reduction in Tilled Soils (C6)
- Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)
 - Other (Evolain in Re

Water-Stained Leaves (B9)		Other (Explain in Remarks)		FAC-Neutral Test (D5)				
Field Observations:								
Surface Water Present?	Yes	No	Depth (inches):					
Water Table Present?	Yes	No	Depth (inches):					
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):		Wetland Hydrology Present? Yes	No <u>√</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								

Remarks:

Water Marks (B1) (Nonriverine)

Drift Deposits (B3) (**Nonriverine**)

Surface Soil Cracks (B6)

Sediment Deposits (B2) (Nonriverine)

____ Crayfish Burrows (C8)

Shallow Aquitard (D3)

____ Saturation Visible on Aerial Imagery (C9)

Project/Site: Border Swale	City/County: San Diego County	Sampling Date: <u>11/04/2021</u>							
Applicant/Owner: Federal/US Border Patrol	State:	CA Sampling Point: <u>BS-DP2</u>							
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: <u>Sections 2,</u>	3, 4, 9, 10, 11 Township 19 South, 🖻							
Landform (hillslope, terrace, etc.): Swale	Local relief (concave, convex, none): <u>Co</u>	oncave Slope (%): 0.5							
Subregion (LRR): <u>C-19</u> Lat:	32.540244 Long: -117.061	462 Datum: NAD83							
Soil Map Unit Name: Chino Fine Sandy Loam	NWI	classification: <u>N/A</u>							
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes No (If no, expla	ain in Remarks.)							
Are Vegetation, Soil, or Hydrology _	Intly disturbed? Are "Normal Circumsta	nces" present? Yes No _							
Are Vegetation, Soil, or Hydrology naturall	y problematic? (If needed, explain any a	answers in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.									
Hydrophytic Vegetation Present? Yes _ ✓ _ No Hydric Soil Present? Yes _ ✓ _ No Wetland Hydrology Present? Yes _ ✓ _ No	is the Sampled Area within a Wetland? Ye	s_√_ No							

Remarks:

West end of swale feature near outlet of two foot concrete culvert.

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:) 1)				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2 3				Total Number of Dominant Species Across All Strata: 1 (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1				
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total Co		FACU species x 4 =
Herb Stratum (Plot size:)				UPL species x 5 =
1. Lolium perenne	95	Y	FAC	Column Totals: (A) (B)
2. <u>Ricinus communis</u>	3	N	FACU	
3. <u>Echinochloa crus-galli</u>	1	Ν	FACW	Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8				
Woody Vine Stratum (Plot size:)		= Total Co		Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2				Hydrophytic
% Bare Ground in Herb Stratum <u>1</u> % Cove	r of Biotic C			Vegetation Present? Yes <u>√</u> No
Remarks:				I

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix			ox Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-6	10YR 3/2	96	7.5YR 4/4	4	RM	PL/M	Loam	Dry		
				_						
¹ Type: C=C	oncentration. D=Dep	letion. RM	=Reduced Matrix, C	S=Covere	d or Coate	d Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.		
			LRRs, unless othe					s for Problematic Hydric Soils ³ :		
Histosol	(A1)		Sandy Red	ox (S5)			1 cm	Muck (A9) (LRR C)		
	pipedon (A2)		Stripped Matrix (S6)				2 cm Muck (A10) (LRR B)			
· ·	istic (A3)		Loamy Muc	. ,	al (F1)		Reduced Vertic (F18)			
Hydroge	en Sulfide (A4)		Loamy Gle	yed Matrix	(F2)		Red Parent Material (TF2)			
Stratifie	d Layers (A5) (LRR (C)	Depleted N	latrix (F3)			Other	(Explain in Remarks)		
1 cm Mu	uck (A9) (LRR D)		✓ Redox Darl	k Surface	(F6)					
Deplete	d Below Dark Surfac	e (A11)	Depleted D	ark Surfac	ce (F7)					
Thick Da	ark Surface (A12)		Redox Dep	ressions ((F8)		³ Indicators of hydrophytic vegetation and			
Sandy N	lucky Mineral (S1)		Vernal Poo	ls (F9)			wetland hydrology must be present,			
-	Gleyed Matrix (S4)						unless o	disturbed or problematic.		
Restrictive	Layer (if present):									
Type: <u>Ro</u>	ock									
Depth (in	ches): <u>6</u>						Hydric Soi	I Present? Yes∕ No		
Remarks:										

Wetland Hydrology Indicate	ors:			
Primary Indicators (minimum	of one requ	ired; ch	eck all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)			Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)			Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)			Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonri	iverine)		Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2)	(Nonriverin	ie)	_✓ Oxidized Rhizospheres along Livir	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Noni	riverine)		✓ Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	1		Recent Iron Reduction in Tilled So	ils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aer	rial Imagery	(B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (E	39)		Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes	No _	Depth (inches):	
Water Table Present?	Yes	No _	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes _ ✓ No
Describe Recorded Data (stre	eam gauge,	monitor	ring well, aerial photos, previous inspect	tions), if available:
Remarks:				

Project/Site: Border Swale / IBWC Property	City/County: San Diego County	Sampling Date: <u>11/04/202</u>	.1
Applicant/Owner: Federal/US Border Patrol	State:	: <u>CA</u> Sampling Point: <u>BS-DP3</u>	
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Section	ns 2, 3, 4, 9, 10, 11 Township 19 South	, Ra
Landform (hillslope, terrace, etc.): Depression	Local relief (concave, convex, none	e): None 0 Slope (%):	
Subregion (LRR): C-19 Lat: 32	.541301 Long: -117	7.062876 Datum: <u>NAD83</u>	
Soil Map Unit Name: Chino Fine Sandy Loam	1	NWI classification: <u>N/A</u>	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no,	, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Normal Circu	Imstances" present? Yes No	
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain	any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations,	, transects, important features, e	tc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes _✔	No No No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

Slight depressional area with restrictive layer/soils. Ponding on imagery. Distrurbed

Trace Otratum (Distaire)	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2.				
3.				Total Number of Dominant Species Across All Strata: 4 (B)
4				
		= Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC:50 (A/B)
Sapling/Shrub Stratum (Plot size: 5x5)				
1. Baccharis salicifolia	8	Y	FAC	Prevalence Index worksheet:
2. Baccharis sarothroides	12	Y	FACU	Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total Co		FACU species x 4 =
Herb Stratum (Plot size: 5 x 5)				UPL species x 5 =
1. <u>Salsola tragus</u>		<u>N</u>		Column Totals: (A) (B)
2. <u>Glebionis coronaria</u>				
3				Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation ¹ (Explain)
	15	= Total Co	ver	
Woody Vine Stratum (Plot size:)				
1				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
		= Total Co	ver	Hydrophytic Vegetation
% Bare Ground in Herb Stratum <u>65</u> % Cove	r of Biotic C	rust <u>(</u>)	Present? Yes No
Remarks:				
Sparsely vegetated				

Profile Desc	ription: (Describe f	to the depth	needed to docun	nent the i	ndicator o	or confirm	n the absence	of indicators.)	
Depth	Matrix		Redox Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-6	10YR 3/2	100					Loam	Very compacted, dry	
		<u> </u>		·					
·		<u> </u>							
¹ Type: C=Co	oncentration, D=Depl	letion, RM=F	Reduced Matrix, CS	=Covered	l or Coate	d Sand G	rains. ² Loo	cation: PL=Pore Lining, M=Matrix.	
Hydric Soil	ndicators: (Applica	able to all Li	RRs, unless other	wise note	ed.)		Indicators	for Problematic Hydric Soils ³ :	
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm M	Muck (A9) (LRR C)	
Histic Ep	oipedon (A2)		Stripped Matrix (S6)				2 cm Muck (A10) (LRR B)		
Black Hi	()		Loamy Mucky Mineral (F1)				Reduced Vertic (F18)		
Hydroge	n Sulfide (A4)		Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)		
	l Layers (A5) (LRR C	;)	Depleted Matrix (F3)				Other (Explain in Remarks)		
	ick (A9) (LRR D)		Redox Dark Surface (F6)						
	Below Dark Surface	e (A11)	Depleted Date		. ,		2		
	ark Surface (A12)		Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and		
	lucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present,		
	ileyed Matrix (S4)						unless d	listurbed or problematic.	
	_ayer (if present):								
Туре:									
Depth (ind	ches):						Hydric Soil	Present? Yes No _✓_	
Remarks:									

Wetland Hydrology Indicators:							
Primary Indicators (minimum	of one requ		Secondary Indicators (2 or more required)				
Surface Water (A1)		_	Salt Crust (B11)		Water Marks (B1) (Riverine)		
High Water Table (A2)		_	Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)		
Saturation (A3)		_	Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)		
Water Marks (B1) (Nonri	iverine)	_	Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)		
Sediment Deposits (B2)	(Nonriverin	ie) _	Oxidized Rhizospheres along Livi	ng Roots (C3)	Dry-Season Water Table (C2)		
Drift Deposits (B3) (Non	riverine)	_	Presence of Reduced Iron (C4)		Crayfish Burrows (C8)		
✓ Surface Soil Cracks (B6)	1	_	Recent Iron Reduction in Tilled So	oils (C6)	✓ Saturation Visible on Aerial Imagery (C9)		
Inundation Visible on Aer	rial Imagery	(B7) _	Thin Muck Surface (C7)		Shallow Aquitard (D3)		
Water-Stained Leaves (E	39)	_	Other (Explain in Remarks)		FAC-Neutral Test (D5)		
Field Observations:							
Surface Water Present?	Yes	No	Depth (inches):				
Water Table Present?	Yes	No	Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hy	drology Present? Yes _ ✓ No		
Describe Recorded Data (stre	eam gauge,	monitorin	ig well, aerial photos, previous inspec	tions), if availa	ble:		
Remarks:							
Likely only ponds after significant rain events, ponding visible on imagery							

Project/Site: <u>Stewarts Drain</u>	City/County: San Diego County Sampling Date: 11/03/2021					
Applicant/Owner: USIBWC	State: CA Sampling Point: SD-DP1					
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South, 🖻					
Landform (hillslope, terrace, etc.): floodplain	Local relief (concave, convex, none): <u>none</u> Slope (%): <u>0</u>					
Subregion (LRR): C-19 Lat: 32	2.540973 Long: -117.057673 Datum: NAD83					
Soil Map Unit Name: <u>Chino silt Ioam</u>	NWI classification: <u>N/A</u>					
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes No _✓ Hydric Soil Present? Yes No _✓ Wetland Hydrology Present? Yes _✓ No Remarks: Ves _✓ No	within a Wetland? Yes No ✓					

Near border/drain feature - downstream vegetated channel. Stormwater fed erosional feature

	Absolute	Dominant		Dominance Test worksheet:		
Tree Stratum (Plot size: <u>30 X 30</u>)		Species?		Number of Dominant Species		
1				That Are OBL, FACW, or FAC: (A)		
2				Total Number of Dominant		
3			·	Species Across All Strata: (B)		
4			·	Percent of Dominant Species		
Sapling/Shrub Stratum (Plot size: 5 X 5)		= Total Co	ver	That Are OBL, FACW, or FAC: (A/B)		
1			. <u> </u>	Prevalence Index worksheet:		
2				Total % Cover of:Multiply by:		
3				OBL species x 1 =		
4				FACW species x 2 =		
5				FAC species x 3 =		
		= Total Co		FACU species x 4 =		
Herb Stratum (Plot size: 5 X 5)				UPL species x 5 =		
1. <u>Rumex Crispus</u>		Υ	FAC	Column Totals: (A) (B)		
2. <u>Echinochloa crus-galli</u>	8	<u> N </u>	FACW			
3. <u>Malva</u>	10	N	UPL	Prevalence Index = B/A =		
4. Amaranthus retroflexus	15	Y	FACU	Hydrophytic Vegetation Indicators:		
5. <u>Raphanus sativas</u>	15	Y	UPL	Dominance Test is >50%		
6. <u>Portulaca oleracea</u>	10	N	FAC	Prevalence Index is $≤3.0^1$		
7. Lolium perenne	30	Y	FAC	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
8				Problematic Hydrophytic Vegetation ¹ (Explain)		
Weedy Vine Stratum (Distaire)	103	= Total Co	ver			
Woody Vine Stratum (Plot size:)				¹ Indicators of hydric soil and wetland hydrology must		
1		·	·	be present, unless disturbed or problematic.		
2				Hydrophytic		
Vegetation						
% Bare Ground in Herb Stratum 0 % Cove	r of Biotic C	rust <u>C</u>)	Present? Yes No √		
Remarks:				1		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix	<u> </u>	Redo	k Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0-15	10YR 3/2	100					Loam	Moist		
·		· ·		·						
		·								
		·		<u> </u>						
·		·								
¹ Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, CS	=Covered	or Coate	d Sand G	rains. ² Lo	cation: PL=	Pore Lining,	M=Matrix.
Hydric Soil	Indicators: (Applic	able to all L	.RRs, unless other	wise note	d.)		Indicators	for Proble	matic Hydrid	: Soils ³ :
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm I	Muck (A9) (L	RR C)	
Histic Ep	pipedon (A2)		Stripped Ma					Muck (A10) (
Black Hi	stic (A3)		Loamy Mucl	ky Mineral	(F1)		Reduc	ed Vertic (F	18)	
Hydroge	n Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red P	arent Materi	ial (TF2)	
Stratified	Layers (A5) (LRR C	C)	Depleted Ma	Depleted Matrix (F3)			Other (Explain in Remarks)			
1 cm Mu	ick (A9) (LRR D)		Redox Dark	Redox Dark Surface (F6)						
Depleted	d Below Dark Surface	e (A11)	Depleted Da	ark Surface	e (F7)					
Thick Da	ark Surface (A12)		Redox Depr	essions (F	8)		³ Indicators	of hydrophy	/tic vegetatio	n and
Sandy M	lucky Mineral (S1)		Vernal Pool	Vernal Pools (F9)			wetland hydrology must be present,			ent,
Sandy G	leyed Matrix (S4)						unless d	listurbed or	problematic.	
Restrictive I	_ayer (if present):									
Туре:										
Depth (ind	ches):						Hydric Soil	Present?	Yes	No∕
Remarks:							-			

Drive and indicators (minimum of one required, check, all that each)			
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)		
Surface Water (A1) Salt Crust (B11)	Water Marks (B1) (Riverine)		
High Water Table (A2) Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)		
Saturation (A3) Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)		
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)		
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3)) Dry-Season Water Table (C2)		
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)	Crayfish Burrows (C8)		
✓ Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)		
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Water-Stained Leaves (B9) Other (Explain in Remarks)	FAC-Neutral Test (D5)		
Field Observations:			
Surface Water Present? Yes No Depth (inches):			
Water Table Present? Yes No Depth (inches):			
Saturation Present? Yes No Depth (inches): Wetland Hy (includes capillary fringe)	ydrology Present? Yes _ ✓ No		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	able:		
Remarks:			
Surface water nearby, surface cracks nearby.			

_ City/County:	Samp	bling Date:
	State: Samp	ling Point:
_ Section, Township, Rang	e:	
Local relief (concave, co	nvex, none):	Slope (%):
	_ong:	Datum:
	NWI classification:	
year? Yes No	(If no, explain in Remarks	s.)
ly disturbed? Are "N	ormal Circumstances" present	? Yes No
oroblematic? (If need	led, explain any answers in R	emarks.)
ng sampling point loo	ations, transects, imp	ortant features, etc.
) 	_ Section, Township, Rang _ Local relief (concave, co _ l /ear? Yes No y disturbed? Are "No roblematic? (If need	State:SampSection, Township, Range:Local relief (concave, convex, none):Long:Long:NWI classification:NWI classification:NWI classification:Near? YesNo(If no, explain in Remark y disturbed? Are "Normal Circumstances" present

Hydrophytic Vegetation Present?	Yes	No	Is the Sampled Area		
Hydric Soil Present?	Yes	No	within a Wetland?	Yes	No
Wetland Hydrology Present?	Yes	No	within a wetland:	103	
Remarks:					
Remarks:					

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)			Number of Dominant Species That Are OBL, FACW, or FAC:
2 3			Total Number of Dominant Species Across All Strata: (B)
4		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size: 5 X 5)		-	UPL species x 5 =
1			Column Totals: (A) (B)
2			、,
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:) 1 2			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic
% Bare Ground in Herb Stratum % Cove	r of Biotic C	rust	Vegetation Present? Yes No
Remarks:			

Depth (inches) Matrix Redox Features Color (moist) % Type ¹ Loc ² Texture Remarks Image: Second S	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Image: Section in the image: Sectio	Depth	Matrix		Redox	Features						
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :	(inches)	Color (moist)	% (Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :						·		·			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :			<u> </u>					·			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :								. <u></u>			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :								·			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :			<u> </u>					·			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :								. <u></u>			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :								·			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :			<u> </u>								
							d Sand Gr			<u>ـ</u>	
Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) (LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Strink Dark Surface (A12) Sandy Mucky Mineral (S1) Vernal Pools (F9) Wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes No	Hydric Soil I	ndicators: (Applica	ble to all LRR	ts, unless other	wise note	d.)		Indicators for Prol	plematic Hydric S	oils³:	
Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Stratified Layers (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Mucky (inches): No	Histosol (A1)		Sandy Redo	x (S5)			1 cm Muck (A9) (LRR C)		
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:	Histic Ep	pedon (A2)		Stripped Ma	trix (S6)			2 cm Muck (A10) (LRR B)			
Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Gleyed Matrix (S4) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): No	Black His	tic (A3)		Loamy Muck	ky Mineral	(F1)		Reduced Vertic (F18)			
1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Gleyed Matrix (S4) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): No	Hydroger	n Sulfide (A4)		Loamy Gley	ed Matrix ((F2)		Red Parent Material (TF2)			
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): No	Stratified	Layers (A5) (LRR C)	Depleted Ma	atrix (F3)			Other (Explain in Remarks)			
Thick Dark Surface (A12) Redox Depressions (F8) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) unless disturbed or problematic. Restrictive Layer (if present): Type: Type: Hydric Soil Present? Yes	1 cm Mu	ck (A9) (LRR D)		Redox Dark	Surface (F	-6)					
Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:	Depleted	Below Dark Surface	(A11)	Depleted Da	irk Surface	e (F7)					
Sandy Gleyed Matrix (S4) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes	Thick Da	rk Surface (A12)		Redox Depr	essions (F	8)		³ Indicators of hydrophytic vegetation and			
Restrictive Layer (if present): Type:	Sandy Mucky Mineral (S1) Vernal Pools (F9)					wetland hydrology must be present,					
Type:	Sandy G	eyed Matrix (S4)						unless disturbed	or problematic.		
Depth (inches): Hydric Soil Present? Yes No	Restrictive L	ayer (if present):									
	Туре:			_							
Pemarke:	Depth (inc	hes):		-				Hydric Soil Present	? Yes	No	
	Remarks:										

No pit at this location due to cobble/gravel substrates, assumed due to surface water and dominance by salix saplings/seedlings.

Primary Indicators (minimum of one required; check all that apply)							
Salt Crust (B11)	Water Marks (B1) (Riverine)						
Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)						
Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)						
Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)						
Oxidized Rhizospheres along Living	Roots (C3) Dry-Season Water Table (C2)						
Presence of Reduced Iron (C4)	Crayfish Burrows (C8)						
Recent Iron Reduction in Tilled Soils	s (C6) Saturation Visible on Aerial Imagery (C9)						
Thin Muck Surface (C7)	Shallow Aquitard (D3)						
Other (Explain in Remarks)	FAC-Neutral Test (D5)						
Depth (inches):							
Depth (inches):							
Depth (inches): V	Netland Hydrology Present? Yes No						
ring well, aerial photos, previous inspectior	ns), if available:						
	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): V 						

Project/Site:	City/County:	Samplin	ng Date:
Applicant/Owner:		State: Samplin	ng Point:
Investigator(s):	Section, Township, Range:		
Landform (hillslope, terrace, etc.):	_ Local relief (concave, conve	ex, none):	Slope (%):
Subregion (LRR): Lat:	Lor	g:	Datum:
Soil Map Unit Name:		NWI classification:	
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes No	(If no, explain in Remarks.)	1
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Norm	al Circumstances" present?	Yes No
Are Vegetation, Soil, or Hydrology naturally pr	roblematic? (If needed	, explain any answers in Ren	narks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locat	ions, transects, impo	rtant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)		<u>Species?</u> Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
1			
2			Total Number of Dominant
3			Species Across All Strata: (B)
4			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)		_ = Total Cover	That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8			Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)		= Total Cover	
1			¹ Indicators of hydric soil and wetland hydrology must
2			be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic
% Bare Ground in Herb Stratum % Cove	r of Biotic C	rust	Vegetation Present? Yes No
Remarks:			·

Profile Desc	ription: (Describe	to the depth	needed to docun	nent the i	ndicator	or confirm	n the absence	of indicato	ors.)		
Depth	Matrix		Redox	K Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remark	S	
0-6	10YR 3/2	100					Sandy Loa	Dry			
		·					·				
		·				<u> </u>					
		·									
							·,				
¹ Type: C=Co	oncentration, D=Dep	letion, RM=R	Reduced Matrix, CS	=Covered	l or Coate	d Sand G	rains. ² Loo	cation: PL=	Pore Lining	, M=Matr	ix.
Hydric Soil I	Indicators: (Application)	able to all Li	RRs, unless other	wise note	ed.)		Indicators	for Proble	matic Hydr	ic Soils ³	:
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm N	/luck (A9) (L	.RR C)		
Histic Ep	pipedon (A2)		Stripped Ma	trix (S6)				/luck (A10)			
Black Hi	stic (A3)		Loamy Mucl	ky Mineral	(F1)		Reduc	ed Vertic (F	18)		
Hydroge	n Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red P	arent Materi	al (TF2)		
Stratified	d Layers (A5) (LRR (C)	Depleted Ma	atrix (F3)			Other	(Explain in F	Remarks)		
1 cm Mu	ick (A9) (LRR D)		Redox Dark	Surface (F6)						
Depleted	d Below Dark Surface	e (A11)	Depleted Da	ark Surfac	e (F7)						
Thick Da	ark Surface (A12)		Redox Depr	essions (F	-8)		³ Indicators	of hydrophy	tic vegetati	on and	
Sandy M	lucky Mineral (S1)		Vernal Pools	Vernal Pools (F9)				wetland hydrology must be present,			
	Bleyed Matrix (S4)						unless d	isturbed or	problematic		
Restrictive L	_ayer (if present):										
Type: <u>Ro</u>	ots/Rocks										
Depth (inc	ches): <u>6</u>						Hydric Soil	Present?	Yes	No	
Remarks:							<u>.</u>				

Wetland Hydrology Indicat	ors:							
Primary Indicators (minimum of one required; check all that apply)					Secondary Indicators (2 or more required)			
Surface Water (A1) Salt Crust (B11)				Water Marks (B1) (Riverine)				
High Water Table (A2) Biotic Crust (B12)					Sediment Deposits (B2) (Riverine)			
Saturation (A3) Aquatic Invertebrates (B13)					Drift Deposits (B3) (Riverine)			
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)					Drainage Patterns (B10)			
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living				ng Roots (C3)	Dry-Season Water Table (C2)			
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)					Crayfish Burrows (C8)			
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6)				oils (C6)	Saturation Visible on Aerial Imagery (C9)			
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)				Shallow Aquitard (D3)				
Water-Stained Leaves (39)	_	Other (Explain in Remarks)		FAC-Neutral Test (D5)			
Field Observations:								
Surface Water Present?	Yes	No	Depth (inches):					
Water Table Present?	Yes	No	Depth (inches):					
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hyd	drology Present? Yes No			
Describe Recorded Data (str	eam gauge,	monitorin	ng well, aerial photos, previous inspec	tions), if availa	ble:			
Remarks:								

Project/Site: Smugglers Gulch	City/County: San Diego Cou	nty	Sampling Date: 11/04/2021
Applicant/Owner: San Diego County		State: CA	Sampling Point: <u>SB-DP3</u>
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: S	<u>ections 2, 3, 4, 9,</u>	10, 11 Township 19 South, 🖬
Landform (hillslope, terrace, etc.): Channel/Bed/Low flow	Local relief (concave, convex	, none): <u>Concave</u>	Slope (%): 0
Subregion (LRR): C-19 Lat: 32	54268 Long	: -117.088211	Datum: NAD83
Soil Map Unit Name: Terrace escarpments		NWI classifica	ation: N/A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology significantly	v disturbed? Are "Normal	Circumstances" pro	esent? Yes No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, e	xplain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	y sampling point locati	ons, transects,	, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes \checkmark Yes \checkmark	_	No No No	Is the Sampled Area within a Wetland?	Yes✓	<u>, </u>	No
Remarks:							
Low flow / Active channel							

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 x 30</u>)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 5 X 5)		= Total Co	ver	That Are OBL, FACW, or FAC: <u>100</u> (A/B)
	20	v	FAC	Prevalence Index worksheet:
1. <u>Baccharis salicifolia sapling</u>				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				· · <u> </u>
4				FACW species x 2 =
5				FAC species x 3 =
Herb Stratum (Plot size: 5 x 5)	20	= Total Co	ver	FACU species x 4 =
1. Echinochloa crus-galli	10	Y	FACW/	UPL species x 5 =
2. Raphanus sativus	<u> </u>		FACU	Column Totals: (A) (B)
			FACU	Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
4. <u>Glebionis coronaria</u>				Dominance Test is >50%
5. <u>Xanthium strumarium</u>			FAC	$ Prevalence Index is <3.0^{1} $
6. <u>Ricinus communis</u> seedlings		<u> N </u>	FACU	Morphological Adaptations ¹ (Provide supporting
7				data in Remarks or on a separate sheet)
8			·	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)	27	= Total Co	ver	
				¹ Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2		= Total Co		Hydrophytic
				Vegetation
% Bare Ground in Herb Stratum 33 % Cover	r of Biotic C	rust <u>C</u>)	Present? Yes <u>√</u> No
Remarks:				

SOIL

Profile Description: (Describe	to the depth n				or confirm	the absence of inc	licators.)	
Depth <u>Matrix</u>			x Features		. 2	— .	_	
(inches) Color (moist)	(Color (moist)	 	Type ¹			Remarks	
¹ Type: C=Concentration, D=De Hydric Soil Indicators: (Appli		Rs, unless other	rwise note		d Sand Gr	Indicators for P	: PL=Pore Lining, M=Matri roblematic Hydric Soils ³ :	
Histosol (A1)		Sandy Red	. ,				(A9) (LRR C)	
Histic Epipedon (A2)		Stripped Ma		<i>(</i> - 1)			(A10) (LRR B)	
Black Histic (A3)		Loamy Muc				Reduced Ve	. ,	
Hydrogen Sulfide (A4)	\mathbf{c}	Loamy Gley		F2)			Material (TF2)	
Stratified Layers (A5) (LRR 1 cm Muck (A9) (LRR D)	C)	Depleted M Redox Dark	• •	6)		Other (Expla	ain in Remarks)	
Depleted Below Dark Surface	(A 1 1)	Depleted Da	•	,				
Thick Dark Surface (A12)		Redox Dep		. ,		³ Indicators of by	drophytic vegetation and	
Sandy Mucky Mineral (S1)		Vernal Pool		0)		•	logy must be present,	
Sandy Gleyed Matrix (S4)			0(10)			•	ed or problematic.	
Restrictive Layer (if present):								
Type:								
Depth (inches):		-				Hydric Soil Pres	ent? Yes <u>√</u> No_	
Remarks:								
Soils are assumed base	d on indicat	ors of wetla	nd vege [.]	tation	and hyc	lrology, surface	e soils are cobbles/g	ravels

Wetland Hydrology Indicate	ors:				
Primary Indicators (minimum	of one requir		Secondary Indicators (2 or more required)		
Surface Water (A1)			Salt Crust (B11)		Water Marks (B1) (Riverine)
High Water Table (A2) Biotic Crust (B12)			✓ Sediment Deposits (B2) (Riverine)		
✓ Saturation (A3) Aquatic Invertebrates (B13)		Aquatic Invertebrates (B13)		✓ Drift Deposits (B3) (Riverine)	
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)			Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Livi				ng Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)					Crayfish Burrows (C8)
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Sc				oils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)					Shallow Aquitard (D3)
Water-Stained Leaves (B	,9)		Other (Explain in Remarks)		FAC-Neutral Test (D5)
Field Observations:					
Surface Water Present?	Yes	_ No	Depth (inches):		
Water Table Present?	Yes	No	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	No	_ Depth (inches):	Wetland Hy	drology Present? Yes _ ✓ No
Describe Recorded Data (stre	am gauge, n	nonitoring	well, aerial photos, previous inspec	tions), if availa	ible:
Remarks:					
Pockets of saturation					

Project/Site: Tijuana River Floodplain - Transect 1	City/County	San Diego County		Sampling Date:	11/03/2021	
Applicant/Owner: USIBWC		State:	CA	Sampling Point:	T1-DP1	
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, To	wnship, Range: <u>Section</u>	s 2, 3, 4, 9), 10, 11 Townsh	ip 19 South, 🗟	
Landform (hillslope, terrace, etc.): Floodplain	Local relief	(concave, convex, none)	None	Slo	pe (%): <u>0</u>	
Subregion (LRR): C-19 Lat:	32.542593	Long: <u>-117</u> .	044021	Datu	m: <u>NAD83</u>	
Soil Map Unit Name: Chino Silt Loam	cation: <u>N/A</u>					
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						
Are Vegetation <u>√</u> , Soil <u>√</u> , or Hydrology <u>√</u> significa	antly disturbed?	Are "Normal Circun	nstances" p	oresent? Yes	No _✔	
Are Vegetation, Soil, or Hydrology naturally	y problematic?	(If needed, explain a	ny answer	s in Remarks.)		
SUMMARY OF FINDINGS – Attach site map show	ving samplin	g point locations, t	ransects	s, important fe	eatures, etc.	
Hydrophytic Vegetation Present? Yes No✓ Hydric Soil Present? Yes No✓ Wetland Hydrology Present? Yes No✓	with	e Sampled Area in a Wetland?	Yes	No✓	-	
Remarks:						

Constructed road bed in floodplain - very disturbed. Managed hydrology

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)		= Total Co	ver	That Are OBL, FACW, or FAC: <u>33</u> (A/B)
				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species x 1 =
3				FACW species x 2 =
4				FAC species x 3 =
5				
Herb Stratum (Plot size: <u>5 x 5</u>)		= Total Co	ver	FACU species x 4 = UPL species x 5 =
1. <u>Malva Neglecta</u>	3	Y	FACU	
2. <u>Raphanus sativus</u>			FACU	Column Totals: (A) (B)
3. Lolium perenne	_	Ŷ		Prevalence Index = B/A =
4. <u>Glebionis coronaria</u>			UPL	Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)		10101 00		
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co		Hydrophytic
% Bare Ground in Herb Stratum <u>88</u> % Cover	r of Biotic C	rust		Vegetation Present? Yes No√
Remarks:				

(inches)	Matrix		Redo	x Feature	s					
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0-2	10YR 3/3	100					Loam	Compact	ed road lay	ver
2-12	1-YR 2/2	100					Clay Loam			
	Concentration, D=Dep					ed Sand G			Pore Lining,	
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless other	rwise not	ed.)		Indicators	for Proble	matic Hydric	: Soils ³ :
Histoso	l (A1) pipedon (A2)		Sandy Red Stripped Ma	()				/luck (A9) (I /luck (A10)	,	
	listic (A3)		Supped Ma	• •	J (E1)			ed Vertic (F	. ,	
	en Sulfide (A4)		Loamy Gley	-				arent Mater		
	d Layers (A5) (LRR	C)	Depleted M		(1 <u>2</u>)			(Explain in I	. ,	
	uck (A9) (LRR D)	•)	Redox Dark	· · /	(F6)				(onlance)	
	d Below Dark Surfac	ce (A11)	Depleted D		• •					
	ark Surface (A12)	,	Redox Dep		. ,		³ Indicators	of hydroph	ytic vegetatio	n and
	()		Vernal Pool	,	- /			• • •	nust be prese	
Thick D	Mucky Mineral (S1)			()					problematic.	
Thick D Sandy I	Mucky Mineral (S1) Gleyed Matrix (S4)						uniess u	isturbed of	problematio.	
Thick D Sandy I Sandy (uniess u		problemate.	
Thick D Sandy I Sandy (Restrictive Type:	Gleyed Matrix (S4)						Hydric Soil		Yes	No 🗸

Primary Indicators (minimum of one required; chec	Secondary Indicators (2 or more required)	
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livir	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	ils (C6) Saturation Visible on Aerial Imagery (C9)	
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9) Other (Explain in Remai		FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes No	Depth (inches):	
Water Table Present? Yes No	Depth (inches):	
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland Hydrology Present? Yes No _✓
Describe Recorded Data (stream gauge, monitoring	g well, aerial photos, previous inspec	tions), if available:
Remarks:		

Project/Site: Tijuana River Floodplain - Transect 1	City/County: San Diego County Sampling Date: 11/03/2021						
Applicant/Owner: USIBWC	State: <u>CA</u> Sampling Point: <u>T1-DP2</u>						
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South, 🗈						
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, none): <u>None</u> Slope (%): <u>0</u>						
Subregion (LRR): C-19 Lat: 32	Long: <u>-117.044024</u> Datum: <u>NAD83</u>						
Soil Map Unit Name: Chino Silt Loam NWI classification: N/A							
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)							
Are Vegetation 🖌 , Soil 🖌 , or Hydrology 🖌 significantly disturbed? Are "Normal Circumstances" present? Yes No 🗸							
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Yes No	Is the Sampled Area within a Wetland? Yes No∕						

Disturbed floodplain - primarily early successional ruderal weeds

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2 3				Total Number of Dominant Species Across All Strata:1(B)
4		= Total Co		Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total Co		FACU species x 4 =
Herb Stratum (Plot size: 5 X 5)				UPL species x 5 =
1. <u>Raphanus sativus</u>	20	<u>N</u>	FACU	Column Totals: (A) (B)
2. <u>Glebionis coronaria</u>	5	<u> N </u>	UPL	
3. <u>Malva nicaeensis</u>	3	N	UPL	Prevalence Index = B/A =
4. <u>Lolium perenne</u>	80	Y	FAC	Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
<u>Woody Vine Stratum</u> (Plot size:) 1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co	ver	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	r of Biotic C	rust		Present? Yes <u>√</u> No
Remarks:				

Depth	Matrix		Redo	x Feature	s		
(inches)	Color (moist)	%	Color (moist)	%		Loc ²	Texture Remarks
0-14	<u>10YR 2/2</u>	100					Sandy Loa
				·			
¹ Type: C=C	oncentration, D=Dep	bletion, RM:	Reduced Matrix, CS	=Covere	d or Coate	d Sand G	Grains. ² Location: PL=Pore Lining, M=Matrix
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless other	wise not	ed.)		Indicators for Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy Redo	ox (S5)			1 cm Muck (A9) (LRR C)
Histic E	pipedon (A2)		Stripped Ma	trix (S6)			2 cm Muck (A10) (LRR B)
Black H	istic (A3)		Loamy Muc	ky Minera	l (F1)		Reduced Vertic (F18)
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red Parent Material (TF2)
Stratifie	d Layers (A5) (LRR	C)	Depleted Ma	atrix (F3)			Other (Explain in Remarks)
	uck (A9) (LRR D)		Redox Dark	Surface	(F6)		
	d Below Dark Surfac	æ (A11)	Depleted Date		. ,		
	ark Surface (A12)		Redox Depr		F8)		³ Indicators of hydrophytic vegetation and
	Mucky Mineral (S1)		Vernal Pool	s (F9)			wetland hydrology must be present,
Sandy C	Gleyed Matrix (S4)						unless disturbed or problematic.
Restrictive	Layer (if present):						
Туре:							
Depth (in	ches): <u>14</u>						Hydric Soil Present? Yes No
Remarks:							
Highly die	sturbed/tilled						
IYDROLO	GY						

Project/Site: Tijuana River Floodplain	City/County: San Diego County Sampling Date: 11/03/2021						
Applicant/Owner: USIBWC	State: <u>CA</u> Sampling Point: <u>T1-DP3</u>						
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South, 🗈						
Landform (hillslope, terrace, etc.): Floodplain terrace	Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0</u>						
Subregion (LRR): C-19 Lat: 32.	.542246 Long: -117.044053 Datum: NAD83						
Soil Map Unit Name: <u>Chino Silt Loam</u>	NWI classification: N/A						
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)							
Are Vegetation 🖌 , Soil 🖌 , or Hydrology 🖌 significantly disturbed? Are "Normal Circumstances" present? Yes No							
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Yes No	Is the Sampled Area within a Wetland? Yes No						

Floodplain terrace above low flow channel

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size:)		Species?		Number of Dominant Species	
1				That Are OBL, FACW, or FAC: (A)	
2				Total Number of Dominant	ļ
3				Species Across All Strata: (B)	ļ
4			·	Percent of Dominant Species	ļ
Conling/Chruh Stratum (Distaiza)		= Total Co	ver	That Are OBL, FACW, or FAC: 100 (A/E	B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:	
1				Total % Cover of: Multiply by:	
2					ļ
3				OBL species x 1 =	
4				FACW species x 2 =	ļ
5				FAC species x 3 =	ļ
Herb Stratum (Plot size: <u>5 X 5</u>)		= Total Co	ver	FACU species x 4 =	ļ
(Duran and and an	40	v	FAC	UPL species x 5 =	
1. <u>Rumex crispus</u> 2. <u>Cyperus esculentus</u>			FACW	Column Totals: (A) (B	;)
	-	<u> </u>	UPL	Prevalence Index = B/A =	
				Hydrophytic Vegetation Indicators:	
 <u>Raphanus sativus</u> Echinochloa crus-galli 	1	<u> </u>	FACW	✓ Dominance Test is >50%	
A munda da mari					ļ
6. <u>Arundo donax</u>			FACW	Morphological Adaptations ¹ (Provide supporting	
7. <u>Lolium perenne</u>		<u> </u>	FAC	data in Remarks or on a separate sheet)	ļ
8				Problematic Hydrophytic Vegetation ¹ (Explain)	ļ
Woody Vine Stratum (Plot size:)	93	= Total Co	ver		ļ
				¹ Indicators of hydric soil and wetland hydrology must	
12				be present, unless disturbed or problematic.	
<u>ــــــــــــــــــــــــــــــــــــ</u>		= Total Co	ver	Hydrophytic	
_				Vegetation	
% Bare Ground in Herb Stratum 7 % Cove	r of Biotic C	rust		Present? Yes ✓ No	
Remarks:					

<u>(inches)</u>	Color (moist) 10YR 3/2	% 100 	Color (moist)	%Type 	Loc ²	Loam	Dry	Remarks	
<u>0-12</u> - 	10YR 3/2	<u>100</u>		 		<u>Loam</u>	Dry		
				 		·			
·		 		 					
		 				·			
					_				
						·			
						21		Dens Lining M	-Natrix
			Reduced Matrix, C RRs, unless othe		ted Sand G			Pore Lining, M matic Hydric \$	
Histosol (A			Sandy Rec	-			/luck (A9) (L	-	
	bedon (A2)		Stripped M				/luck (A3) (L		
Black Hist	()			cky Mineral (F1)			ed Vertic (F	,	
	Sulfide (A4)			yed Matrix (F2)			arent Materi		
	_ayers (A5) (LRR	C)	Depleted N	•		Other	(Explain in F	Remarks)	
1 cm Muc	k (A9) (LRR D)	,	Redox Dar	k Surface (F6)				,	
Depleted I	Below Dark Surfa	ce (A11)	Depleted D	ark Surface (F7)					
Thick Darl	k Surface (A12)		Redox Dep	pressions (F8)		³ Indicators	of hydrophy	tic vegetation	and
Sandy Mu	cky Mineral (S1)		Vernal Poo	ls (F9)		wetland hydrology must be present,			
	eyed Matrix (S4)					unless d	isturbed or p	problematic.	
Restrictive La	yer (if present):								
Type: <u>Roc</u> l	k								
Depth (inch	es): <u>12</u>					Hydric Soil	Present?	Yes	No _√
Remarks:						1			
			onditions - pot	بالملاحدة					

Wetland Hydrology Indica	tors:			
Primary Indicators (minimun	n of one requ	ired; cheo	ck all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)		_	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)		_	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)		-	Aquatic Invertebrates (B13)	✓ Drift Deposits (B3) (Riverine)
Water Marks (B1) (Non	riverine)	-	Hydrogen Sulfide Odor (C1)	_ Drainage Patterns (B10)
Sediment Deposits (B2)) (Nonriverir	ıe) <u>-</u>	Oxidized Rhizospheres along Livit	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nor	nriverine)	-	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
✓ Surface Soil Cracks (B6	5)	-	bils (C6) Saturation Visible on Aerial Imagery (C9)	
Inundation Visible on A	erial Imagery	' (B7)	Shallow Aquitard (D3)	
Water-Stained Leaves ((B9)	-	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes _ ✓ No
Describe Recorded Data (st	ream gauge,	monitorir	ng well, aerial photos, previous inspec	tions), if available:
Remarks:				

Project/Site: Tijuana River Floodplain - Transect 1	City/County: San Diego County Sampling Date: 11/03/2021						
Applicant/Owner: USIBWC	State: <u>CA</u> Sampling Point: <u>T1-DP4</u>						
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South, 🗈						
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, none): <u>None</u> Slope (%): <u>0</u>						
Subregion (LRR): C-19 Lat: 32	2.542019 Long: <u>-117.044105</u> Datum: <u>NAD83</u>						
Soil Map Unit Name: <u>Chino silt Ioam</u>	NWI classification: <u>N/A</u>						
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Normal Circumstances" present? Yes No						
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Yes No	Is the Sampled Area within a Wetland? Yes No						
Top of bank, left descending above low flow chan	nel						

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
		= Total Cov	/er	That Are OBL, FACW, or FAC: <u>100</u> (A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1				
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
Herb Stratum (Plot size: <u>5 X 5</u>)		= Total Cov	/er	FACU species x 4 =
1. <u>Raphanus sativus</u>	10	N	UPL	UPL species x 5 =
			UPL	Column Totals: (A) (B)
2. <u>Malva nicaeensis</u>				Prevalence Index = B/A =
3. Lolium perenne		<u> </u>		Hydrophytic Vegetation Indicators:
4. <u>Glebionis coronaria</u>			UPL	✓ Dominance Test is >50%
5. Unk Herb		<u> </u>		$ Prevalence Index is \leq 3.0^{1} $
6. <u>Urtica dioica</u>		<u> </u>	FAC	
7. <u>Cynodon dactylon</u>		<u> N </u>	FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Cov		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)	90		/ei	
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Cov	ver	Hydrophytic
% Bare Ground in Herb Stratum <u>10</u> % Cove	r of Biotic C	rust		Vegetation Present? Yes ✓ No
Remarks:	2.0.00			
Tromuno.				

SOIL

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for	Remarks
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrogen Sufface (A10)	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Wetland hydowetland hydowet	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Wetland hydowetland hydowet	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Wetland hydowetland hydowet	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrogen Sufface (A10)	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrogen Sufface (A10)	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Natrix (F3) Thick Dark Surface (A12) Redox Depressions (F8) Indicators of Wetland hydrogen (F9)	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Wetland hydowetland hydowet	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Natrix (F3) Thick Dark Surface (A12) Redox Depressions (F8) Indicators of Wetland hydrogen (F9)	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Natrix (F3) Thick Dark Surface (A12) Redox Depressions (F8) Indicators of Wetland hydrogen (F9)	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Natrix (F3) Thick Dark Surface (A12) Redox Depressions (F8) Indicators of Wetland hydrogen (F9)	rs for Problematic Hydric Soils ³ : n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) ³ Indicators of I Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hyde	n Muck (A9) (LRR C) n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hyde	n Muck (A10) (LRR B) uced Vertic (F18) Parent Material (TF2)
Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Other (Ex Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hyde	uced Vertic (F18) Parent Material (TF2)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Pare Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9)	Parent Material (TF2)
Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Ex. 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9)	
1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9)	ər (Explain in Remarks)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9)	
Thick Dark Surface (A12) Redox Depressions (F8) ³ Indicators of Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrogeneral (S1)	
Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hyd	
	rs of hydrophytic vegetation and
	nd hydrology must be present,
	s disturbed or problematic.
Restrictive Layer (if present):	
Туре:	
Depth (inches): Hydric Soil Pr	oil Present? Yes No
Remarks:	

- Biotic Crust (B12) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) _ Hydrogen Sulfide Odor (C1)
 - Oxidized Rhizospheres along Living Roots (C3) ___ Dry-Season Water Table (C2)
 - Presence of Reduced Iron (C4)
 - Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7)
- Inundation Visible on Aerial Imagery (B7)

Water-Stained Leaves (B9)	_	Other (Explain in Remarl	ks)	FAC-Neutral T	est (D5)	
Field Observations:							
Surface Water Present?	Yes	No	Depth (inches):				
Water Table Present?	Yes	No	Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):		Wetland Hydrology Present?	Yes	No_✓
Describe Recorded Data (st	ream gauge	, monitorin	g well, aerial photos, previou	us inspec	tions), if available:		

Remarks:

Saturation (A3)

Sediment Deposits (B2) (Nonriverine)

Drift Deposits (B3) (Nonriverine)

Surface Soil Cracks (B6)

_ Drift Deposits (B3) (Riverine)

____ Saturation Visible on Aerial Imagery (C9)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

Shallow Aquitard (D3)

Project/Site: Tijuana River Floodplain - Transect 1	City/County: San Diego County Sampling	g Date: <u>11/03/2021</u>
Applicant/Owner: USIBWC	State: <u>CA</u> Sampling	g Point: <u>T1-DP5</u>
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: <u>Sections 2, 3, 4, 9, 10, 11</u>	Township 19 South, 🗟
Landform (hillslope, terrace, etc.): Floodplain	_ Local relief (concave, convex, none): <u>None</u>	Slope (%):0
Subregion (LRR): C-19 Lat: 32	2.54194 Long: -117.044092	Datum: NAD83
Soil Map Unit Name: <u>Chino Silt Loam</u>	NWI classification: N/	Ά
Are climatic / hydrologic conditions on the site typical for this time of year Vegetation, Soil, or Hydrology significantly Are Vegetation, Soil, or Hydrology naturally pr	y disturbed? Are "Normal Circumstances" present? roblematic? (If needed, explain any answers in Rema	rks.)
Hydrophytic Vegetation Present? Yes No _✓ Hydric Soil Present? Yes No _✓ Wetland Hydrology Present? Yes No _✓ Remarks: Barren area, managed vegetation, tilled	within a Wetland? Yes No	

	Absolute		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size:) 1)		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:	(A)
2 3			Total Number of Dominant Species Across All Strata:	(B)
4			Percent of Dominant Species	()
Sapling/Shrub Stratum (Plot size:)		_= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC:	(A/B)
1			Prevalence Index worksheet:	
2			Total % Cover of: Multiply by:	_
3			OBL species x 1 =	_
4			FACW species x 2 =	_
5			FAC species x 3 =	_
		= Total Cover	FACU species x 4 =	
Herb Stratum (Plot size: 5 X 5)		-	UPL species x 5 =	
1. <u>Unk grass</u>	21		Column Totals: (A)	
2				
3			Prevalence Index = B/A =	_
4			Hydrophytic Vegetation Indicators:	
5			Dominance Test is >50%	
6			Prevalence Index is $\leq 3.0^{1}$	
7			Morphological Adaptations ¹ (Provide support data in Remarks or on a separate sheet)	ing
8		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain	n)
Woody Vine Stratum (Plot size:) 1) 2			¹ Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.	nust
		= Total Cover	Hydrophytic Vegetation	
% Bare Ground in Herb Stratum 79 % Cove	r of Biotic C	rust	Present? Yes No _✓	
Remarks:				
No cover by herbs, grass is mowed/desicca	ated			

SOIL

Depth Matrix		Redo	x Feature					
(inches) Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
Type: C=Concentration, D=Depleti					d Sand Gr		: PL=Pore Lining, M=Matrix.	
lydric Soil Indicators: (Applicabl	e to all L			ed.)			Problematic Hydric Soils ³ :	
Histosol (A1)		Sandy Redo					(A9) (LRR C)	
Histic Epipedon (A2)		Stripped Matrix (S6)				2 cm Muck (A10) (LRR B)		
Black Histic (A3)		Loamy Mucky Mineral (F1)				Reduced Vertic (F18) Red Parent Material (TF2)		
Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2) Depleted Matrix (F3)				Other (Explain in Remarks)		
Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D)		Redox Dark	• •	(E6)			am in Remarks)	
Depleted Below Dark Surface (A	A11)	Depleted Da						
Thick Dark Surface (A12)	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Redox Depi				³ Indicators of hy	drophytic vegetation and	
Sandy Mucky Mineral (S1)		Vernal Pool		0)		wetland hydrology must be present,		
Sandy Gleyed Matrix (S4)			0(10)			unless disturbed or problematic.		
Restrictive Layer (if present):								
Type:								
Depth (inches):						Hydric Soil Pres	sent? Yes No _✔	
Remarks:								
Como oo DD1								
Same as DP1								
YDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one	required;	check all that apply	()			Secondary	Indicators (2 or more required)	
Surface Water (A1)		Salt Crust	(B11)				Marks (B1) (Riverine)	
High Water Table (A2)	· · · · · · · · · · · · · · · · · · ·					Sediment Deposits (B2) (Riverine)		

 Biotic Crust (B12)
 Aquatic Invertebrates (B13)

Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres alon

- _ Oxidized Rhizospheres along Living Roots (C3) ___ Dry-Season Water Table (C2)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7)
- Inundation Visible on Aerial Imagery (B7)

Water-Stained Leaves	(B9)		Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	、 ,	_		
Surface Water Present?	Yes	No	Depth (inches):	_
Water Table Present?	Yes	No	Depth (inches):	_
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	_ Wetland Hydrology Present? Yes No _✓
Describe Recorded Data (st	tream gauge	e, monitorin	ig well, aerial photos, previous insp	pections), if available:
Demerila				

Remarks:

Saturation (A3)

Water Marks (B1) (Nonriverine)

Drift Deposits (B3) (Nonriverine)

Surface Soil Cracks (B6)

____ Drift Deposits (B3) (Riverine)

____ Saturation Visible on Aerial Imagery (C9)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

Shallow Aquitard (D3)

Project/Site: Tijuana River Floodplain - Transect 2	City/County: San Diego County	Sampling Date: <u>11/03/2021</u>
Applicant/Owner: USIBWC	State: <u>CA</u>	Sampling Point: <u>T2-DP1</u>
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4,	9, 10, 11 Township 19 South, 🖬
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, none): <u>None</u>	Slope (%):0
Subregion (LRR): C-19 Lat: 32	.544723 Long: <u>-117.058814</u>	Datum: NAD83
Soil Map Unit Name: <u>Chino silt Ioam</u>	NWI classif	ication: N/A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no, explain in l	Remarks.)
Are Vegetation, Soil, or Hydrology significantly	v disturbed? Are "Normal Circumstances"	present? Yes No 🖌
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? (If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes No _✓ Hydric Soil Present? Yes No _✓ Wetland Hydrology Present? Yes No _✓ Remarks: Yes No _✓	Is the Sampled Area within a Wetland? Yes	No

Edge of study area. Berm separates delineation area from adjacent sod area

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
1				
2				Total Number of Dominant Species Across All Strata: 3 (B)
3				Species Across All Strata. <u>5</u> (B)
4		= Total Co		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)			vei	That Are OBL, FACW, or FAC:33 (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total Co	ver	FACU species x 4 =
Herb Stratum (Plot size: 5 x 5)		-		UPL species x 5 =
1. <u>Arundo donax</u>	8	Υ	FACW	Column Totals: (A) (B)
2. <u>Raphanus sativus</u>	12	Y	UPL	
3. <u>Sorghum halepense</u>	15	Y	FACU	Prevalence Index = B/A =
4. <u>Lolium perenne</u>	3	N	FAC	Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation ¹ (Explain)
	38	= Total Co	ver	
Woody Vine Stratum (Plot size:)				¹ Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2				Undrophytic
		= Total Co	ver	Hydrophytic Vegetation
% Bare Ground in Herb Stratum <u>62</u> % Cover of Biotic Crust				Present? Yes No _✓
Remarks:				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redox Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-1	10YR 3/2						<u>Clay Loam</u>	Dry, Granular	
1-12	10YR 3/2	100					<u>Clay Loam</u>	Blocky	
		·							
									<u>.</u>
						·			
						<u> </u>			
<u> </u>		·							
	oncentration, D=Dep					d Sand G		cation: PL=Pore Lining, I	
Hydric Soil I	Indicators: (Applic	able to all L	RRs, unless other	wise note	ed.)			for Problematic Hydric	Soils":
Histosol	· · /		Sandy Redo					/luck (A9) (LRR C)	
Histic Epipedon (A2) Stripped Matrix (S6)			2 cm N	/luck (A10) (LRR B)					
Black Histic (A3) Loamy Mucky Mineral (F1)			Reduc	ed Vertic (F18)					
Hydrogen Sulfide (A4) Loamy Gleye		ed Matrix	(F2)		Red P	arent Material (TF2)			
Stratified	Layers (A5) (LRR (C)	Depleted Ma	atrix (F3)			Other (Explain in Remarks)		
1 cm Mu	ick (A9) (LRR D)		Redox Dark	Surface (I	F6)			,	
	d Below Dark Surfac	e (A11)	Depleted Da	•	,				
	ark Surface (A12)		Redox Depr		. ,		³ Indicators	of hydrophytic vegetation	n and
	lucky Mineral (S1)		Vernal Pools		-,		wetland hydrology must be present,		
	Bleyed Matrix (S4)			,				isturbed or problematic.	
Restrictive I	_ayer (if present):								
Туре:									
Depth (ind	ches):						Hydric Soil	Present? Yes	No
Remarks:									

HYDROLOGY

I

Wetland Hydrology Indicato	rs:				
Primary Indicators (minimum	of one requi		Secondary Indicators (2 or more required)		
Surface Water (A1)			Salt Crust (B11)		Water Marks (B1) (Riverine)
High Water Table (A2)			Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)
Saturation (A3)			Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonri	verine)		Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverin	e)	Oxidized Rhizospheres along Livir	ng Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonr	iverine)		Presence of Reduced Iron (C4)		Crayfish Burrows (C8)
Surface Soil Cracks (B6)			Recent Iron Reduction in Tilled Sc	oils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aeri	Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)				Shallow Aquitard (D3)
Water-Stained Leaves (B	9)		Other (Explain in Remarks)		FAC-Neutral Test (D5)
Field Observations:					
Surface Water Present?	Yes	No	Depth (inches):		
Water Table Present?	Yes	No	Depth (inches):		
Saturation Present? (includes capillary fringe)	uration Present? Yes No Depth (inches): Wetland Hy			Wetland Hyd	Irology Present? Yes No _√
Describe Recorded Data (stre	am gauge,	monitori	ng well, aerial photos, previous inspec	tions), if availat	ole:
Remarks:					

Project/Site: Tijuana River Floodplain - Transect 2	City/County: San Diego County Sampling Date: 11/03/2021					
Applicant/Owner: USIBWC	State: <u>CA</u> Sampling Point: <u>T2-DP2</u>					
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South, 🗈					
Landform (hillslope, terrace, etc.): Floodplain - Side Channel	Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0.5</u>					
Subregion (LRR): C-19 Lat: 32	.544582 Long: <u>-117.058877</u> Datum: <u>NAD83</u>					
Soil Map Unit Name: <u>Chino Silt Loam</u>	NWI classification: <u>N/A</u>					
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hydrology significantly	v disturbed? Are "Normal Circumstances" present? Yes No					
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes No _✓ Hydric Soil Present? Yes No _✓ Wetland Hydrology Present? Yes _✓ No _✓ Remarks: Ves _✓ No _✓	within a wetland? Tes NO V					

Small vegetated side channel - standing water upstream.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				
		= Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC:33 (A/B)
Sapling/Shrub Stratum (Plot size: 5 X 5)				$\frac{11}{100} = \frac{11}{100} = 1$
1. <u>Salix exigua</u>	5	Y	FACW	Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total Co		FACU species x 4 =
Herb Stratum (Plot size: 5 X 5)				UPL species x 5 =
1. <u>Persicaria amphibia</u>	3	N	OBL	Column Totals: (A) (B)
2. <u>Schoenoplectus</u>	2	N	OBL	
3. <u>Xanthium strumarium</u>	10	N	FAC	Prevalence Index = B/A =
4. <u>Cynodon dactylon</u>	55	Y	FACU	Hydrophytic Vegetation Indicators:
5. Amaranthus retroflexus	20	Y	FACU	Dominance Test is >50%
6. Malva Neglecta	2	N	FACU	Prevalence Index is ≤3.0 ¹
7. Lolium perenne	2	N	FAC	Morphological Adaptations ¹ (Provide supporting
8. Knotweed	n		FAC	data in Remarks or on a separate sheet)
		= Total Co		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)				
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co	ver	Hydrophytic
% Para Craund in Llark Stratum	% Bare Ground in Herb Stratum 4 % Cover of Biotic Crust			
		านอเ		Present? Yes No _✓
Remarks:				

Profile Desc	cription: (Describe	to the dept	h needed to docu	nent the in	dicator	or confirn	n the absence	of indicato	rs.)		
Depth	Matrix		Redox Features								
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks		
0-12	10YR 3/2	100					Sandy Lo+	Moist			
	-										
¹ Type: C=C	oncentration, D=Dep	letion RM=	Reduced Matrix C	S=Covered	or Coate	d Sand G	rains ² Loo	ation: PI =	Pore Lining,	M=Matrix	
	Indicators: (Applic								matic Hydric		
Histosol			Sandy Red		,			/luck (A9) (L			
	pipedon (A2)		Stripped Ma	. ,				/luck (A10) (,		
	istic (A3)		Loamy Muc	()	(F1)			ed Vertic (F	,		
	en Sulfide (A4)		Loamy Gleyed Matrix (F2)			Red Parent Material (TF2)					
	d Layers (A5) (LRR (C)	Depleted Matrix (F3)			Other (Explain in Remarks)					
1 cm Mu	uck (A9) (LRR D)	,	Redox Darl	K Surface (F	-6)				,		
Deplete	d Below Dark Surfac	e (A11)	Depleted D	ark Surface	e (F7)						
Thick Da	ark Surface (A12)		Redox Depressions (F8)				³ Indicators	of hydrophy	tic vegetatio	n and	
Sandy M	/lucky Mineral (S1)		Vernal Pools (F9)			wetland	hydrology m	nust be prese	ent,		
Sandy G	Bleyed Matrix (S4)						unless d	isturbed or p	problematic.		
Restrictive	Layer (if present):										
Туре:											
Depth (in	ches):						Hydric Soil	Present?	Yes	No	✓
Remarks:							•				

HYDROLOGY

Wetland Hydrology Indicate	ors:				
Primary Indicators (minimum	of one requ	ired; che	ck all that apply)	Secondary Indicators (2 or more required)	
Surface Water (A1)			Salt Crust (B11)	Water Marks (B1) (Riverine)	
High Water Table (A2)			Biotic Crust (B12)	✓ Sediment Deposits (B2) (Riverine)	
Saturation (A3)			Aquatic Invertebrates (B13)	✓ Drift Deposits (B3) (Riverine)	
Water Marks (B1) (Nonri	iverine)		Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)	
Sediment Deposits (B2)	(Nonriverin	ıe)	Oxidized Rhizospheres along Livir	ng Roots (C3) Dry-Season Water Table (C2)	
Drift Deposits (B3) (Non	riverine)		Presence of Reduced Iron (C4)	Crayfish Burrows (C8)	
Surface Soil Cracks (B6)	I.		Recent Iron Reduction in Tilled Sc	oils (C6) Saturation Visible on Aerial Imagery (C9)	
Inundation Visible on Aer	rial Imagery	(B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Water-Stained Leaves (B	39)		Other (Explain in Remarks)	FAC-Neutral Test (D5)	
Field Observations:					
Surface Water Present?	Yes	No	Depth (inches):		
Water Table Present?	Yes	No	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes _ ✓ _ No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

Project/Site:	City/County:	Samp	ling Date:
Applicant/Owner: USIBWC		State: Samp	ling Point:
Investigator(s):	Section, Township, Range	::	
Landform (hillslope, terrace, etc.):	Local relief (concave, cor	vex, none):	Slope (%):
Subregion (LRR): Lat: _	L	ong:	Datum:
Soil Map Unit Name:		NWI classification:	
Are climatic / hydrologic conditions on the site typical for this time o	of year? Yes No	(If no, explain in Remarks	S.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "No	rmal Circumstances" present	? Yes No
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If need	ed, explain any answers in Re	emarks.)
SUMMARY OF FINDINGS – Attach site map show	ing sampling point loc	ations, transects, imp	ortant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3			Species Across All Strata: (B)
4		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
0		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)			
1			¹ Indicators of hydric soil and wetland hydrology must
2			be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust	Present? Yes <u>No</u>
Remarks:			

Depth	Matrix		Redo	x Feature					
inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
-1	10YR 3/2	100		<u> </u>	<u>.</u>		<u>Clay Loam</u>	Dry, Granular	
12	10YR 3/2	100		. .			<u>Clay Loam</u>	Blocky	
				- <u> </u>	 				
					·				
	Concentration, D=De					d Sand G		cation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :	
Histoso Histic E Black H Hydrog Stratific Deplet Thick I Sandy Sandy Sandy Depth (i		C) ce (A11)	Sandy Red Stripped Ma Loamy Muc Loamy Gley Depleted M Redox Dark Depleted D Redox Dep Vernal Poo	Rs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Vernal Pools (F9)			1 cm I 2 cm I Red uc Red P Other ³ Indicators wetland unless c	Muck (A9) (LRR C) Muck (A10) (LRR B) ced Vertic (F18) Parent Material (TF2) (Explain in Remarks) s of hydrophytic vegetation and hydrology must be present, disturbed or problematic.	
ame as									
	ydrology Indicators	:							
imary Inc	licators (minimum of	one require	d; check all that appl	y)			Seco	ndary Indicators (2 or more required	
_	e Water (A1)		Salt Crust	` '				Water Marks (B1) (Riverine)	
	/ater Table (A2)		Biotic Cru	st (B12)			Sediment Deposits (B2) (Riverine)		
Satura	tion (A3)		Aquatic Invertebrates (B13)				Drift Deposits (B3) (Riverine)		

- ____ Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine)
 - ____ Oxidized Rhizospheres along Living Roots (C3) ____ Dry-Season Water Table (C2)
 - Presence of Reduced Iron (C4)
 - ____ Recent Iron Reduction in Tilled Soils (C6) ____ Thin Muck Surface (C7)
 - Inundation Visible on Aerial Imagery (B7)

Inundation Visible on Aerial Imagery (B7)		Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Water-Stained Leaves (B9)		Other (Explain in Remarks) FAC-Neutral Test (D5)	
Field Observations:				
Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (st	ream gauge	e, monitorin	ig well, aerial photos, previous	inspections), if available:
Remarks [.]				

Remarks:

Water Marks (B1) (Nonriverine)

____ Drift Deposits (B3) (Nonriverine)

____ Surface Soil Cracks (B6)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

____ Saturation Visible on Aerial Imagery (C9)

Project/Site:	City/County:	Samplin	g Date:	
Applicant/Owner: USIBWC		State: Samplin	g Point:	
Investigator(s):	Section, Township, Range	:		
Landform (hillslope, terrace, etc.):	Local relief (concave, con	Slope (%):		
Subregion (LRR): Lat:	Lo	ong:	Datum:	
Soil Map Unit Name:		NWI classification:		
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes No	(If no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology significan	tly disturbed? Are "Nor	mal Circumstances" present?	Yes No	
Are Vegetation, Soil, or Hydrology naturally	problematic? (If neede	ed, explain any answers in Rem	narks.)	
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point loca	ations, transects, impor	rtant features, etc.	

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)			Number of Dominant Species That Are OBL, FACW, or FAC:
2			Total Number of Dominant
3			Species Across All Strata: (B)
4		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)			
1,			¹ Indicators of hydric soil and wetland hydrology must
2			be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust	Present? Yes No
Remarks:			

Depth	Matrix			x Feature							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
-12	10YR 3/2	100					Sandy Loar	Moist			
					·						
ype: C=0	Concentration, D=De	pletion, RM	=Reduced Matrix, C	S=Covere	d or Coate	d Sand G	rains. ² Loo	cation: PL=Pore Lining, M=Matrix.			
	il Indicators: (Appli							o for Problematic Hydric Soils ³ :			
Black H Hydrog Stratifie 1 cm M Deplete Thick I Sandy Sandy estrictive	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Layers (A5) (LRR Muck (A9) (LRR D) ted Below Dark Surfa Dark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) E Layer (if present):	ce (A11)		atrix (S6) cky Minera yed Matrix (atrix (F3) < Surface ark Surfac ressions ((F2) (F6) ce (F7)		2 cm M Red uc Red P Other ³ Indicators wetland unless d	Muck (A9) (LRR C) Muck (A10) (LRR B) ced Vertic (F18) Parent Material (TF2) (Explain in Remarks) s of hydrophytic vegetation and hydrology must be present, disturbed or problematic.			
emarks: ame as	5 T2-DP2										
YDROLO	OGY										
etland H	lydrology Indicators	:									
rimary Ind	dicators (minimum of	one require	d; check all that app	y)			Secor	ndary Indicators (2 or more required			
Surface	e Water (A1)		Salt Crust	(B11)			V	Water Marks (B1) (Riverine)			
_ High W	Vater Table (A2)		Biotic Cru	st (B12)				Sediment Deposits (B2) (Riverine)			
Saturation (A3)			Aquatic In	Aquatic Invertebrates (B13)				Drift Deposits (B3) (Riverine)			

- ____ Aquatic Invertebrates (B13)
 - ____ Hydrogen Sulfide Odor (C1)
 - ____ Oxidized Rhizospheres along Living Roots (C3) ____ Dry-Season Water Table (C2)
 - Presence of Reduced Iron (C4)
 - Recent Iron Reduction in Tilled Soils (C6)
 - Thin Muck Surface (C7)

Inundation Visible on Ae	erial Imager	y (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)			Other (Explain in Remarks) FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (str	ream gauge	e, monitorin	g well, aerial photos, previous	inspections), if available:
Remarks:				

Water Marks (B1) (Nonriverine)

____ Drift Deposits (B3) (Nonriverine)

____ Surface Soil Cracks (B6)

Sediment Deposits (B2) (Nonriverine)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

____ Saturation Visible on Aerial Imagery (C9)

Project/Site: Tijuana River Floodplain	_ City/County: San Diego County Sampling Date:							
Applicant/Owner: USIBWC	State: <u>CA</u> Sampling Point: <u>T2-DP5</u>							
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	_ Section, Township, Range: <u>Sections 2, 3, 4, 9, 10, 11 Township 19 South, </u>							
Landform (hillslope, terrace, etc.): Floodplain terrace	_ Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0</u>							
Subregion (LRR): C-19 Lat: 32	2.543589 Long: -117.059739 Datum: NAD83							
Soil Map Unit Name: Chino Silt Loam	NWI classification: N/A							
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)								
Are Vegetation \checkmark , Soil \checkmark , or Hydrology \checkmark significantly	tly disturbed? Are "Normal Circumstances" present? Yes No							
Are Vegetation, Soil, or Hydrology naturally pro	problematic? (If needed, explain any answers in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Yes No	 Is the Sampled Area 							
Hydric Soil Present? Yes No _✓	− within a Wetland? Yes No ✓							
Wetland Hydrology Present? Yes No	-							

Remarks:

High point between side channel swales low flow channel main channel

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3			<u> </u>	Species Across All Strata: <u>2</u> (B)
4			·	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)		= Total Co	ver	That Are OBL, FACW, or FAC: <u>50</u> (A/B)
				Prevalence Index worksheet:
1 2				Total % Cover of: Multiply by:
3				OBL species x 1 =
				FACW species x 2 =
45				FAC species x 3 =
5		= Total Co		FACU species x 4 =
Herb Stratum (Plot size: 5 x 5)		10(a) C0	VEI	UPL species x 5 =
1. Arundo donax	20	Y	FACW	Column Totals: (A) (B)
2. Raphanus sativus	35	Y	FACU	
3. Lolium perenne	15	N	FAC	Prevalence Index = B/A =
4. Cynodon dactylon	5	Ν	FACU	Hydrophytic Vegetation Indicators:
5. Amaranthus retroflexus	1	N	FACU	Dominance Test is >50%
6. Glebionis coronaria	_	N	UPL	Prevalence Index is ≤3.0 ¹
7. Erodium cicutarium	1	N	UPL	Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)		-		
1				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				be present, unless disturbed of problematic.
		= Total Co	ver	Hydrophytic
% Bare Ground in Herb Stratum 20 % Cover	Vegetation Present? Yes No∕			
Remarks:				1

Depth	Matrix	Redo	x Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-12	<u>10yr 3/2</u>	100		<u> </u>			<u>Clay Loam</u>		
							·		
	Concentration, D=Dep					d Sand G		PL=Pore Lining, M	
Hydric Soil Histoso	I Indicators: (Applic ol (A1)	cable to all	LRRs, unless othe Sandy Red		ied.)		Indicators for Pro	oblematic Hydric S (S) (LRR C)	Solls":
Histic E	Epipedon (A2)		Stripped Matrix (S6)				2 cm Muck (A10) (LRR B)		
	Histic (A3)		Loamy Mucky Mineral (F1)				Reduced Vertic (F18)		
	gen Sulfide (A4)		Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)		
	ed Layers (A5) (LRR	C)	Depleted Matrix (F3)				Other (Explain in Remarks)		
	1uck (A9) (LRR D)		Redox Dark		. ,				
	ed Below Dark Surfac	ce (A11)	Depleted D				3		
	Dark Surface (A12)		Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and		
	Mucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present, unless disturbed or problematic.		
	Gleyed Matrix (S4)						uniess disturbe	u or problematic.	
Type:	E Layer (if present):								
	nches):						Hydric Soil Prese	nt? Yes	No √
Remarks:	,								
Same as	רחח								
Same as	DFI								
YDROLO									
Wetland H	ydrology Indicators	:							
Primary Ind	licators (minimum of a	one require	d [.] check all that ann	V)			Secondary Ir	ndicators (2 or more	required)

Primary Indicators (minimur	n of one requ		Secondary Indicators (2 or more required)						
Surface Water (A1)		_	Salt Crust (B11)	_	Water Marks (B1) (Riverine)				
High Water Table (A2)		_	Biotic Crust (B12)	_	Sediment Deposits (B2) (Riverine)				
Saturation (A3)		_	Aquatic Invertebrates (B13)	_	Drift Deposits (B3) (Riverine)				
Water Marks (B1) (Non	riverine)	_	Hydrogen Sulfide Odor (C1)	_	Drainage Patterns (B10)				
Sediment Deposits (B2) (Nonriverir	ie) _	Oxidized Rhizospheres along Liv	ing Roots (C3)	Dry-Season Water Table (C2)				
Drift Deposits (B3) (No	nriverine)	_	Presence of Reduced Iron (C4)	_	Crayfish Burrows (C8)				
Surface Soil Cracks (B6	3)	_	Recent Iron Reduction in Tilled S	oils (C6)	Saturation Visible on Aerial Imagery (C9)				
Inundation Visible on A	erial Imagery	(B7)	Thin Muck Surface (C7)	_	Shallow Aquitard (D3)				
Water-Stained Leaves	(B9)	_	Other (Explain in Remarks)	Other (Explain in Remarks) FA					
Field Observations:									
Surface Water Present?	Yes	No	Depth (inches):						
Water Table Present?	Yes	No	Depth (inches):						
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydr	rology Present? Yes No _✓				
Describe Recorded Data (st	ream gauge,	monitorin	g well, aerial photos, previous inspec	ctions), if availabl	le:				
Remarks:									

Project/Site:	City/County:		Sampling Date:	
Applicant/Owner: USIBWC		State:	_ Sampling Point:	
Investigator(s):	Section, Town	ship, Range:		
Landform (hillslope, terrace, etc.):	Local relief (co	oncave, convex, none):	Slope (%):	
Subregion (LRR):	Lat:	Long:	Datum:	
Soil Map Unit Name:		NWI classif	ication:	
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes	No (If no, explain in	Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances"	present? Yes No	
Are Vegetation, Soil, or Hydrology	_ naturally problematic?	(If needed, explain any answ	ers in Remarks.)	
SUMMARY OF FINDINGS – Attach site ma	p showing sampling	point locations, transect	s, important features, etc.	

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

		nt Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1)	<u>% Cover</u> Species		Number of Dominant Species That Are OBL, FACW, or FAC:
2			Total Number of Dominant Species Across All Strata: (B)
4			Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:) 1			Prevalence Index worksheet:
2			Total % Cover of:Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
	= Total 0		FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8	= Total 0		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:) 1) 2			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum % Cove	= Total (Cover	Hydrophytic Vegetation Present? Yes No
Remarks:			1

Depth	Matrix	-	Redo	x Feature	s					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
-12	<u>10YR 3/2</u>	100			·		<u>Sandy Loar</u>	Moist		
					·					
					·					
ype: C=0	Concentration, D=Dep	oletion, RM	Reduced Matrix, C	S=Covere	d or Coate	d Sand G	rains. ² Loo	cation: PL=Pore Lining, M=Matrix.		
/dric Soi	I Indicators: (Applic	cable to all	LRRs, unless othe	rwise not	ed.)		Indicators	for Problematic Hydric Soils ³ :		
Black H Hydrog Stratifie 1 cm M Deplete Thick I Sandy Sandy	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Layers (A5) (LRR Muck (A9) (LRR D) ed Below Dark Surfac Dark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) a Layer (if present):		Sandy Red Stripped M Loamy Muc Loamy Gle Depleted M Redox Darl Redox Dep Redox Dep Vernal Poo	atrix (S6) cky Minera yed Matrix (atrix (F3) < Surface ark Surfac ressions ((F2) (F6) ce (F7)		2 cm M Reduc Red P Other ³ Indicators wetland	Muck (A9) (LRR C) Muck (A10) (LRR B) ced Vertic (F18) Parent Material (TF2) (Explain in Remarks) of hydrophytic vegetation and hydrology must be present, disturbed or problematic.		
••	nches):						Hydric Soil	Present? Yes No		
emarks:	DP2 - cobbles c	on surfac	e							
DROLO	DGY									
etland H	ydrology Indicators	:								
imary Ind	dicators (minimum of	one require	d; check all that app	y)			Secor	ndary Indicators (2 or more required)		
Surfac	e Water (A1)		Salt Crust	(B11)			V	Vater Marks (B1) (Riverine)		
_ High W	Vater Table (A2)		Biotic Cru	st (B12)			S	Sediment Deposits (B2) (Riverine)		
Satura	tion (A3)		Aquatic In	vertebrate	es (B13)		Drift Deposits (B3) (Riverine)			

____ Hydrogen Sulfide Odor (C1) ____ Oxidized Rhizospheres along Living Roots (C3) ____ Dry-Season Water Table (C2) Sediment Deposits (B2) (Nonriverine)

- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)

Inundation Visible on A	erial Imager	y (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves	(B9)	_	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes	No	Depth (inches):	_
Water Table Present?	Yes	No	Depth (inches):	_
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	_ Wetland Hydrology Present? Yes No _
Describe Recorded Data (st	tream gauge	e, monitorin	g well, aerial photos, previous insp	ections), if available:

Remarks:

Water Marks (B1) (Nonriverine)

Drift Deposits (B3) (Nonriverine)

Surface Soil Cracks (B6)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

____ Saturation Visible on Aerial Imagery (C9)

Project/Site:	_ City/County:	Sampling	g Date:	
Applicant/Owner: USIBWC	_	State: Sampling	g Point:	
Investigator(s):	Section, Township, Range	:		
Landform (hillslope, terrace, etc.):	Local relief (concave, con	vex, none):	Slope (%):	
Subregion (LRR): Lat:	L	ong:	Datum:	
Soil Map Unit Name:		NWI classification:		
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes No	(If no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology significan	tly disturbed? Are "No	mal Circumstances" present?	Yes No	
Are Vegetation, Soil, or Hydrology naturally	problematic? (If need	ed, explain any answers in Rem	arks.)	
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point loc	ations, transects, impor	tant features, etc.	

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3			Species Across All Strata: (B)
4		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
0		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)			
1			¹ Indicators of hydric soil and wetland hydrology must
2			be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust	Present? Yes <u>No</u>
Remarks:			

Depth	Matrix		Redo	x Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-1	10YR 3/2	100		<u></u>			<u>Clay Loam</u>	Dry, Granular	
L-12	10YR 3/2	100					lay Loam	Blocky	
				- <u></u>					
	Concentration, D=De					d Sand G		cation: PL=Pore Lining, M=Matrix.	
•	il Indicators: (Appli	cable to all			ea.)			for Problematic Hydric Soils ³ :	
	ol (A1) Epipedon (A2)		Sandy Red	• •				Muck (A9) (LRR C) Muck (A10) (LRR B)	
	Histic (A3)		Stripped Matrix (S6) Loamy Mucky Mineral (F1)			Reduced Vertic (F18)			
	gen Sulfide (A4)			· · · · · · · · · · · · · · · · · · ·		arent Material (TF2)			
	ed Layers (A5) (LRR	C)	Depleted Matrix (F3)			Other (Explain in Remarks)			
	Auck (A9) (LRR D)	- /	Redox Dark	. ,	(F6)			Х Г	
Deplet	ed Below Dark Surfa	ce (A11)	Depleted D	ark Surfac	ce (F7)				
Thick [Dark Surface (A12)		Redox Dep	ressions (F8)		³ Indicators	of hydrophytic vegetation and	
_ Sandy	Mucky Mineral (S1)		Vernal Poo	s (F9)			wetland hydrology must be present,		
_ Sandy	Gleyed Matrix (S4)						unless d	listurbed or problematic.	
estrictive	e Layer (if present):								
Type: _									
Depth (i	inches):						Hydric Soil	Present? Yes No	
emarks:							1		
ame as									
anne as									
YDROL	OGY								
Vetland H	lydrology Indicators	:							
rimary Inc	dicators (minimum of	one require	d; check all that appl	y)			Secor	ndary Indicators (2 or more required	
Surfac	e Water (A1)		Salt Crust	(B11)			V	Vater Marks (B1) (Riverine)	
High V	Vater Table (A2)		Biotic Crust (B12)				Sediment Deposits (B2) (Riverine)		

- ____ Aquatic Invertebrates (B13)
 - ____ Hydrogen Sulfide Odor (C1)
 - ____ Oxidized Rhizospheres along Living Roots (C3) ____ Dry-Season Water Table (C2)
 - _____ Presence of Reduced Iron (C4)
 - Recent Iron Reduction in Tilled Soils (C6)
- Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)

Water-Stained Leaves (Water-Stained Leaves (B9) Other (Explain in Remarks)		Other (Explain in Remarks)	FAC-Neutral Test (D5)	
Field Observations:					
Surface Water Present?	Yes	No	Depth (inches):		
Water Table Present?	Yes	No	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes No	-
Describe Recorded Data (str	ream gauge	, monitorin	g well, aerial photos, previous in	inspections), if available:	
Remarks [.]					

Remarks:

Saturation (A3)

Water Marks (B1) (Nonriverine)

Drift Deposits (B3) (Nonriverine)

____ Surface Soil Cracks (B6)

Sediment Deposits (B2) (Nonriverine)

____ Drift Deposits (B3) (Riverine)

____ Saturation Visible on Aerial Imagery (C9)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

____ Shallow Aquitard (D3)

Project/Site:	City/County:		Sampling Date:
Applicant/Owner: USIBWC		State:	Sampling Point:
Investigator(s):	Section, Township, Range	:	
Landform (hillslope, terrace, etc.):	Local relief (concave, con	vex, none):	Slope (%):
Subregion (LRR): La	at: Lo	ong:	Datum:
Soil Map Unit Name:		NWI classifica	ation:
Are climatic / hydrologic conditions on the site typical for this tim	e of year? Yes No	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology signif	icantly disturbed? Are "Nor	mal Circumstances" pi	resent? Yes No
Are Vegetation, Soil, or Hydrology natur	ally problematic? (If neede	ed, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map sho	wing sampling point loca	ations, transects,	important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)			Number of Dominant Species That Are OBL, FACW, or FAC:
2			Total Number of Dominant
3			Species Across All Strata: (B)
4		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)			
1,			¹ Indicators of hydric soil and wetland hydrology must
2			be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust	Present? Yes No
Remarks:			

Depth Matrix			Redo	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-5	10YR 3/2	100					Loam	Dry	
5-15	<u>10YR 3/2</u>	100					Sand	Dry	
	oncentration, D=Dep					d Sand G		bcation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :	
Histosol			Sandy Red		:u.)			Muck (A9) (LRR C)	
	pipedon (A2)		Stripped M					Muck (A10) (LRR B)	
	istic (A3)		Loamy Mu	. ,	(F1)			ced Vertic (F18)	
	en Sulfide (A4)		Loamy Gle	2	· ,			Parent Material (TF2)	
	d Layers (A5) (LRR	C)	Depleted M	•	. ,		Other (Explain in Remarks)		
	uck (A9) (LRR D)		Redox Dar	• •	F6)			· · ·	
Deplete	d Below Dark Surfac	e (A11)	Depleted D	ark Surfac	e (F7)				
Thick Da	ark Surface (A12)		Redox Dep	oressions (F	-8)		³ Indicators	s of hydrophytic vegetation and	
Sandy M	Mucky Mineral (S1)		Vernal Poo	ls (F9)			wetland hydrology must be present,		
	Gleyed Matrix (S4)						unless	disturbed or problematic.	
Restrictive	Layer (if present):								
Туре:									
Depth (in	ches):						Hydric Soi	il Present? Yes No	
Remarks:									
nemarks.									

Wetland Hydrology Indicators:						
Primary Indicators (minimum	of one requi		Secondary Indicators (2 or more required)			
Surface Water (A1)			Salt Crust (B11)		Water Marks (B1) (Riverine)	
High Water Table (A2)			Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)	
Saturation (A3)			Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)	
Water Marks (B1) (Nonr	iverine)		Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)	
Sediment Deposits (B2)	(Nonriverine	e)	Oxidized Rhizospheres along Livir	ng Roots (C3)	Dry-Season Water Table (C2)	
Drift Deposits (B3) (Non	riverine)		Presence of Reduced Iron (C4)		Crayfish Burrows (C8)	
Surface Soil Cracks (B6))		Recent Iron Reduction in Tilled So	oils (C6)	Saturation Visible on Aerial Imagery (C9)	
Inundation Visible on Ae	rial Imagery	(B7)	Thin Muck Surface (C7)		Shallow Aquitard (D3)	
Water-Stained Leaves (E	39)		Other (Explain in Remarks)		FAC-Neutral Test (D5)	
Field Observations:						
Surface Water Present?	Yes	_ No	Depth (inches):			
Water Table Present?	Yes	_ No	Depth (inches):			
Saturation Present?	Yes	_ No	Depth (inches):	Wetland Hyd	Irology Present? Yes No	
(includes capillary fringe)	0000 00000	monitori	ing well, porial photos, provious inspec	tione) if availat		
Describe Recorded Data (Str	eam gauge,	noniton	ing well, aerial photos, previous inspect	lions), il avallat	Je.	
Remarks:						
Debris						

Project/Site:	City/County:		Sampling Date:
Applicant/Owner: USIBWC		State:	Sampling Point:
Investigator(s):	_ Section, Towns	hip, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):		Slope (%):
Subregion (LRR): Lat:		Long:	Datum:
Soil Map Unit Name:		NWI classific	cation:
Are climatic / hydrologic conditions on the site typical for this time of y	/ear? Yes	_ No (If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significantl	y disturbed?	Are "Normal Circumstances" p	present? Yes No
Are Vegetation, Soil, or Hydrology naturally p	roblematic?	(If needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	g sampling p	oint locations, transects	, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3			Species Across All Strata: (B)
4		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
0		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)			
1			¹ Indicators of hydric soil and wetland hydrology must
2			be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust	Present? Yes No No
Remarks:			

	Color (moist) 10YR 4/2	<u>%</u> 100	Color (moist)	%	Type ¹	Loc ²	Texture		Remar	(S	
	10YR 4/2	100									
6-15 1		100					Clay	<u>Granular</u>	/moist		
	10YR 4/2	100					Clay Moist				
		<u> </u>									
		<u> </u>				<u> </u>					
					·			. <u> </u>			
					·						
					·						
¹ Type: C=Con	centration, D=De	pletion, RM=	=Reduced Matrix, C	S=Covered o	or Coated	l Sand G	rains. ² Lo	cation: PL=	Pore Lining	g, M=Ma	atrix.
Hydric Soil Ind	dicators: (Appli	cable to all	LRRs, unless othe	rwise noted	.)		Indicators	for Proble	matic Hyd	ric Soils	s ³ :
Histosol (A	A1)		Sandy Red	ox (S5)			1 cm l	Muck (A9) (I	RR C)		
Histic Epipedon (A2)			Stripped M	atrix (S6)			2 cm I	Muck (A10)	(LRR B)		
Black Histi	ic (A3)		Loamy Mud	Loamy Mucky Mineral (F1)					18)		
Hydrogen	Sulfide (A4)		Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)				
Stratified L	Layers (A5) (LRR	C)	Depleted Matrix (F3)				Other (Explain in Remarks)				
	k (A9) (LRR D)		Redox Dar	Redox Dark Surface (F6)							
	Below Dark Surfa	ice (A11)		ark Surface (
	k Surface (A12)	~ /		pressions (F8		³ Indicators of hydrophytic vegetation and					
	icky Mineral (S1)			Vernal Pools (F9)				wetland hydrology must be present.			
·	eyed Matrix (S4)							listurbed or	•	,	
	yer (if present):										
Туре:											
Depth (inch	ies):						Hydric Soi	Present?	Yes	No	o
Remarks:							•				

HYDROLOGY

Wetland Hydrology Indicate	ors:							
Primary Indicators (minimum	of one requir	Secondary Indicators (2 or more required)						
Surface Water (A1)			_ Salt Crust (B11)		Water Marks (B1) (Riverine)			
High Water Table (A2)			Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)			
Saturation (A3)			_ Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)			
Water Marks (B1) (Nonr	iverine)	_	_ Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)			
Sediment Deposits (B2)	(Nonriverine	≥)	_ Oxidized Rhizospheres along Livir	ng Roots (C3)	Dry-Season Water Table (C2)			
Drift Deposits (B3) (Non	riverine)		Presence of Reduced Iron (C4)		Crayfish Burrows (C8)			
Surface Soil Cracks (B6)			_ Recent Iron Reduction in Tilled Sc	oils (C6)	Saturation Visible on Aerial Imagery (C9)			
Inundation Visible on Ae	rial Imagery ((B7)	_ Thin Muck Surface (C7)		Shallow Aquitard (D3)			
Water-Stained Leaves (B9)			Other (Explain in Remarks)		FAC-Neutral Test (D5)			
Field Observations:								
Surface Water Present?	Yes	_ No	Depth (inches):					
Water Table Present?	Yes	_ No	Depth (inches):					
Saturation Present? (includes capillary fringe)	Yes	_ No	Depth (inches):	Wetland Hyd	drology Present? Yes No			
Describe Recorded Data (stre	eam gauge, r	monitoring	well, aerial photos, previous inspec	tions), if availa	ble:			
Remarks:								

Project/Site: <u>Tijuana River Floodplain - Transect 3</u>		City/County	: San Dieg	go County	Sa	impling Date	: 11/()3/2021
-			State:					
Investigator(s): <u>Esa Crumb, Zak Erickson, Abe Margo</u>								
Landform (hillslope, terrace, etc.): Floodplain				-				
Subregion (LRR): <u>C-19</u>								
Soil Map Unit Name: <u>Chino Silt Loam</u>								
Are climatic / hydrologic conditions on the site typical for this	s time of ye	ear? Yes	No	(If no, ex	plain in Rem	arks.)		
Are Vegetation \checkmark , Soil \checkmark , or Hydrology \checkmark s	significantly	disturbed?	Are "	Normal Circums	stances" prese	ent? Yes _	1	No <u> </u>
Are Vegetation, Soil, or Hydrology r	naturally pro	oblematic?	(If nee	eded, explain an	y answers in	Remarks.)		
SUMMARY OF FINDINGS – Attach site map	showing	g samplir	ig point l	locations, tr	ansects, ii	mportant	featur	es, etc
Hydrophytic Vegetation Present? Yes N	lo	le th	e Samplec	1 Aroa				
Hydric Soil Present? Yes N	-		in a Wetla		Yes	No 🗸		
Wetland Hydrology Present? Yes N	lo_ √	with		iiu :	163		—	
Remarks:								
Riparian woodland upstream of Dairy Mar	t Road b	oridge						
		0						
VECETATION lies estentific names of ale	nto							
VEGETATION – Use scientific names of pla								
Tree Stratum (Plot size: <u>30 x 30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance 1				
1. <u>Salix gooddingii</u>		Y		Number of Do That Are OBL			3	(A)
2								_ ()
3				Total Number Species Acro			3	(B)
4								,
	80	_ = Total Co	over	Percent of Do That Are OBL			100	(A/B)
Sapling/Shrub Stratum (Plot size: 5 X 5)								_ ()
1. <u>Salix gooddingii (sapling)</u>				Prevalence I				
2					Cover of:			
3				OBL species				
4				FACW specie				
5				FAC species				
Herb Stratum (Plot size: 5 x 5)	3	_ = Total Co	over	FACU specie				
1. Rumex crispus	25	Y	FAC	UPL species				
2. <u>Hirschfeldia incana</u>		 N	UPL	Column Total	s:	(A)		(B)
3. Arundo donax	2		FACW	Prevale	nce Index = I	B/A =		
4. Echinochloa crus-galli				Hydrophytic	Vegetation I	ndicators:		
5				Dominan	-			
6				Prevalen				
7				Morpholo	gical Adaptat n Remarks or	tions ¹ (Provid	le suppo	orting
8		<u> </u>				•		,
	22			Problema	atic Hydrophy	uc vegetation	n (⊏xpl	am)

32 = Total Cover

_____ = Total Cover

_ _

Dense	Salix	goodingii.	Mature	trees	and	some	saplings
Dense	oann	9000m.9	matare			001110	50,000,000

% Bare Ground in Herb Stratum _____65 % Cover of Biotic Crust ____

Woody Vine Stratum (Plot size: _____)

2._____

1. ____

Remarks:

¹Indicators of hydric soil and wetland hydrology must

Yes <u>√</u> No _

be present, unless disturbed or problematic.

Hydrophytic Vegetation

Present?

Texture Remarks Clay Granular moist Clay Moist Clay Moist			
Claγ Moist			
ins. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ : 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
Indicators for Problematic Hydric Soils ³ : 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
Indicators for Problematic Hydric Soils ³ : 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
Indicators for Problematic Hydric Soils ³ : 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
Indicators for Problematic Hydric Soils ³ : 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
Indicators for Problematic Hydric Soils ³ : 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
 2 cm Muck (A10) (LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and 			
wetland hydrology must be present, unless disturbed or problematic.			
Hydric Soil Present? Yes No∕			

	e)
	e)
Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine)	
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10)	
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2)	
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8)	
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imag	ery (C9)
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3)	
Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5)	
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No	_ ✓
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

Project/Site: Tijuana River Floodplain - Transect 3	City/County: San Diego County Sampling Date: 11/03/2021							
Applicant/Owner: USIBWC	State: <u>CA</u> Sampling Point: <u>T3-DP4</u>							
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South, R							
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, none): <u>None</u> Slope (%): <u>0</u>							
Subregion (LRR): <u>C-19</u>	Lat: <u>32.548015</u> Long: <u>-117.06422</u> Datum: <u>NAD83</u>							
Soil Map Unit Name: <u>Chino Silt Loam</u>	NWI classification: N/A							
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Low tree cover, high cover by ruderal wetlated	$b_{1} = \frac{\sqrt{1-1}}{\sqrt{1-1}}$ within a Wetland? Yes No							

Tree Stratum (District)	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1)		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:4 (A)
2				(')
3.				Total Number of Dominant Species Across All Strata:4 (B)
4				
EVE		= Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 5 X 5)				, <u></u> , ,
1. <u>Salix gooddingii</u>		Y		Prevalence Index worksheet:
2. <u>Baccharis salicifolia</u>				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	18	= Total Co	ver	FACU species x 4 =
Herb Stratum (Plot size: 5 x 5)				UPL species x 5 =
1. <u>Arundo donax</u>		Y		Column Totals: (A) (B)
2. <u>Ricinus communis</u>	3	<u>N</u>	FACU	
3. Xanthium strumarium	15	Y	FAC	Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5				_✓ Dominance Test is >50%
6				Prevalence Index is $\leq 3.0^1$
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)	43	= Total Co	ver	
				¹ Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2		= Total Co	ver	Hydrophytic
% Bare Ground in Herb Stratum <u>39</u> % Cove	r of Biotic C	rust		Vegetation Present? Yes <u>√</u> No
Remarks:				1
Xanthium is senesced				

Depth	cription: (Describe Matrix			x Feature					15.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks		
0-15	10YR 3/2	100					Clay	Moist			
											_
											—
											—
¹ Type: C=C	oncentration, D=Dep	pletion, RM=	Reduced Matrix, CS	S=Covered	d or Coate	d Sand G	rains. ² Lo	cation: PL=I	Pore Lining,	M=Matrix.	_
Hydric Soil	Indicators: (Applic	cable to all	LRRs, unless othe	rwise not	ed.)		Indicators	for Probler	matic Hydric	c Soils ³ :	
Histoso	()		Sandy Red	()				Muck (A9) (L			
	pipedon (A2)	Stripped Ma	. ,			2 cm Muck (A10) (LRR B)					
	listic (A3)		Loamy Muc	•	• •			ced Vertic (F	,		
	en Sulfide (A4)	•	Loamy Gley		(⊦2)			Parent Materi	. ,		
	d Layers (A5) (LRR	C)	Depleted M	· · ·			Other	(Explain in F	(Remarks)		
	uck (A9) (LRR D) d Below Dark Surfac	(A 1 1)	Redox Dark Depleted D		,						
	ark Surface (A12)				. ,		³ Indicators	of hydrophy	rtic venetatio	n and	
	Mucky Mineral (S1)		Redox Depressions (F8) Vernal Pools (F9)				³ Indicators of hydrophytic vegetation and wetland hydrology must be present,				
	Gleyed Matrix (S4)							listurbed or p	•	,	
-	Layer (if present):										
Туре:											
Depth (in	iches):						Hydric Soi	I Present?	Yes	No✓	
Remarks:											
Samo ac	DD2 moist clay	,									
Same dS	DP3, moist clay	/									

HYDROLOGY

Wetland Hydrology Indicato	ors:			
Primary Indicators (minimum	of one requ	Secondary Indicators (2 or more required)		
Surface Water (A1)			Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)			Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)			Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonri	verine)		Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverir	ie)	Oxidized Rhizospheres along Livi	ving Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonr	iverine)		Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)			Recent Iron Reduction in Tilled Se	Soils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)			Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)			Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes	No	Depth (inches):	_
Water Table Present?	Yes	No	Depth (inches):	_
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (stre	am gauge,	monitori	ng well, aerial photos, previous inspec	ections), if available:
Remarks:				

Project/Site: Tijuana River Floodplain - Transect 3	City/County: San Diego County Sampling Date: 11/03/2021						
Applicant/Owner: USIBWC	State: CA Sampling Point: T3-DP5						
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	_ Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 Township 19 South,						
Landform (hillslope, terrace, etc.): floodplain	_ Local relief (concave, convex, none): <u>none</u> Slope (%): <u>0</u>						
Subregion (LRR): <u>C-19</u> Lat: <u>32</u>	2.547597 Long: <u>-117.064453</u> Datum: <u>NAD83</u>						
Soil Map Unit Name: Chino Silt Loam	NWI classification: N/A						
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Forested/riparian adjacent to active main low flow	Is the Sampled Area within a Wetland? Yes No						

	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 x 30</u>)		Species?		Number of Dominant Species
1. <u>Salix gooddingii</u>	15	Y	FACW	That Are OBL, FACW, or FAC:3 (A)
2				Total Number of Dominant
3				Species Across All Strata:4 (B)
4				
		= Total Co		Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)
Sapling/Shrub Stratum (Plot size: 5 X 5)				$\frac{111}{1100} \text{ (A/B)}$
1. <u>Salix gooddingii</u>	10	Y	FACW	Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5.				FAC species x 3 =
		= Total Co	wor	FACU species x 4 =
Herb Stratum (Plot size: 5 x 5)		10tal Ct		UPL species x 5 =
1. Arundo donax	20	Y	FACW	
2				Column Totals: (A) (B)
				Prevalence Index = B/A =
3				Hydrophytic Vegetation Indicators:
4				Dominance Test is >50%
5				$ Prevalence Index is \leq 3.0^{1} $
6				
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		-		Problematic Hydrophytic Vegetation ¹ (Explain)
		= Total Co	over	
Woody Vine Stratum (Plot size:)				The discharge of the data and the data at the data to see the set
1. <u>Ipomoea indica</u>	10	<u> </u>	FAC	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2		-		
	10	= Total Co	over	Hydrophytic
% Bare Ground in Herb Stratum <u>60</u> % Cove	r of Biotic C	rust		Vegetation Present? Yes <u>√</u> No
Remarks:				
Arundo mostly senesced				

SOIL

	Matrix	0/		ox Feature	- 1	. 2	- (– –	
inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0-12	<u>10YR 4/1</u>	100	5YR 4/4	1	<u></u>	PL	Loamy Cl+	Moist		
12-18	10YR 4/2	100					Loamy Sa+	Moist		
						-				
							·			
			I=Reduced Matrix, C		- <u> </u>				Pore Lining, M	-Motrix
			I LRRs, unless othe						natic Hydric S	
Histosol			Sandy Rec		,		1 cm N	/luck (A9) (L	RR C)	
Histic Ep	pipedon (A2)		Stripped M					/luck (A10) (
Black Hi	stic (A3)		Loamy Mu	cky Minera	al (F1)		Reduc	ed Vertic (F	18)	
- • •	n Sulfide (A4)		Loamy Gle	•	. ,			arent Materia	. ,	
	Layers (A5) (LRR	C)	Depleted N	· · ·			Other	(Explain in F	lemarks)	
	ick (A9) (LRR D)		Redox Dar		. ,					
	d Below Dark Surfac	e (A11)	Depleted E		• •		³ leadia atoma	of hurdrowhurd	tio	a a d
_	ark Surface (A12)		Redox Dep		(F8)			• • •	tic vegetation	
	lucky Mineral (S1) Gleyed Matrix (S4)		Vernal Poo	is (F9)				isturbed or p	ust be present	t,
	Laver (if present):								i obiematic.	
Type:										
	ches):						Hydric Soil	Present?	Yes	No_√
Remarks:	·									
atat Dard										
aint Ked	ox in upper ho	rizon								

			ators:	Wetland Hydrology Indica				
Secondary Indicators (2 or more required)	Primary Indicators (minimum of one required; check all that apply)							
Water Marks (B1) (Riverine)	Salt Crust (B11)			Surface Water (A1)				
Sediment Deposits (B2) (Riverine)	Biotic Crust (B12)	_		High Water Table (A2)				
Drift Deposits (B3) (Riverine)	Aquatic Invertebrates (B13)	_		Saturation (A3)				
Drainage Patterns (B10)	Hydrogen Sulfide Odor (C1)	_	nriverine)	Water Marks (B1) (Nor				
; (C3) Dry-Season Water Table (C2)	Oxidized Rhizospheres along Living Roots (C3	ne) _	2) (Nonriveri	Sediment Deposits (B2				
Crayfish Burrows (C8)	Presence of Reduced Iron (C4)	_	nriverine)	Drift Deposits (B3) (No				
Saturation Visible on Aerial Imagery (C9)	Recent Iron Reduction in Tilled Soils (C6)	_	6)	Surface Soil Cracks (B				
Shallow Aquitard (D3)	Thin Muck Surface (C7)	y (B7)	erial Imagery	Inundation Visible on A				
FAC-Neutral Test (D5)	Other (Explain in Remarks)	_	(B9)	Water-Stained Leaves				
				Field Observations:				
	Depth (inches):	No	Yes	Surface Water Present?				
	Depth (inches):	No	Yes	Water Table Present?				
nd Hydrology Present? Yes No _√_	Depth (inches): Wetland H	No	Yes	Saturation Present? (includes capillary fringe)				
available:	ng well, aerial photos, previous inspections), if avail	e, monitorin	tream gauge	Describe Recorded Data (s				
				Remarks:				
Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitard (D3) FAC-Neutral Test (D5)	Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Wetland H	y (B7) No No No	nriverine) 6) kerial Imagery (B9) Yes Yes Yes	 Drift Deposits (B3) (No Surface Soil Cracks (B Inundation Visible on A Water-Stained Leaves Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (see Second Seco				

Project/Site: Tijuana River Floodplain	City/County: San Diego County	Sampling Date: <u>11/03/2021</u>
Applicant/Owner: USIBWC	State: CA	Sampling Point: <u>T3-DP6</u>
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9,	10, 11 Township 19 South, 🗟
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, none): <u>None</u>	Slope (%):0
Subregion (LRR): C-19 Lat: 32	.54749 Long: <u>-117.064604</u>	Datum: NAD83
Soil Map Unit Name: <u>Chino Silt Loam</u>	NWI classifica	ation: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Normal Circumstances" pr	resent?Yes No _✓
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No _✓ Hydric Soil Present? Yes No _✓ Wetland Hydrology Present? Yes No _✓	Is the Sampled Area within a Wetland? Yes	No
Remarks:		
High terrace above mainstream/active channel if o	close	

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
		= Total Co		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)				That Are OBL, FACW, or FAC: (A/B)
1				Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
3.				OBL species x 1 =
				FACW species x 2 =
4				FAC species x 3 =
5				
Herb Stratum (Plot size: 5 x 5)		= Total Co	ver	FACU species x 4 =
1. <u>Raphanus sativus</u>	15	Y	FACU	UPL species x 5 =
				Column Totals: (A) (B)
2. <u>Convolvulus arvensis</u>				Prevalence Index = B/A =
3. <u>Foeniculum vulgare</u>			UPL	
4				Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
	35	= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)		-		
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co		Hydrophytic
		-		Vegetation
% Bare Ground in Herb Stratum 65 % Cover	r of Biotic C	rust		Present? Yes No _✓
Remarks:				
Mostly raphanus seedlings				

Depth <u>Matrix</u>		Redo	x Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-18	10YR 4/3	100					<u>Sand</u>	
				- <u> </u>				
		- <u> </u>		- <u> </u>				
	oncentration, D=Dep					d Sand G		PL=Pore Lining, M=Matrix. oblematic Hydric Soils ³ :
Black Hi Hydroge Stratified 1 cm Mu Depleted Thick Da Sandy M	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) (LRR D) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4)		Sandy Red Stripped Ma Loamy Muc Loamy Gle Depleted M Redox Darl Depleted D Redox Dep Vernal Poo	atrix (S6) ky Minera yed Matrix (atrix (F3) k Surface ark Surfac ressions ((F2) (F6) ce (F7)		 1 cm Muck (A 2 cm Muck (A Reduced Ver Red Parent M Other (Explai ³Indicators of hydrodowetland hydrodowetland 	A9) (LRR C) (10) (LRR B) tic (F18)
Restrictive I Type:	Layer (if present):							
	ches):						Hydric Soil Prese	nt? Yes No _√
Remarks: 0-5 dry, 5	-18 moist							
HYDROLO	GY drology Indicators:							

Primary Indicators (minimun	1 of one requ	Secondary Indicators (2 or more required)					
Surface Water (A1)			Salt Crust (B11)		Water Marks (B1) (Riverine)		
High Water Table (A2)		-	Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)		
Saturation (A3)			Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)		
Water Marks (B1) (Non	riverine)	-	Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)		
Sediment Deposits (B2)	(Nonriverin	ie) _	Oxidized Rhizospheres along Living	g Roots (C3)	Dry-Season Water Table (C2)		
Drift Deposits (B3) (Nor	iriverine)		Presence of Reduced Iron (C4)		Crayfish Burrows (C8)		
Surface Soil Cracks (B6)	i)	-	Recent Iron Reduction in Tilled Soi	ls (C6)	Saturation Visible on Aerial Imagery (C9)		
Inundation Visible on A	erial Imagery	(B7)	Thin Muck Surface (C7)		Shallow Aquitard (D3)		
Water-Stained Leaves (B9)	-	_ Other (Explain in Remarks)		FAC-Neutral Test (D5)		
Field Observations:							
Surface Water Present?	Yes	No	Depth (inches):				
Water Table Present?	Yes	No	Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hy	drology Present? Yes No _✓		
Describe Recorded Data (st	ream gauge,	monitori	ng well, aerial photos, previous inspecti	ons), if availa	ble:		
Remarks:							

Project/Site: Tijuana River Floodplain -Transect 3	City/County: San Diego County Sampling	Date: <u>11/03/2021</u>
Applicant/Owner: USIBWC	State: CA Sampling	Point: <u>T3-DP7</u>
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, Township, Range: Sections 2, 3, 4, 9, 10, 11 To	ownship 19 South, 🖥
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, none): None	Slope (%):0
Subregion (LRR): <u>C-19</u> Lat: <u>32</u>	.54749 Long: <u>-117.064604</u>	Datum: NAD83
Soil Map Unit Name: <u>Chino Silt Loam</u>	NWI classification: <u>N/A</u>	\
Are climatic / hydrologic conditions on the site typical for this time of ye		
Are Vegetation 🧹 , Soil 🖌 , or Hydrology 🖌 significantly	v disturbed? Are "Normal Circumstances" present? Y	es No 🖌
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any answers in Remark	(S.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Yes No	Is the Sampled Area within a Wetland? Yes No _	<u>√</u>
Shrub with ruderal understory		

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 x 30</u>)		Species?		Number of Dominant Species	
1. <u>Salix gooddingii</u>				That Are OBL, FACW, or FAC:3	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 4	(B)
4				Percent of Dominant Species	
	3	= Total Co	over		(A/B)
Sapling/Shrub Stratum (Plot size: 5 X 5)					()
1. <u>Baccharis salicifolia</u>		Y		Prevalence Index worksheet:	
2. <u>Salix gooddingii</u>	3	<u> N</u>	FACW	Total % Cover of:Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total Co		FACU species x 4 =	
Herb Stratum (Plot size: 5 x 5)		-		UPL species x 5 =	
1. <u>Raphanus sativus</u>	20	Y	FACU	Column Totals: (A)	
2. <u>Cynodon dacylis</u>	3	N	FACU		_ ()
3. <u>Lolium perenne</u>	10	Y	FAC	Prevalence Index = B/A =	
4. Amaranthus retroflexus	2	N	FACU	Hydrophytic Vegetation Indicators:	
5				✓ Dominance Test is >50%	
6				Prevalence Index is $≤3.0^1$	
7				Morphological Adaptations ¹ (Provide suppo	rting
8				data in Remarks or on a separate sheet)	-
···		= Total Co	wor	Problematic Hydrophytic Vegetation ¹ (Expla	ıin)
Woody Vine Stratum (Plot size:)					
1				¹ Indicators of hydric soil and wetland hydrology	must
2				be present, unless disturbed or problematic.	
				Hydrophytic	
				Vegetation	
% Bare Ground in Herb Stratum 22 % Cove	r of Biotic C	rust		Present? Yes <u>✓</u> No	
Remarks:					
Raphanus seedlings					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix		Redo	K Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-17	10YR 4/3	100					Sand			
17-20	10YR 3/2	100					Loamy Cl+			
		· ·								
							·			
		·								
¹ Type: C=Co	oncentration, D=Dep	letion. RM=	Reduced Matrix. CS	=Covered	l or Coate	d Sand G	rains. ² Location:	PL=Pore Lining,	M=Matrix.	
	Indicators: (Applic							oblematic Hydric		
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm Muck (A	A9) (LRR C)		
Histic Ep	pipedon (A2)		Stripped Matrix (S6)				2 cm Muck (A10) (LRR B)			
Black Hi	stic (A3)		Loamy Mucky Mineral (F1)				Reduced Vertic (F18)			
Hydroge	en Sulfide (A4)		Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)			
	d Layers (A5) (LRR (C)	Depleted Matrix (F3)				Other (Explain in Remarks)			
	ıck (A9) (LRR D)		Redox Dark	```	,					
·	d Below Dark Surfac	e (A11)	Depleted Da		. ,		2			
	ark Surface (A12)		Redox Depr	•	-8)		³ Indicators of hydrophytic vegetation and			
	lucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present,			
	Bleyed Matrix (S4)						unless disturbe	ed or problematic.		
Restrictive I	Layer (if present):									
Туре:										
Depth (ind	ches):						Hydric Soil Prese	ent? Yes	No✓	
Remarks:										

HYDROLOGY

I

Wetland Hydrology Indicators:								
Primary Indicators (minimum	of one requ	Secondary Indicators (2 or more required)						
Surface Water (A1)			Salt Crust (B11)	Water Marks (B1) (Riverine)				
High Water Table (A2)			Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)				
Saturation (A3)			Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)				
Water Marks (B1) (Nonr	iverine)		Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)				
Sediment Deposits (B2)	(Nonriverin	ıe)	Oxidized Rhizospheres along Livir	ing Roots (C3) Dry-Season Water Table (C2)				
Drift Deposits (B3) (Non	riverine)		Presence of Reduced Iron (C4)	Crayfish Burrows (C8)				
Surface Soil Cracks (B6))		Recent Iron Reduction in Tilled Sc	oils (C6) Saturation Visible on Aerial Imagery (C9)				
Inundation Visible on Ae	rial Imagery	′ (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Water-Stained Leaves (B	39)		Other (Explain in Remarks)	FAC-Neutral Test (D5)				
Field Observations:								
Surface Water Present?	Yes	No	Depth (inches):					
Water Table Present?	Yes	No	Depth (inches):					
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes No				
Describe Recorded Data (str	eam gauge,	monitori	ing well, aerial photos, previous inspec	ctions), if available:				
Remarks:								

Project/Site:	City/County:	Sampling	Date:
Applicant/Owner: USIBWC		State: Sampling	Point:
Investigator(s):	Section, Township, Range:		
Landform (hillslope, terrace, etc.):	Local relief (concave, conve	ex, none):	Slope (%):
Subregion (LRR): I	Lat: Lon	g:	_ Datum:
Soil Map Unit Name:		NWI classification:	
Are climatic / hydrologic conditions on the site typical for this tir	ne of year? Yes No	(If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology sign	ificantly disturbed? Are "Norm	al Circumstances" present?	Yes No
Are Vegetation, Soil, or Hydrology natu	rally problematic? (If needed	, explain any answers in Rema	arks.)
SUMMARY OF FINDINGS – Attach site map sh	owing sampling point locat	ions, transects, impor	tant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1)		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2 3			Total Number of Dominant Species Across All Strata: (B)
4 Sapling/Shrub Stratum (Plot size:)		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1,			Prevalence Index worksheet:
2			Total % Cover of:Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)		-	UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5	<u> </u>		Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:) 1 2			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum % Cover		_= Total Cover	Hydrophytic Vegetation Present? Yes No
Remarks:			1

Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
)-17	10YR 4/3	100					Sand	
7-20	10YR 4/3	100					Loamy Clay	
							·	
		_,						
			Deduced Matrix Of				21	D. David Lieban M. Matria
	Concentration, D=De il Indicators: (Appli					a Sana G		PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRR: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Restrictive Layer (if present): Type: Depth (inches):		Stripped Ma Loamy Muc Loamy Gley Depleted M Redox Dark Depleted D Redox Dep Vernal Poo	 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Vernal Pools (F9) 			wetland hydrolo	10) (LRR B) ic (F18) aterial (TF2) n in Remarks) ophytic vegetation and gy must be present, d or problematic.	
emarks: ame as	DP7							
YDROL	OGY							
etland H	ydrology Indicators	:						
rimary Inc	dicators (minimum of	one require	d; check all that appl	y)			Secondary In	dicators (2 or more required
	e Water (A1)		Salt Crust	` '				arks (B1) (Riverine)
	Vater Table (A2)		Biotic Crus	st (B12)				t Deposits (B2) (Riverine)
Satura	Saturation (A3) Aquatic Invertebrates (B13)			Drift Dep	osits (B3) (Riverine)			

- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
 - ____ Oxidized Rhizospheres along Living Roots (C3) ____ Dry-Season Water Table (C2)
 - _____ Presence of Reduced Iron (C4)
 - Recent Iron Reduction in Tilled Soils (C6)
- Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)

Water-Stained Leaves (B9)		_	Other (Explain in Remarks)	FAC-Neutral Test (D5)		
Field Observations:						
Surface Water Present?	Yes	No	Depth (inches):	_		
Water Table Present?	Yes	No	Depth (inches):	_		
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	_ Wetland Hydrology Present? Yes No	-	
Describe Recorded Data (str	ream gauge	e, monitorin	g well, aerial photos, previous insp	pections), if available:		
Demonstrat						

Remarks:

Water Marks (B1) (Nonriverine)

____ Drift Deposits (B3) (Nonriverine)

____ Surface Soil Cracks (B6)

Sediment Deposits (B2) (Nonriverine)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

____ Shallow Aquitard (D3)

____ Saturation Visible on Aerial Imagery (C9)

Project/Site: Tijuana River Floodplain - Transect 3	City/Cou	unty: San Diego County		Sampling Date:	11/31/2021
Applicant/Owner: USIBWC		State	: <u>CA</u>	_ Sampling Point:	T3-DP9
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section	, Township, Range: <u>Sectio</u>	ns 2, 3, 4,	9, 10, 11 Townsł	nip 19 South, 🔒
Landform (hillslope, terrace, etc.): Floodplain	Local re	elief (concave, convex, non	e): <u>None</u>	Sic	ope (%): <u>0</u>
Subregion (LRR): <u>C-19</u>	Lat: <u>32.546547</u>	Zeneration Long: <u>-11</u>	7.06483	Datu	ım: NAD83
Soil Map Unit Name: <u>Chino Silt Loam</u>			NWI classif	fication: <u>N/A</u>	
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes	s No (If no	, explain in	Remarks.)	
Are Vegetation <u>/</u> , Soil <u>/</u> , or Hydrology <u>/</u> s	significantly disturbe	d? Are "Normal Circ	umstances"	present? Yes	No
Are Vegetation, Soil, or Hydrology r	naturally problemation	c? (If needed, explain	any answe	ers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing samp	ling point locations,	transect	ts, important f	eatures, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N		s the Sampled Area vithin a Wetland?	Yes	No∕	-
Remarks:					

Above second (West) active channel, right descending bank.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
		= Total Co	ver	That Are OBL, FACW, or FAC: 50 (A/B)
Sapling/Shrub Stratum (Plot size:)				
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total Co	ver	FACU species x 4 =
Herb Stratum (Plot size: 5 x 5)				UPL species x 5 =
1. <u>Rumex crispus</u>	20	Y	FAC	Column Totals: (A) (B)
2. <u>Raphanus sativus</u>	4 -	Y	FACU	
3. <u>Canoa sp.</u>	5	N		Prevalence Index = B/A =
4. <u>Lolium perenne</u>	5	Ν	FAC	Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)				
1				¹ Indicators of hydric soil and wetland hydrology must
2.				be present, unless disturbed or problematic.
				Hydrophytic
				Vegetation
% Bare Ground in Herb Stratum <u>55</u> % Cove	r of Biotic C	rust		Present? Yes No _✓
Remarks:				

Profile Desc	ription: (Describe	to the dept	h needed to docum	nent the i	ndicator	or confirm	n the absence	of indicators.)	
Depth	Matrix		Redox Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-12	10YR 3/2	96					Sandy Lo +	Moist	
0-12	10YR 4/3	4					Sand	Sand Lense	
		· ·							
		·							
1 Type: C=C	oncentration, D=Dep	letion RM=	Reduced Matrix CS		l or Coate	d Sand G	rains ² Loc	cation: PL=Pore Lining,	M=Matrix
71	Indicators: (Application)	,	,					for Problematic Hydric	^
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm N	uuck (A9) (LRR C)	
	pipedon (A2)		Stripped Matrix (S6)				2 cm Muck (A10) (LRR B)		
Black Hi	• • •			ucky Mineral (F1) Reduced Vertic (F18)					
	en Sulfide (A4)		Loamy Gley	-	. ,			arent Material (TF2)	
	d Layers (A5) (LRR (.)	Depleted Matrix (F3)				Other (Explain in Remarks)		
	ick (A9) (LRR D)	•)	Redox Dark Surface (F6)						
	d Below Dark Surface	- (A11)	Depleted Da						
	ark Surface (A12)	= (ATT)			. ,		³ Indiactora	of hydrophytic vocatatio	n and
	· ,		Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and		
	lucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present,		
-	Bleyed Matrix (S4)						uniess a	listurbed or problematic.	
	Layer (if present):								
<u> </u>									
Depth (ind	ches):						Hydric Soil	Present? Yes	_ No <u>√</u> _
Remarks:									

HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (minimum of one required;	Secondary Indicators (2 or more required)			
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)		
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)		
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)		
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)		
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livir	ng Roots (C3) Dry-Season Water Table (C2)		
Drift Deposits (B3) (Nonriverine)	Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)			
Surface Soil Cracks (B6)	Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6)			
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes N	o Depth (inches):			
Water Table Present? Yes N	o Depth (inches):			
Saturation Present? Yes N (includes capillary fringe)	o Depth (inches):	Wetland Hydrology Present? Yes No		
Describe Recorded Data (stream gauge, mor	itoring well, aerial photos, previous inspec	tions), if available:		
Remarks:				

Project/Site:	City/County:	Sampli	ing Date:
Applicant/Owner: USIBWC		State: Sampli	ng Point:
Investigator(s):	Section, Township, Range		
Landform (hillslope, terrace, etc.):	Local relief (concave, con	/ex, none):	Slope (%):
Subregion (LRR): Lat: _	Lo	ong:	Datum:
Soil Map Unit Name:		NWI classification:	
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes No	(If no, explain in Remarks.	.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Nor	mal Circumstances" present?	Yes No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If neede	d, explain any answers in Re	marks.)
SUMMARY OF FINDINGS – Attach site map showi	ing sampling point loca	itions, transects, impo	ortant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

		nt Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1)	<u>% Cover</u> Species		Number of Dominant Species That Are OBL, FACW, or FAC:
2			Total Number of Dominant Species Across All Strata: (B)
4			Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:) 1			Prevalence Index worksheet:
2			Total % Cover of:Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
	= Total 0		FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is ≤3.0 ¹
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8	= Total 0		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:) 1) 2			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum % Cove	= Total (Cover	Hydrophytic Vegetation Present? Yes No
Remarks:			1

Depth	• •	to the dep	oth needed to docu			or confirm	n the absence	of indicators.)		
(inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	<u>x Feature</u> %	s Tvpe ¹	Loc ²	Texture	Remarks		
0-12	10YR 3/2	96	· · · ·				Sandy Loa	Moist		
0-12	10YR 4/3	4					Sand	Sand Lense		
0-12	1011(4/5						Janu			
					·					
					·					
					·					
¹ Type: C=C	oncentration. D=De	oletion. RM	=Reduced Matrix, C	S=Covere	d or Coate	d Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.		
	,	,	LRRs, unless othe					for Problematic Hydric Soils ³ :		
Histoso	l (A1)		Sandy Red	ox (S5)			1 cm M	Muck (A9) (LRR C)		
Histic E	pipedon (A2)		Stripped Ma	atrix (S6)			2 cm Muck (A10) (LRR B)			
Black H	listic (A3)		Loamy Muc	ky Minera	l (F1)		Reduced Vertic (F18)			
Hydrog	en Sulfide (A4)		Loamy Gle	yed Matrix	(F2)		Red Parent Material (TF2)			
Stratifie	d Layers (A5) (LRR	C)	Depleted M	Depleted Matrix (F3)				Other (Explain in Remarks)		
1 cm M	uck (A9) (LRR D)		Redox Darl	< Surface	(F6)					
Deplete	ed Below Dark Surface	ce (A11)	Depleted D	ark Surfac	e (F7)					
Thick D	ark Surface (A12)		Redox Dep	ressions (F8)		³ Indicators	of hydrophytic vegetation and		
Sandy I	Mucky Mineral (S1)		Vernal Poo	ls (F9)			wetland hydrology must be present,			
	Gleyed Matrix (S4)						unless disturbed or problematic.			
Restrictive	Layer (if present):									
Туре:										
Depth (ir	iches):						Hydric Soil	Present? Yes No		
Remarks:										
Same as	DP9									
Sume us										
HYDROLC	OGY									
Wetland Hy	drology Indicators	:								
Primary Indi	cators (minimum of	one require	d; check all that appl	V)			Seco	ndary Indicators (2 or more required)		
	Water (A1)		Salt Crust					Vater Marks (B1) (Riverine)		
High W	ater Table (A2)		Biotic Cru					Sediment Deposits (B2) (Riverine)		
	Saturation (A3) Aquatic Invertebrates (B13)				Drift Deposits (B3) (Riverine)					

- Aquatic Invertebrates (B13)
 - ____ Hydrogen Sulfide Odor (C1)
 - Oxidized Rhizospheres along Living Roots (C3) ___ Dry-Season Water Table (C2)
 - Presence of Reduced Iron (C4)
 - Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7)

 Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 		y (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
		_	Other (Explain in Remarks) FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (st	ream gauge	e, monitorin	ig well, aerial photos, previous	inspections), if available:
Remarks:				

Water Marks (B1) (Nonriverine)

____ Drift Deposits (B3) (Nonriverine)

Surface Soil Cracks (B6)

Sediment Deposits (B2) (Nonriverine)

____ Drainage Patterns (B10)

____ Crayfish Burrows (C8)

____ Saturation Visible on Aerial Imagery (C9)

Project/Site:	City/County:		Sampling Date:
Applicant/Owner: USIBWC		State:	Sampling Point:
Investigator(s):	_ Section, Township, F	Range:	
Landform (hillslope, terrace, etc.):	_ Local relief (concave	e, convex, none):	Slope (%):
Subregion (LRR): Lat:		Long:	Datum:
Soil Map Unit Name:		NWI classifie	cation:
Are climatic / hydrologic conditions on the site typical for this time of y	/ear? Yes No	(If no, explain in F	Remarks.)
Are Vegetation, Soil, or Hydrology significant	y disturbed? Ar	e "Normal Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If	needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	g sampling point	locations, transects	s, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)			Number of Dominant Species That Are OBL, FACW, or FAC:
2 3			Total Number of Dominant Species Across All Strata: (B)
4		_ = Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size: 5 X 5)		-	UPL species x 5 =
1			Column Totals: (A) (B)
2			、,
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is $\leq 3.0^{1}$
7			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:) 1			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust	Present? Yes <u>No</u>
Remarks:			

Depth	Matrix			x Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-12	10YR 3/2	96					Sandy Loar	Moist	
0-12	10YR 4/3	4		<u> </u>			Sand	Sand Lense	
					·				
					·				
	Concentration, D=De					d Sand G	rains. ² Loo	cation: PL=Pore Lining, M=Matrix.	
•	il Indicators: (Appli	cable to al			ed.)			for Problematic Hydric Soils ³ :	
Histoso	()		Sandy Red					Muck (A9) (LRR C)	
	Epipedon (A2)			Stripped Matrix (S6) Loamy Mucky Mineral (F1)			2 cm Muck (A10) (LRR B) Reduced Vertic (F18)		
Black Histic (A3) Hydrogen Sulfide (A4)			Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)		
	ed Layers (A5) (LRR	C)	Depleted M		(FZ)		Other (Explain in Remarks)		
	Auck (A9) (LRR D)	0)	Redox Dark		(E6)				
	ed Below Dark Surface	ce (A11)	Depleted D		· /				
·	Dark Surface (A12)		Redox Dep		. ,		³ Indicators	of hydrophytic vegetation and	
	Mucky Mineral (S1)		Vernal Poo)		wetland hydrology must be present,		
	Gleyed Matrix (S4)						unless disturbed or problematic.		
	E Layer (if present):							· ·	
Type:									
	inches):						Hydric Soil	Present? Yes No	
Remarks:	,								
same as	DP10								
YDROLO	OGY								
Netland H	ydrology Indicators	:							
Primary Ind	dicators (minimum of	one require	ed; check all that appl	y)			Secor	ndary Indicators (2 or more required	
Surface	e Water (A1)		Salt Crust	(B11)			V	Vater Marks (B1) (Riverine)	
High W	Vater Table (A2)		Biotic Crus	st (B12)			s	Sediment Deposits (B2) (Riverine)	
Satura	tion (A3)		Aquatic In	vertebrate	es (B13)		D	Drift Deposits (B3) (Riverine)	
	Marks (B1) (Nonrive	rino					Drainage Patterns (B10)		

- ____ Oxidized Rhizospheres along Living Roots (C3) ____ Dry-Season Water Table (C2)
 - ____ Crayfish Burrows (C8)

Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4			ring Roots (C3) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Surface Soil Cracks (B6)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Recent Iron Reduction in Tilled S	
Inundation Visible on Aerial	Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)		Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:			
Surface Water Present?	Yes No _	Depth (inches):	
Water Table Present?	Yes No _	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes No _	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream	n gauge, monitor	ring well, aerial photos, previous inspe	ctions), if available:
Remarks:			

Project/Site:	City/County:	Sampl	ing Date:
Applicant/Owner: USIBWC		State: Sampli	ing Point:
Investigator(s):	Section, Township, Range		
Landform (hillslope, terrace, etc.):	Local relief (concave, con	vex, none):	Slope (%):
Subregion (LRR): La	t: Lo	ong:	Datum:
Soil Map Unit Name:		NWI classification:	
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes No	(If no, explain in Remarks	.)
Are Vegetation, Soil, or Hydrology signific	cantly disturbed? Are "Nor	mal Circumstances" present?	Yes No
Are Vegetation, Soil, or Hydrology natura	Illy problematic? (If neede	ed, explain any answers in Re	emarks.)
SUMMARY OF FINDINGS – Attach site map show	wing sampling point loc	ations, transects, impo	ortant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1)		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:
2 3			Total Number of Dominant Species Across All Strata:(B)
4 Sapling/Shrub Stratum (Plot size:)			Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)			UPL species x 5 =
1			Column Totals: (A) (B)
2			
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			Prevalence Index is $\leq 3.0^1$
7	<u> </u>		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8		= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:) 1 2			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum % Cover		= Total Cover	Hydrophytic Vegetation Present? Yes No
Remarks:			

Profile Des	scription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confirn	n the absence	e of indicato	rs.)
Depth	Matrix		Redo	x Features	5				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
0-12	<u>10YR 3/2</u>	96					Sandy Loar	Moist	
0-12	10YR 4/3	4					Sand	Sand Len	se
	_								
						<u> </u>			
	_								
				_					
¹ Type: C=0	Concentration, D=Dep	oletion, RM=Re	educed Matrix, C	S=Covered	d or Coate	d Sand G	rains. ² Lo	cation: PL=	Pore Lining, M=Matrix.
Hydric Soi	I Indicators: (Applic	able to all LR	Rs, unless othe	rwise note	ed.)				matic Hydric Soils ³ :
Histoso	ol (A1)		Sandy Red	ox (S5)			1 cm	Muck (A9) (L	.RR C)
	Epipedon (A2)		Stripped Ma	. ,				Muck (A10) (
	Histic (A3)		Loamy Muc	-				Reduced Vertic (F18)	
	gen Sulfide (A4) ed Layers (A5) (LRR	\mathbf{c}	Loamy Gleyed Matrix (F2) Depleted Matrix (F3)					Red Parent Material (TF2) Other (Explain in Remarks)	
	Auck (A9) (LRR D)	C)	Redox Dark Surface (F6)					(Explain in F	(emarks)
	ed Below Dark Surfac	ce (A11)	Depleted D	•	,				
-	Dark Surface (A12)	()	Redox Dep				³ Indicators	s of hydrophy	rtic vegetation and
	Mucky Mineral (S1)		Vernal Poo	ls (F9)					nust be present,
-	Gleyed Matrix (S4)						unless	disturbed or p	problematic.
	e Layer (if present):								
Туре:			_						
· · ·	nches):		_				Hydric Soi	I Present?	Yes No
Remarks:									
same as	DP10								
HYDROLO	DGY								
Wetland H	ydrology Indicators	:							
	dicators (minimum of o		heck all that appl	V)			Seco	ndary Indica	tors (2 or more required)
	e Water (A1)		Salt Crust	• •				-	(B1) (Riverine)
							posits (B2) (Riverine)		
	_ High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13)							s (B3) (Riverine)	
	Marks (B1) (Nonrive	rine)	Hydrogen					Drainage Pat	
	ent Deposits (B2) (No					Living Roo		-	Nater Table (C2)
	eposits (B3) (Nonrive		Presence		-	-		Crayfish Burr	. ,
	e Soil Cracks (B6)	,						-	sible on Aerial Imagery (C9)
	ace Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6)					·	N - II A !	taud (D0)	

	,			
Inundation Visible on Aerial Imagery (B7)		y (B7)	Thin Muck Surface (C7)) Shallow Aquitard (D3)
Water-Stained Leaves (B9)		_	Other (Explain in Remark	rks) FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (st	ream gauge	, monitorin	g well, aerial photos, previou	bus inspections), if available:
Remarks:				
wrack lines				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site:	City/County:		Sampling Date:
Applicant/Owner: USIBWC		State:	Sampling Point:
Investigator(s):	_ Section, Townsh	hip, Range:	
Landform (hillslope, terrace, etc.):	_ Local relief (cor	ncave, convex, none):	Slope (% :
Subregion (LRR): Lat:		Long:	Datum:
Soil Map Unit Name:		NWI classific	ation:
Are climatic / hydrologic conditions on the site typical for this time of y	/ear? Yes	_ No (If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significantl	y disturbed?	Are "Normal Circumstances" p	present? Yes No
Are Vegetation, Soil, or Hydrology naturally p	roblematic?	(If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	g sampling p	oint locations, transects	, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

VEGETATION – Use scientific names of plants.

Tura Olymphony (District)	Absolute	Dominant Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 1		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:	A)
2			Total Number of Dominant	
3			Species Across All Strata:	B)
4 Sapling/Shrub Stratum (Plot size:		_ = Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC:	(A/B)
1			Prevalence Index worksheet:	
2			Total % Cover of:	Multiply by:
3.			OBL species x	1 =
4			FACW species x	
5			FAC species x	
		= Total Cover	FACU species x	
Herb Stratum (Plot size:			UPL species x	
1			Column Totals: A	
2				
3			Prevalence Index = B/A =	
4			Hydrophytic Vegetation Indica	tors:
5			Dominance Test is >50%	
6			Prevalence Index is $\leq 3.0^1$	
7			Morphological Adaptations ¹ data in Remarks or on a s	
8			Problematic Hydrophytic Veg	jetation ¹ Explain)
Woody Vine Stratum (Plot size:		= Total Cover		
1			¹ Indicators of hydric soil and wetl	
2			be present, unless disturbed or p	roblematic.
		_= Total Cover	Hydrophytic Vegetation	
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust	Present? Yes	No
Remarks:				

Profile Des	cription: (Describe	e to the dep	oth needed to docur	ment the in	ndicator	or confirr	n the absence	of indicato	ors.)	
Depth	Matrix			x Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0-12	10YR 3/2	96					<u>Sandy Loar</u>	Moist		
0-12	10YR 4/3	4					Sand	Sand Len	se	
							<u> </u>			
¹ Type: C=C	oncentration, D=De	pletion, RM	=Reduced Matrix, CS	S=Covered	or Coate	d Sand G	rains. ² Loo	cation: PL=	Pore Lining, I	M=Matrix.
Hydric Soil	Indicators: (Appli	cable to all	LRRs, unless othe	rwise note	ed.)		Indicators	for Proble	matic Hydric	: Soils ³ :
Histoso	l (A1)		Sandy Red	ox (S5)			1 cm M	/luck (A9) (I	RR C)	
Histic E	pipedon (A2)		Stripped Ma	atrix (S6)			2 cm N	/luck (A10)	(LRR B)	
	listic (A3)		Loamy Mucky Mineral (F1)				Reduced Vertic (F18)			
	en Sulfide (A4)		Loamy Gley		(F2)		Red P	arent Mater	ial (TF2)	
	d Layers (A5) (LRR	C)	Depleted M	. ,			Other	(Explain in I	Remarks)	
	uck (A9) (LRR D)		Redox Dark		,					
·	d Below Dark Surfa	ce (A11)	Depleted D		. ,		0			
	ark Surface (A12)		Redox Dep	•	-8)				tic vegetatio	
	Mucky Mineral (S1)		Vernal Pool	ls (F9)					nust be prese	ent,
	Gleyed Matrix (S4)						unless d	isturbed or	problematic.	
	Layer (if present):									
Туре:										
	iches):						Hydric Soil	Present?	Yes	No
Remarks:										
same as	DP10									
sume us	51 10									
HYDROLO	OGY									
Wetland Hv	drology Indicators	:								
-							0			·

Primary Indicators (minimum	of one requ	ired; che	ck all that apply)	S	econdary Indicate	ors (2 or more required)
Surface Water (A1)		-	Salt Crust (B11)	_	_ Water Marks ((B1) (Riverine)
High Water Table (A2)		-	Biotic Crust (B12)	_	_ Sediment Dep	oosits (B2) (Riverine)
Saturation (A3)		-	Aquatic Invertebrates (B13)	_	_ Drift Deposits	(B3) (Riverine)
Water Marks (B1) (Nonr	iverine)	-	Hydrogen Sulfide Odor (C1)		_ Drainage Patte	erns (B10)
Sediment Deposits (B2)	(Nonriverir	ne)	Oxidized Rhizospheres along Livi	ng Roots (C3)	_ Dry-Season W	/ater Table (C2)
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)				_ Crayfish Burro	ows (C8)	
Surface Soil Cracks (B6))	-	Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imag			
Inundation Visible on Ae	rial Imagery	(B7)	Thin Muck Surface (C7)		_ Shallow Aquita	ard (D3)
Water-Stained Leaves (B	39)	-	Other (Explain in Remarks)	_	FAC-Neutral T	Fest (D5)
Field Observations:						
Surface Water Present?	Yes	No	Depth (inches):			
Water Table Present?	Yes	No	Depth (inches):			
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydro	ology Present?	Yes No
Describe Recorded Data (str	eam gauge,	monitori	ng well, aerial photos, previous inspec	tions), if available	:	
Remarks:						

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Tijuana River Floodplain	City/County	: San Diego County		Sampling Date:	11/03/2021
Applicant/Owner: USIBWC		State:	CA	Sampling Point:	T3-DP14
Investigator(s): Esa Crumb, Zak Erickson, Abe Margo	Section, To	wnship, Range: <u>Sections</u>	2, 3, 4, 9	9, 10, 11 Townshi	p19 South, 🗟
Landform (hillslope, terrace, etc.): Floodplain	Local relief	(concave, convex, none):	none	Slop	e (%): <u>0</u>
Subregion (LRR): C-19 Lat:	32.545694	Long: -117.	064783	Datur	n: <u>NAD83</u>
Soil Map Unit Name: <u>Chino Silt Loam</u>		N	NI classifi	cation: <u>N/A</u>	
Are climatic / hydrologic conditions on the site typical for this time o	of year? Yes	No (If no, e	xplain in F	Remarks.)	
Are Vegetation \checkmark , Soil \checkmark , or Hydrology \checkmark significa	ntly disturbed?	Are "Normal Circum	stances"	present? Yes	No 🖌
Are Vegetation, Soil, or Hydrology naturally	v problematic?	(If needed, explain a	ny answei	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map show	ing samplin	g point locations, t	ransect	s, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes No		e Sampled Area			
Hydric Soil Present? Yes No _✓	with	in a Wetland?	Yes	No	
Wetland Hydrology Present? Yes No					

Remarks:

Similar to DP13 but higher cover by Raphanus sativas; active ground squirrel burrows observed near point

VEGETATION – Use scientific names of plants.

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size:) 1)				Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A))
2 3				Total Number of Dominant Species Across All Strata: <u>3</u> (B))
4 (Plot size:)		_= Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/	/B)
1,				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total Co		FACU species x 4 =	
Herb Stratum (Plot size: 5 x 5)				UPL species x 5 =	
1. Raphanus sativus	60	<u> </u>	UPL	Column Totals: (A) (E	B)
2. <u>Lolium perenne</u>		<u> N </u>			
3. Convolvulus arvensis	25	Y	UPL	Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Dominance Test is >50%	
6				Prevalence Index is ≤3.0 ¹	
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)	
Woody Vine Stratum (Plot size:) 1				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	t
% Bare Ground in Herb Stratum % Cove		= Total Co	ver	Hydrophytic Vegetation Present? Yes No√	
Remarks:				<u> </u>	
					1
		= Total Co	ver	Vegetation	

Depth	Matrix		Redo	x Feature	s				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
)-12	<u>10YR 3/2</u>	100					Sandy Lo		
					·				
				<u> </u>	·		·		
	Concentration, D=Dep					d Sand G		PL=Pore Lining, N	
•	I Indicators: (Applic	able to all			ed.)			oblematic Hydric	Solls
	istosol (A1)		Sandy Redox (S5)				1 cm Muck (A9) (LRR C)		
_ Histic Epipedon (A2) _ Black Histic (A3)		Stripped Matrix (S6)				2 cm Muck (A10) (LRR B) Reduced Vertic (F18)			
	gen Sulfide (A4)	Loamy Mucky Mineral (F1)				Red Parent N	. ,		
	ed Layers (A5) (LRR	Loamy Gleyed Matrix (F2) Depleted Matrix (F3)					n in Remarks)		
	Auck (A9) (LRR D)	C)	Redox Darl	• •	(F6)			ii iii Reinaiks)	
	ed Below Dark Surfac	ο (Δ11)	Depleted D		• •				
	Dark Surface (A12)		Redox Dep				³ Indicators of hydr	rophytic vegetation	and
	Mucky Mineral (S1)		Vernal Poo		10)		•	bgy must be preser	
-	Gleyed Matrix (S4)			10 (1 0)				d or problematic.	it,
	E Layer (if present):								
Туре:									
Depth (i	nches):						Hydric Soil Prese	nt? Yes	No_√
Remarks:									
same as	DP10								
YDROL	OGY								
Wetland H	ydrology Indicators:								
Primary Ind	licators (minimum of o	one require	d; check all that appl	y)			Secondary Ir	ndicators (2 or more	e required)

	i ol ollo loquilou, o		
Surface Water (A1)		Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)		Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)		Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nor	riverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Liv	ring Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (No	nriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6	6)	Recent Iron Reduction in Tilled S	Soils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on A	erial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves	(B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:			
Surface Water Present?	Yes No	Depth (inches):	
Water Table Present?	Yes No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	Wetland Hydrology Present? Yes No∕
Describe Recorded Data (st	ream gauge, monite	oring well, aerial photos, previous inspe	ctions), if available:
Remarks:			
1			
1			

APPENDIX E: ARID WEST ORDINARY HIGH WATER MARK DATA FORMS

Location Details: Goat Canyon Creek, downstream of canyon collector Projection: Datum: NAD83 Coordinates: 32.537162838, -117.099921609 em: ignificant trash/debris throughout channel bottom
Coordinates: 32.537162838, -117.099921609 em: gnificant trash/debris throughout channel bottom
gnificant trash/debris throughout channel bottom
diment pond
e data er: cord: of recent effective discharges of flood frequency analysis ecent shift-adjusted rating eights for 2-, 5-, 10-, and 25-year events and the ecent event exceeding a 5-year event
loodplain Units
OHWM Paleo Channel
plain units to assist in identifying the OHWM:
o get an impression of the geomorphology and Draw the cross section and label the floodplain units. stic of one of the hydrogeomorphic floodplain units. class size) and the vegetation characteristics of the

	Mapping on actual photograph	010	
Х	Digitized on computer	Other:	

Project ID: Cross sect	tion ID: GC-T1-OHWM	Date: 11/4/2021	Time:
Cross section drawing:	OHWM 12.2 meters	Rig	
Left			scending
descending	A		
	Low flow chann	nel	
OHWM			
GPS point: GC-Transect 1			
Indicators:			
Change in average sediment to	exture Break	in bank slope	
Change in vegetation species		late successional plan	
Change in vegetation cover	U Other:		
Comments:			
OHWM defined by break in slope, transition texture	on to mature/riparian trees a	and/or upland species, a	and change in sediment
lexture			
Floodplain unit: Low-Flow C	Channel Active	Floodplain	Low Terrace
<u></u>			
GPS point: _GC-Transect 1			
Characteristics of the floodplain unit:			
Average sediment texture: <u>_silts/gravels</u>			
Total veg cover: <u>50</u> % Tree: <u>0</u>		Herb: <u>20</u> %	
Community successional stage:			
NA Early (herbecause & coodling		herbaceous, shrubs, sa	
Early (herbaceous & seedling	s) A Late (r	herbaceous, shrubs, m	ature trees)
Indicators:			
Mudcracks		evelopment	
Ripples		e relief	
\square Drift and/or debris		late successional veg	
Presence of bed and bankBenches	Uther:		
—	U Other:		
Comments:	"		
Low terrace/transition to OHWM from low	/ flow channel		

Project ID:	Cross section ID:	GC-T1-OHWM	Date: 11/4/202	1 Time:
<u>Floodplain unit</u> :	X Low-Flow Channel	☐ Active	Floodplain	Low Terrace
GPS point: GC-Tran	sect 1			
Total veg cover: <u>5</u> Community successi	xture: <u>cobbles/gravels</u> % Tree: <u>%</u>		Herb: <u><1</u> % erbaceous, shrubs erbaceous, shrubs	
Indicators: Mudcracks Ripples Trift and/or Presence of Benches		Surface X Other: Other:	velopment e relief sediment sorting	
Comments:	dry, lots of debris/trash.			
	Low-Flow Channel	Active	Floodplain	Low Terrace
Community successi	xture:% Tree:%	Mid (h	Herb:% erbaceous, shrubs erbaceous, shrubs	
Indicators: Mudcracks Ripples Drift and/or Presence of Benches Comments:	debris bed and bank	Surface	velopment e relief	

Project: Tijuana River USMCA Project	Date: 11/4/2021	Time:		
Project Number:	Town: Dhata haain fila#	State: California		
Stream: Goat Canyon Creek	Photo begin file#:	Photo end file#:		
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo	Location Details:			
$Y \square / N \boxtimes$ Do normal circumstances exist on the site?	Goat Canyon Creek, mid	-channel segment		
$Y \times / N \square$ Is the site significantly disturbed?	Projection:	Datum: NAD83		
	Coordinates: 32.53761	9511, -117.100403225		
Potential anthropogenic influences on the channel system: Managed hydrology (low flows diverted at canyon collector), significant trash/debris throughout channel bottom				
Brief site description:				
Goat Canyon Creek - mid channel segment in delineation area	a, wide channel floodplain a	area		
Checklist of resources (if available):				
X Aerial photography Stream gag				
Dates: Gage numb				
Topographic maps Period of r				
	y of recent effective discl	0		
	s of flood frequency anal	-		
	ecent shift-adjusted ratin	-		
	eights for 2-, 5-, 10-, and	•		
	ecent event exceeding a :	5-year event		
Global positioning system (GPS)				
Hydrogeomorphic F	loodplain Units			
Active Floodplain	Low Terrace	-		
	and the second second			
	/ /			
Low-Flow Channels	OHWM Paleo Ch	annel		
Procedure for identifying and characterizing the flood	plain units to assist in i	dentifying the OHWM:		
1. Walk the channel and floodplain within the study area t	o get an impression of th	ne geomorphology and		
vegetation present at the site.				
2. Select a representative cross section across the channel.				
3. Determine a point on the cross section that is characteri	stic of one of the hydrog	geomorphic floodplain units.		
a) Record the floodplain unit and GPS position.	1 1 1 1			
b) Describe the sediment texture (using the Wentworth	class size) and the veget	ation characteristics of the		
floodplain unit.				
c) Identify any indicators present at the location.	odplain units across the	cross soction		
4. Repeat for other points in different hydrogeomorphic fl 5. Identify the OHWM and record the indicators. Record				
Mapping on aerial photograph GPS				

	Mapping on aerial photograph	015
Х	Digitized on computer	Other:

Project ID:	Cross section ID: GC-T2-OHW	/M Date: 11/4/2021	Time:
Cross section drawing	CHWM 23.1 meters Low flow ch	de	ght scending
OHWM			
GPS point: GC-Transect 2	·		
Indicators: X Change in avera Change in veget Change in veget	ation species \overline{X} Ot	eak in bank slope her: <u>late successional pla</u> her:	
Comments: OHWM defined by break in texture	slope, transition to mature/riparian tre	es and/or upland species,	and change in sediment
Floodplain unit:	Low-Flow Channel Ac	tive Floodplain	X Low Terrace
GPS point: _GC-Transect 2	2		
Characteristics of the flow Average sediment texture Total veg cover: <u>60</u> 9 Community successional NA Early (herbaceou	e: <u>silts/gravels</u> % Tree: <u>10</u> % Shrub: <u>30</u> stage: X Mi	_% Herb: <u>20</u> % d (herbaceous, shrubs, sa te (herbaceous, shrubs, n	
Indicators: Mudcracks Ripples Drift and/or debu Presence of bed Benches Comments: Low terrace/transition to O	ris Su and bank Ot	il development rface relief her: <u>late successional vec</u> her: her:	

Project ID:	Cross section ID:	GC-T2-OHWM	Date: 11/4/2021	Time:
Floodplain unit:	Low-Flow Channel	Active 2	Floodplain	Low Terrace
GPS point:GC-Trai	nsect 2			
Total veg cover: _2 Community success NA	exture: <u>cobbles/gravels</u> 2% Tree:% S		Herb: <u><1</u> % erbaceous, shrubs, erbaceous, shrubs,	
Indicators: Mudcracks Ripples Drift and/o Presence of Benches	r debris	Surface Surface Other: Other:	velopment relief sediment sorting	
Comments:				
	nel, mostly devoid of vegetation		Floodplain	Low Terrace
GPS point:				
Community success	exture:% Tree:% \$	= `	Herb:% erbaceous, shrubs, erbaceous, shrubs,	1 0
Indicators: Mudcracks Ripples Drift and/o Presence of Benches		Surface	velopment relief	
Comments:				

Project: Tijuana River USMCA Project	Date: 11/4/2021	Time:		
Project Number:	Town:	State: California		
Stream: Goat Canyon Creek	Photo begin file#:	Photo end file#:		
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo Y / N X Do normal circumstances exist on the site?	Location Details:			
$Y \times / N $ Is the site significantly disturbed?	Projection: Coordinates: 32.5378201	Datum: NAD83		
Potential anthropogenic influences on the channel syst		26, -117:101390029		
Managed hydrology (low flows diverted at canyon collector), significant trash/debris throughout channel bottom				
Brief site description:				
Goat Canyon Creek - downstream segment near access road	crossing			
Checklist of resources (if available):XAerial photographyDates:Stream gagTopographic mapsPeriod of r	ber:			
	of recent effective discha	0		
	s of flood frequency analys	sis		
	ecent shift-adjusted rating			
	eights for 2-, 5-, 10-, and 2	•		
X Existing delineation(s) for sitemost rGlobal positioning system (GPS)	ecent event exceeding a 5-	year event		
X Other studies				
	leedalein Linite			
Hydrogeomorphic F				
Active Floodplain	Low Terrace	<u>*</u>		
Low-Flow Channels	OHWM Paleo Chan			
Procedure for identifying and characterizing the flood	plain units to assist in ide	entifying the OHWM:		
1. Walk the channel and floodplain within the study area	o get an impression of the	geomorphology and		
vegetation present at the site.				
2. Select a representative cross section across the channel.				
3. Determine a point on the cross section that is characteria	stic of one of the hydroge	omorphic floodplain units.		
a) Record the floodplain unit and GPS position.b) Describe the sediment texture (using the Wentworth)	class size) and the vegetat	ion characteristics of the		
floodplain unit.	class size) and the vegetat	ion characteristics of the		
c) Identify any indicators present at the location.				
4. Repeat for other points in different hydrogeomorphic fl	oodplain units across the c	cross section.		
5. Identify the OHWM and record the indicators. Record				
Mapping on aerial photograph GPS				

	Mapping on aerial photograph		
Х	Digitized on computer	Other:	

Project ID:	Cross section ID: G	C-T3-OHWM	Date: 11/4/202	21 Time:
Cross section draw	ing:	OHWM		
		7 meters		~
	Left	/		Right
	descending		C	descending
		\mathbf{A}		
		Low flow chan	nel	
OHWM				
GPS point: <u>GC-Transe</u>	ct 3			
Indicators:	1			
	erage sediment texture getation species		in bank slope	Inlants
= 0	getation cover			
Comments:				
OHWM defined by brea	k in slope, transition to mature	/riparian trees	and/or upland spec	ies, and change in sediment
texture		I		, U
<u>Floodplain unit:</u>	Low-Flow Channel	Active Active	e Floodplain	X Low Terrace
GPS point: GC-Transe	act 3			
Characteristics of the	floodplain unit:			
Average sediment text	-	1 0/		
Community successio		rub: <u>15</u> %	Herb: <u>5</u> %	
	nar stage.	X Mid (1	nerbaceous, shrub	s, saplings)
	ceous & seedlings)		herbaceous, shrub	
·				
Indicators:			avalannant	
			evelopment e relief	
\square Ripples \square Drift and/or d	lebris		late successional	vegetation
Presence of b			·	
Benches			·	
Comments:				
Low terrace/transition to	o OHWM from low flow channe	el		

Project ID:	Cross section ID:	GC-T3-OHWM	Date:	Time:
Floodplain unit:	Low-Flow Channel	☐ Active	Floodplain	Low Terrace
GPS point:GC-Trans	sect 3			
Total veg cover: _<1 Community succession	xture: <u>cobbles/gravels</u>	= `	Herb: <u><1</u> % erbaceous, shrubs erbaceous, shrubs	
Indicators: Mudcracks Ripples Drift and/or Presence of Benches Comments:		Surface X Other: Other:	velopment relief sediment sorting	
Narrower low flow cha	annel, devoid of vegetation, s	some trash/debris.		
<u>Floodplain unit</u> : GPS point:	Low-Flow Channel	Active	Floodplain	Low Terrace
Community succession	xture:% Tree:%	Mid (he	Herb:% erbaceous, shrubs erbaceous, shrubs	
Indicators: Mudcracks Ripples Drift and/or Presence of Benches Comments:	debris bed and bank	Surface	velopment e relief	

Project: Tijuana River USMCA Project Project Number: Stream: Smuggler's Gulch drainage Investigator(s): Esa Crumb, Zak Erikson, Abe Margo	Date: 11/4/2021 Town: Photo begin file#:	Time: State: California Photo end file#:
$Y \square / N \blacksquare Do normal circumstances exist on the site?$	Location Details: Smuggler's Gulch draina	age downstream of canyon collecto
$Y \times / N \square$ Is the site significantly disturbed?	Projection: Coordinates: 32.5403	Datum: NAD83 12067, -117.087184271
Potential anthropogenic influences on the channel syst Managed hydrology (low flows diverted at canyon collector), o channel)		nt and vegetation removal in
Brief site description:		
Smuggler's Gulch drainage, downstream of canyon collector of	outlet	
XVegetation mapsResultXSoils mapsMost rRainfall/precipitation mapsGage h	ber: ecord: y of recent effective disc s of flood frequency ana ecent shift-adjusted ratio	lysis ng nd 25-year events and the
Hydrogeomorphic F	Floodplain Units	
Active Floodplain	OHWM Paleo C	
Procedure for identifying and characterizing the flood	plain units to assist in	identifying the OHWM:
 Walk the channel and floodplain within the study area to vegetation present at the site. Select a representative cross section across the channel. Determine a point on the cross section that is characteric a) Record the floodplain unit and GPS position. Describe the sediment texture (using the Wentworth floodplain unit. c) Identify any indicators present at the location. Repeat for other points in different hydrogeomorphic flips. Identify the OHWM and record the indicators. Record Mapping on aerial photograph 	Draw the cross section a istic of one of the hydro class size) and the vege loodplain units across the	nd label the floodplain units. geomorphic floodplain units. tation characteristics of the he cross section.

	015
X Digitized on computer	Other:

Project ID:	Cross section ID: SG	T1-OHWM Date: 11/4/202	Time:
Cross section drawing	ng:		
	descending	B.6 meters OHWM	Right descending
OHWM			
GPS point: <u>SG Transect</u>	t 1		
	rage sediment texture setation species setation cover	 K Break in bank slope X Other: <u>late successional</u> Other: 	
Comments: OHWM defined by break texture	in slope, transition to mature/ri	parian trees and/or upland speci	es, and change in sediment
Floodplain unit: [GPS point:	Low-Flow Channel	Active Floodplain	I Low Terrace
Characteristics of the fl Average sediment textu Total veg cover: <u>60</u> Community succession	ure: <u>silts/gravels</u> _ % Tree: <u>35</u> % Shru	b: <u>15</u> % Herb: <u>10</u> %	
NA NA	eous & seedlings)	Mid (herbaceous, shrub)Late (herbaceous, shrub)	
Indicators: Mudcracks Ripples Drift and/or de Presence of be Benches Comments: Low terrace/transition to		 Soil development Surface relief Other: late successional Other:	

Project ID:	Cross section ID	SG-T1-OHWM	Date: 11/4/202	1 Time:
<u>Floodplain unit</u> :	Low-Flow Channel	Active I	Floodplain	Low Terrace
GPS point:SG-Trar	nsect 1			
Total veg cover: _4 Community success NA	exture: <u>cobbles/gravels</u> 40% Tree:%		Herb: <u>10</u> % erbaceous, shrubs, erbaceous, shrubs	1 0
Indicators: Mudcracks Ripples Torift and/o Resence of Benches	r debris	Surface Surface Other: C Other: C	velopment relief early/mid successi exposed roots sediment sorting	
Comments:				
Low flow channel co	ntains areas of ponding but n	o surface flows.		
Floodplain unit:	Low-Flow Channel	Active 1	Floodplain	Low Terrace
GPS point:				
Community success	exture:% Tree:%		Herb:% erbaceous, shrubs, erbaceous, shrubs	
Indicators: Mudcracks Ripples Drift and/o Presence of Benches		Surface Other: _ Other: _	velopment relief	
Comments:				

Project: Tijuana River USMCA Project	Date: 11/4/2021	Time:			
Project Number:	Town:	State: California			
Stream: Smuggler's Gulch drainage	Photo begin file#:	Photo end file#:			
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo					
$Y \square / N \blacksquare$ Do normal circumstances exist on the site?	Y / N X Do normal circumstances exist on the site? Location Details: Smuggler's Gulch drainage, mid-reach				
$Y \times / N \square$ Is the site significantly disturbed?	Projection: Coordinates: 32.541142	Datum: NAD83			
Potential anthropogenic influences on the channel syst Managed hydrology (low flows diverted at canyon collector), c	em:				
channel)					
Brief site description:					
Smuggler's Gulch drainage, mid-reach, upstream of access ro	oad.				
Checklist of resources (if available):					
X Aerial photography Stream gag					
Dates: Gage numb					
Topographic maps Period of r					
	y of recent effective disch	0			
	s of flood frequency analy				
	X Soils maps Most recent shift-adjusted rating				
	eights for 2-, 5-, 10-, and	-			
\square Existing delineation(s) for site most recent event exceeding a 5-year event					
Global positioning system (GPS)					
Hydrogeomorphic F	loodplain Units				
Active Floodplain	Low Terrace	-			
		A			
	en e				
Low-Flow Channels	OHWM Paleo Cha	innel			
Procedure for identifying and characterizing the flood	plain units to assist in ic	lentifying the OHWM:			
1. Walk the channel and floodplain within the study area to vegetation present at the site.	to get an impression of the	e geomorphology and			
2. Select a representative cross section across the channel.	Draw the cross section and	d label the floodplain units.			
3. Determine a point on the cross section that is characteri					
a) Record the floodplain unit and GPS position.	, , , , , , , , , ,	r i i i i i i i i i i i i i i i i i i i			
b) Describe the sediment texture (using the Wentworth	class size) and the vegeta	ation characteristics of the			
floodplain unit.					
c) Identify any indicators present at the location.					
4. Repeat for other points in different hydrogeomorphic fl	oodplain units across the	cross section.			
5. Identify the OHWM and record the indicators. Record					
Mapping on aerial photograph	GPS				
X Digitized on computer	Other:				

	Mapping on actual photograph	
Х	Digitized on computer	Other:

Project ID: Cross section	ID: SG-T2-OHWM Date: 11/4/2021 Time:
Cross section drawing:	\sim
Left descending	14.8 meters OHWM Low flow channel
<u>OHWM</u>	
GPS point: SG Transect 2	
Indicators: X Change in average sediment texture Change in vegetation species X Change in vegetation cover	re X Break in bank slope X Other: <u>late successional plants</u> Other:
Comments: OHWM defined by break in slope, transition to texture	riparian shrubs and/or upland species, and change in sediment
Floodulain unite U	nel Active Floodplain X Low Terrace
Floodplain unit: Low-Flow Chan	nel 🗌 Active Floodplain 🛛 Low Terrace
GPS point: SG-Transect 2	
Characteristics of the floodplain unit: Average sediment texture: <u>silts/gravels</u> Total veg cover: <u>60</u> % Tree: <u>10</u> % Community successional stage: NA Early (herbaceous & seedlings)	 Shrub: <u>30</u>% Herb: <u>20</u>% Mid (herbaceous, shrubs, saplings) Late (herbaceous, shrubs, mature trees)
Indicators: Mudcracks Ripples Drift and/or debris Presence of bed and bank Benches Comments: Low terrace/transition to OHWM from low flow	 Soil development Surface relief Other: late successional vegetation Other:

Project ID:	Cross section ID:	SG-T2-OHWM	Date: 11/4/202	Time:
Floodplain unit:	X Low-Flow Channel	Active	Floodplain	Low Terrace
GPS point:SG-Tra	ansect 2			
Total veg cover: Community success	exture: <u>cobbles/gravels</u> 35% Tree:% S		Herb: <u>10</u> % erbaceous, shrubs erbaceous, shrubs	
Indicators: Mudcracks Ripples X Drift and/o Presence of Benches	r debris	Surface	velopment e relief early/mid-success	
Comments:				
	Low-Flow Channel		Floodplain	Low Terrace
Community success	exture:% Tree:% \$		Herb:% erbaceous, shrubs erbaceous, shrubs	1 0
Indicators: Mudcracks Ripples Drift and/o Presence of Benches Comments:		Surface	velopment e relief	

Project: Tijuana River USMCA Project Project Number: Stream: Smuggler's Gulch drainage Investigator(s): Esa Crumb, Zak Erikson, Abe Margo	Date: 11/4/2021 Town: Photo begin file#:	Time: State: California Photo end file#:	
$Y \square / N \boxtimes$ Do normal circumstances exist on the site?	Location Details: Smuggler's Gulch drainag	ge, upstream of Monument Rd	
$Y \times / N \square$ Is the site significantly disturbed?	Projection: Coordinates: 32.543211	Datum: NAD83 369, -117.088207407	
Potential anthropogenic influences on the channel system: Managed hydrology (low flows diverted at canyon collector), channel dredging (sediment and vegetation removal in channel)			
Brief site description:			
Smuggler's Gulch drainage, upstream of Monument Road.			
XVegetation mapsResultXSoils mapsMost rRainfall/precipitation mapsGage hXExisting delineation(s) for sitemost rGlobal positioning system (GPS)XXOther studies	ber: ecord: y of recent effective disch s of flood frequency analy ecent shift-adjusted rating heights for 2-, 5-, 10-, and ecent event exceeding a 5	ysis g 1 25-year events and the	
Hydrogeomorphic F	loodplain Units		
Active Floodplain	OHWM Paleo Cha	annel	
Procedure for identifying and characterizing the flood	plain units to assist in ic	lentifying the OHWM:	
 Walk the channel and floodplain within the study area vegetation present at the site. Select a representative cross section across the channel. Determine a point on the cross section that is character a) Record the floodplain unit and GPS position. Describe the sediment texture (using the Wentworth floodplain unit. 	Draw the cross section an istic of one of the hydrog	d label the floodplain units. eomorphic floodplain units.	
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 Mapping on aerial photograph			

Х	Digitized on computer	Other:	

Project ID: Cross s	ection ID: SG-T3-OHWM	Date: 11/4/2021	Time:
Cross section drawing:			<
Left descending	11.9 meters OHWM	Rig des	ht cending
OHWM			
GPS point: <u>SG Transect 3</u>			
Indicators: ▲ Change in average sediment ▲ Change in vegetation spect ▲ Change in vegetation cove	es X Other:	in bank slope _late successional plan	
Comments: OHWM defined by break in slope, tran texture	sition to riparian shrubs and/or	upland species, and ch	ange in sediment
			7
Floodplain unit: Low-Flow	w Channel Active	Floodplain X	Low Terrace
GPS point: Transect 3			
Characteristics of the floodplain up Average sediment texture: <u>_silts/gra</u> Total veg cover: <u>60</u> % Tree: Community successional stage: NA Early (herbaceous & seedl	<u>vels</u> 10% Shrub: <u>30</u> % ⊠ Mid (h	Herb: <u>20</u> % herbaceous, shrubs, saj herbaceous, shrubs, ma	
Indicators: Mudcracks Ripples Drift and/or debris Presence of bed and bank Benches	Surfac X Other: Other:	evelopment e relief late successional vege	
Comments:			
Low terrace/transition to OHWM from	low flow channel		

Project ID:	Cross section ID:	SG-T3-OHWM	Date: 11/4/2021	Time:
Floodplain unit:	X Low-Flow Channel	Active 1	Floodplain	Low Terrace
GPS point:SG-Tran	isect 3		-	
Total veg cover: <u>40</u> Community successi	xture: <u>Cobbles/gravels</u> 0% Tree:%		Herb: <u>10</u> % erbaceous, shrubs, erbaceous, shrubs,	
Indicators: Mudcracks Ripples Drift and/or Presence of Benches	debris bed and bank	Surface Surface Other: Other:	velopment relief sediment sorting	
Comments:				
Low flow channel su	upports early/mid succession	al wetland shrubs a	nd scattered herbs,	channel is dry.
Floodplain unit:	Low-Flow Channel	Active 1	Floodplain	Low Terrace
GPS point:			Ĩ	
Community successi	xture:% Tree:%		Herb:% erbaceous, shrubs, erbaceous, shrubs,	1
Indicators: Mudcracks Ripples Drift and/or Presence of Benches Comments:	debris bed and bank	Surface	velopment relief	

Project: Tijuana River USMCA Project	Date: 11/3/2021	Time:	
Project Number:	Town:	State: California	
Stream: Tijuana River	Photo begin file#:	Photo end file#:	
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo	Lassting Datallas		
$Y \square / N \blacksquare Do$ normal circumstances exist on the site?	Location Details: Tijuana River Floodplain	downstream of Mexico border	
$Y \times / N \square$ Is the site significantly disturbed?	Projection: Coordinates: 32.542593	Datum: NAD83	
Potential anthropogenic influences on the channel syst		.,	
Managed hydrology (upstream diversions), managed vegetati		nces (tilling)	
Priof cite description.			
Brief site description:		de in her viennen. Ele e de le in	
Tijuana River floodplain, downstream of concrete floodway cha	annel. I ransect area under	rlain by riprap. Floodplain	
confined by levees to north and south.			
Checklist of resources (if available):			
X Aerial photography X Stream gag	a data		
Dates: Gage numb			
XTopographic mapsPeriod of re			
	y of recent effective discl	harges	
	s of flood frequency anal	0	
	ecent shift-adjusted ratin	-	
	heights for 2-, 5-, 10-, and	-	
	ecent event exceeding a :	•	
Global positioning system (GPS)			
X Other studies			
Hydrogeomorphic F	Ioodolain Units		
Active Floodplain	Low Terrace	*	
		N.	
	en e		
Low-Flow Channels	OHWM Paleo Cha	annel	
Procedure for identifying and characterizing the flood	plain units to assist in i	dentifying the OHWM:	
1. Walk the channel and floodplain within the study area t	to get an impression of th	ne geomorphology and	
vegetation present at the site.			
2. Select a representative cross section across the channel.			
3. Determine a point on the cross section that is characteri	stic of one of the hydrog	geomorphic 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	-		
Mapping on aerial photograph	GPS		

	mapping on actual photograph		
Х	Digitized on computer	Other	:

Project ID: Cross section ID:	TRF-T1-OWHM Date: 11/3/2021 Time:
Cross section drawing:	Right descending
descending	low flow/main channel
<u>OHWM</u>	
GPS point: _Transect 1- DP3 and DP4	
Indicators: Change in average sediment texture Change in vegetation species Change in vegetation cover	 X Break in bank slope X Other: <u>Inundation model and inun</u>dation on aerial image Other:
Comments: OHWM defined by inundation model (USACE 2 observations used to defined low flow channel an	018) and evidence of inundation on imagery. In-field d floodplain indicators.
Floodplain unit: X Low-Flow Channel	Active Floodplain Low Terrace
GPS point: Transect 1 - DP3 and DP4	
Characteristics of the floodplain unit: Average sediment texture: <u>coarse silt</u> Total veg cover: <u>5-10</u> % Tree: <u>0</u> % S Community successional stage: NA X Early (herbaceous & seedlings)	Shrub: _0% Herb: <u>5-10</u> % Mid (herbaceous, shrubs, saplings) Late (herbaceous, shrubs, mature trees)
Indicators: X Mudcracks Ripples X Drift and/or debris X Presence of bed and bank	 Soil development Surface relief Other: Other:

Comments:

X Benches

Stable low flow channel visible on aerial imagery and observed in the field. Area underlain by riprap. Low bench below right descending bank.

Other: _____

Project ID:	Cross section ID	TRF-T1-OWHM	Date: 11/3/2021	Time:
Floodplain unit:	Low-Flow Channel	X Active	Floodplain	Low Terrace
GPS point:				
-				
Characteristics of the Average sediment te:				
		Shrub: 0 %	Herb: 0-90 %	
Community successi				
	0 11')		erbaceous, shrubs	1 0 /
[^] Early (herba	aceous & seedlings)	Late (he	erbaceous, shrubs	, mature trees)
Indicators:		_		
Mudcracks			velopment	
Ripples X Drift and/or	debris	Surface		
	bed and bank	Other:		
Benches				
Comments:				
Trash and debris obser	ved throughout floodplain.			
<u>Floodplain unit</u> :	Low-Flow Channel	☐ Active	Floodplain	X Low Terrace
GPS point:				
Characteristics of the	e floodplain unit: xture: Silt-loam (compac	cted)		
Total veg cover: 0)% Tree:%	Shrub: %	Herb: %	
Community successi				
	0 11'	= `	erbaceous, shrubs	1 0 /
Early (herba	aceous & seedlings)		erbaceous, shrubs	, mature trees)
Indicators:		_		
Mudcracks			velopment	
Ripples Drift and/or	debris	Surface	Access road and	levee walls define high
	bed and bank	Other:	terrace limits	C
Benches		Other:		
Comments:				

Project: Tijuana River USMCA Project	Date: 11/3/2021	Time:			
Project Number:	Town:	State: California			
Stream: Tijuana River	Photo begin file#:	Photo end file#:			
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo					
Y / N X Do normal circumstances exist on the site? Location Details: Tijuana River Floodplain, middle of delineation area					
$Y \times / N \square$ Is the site significantly disturbed?	Projection: Coordinates: 32.54472	Datum: NAD83 3117.058814			
Potential anthropogenic influences on the channel syst					
Managed hydrology (upstream diversions), managed vegetati		nces (tilling)			
		(),			
Brief site description:					
Tijuana River floodplain - wider floodplain, earthen bottom, do	wnstream of Stewart's Drai	n swale/channel confluence.			
Checklist of resources (if available):					
X Aerial photography X Stream gag	e data				
Dates: Gage numl	ber:				
XTopographic mapsPeriod of r	ecord:				
Geologic maps History	y of recent effective discl	narges			
	s of flood frequency anal	•			
	ecent shift-adjusted ratin	-			
	eights for 2-, 5-, 10-, and	•			
	ecent event exceeding a :	5-year event			
Global positioning system (GPS)					
X Other studies					
Hydrogeomorphic F	loodplain Units				
Active Floodplain	Low Terrace	-1			
4	•	-			
		164-			
	T				
Low-Flow Channels	OHWM Paleo Ch	annel			
Procedure for identifying and characterizing the flood					
	-				
1. Walk the channel and floodplain within the study area to ware the site	to get an impression of th	le geomorphology and			
vegetation present at the site. 2. Select a representative cross section across the channel.	Drow the grass section or	d 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 veget	ation characteristics of the			
floodplain unit.	enuss size) und the veget				
c) Identify any indicators present at the location.					
4. Repeat for other points in different hydrogeomorphic fl	oodplain units across the	e cross section.			
5. Identify the OHWM and record the indicators. Record					
Mapping on aerial photograph	GPS				
\overline{X} Digitized on computer	Other:				

	mapping on actual photograph	015	
Х	Digitized on computer	Other:	

Cross section ID: TRF-T2-OWHM	Date: 11/3/2021	Time:
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Project ID:	Cross section ID: ⊤	RF-T2-OWHM	Date: 11/3/2021	Time:	
Cross section dra	wing:				
		OHWM			Right descending
Leftdescending	low flow/main	channel (TR ma	in)	high flow swale	e/channel
<u>OHWM</u>					
GPS point: Transec	t 2- DP5 and DP6				
	average sediment texture vegetation species		in bank slope Toe of floodplain lev	ee and berm	

Change in vegetation species X Change in vegetation cover

OHWM defined by floodplain levee to south and constructed berm to north

Comments:

X Other: Toe of floodplain levee and berm

Other: _____

Floodplain unit:	X Low-Flow Channel	Active Floodplain	Low Terrace
GPS point: Transect	1 - DP3 and DP4		
Characteristics of the Average sediment tex	-		
U	% Tree:%	Shrub: _0% Herb: _<5%	
□ NA	ceous & seedlings)	Mid (herbaceous, shrubLate (herbaceous, shrub	
Indicators: X Mudcracks Ripples X Drift and/or X Presence of Benches	debris bed and bank	 Soil development Surface relief Other: Other: Other: 	
Comments:			
Minimal vegetation in	channel, dense algae cover		

Project ID:	Cross section ID: ⊤	RF-T2-OWHM	Date: 11/3/2021	Time:
Floodplain unit:	Low-Flow Channel	X Active F	loodplain	Low Terrace
GPS point:				
Community succession	xture: Silt loam 90_% Tree:0_% Sh		Herb: <u>30-90</u> % baceous, shrubs, baceous, shrubs,	
Benches	debris bed and bank	Other:	1	
	rved throughout floodplain. Mos rating active floodplain from adja tes limits of OWHM.		•	
Floodplain unit:	Low-Flow Channel	Active F	loodplain	Low Terrace
GPS point:				
Total veg cover: Community succession	xture:% Tree:% Sh		Herb:% baceous, shrubs, baceous, shrubs,	
Indicators: Mudcracks Ripples Drift and/or Presence of Benches	debris bed and bank	Other:	-	
Comments:				

Project: Tijuana River USMCA Project	Date: 11/3/2021	Time:		
Project Number:	Town:	State: California		
Stream: Tijuana River	Photo begin file#:	Photo end file#:		
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo				
$Y \square / N \blacksquare$ Do normal circumstances exist on the site?	Location Details: Tijuana River Floodplain	upstream of Dairy Mart bridge		
$Y \times / N \square$ Is the site significantly disturbed?	Projection: Coordinates: 32.548398	Datum: NAD83		
Potential anthropogenic influences on the channel syst		, , , , , , , , , , , , , , , , , , , ,		
Managed hydrology (upstream diversions), managed vegetati	on (clearing), soil disturban	ces (tilling)		
Brief site description:				
Tijuana River floodplain - upstream of Dairy Mart Road. Ripar	an vegetation adjacent to n	nain channel		
Checklist of resources (if available):				
X Aerial photography X Stream gag				
Dates: Gage numl				
X Topographic mapsPeriod of r \Box \Box \Box				
	y of recent effective disch	0		
	s of flood frequency analy			
	ecent shift-adjusted rating			
	heights for 2-, 5-, 10-, and			
XExisting delineation(s) for sitemost rImage: Global positioning system (GPS)Image: Global positioning system (GPS)	ecent event exceeding a 5	year event		
X Other studies				
	Te e du le in Lluite			
Hydrogeomorphic F	-			
Active Floodplain	Low Terrace	►		
		**		
the production of the second s	and the second			
	/ /			
Low-Flow Channels	OHWM Paleo Cha	annel		
Procedure for identifying and characterizing the flood	plain units to assist in ic	lentifying the OHWM:		
1. Walk the channel and floodplain within the study area	to get an impression of th	e geomorphology and		
vegetation present at the site.				
2. Select a representative cross section across the channel.				
3. Determine a point on the cross section that is character	istic of one of the hydrog	eomorphic floodplain units.		
a) Record the floodplain unit and GPS position.				
b) Describe the sediment texture (using the Wentworth	class size) and the vegeta	ation characteristics of the		
floodplain unit.				
c) Identify any indicators present at the location.				
4. Repeat for other points in different hydrogeomorphic fl				
5. Identify the OHWM and record the indicators. Record	_			
Mapping on aerial photograph	GPS			
X Digitized on computer	Other:			

<	Digitized on computer	Other:

Project ID:	Cross section ID: TRI	F-T3-OWHM	Date: 11/3/2021	Time:	
Cross section drawing Left descending high flow channel	Inner terrace		Low vegetated	terrace Right descen	ding
XChange in vegetaXChange in vegetaComments:	1	Other: Other:	n bank slope Bed and bank indicators, and change		
Floodplain unit: X GPS point: Transect 3 - DI Characteristics of the flood Average sediment texture Total veg cover: 0 9 Community successional NA	odplain unit: : _silty loam 6 Tree: _0% Shru	ıb: <u>0</u> %	Floodplain Herb: <u>0</u> % erbaceous, shrubs, sap	Low Terrace	
 Early (herbaceou Indicators: Mudcracks Ripples Drift and/or debr Presence of bed a Benches Comments: North channel/main stem b 	is	Late (he	erbaceous, shrubs, ma velopment relief	.ture trees)	3

Project ID:	Cross section ID:	TRF-T3-OWHM	Date: 11/3/2021	1 Time:
Floodplain unit:	X Low-Flow Channel	Active I	Floodplain	Low Terrace
GPS point: Characteristics of the final verage sediment texture Total veg cover: 5-10	loodplain unit: are: Silt loam _ % Tree: <u>0</u> % S	 Shrub:0%	Herb: <u>5-10</u> %	
Community succession NA X Early (herbace	-	`	erbaceous, shrubs erbaceous, shrubs	
Indicators: Mudcracks Ripples X Drift and/or de Presence of be X Benches		Surface Under: _ Other: _ Other: _	velopment relief	
Comments: South channel/branch. Mi	nimal vegetation in channe	el. Herbaceous veg	etation on channel	l banks, top of bank.
<u>Floodplain unit</u> :	Low-Flow Channel	X Active I	Floodplain	Low Terrace
GPS point:				
Characteristics of the f Average sediment textu Total veg cover: <u>10-90</u> Community succession NA X Early (herbace	nre:		Herb: <u>10-90</u> % erbaceous, shrubs erbaceous, shrubs	
Indicators: X Mudcracks Ripples X Drift and/or de Presence of be Benches		Surface Surface X Other:		
Comments: Vegetation variable across	s Transect 3 - mature scrub	o-shrub and woodla	and riparian vegeta	ation used to define inner

and low terrace breaks, floodplain indicators observed across west segment of transect line and inundation observed on aerial imagery.

Project: Tijuana River USMCA Project	Date: 11/3/2021	Time:				
Project Number:	Town: Photo begin file#:	State: California Photo end file#:				
Stream: Tijuana River	r noto begin me#:	r noto enu me#:				
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo Y / N X Do normal circumstances exist on the site? Location Details: Tijuana River Floodplain, middle of delineation						
$Y \times / N \square$ Is the site significantly disturbed?	Projection: Coordinates: 32.543194	Datum: NAD83				
Potential anthropogenic influences on the channel system:						
Managed hydrology (upstream diversions), managed vegetation (clearing), soil disturbances (tilling)						
Brief site description:						
Tijuana River floodplain - wider floodplain, earthen bottom, upstream of Stewart's Drain swale/channel confluence.						
Checklist of resources (if available):						
X Aerial photography X Stream gag	e data					
Dates: Gage numb						
XTopographic mapsPeriod of r						
	y of recent effective discl					
	s of flood frequency anal					
	ecent shift-adjusted ratin heights for 2-, 5-, 10-, and	-				
	ecent event exceeding a :	•				
Global positioning system (GPS)	ecent event exceeding a .	s year event				
X Other studies						
Hydrogeomorphic F	loodplain Units					
Active Floodplain	Low Terrace	-				
Low-Flow Channels	/ / OHWM Paleo Cha	annel				
Procedure for identifying and characterizing the flood	plain units to assist in i	dentifying the OHWM:				
1. Walk the channel and floodplain within the study area t	to get an impression of th	e geomorphology and				
vegetation present at the site.						
2. Select a representative cross section across the channel.						
3. Determine a point on the cross section that is characteri	istic of one of the hydrog	geomorphic floodplain units.				
a) Record the floodplain unit and GPS position.b) Describe the sediment texture (using the Wentworth)	class size) and the veget	ation characteristics of the				
floodplain unit.	class size) and the veget	ation characteristics of the				
c) Identify any indicators present at the location.						
4. Repeat for other points in different hydrogeomorphic fl	oodplain units across the	e cross section.				
5. Identify the OHWM and record the indicators. Record						
Mapping on aerial photograph GPS						

	Mapping on actual photograph	010	
Х	Digitized on computer	Other:	

Project ID:	Cross section ID:	TRF-T4-OWHM	Date: 11/3/2021	Time:
Cross section drav	wing:			
Low terrace		OHWM		Right descending
Left		\setminus		
descending		K		high flow swale/channel
	low flow/mai	in channel (TR ma	ain)	-
<u>OHWM</u>				
GPS point: Transect	4			
Change in v	verage sediment texture vegetation species vegetation cover	X Other:	in bank slope <u>Toe of berm</u>	
Comments:				
	v terrace to south and constru-	icted berm to north	ı	
<u>Floodplain unit</u> :	X Low-Flow Channel	Active	Floodplain	Low Terrace
GPS point: Transect	1 - DP3 and DP4			
Community successi	exture: <u>clay loam</u> 		Herb: <u><5</u> % herbaceous, shrubs herbaceous, shrubs	
Benches	debris bed and bank	Surface Other: Other:	evelopment e relief 	
Comments:	abannal			
Minimal vegetation in	channel			

Project ID:	Cross section ID: T	RF-T4-OWHM Date: 11/3/20	D21 Time:
Floodplain unit:	Low-Flow Channel	X Active Floodplain	Low Terrace
GPS point:			
Characteristics of the	e floodplain unit:		
Average sediment te			
		rub: <u>0</u> % Herb: <u>30-90</u> %	б
Community successi	onal stage:	_	
NA NA		Mid (herbaceous, shru	
X Early (herba	aceous & seedlings)	Late (herbaceous, shru	ıbs, mature trees)
Indicators:			
Mudcracks		Soil development	
Ripples		Surface relief	
X Drift and/or	debris	Other:	
Presence of	bed and bank	Other:	
Benches		Other:	
Comments:			
Trash and debris obser	rved throughout floodplain. Mos	tly ruderal, weedy vegetation on	floodplain. Low berm on right
descending bank sepa	rating active floodplain from adj	acent sod field. Transect downsti	ream of inner check dam and
within transition from ri	prap lined floodplain to native so	oil.	
Floodplain unit:	Low-Flow Channel	Active Floodplain	X Low Terrace
<u> </u>			
GPS point:			
Characteristics of the	-		
Average sediment te			
-		rub:% Herb: _<5%	6
Community successi	onal stage:	Mid (harbaaaaya ahray	he contines)
NA X Farly (barb)	aceous & seedlings)	Mid (herbaceous, shru Late (herbaceous, shru	1 0
	iceous & seeunings)		ibs, mature frees)
Indicators:			
Mudcracks		Soil development	
Ripples		Surface relief	
Drift and/or	debris	Other:	
Presence of	bed and bank	Other:	
Benches		Other:	
Comments:			
	defined by lack of inundation or	n aerial imagery, lower vegetatior	n cover, and
transition to access ro	-		

Project: Tijuana River USMCA Project	Date: 11/3/2021	Time:		
Project Number:	Town:	State: California		
Stream: Tijuana River	Photo begin file#:	Photo end file#:		
Investigator(s): Esa Crumb, Zak Erikson, Abe Margo				
$Y \square / N X$ Do normal circumstances exist on the site?	Location Details: Tijuana River Floodplain, S	Stewart's Drain outlet channel		
$Y \times / N $ Is the site significantly disturbed?	Projection: Coordinates: 32.541309	Datum: NAD83		
Potential anthropogenic influences on the channel syst		, 111.000000		
Managed hydrology (upstream diversions), managed vegetati managed flows from Stewart's Drain		ces (tilling) on floodplain;		
Brief site description:				
Outlet channel/swale from Stewart's Drain canyon collector				
Checklist of resources (if available):				
X Aerial photography X Stream gag	e data			
Dates: Gage numb	ber:			
X Topographic maps Period of r	ecord:			
Geologic maps History	y of recent effective disch	larges		
X Vegetation maps X Result	s of flood frequency analy	ysis		
	ecent shift-adjusted rating	2		
Rainfall/precipitation maps Gage h	heights for 2-, 5-, 10-, and	25-year events and the		
	ecent event exceeding a 5	•		
Global positioning system (GPS)	-			
X Other studies				
Hydrogeomorphic F	loodplain Units			
Active Floodplain	Low Terrace			
Low-Flow Channels OHWM Paleo Channel				
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				

	Mapping on aerial photograph	015	
Х	Digitized on computer	Other:	

Project ID: Cross section ID	TRF-T5-OWHM Dat	e: 11/3/2021 Time:
Cross section drawing: Low terrace	ОНWМ	Low terrace
Left descending	N	Right descending
Ac	tive floodplain/swale	
OHWM		
GPS point: Transect 2- DP5 and DP6		
Indicators: Change in average sediment texture Change in vegetation species Change in vegetation cover	X Break in ban X Other: Access Other:	1
Comments:		
OHWM defined by low terrace and access road, a	nd visible inundation on a	erial imagery
Floodplain unit: Low-Flow Channel	X Active Flood	plain 🗌 Low Terrace
GPS point: Transect 5 - SP-DP		
Characteristics of the floodplain unit:		
Average sediment texture: <u>clay loam/silt loam</u> Total veg cover: <u>80</u> % Tree: <u>0</u> %	Shrub: <u>0</u> % Herl	b: <u>80</u> %
Community successional stage:		eous, shrubs, saplings)
X Early (herbaceous & seedlings)	Late (herbace	eous, shrubs, mature trees)
Indicators: X Mudcracks Ripples X Drift and/or debris Presence of bed and bank Benches	Other:	
Comments:		
No defined low flow channel		

Project ID:	Cross section ID:	; TRF-T5-OWHM	Date: 11/3/2021	Time:
Floodplain unit:	Low-Flow Channel	Active]	Floodplain	X Low Terrace
GPS point:				
Community success	exture: Silt loam 20% Tree:0% \$		Herb: <u>0-20</u> % erbaceous, shrubs, erbaceous, shrubs	1 0 /
Benches	r debris F bed and bank	X Surface X Other: <u>-</u> Other: <u>-</u>	velopment relief Access road to wes	
Comments:	n access road, transition to ea			
Floodplain unit: GPS point:	Low-Flow Channel		Floodplain	Low Terrace
Community success	exture:% Tree:% \$		Herb:% erbaceous, shrubs, erbaceous, shrubs	
Indicators: Mudcracks Ripples Drift and/or Presence of Benches	r debris S bed and bank	Surface Other: _ Other: _	velopment relief	
Comments:				