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SUPPLEMENTAL PRELIMINARY DELINEATION OF JURISDICTIONAL WATERS

WILLOW ROCK ENERGY STORAGE CENTER

ROSAMOND, KERN COUNTY, CALIFORNIA

Submitted to:

GEM A-CAES LLC

1125 17th St #700
Denver, CO 80202

Submitted by:

WSP USA Inc.
Wells Fargo Bank Building,
401 B Street, Suite 1650 92101-4245
San Diego, CA
(619)-338-9376

January 2025

January 27, 2025

Attention: Laurel Lees
GEM A-CAES LLC
1125 17th St #700
Denver, CO 80202

Subject: **SUPPLEMENTAL PRELIMINARY DELINEATION OF JURISDICTIONAL WATERS REPORT**
GEM A-CAES LLC
1125 17th St #700
Denver, CO 80202
WSP Project Number 2025US368167

Dear Ms. Lees:

WSP is pleased to submit this Supplemental Preliminary Delineation of Jurisdictional Waters Report for the Willow Rock Energy Storage Center (WRESC) Project. Pursuant to Title 20, California Code of Regulations, Section 1716, California Energy Commission (CEC) Staff on January 13, 2025, docketed Data Requests Set 6 (TN# 261072). Data Requests Set 6 presents a list of questions associated with jurisdictional waters.

As part of the supplemental AFC, submitted on March 1, 2024, GEM A-CAES provided a delineation of State waters in the Willow Rock Jurisdictional Waters Delineation Report (TN# 258308). During the review of the report, staff, the California Department of Fish and Wildlife (CDFW), and the Lahontan Regional Water Quality Control Board (RWQCB), noted that there appeared to be features that have the potential to convey water that were previously not mapped or evaluated. This supplemental preliminary delineation of jurisdictional waters report is intended to assist GEM A-CAES in obtaining a dredge and filling permit administered by the Lahontan RWQCB in their preparation of a dredge and filling permit.

In accordance with guidance provided by the USACE, CDFW, CEC, and Lahontan RWQCB, this report presents 74 combined identified drainage features (e.g., jurisdictional and non-jurisdictional features). Of the total number of features presented in this supplemental report, none are located within the permanent footprint of the WRESC site.

If you have any questions concerning the findings presented in this report, please contact Jeremy Paris or Kyralai Duppel at your nearest convenience.

Jeremy Paris, PWS
Vice President/Project Manager
(619) 338-9376

Kyralai Duppel,
Biologist

Enclosure: Jurisdiction Delineation Report
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1.0 INTRODUCTION

WSP USA Inc. (WSP) was contracted by GEM A-CAES LLC (GEM) to conduct a jurisdictional delineation and prepare a report for the Willow Rock Energy Storage Center (WRESC) located in Kern County, California. This report presents regulatory setting, methods, environmental setting, and results of a jurisdictional delineation of water features, wetlands, and associated riparian habitat potentially impacted by the project. All figures referenced in this report are provided in Appendix A. Site photographs are provided in Appendix B.

On March 1, 2024, GEM docketed the Supplemental Application for Certification (SAFC) Volume 1 for the WRESC (WRESC; 21-AFC-02). The previous jurisdictional delineation reports were submitted in support of the SAFC:

- Willow Rock Energy Storage Center Delineation of Jurisdictional Waters, docketed March 4, 2024 (TN# 254819)
- Willow Rock Jurisdictional Waters Delineation Report Addendum, docketed August 5, 2024 (TN# 258308)

Following review of the above referenced documentation, WSP and Chris Huntley, CEC's subject matter expert for biological and water resources, conducted two site walks on November 12, 2024, and November 27, 2024, to review the presence or absence of jurisdictional drainages within the project area (e.g.., WRESC site and gen-tie line preferred and optional routes).

1.1 Purpose

The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area through documentation of existing aquatic features potentially under the jurisdiction of the following agencies:

- The United States Army Corps of Engineers (USACE), pursuant to Section 404 of the Clean Water Act (CWA)
- The Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (California Water Code, Chapter 2, § 13050)
- The California Department of Fish and Wildlife (CDFW), pursuant to Section 1600 of the California Fish and Game Code.

CEC Data Request Set 6 noted that there appeared to be features that have the potential to convey water that were previously not mapped or evaluated in the March 2024 or August 2024 reports. This supplemental jurisdictional waters report is intended to assist the RWQCB in their preparation of a dredge and filling permit. This supplemental report presents both jurisdictional and non-jurisdictional features.

1.2 Project Description

GEM proposes to construct and operate a nominal 520-megawatt (MW) advanced compressed air energy storage facility deploying Hydrostor, Inc.'s proprietary advanced compressed air energy storage technology. The project will be a nominal 520-MW gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility. The proposed project includes the development of WRESC and approximately 19 miles of gen-tie electrical transmission lines (gen-tie lines) connecting to the existing Southern California Edison Whirlwind Substation. The total area, including WRESC, adjacent parcels, gen-tie lines, and their corridor (125-foot buffer), is 680.43 acres and will be herein collectively referred to as the "project" or "project site" unless otherwise specified. The Parcels that have the potential to support WRESC's construction are as follows:

- WRESC Site: 88.6 acres
- P1: 74.6 acres
- P2 north: 46.9

- P2 south: 10.0 acres
- Villa Haines: 79.4 acres

The gen-tie line with a 125-foot buffer is approximately 380.85 acres excluding areas within project parcels. Two scenarios for the project are proposed: with a berm or without a berm. In the “with berm” scenario, only a portion of the Villa Haines parcel is expected to be used for laydown and parking areas, totaling approximately 13.4 acres.

1.3 Project Location

The project site is located on private and public property in and around the rural community of Ansel, just north of State Route 138, south of State Route 58, east of Interstate 5, and west of Edwards Air Force Base (Figure 1, Regional Location). Accessible portions of the project site are areas within public road rights-of-way, parcels owned by the applicant, or parcels with right-of-entry agreements.

WRESC is located on the Soledad Mountain topographic map (7.5-minute quadrangle) published by the U.S. Geological Survey (USGS). The gen-tie lines and variances are shown on the Soledad Mountain, Rosamond, Fairmont Butte, and Little Buttes topographic maps. The project site is located within portions of Sections 31, 32, and 33 of Township 10 North and Range 12 West; portions of Sections 36 of Township 10 North and Range 13 West; portions of Sections 4, 5, and 6 of Township 9 North and Range 12 West; portions of Sections 1, 2, 11, 14, 15, 16, 19, 20, 21, 22, and 23 of Township 9 North and Range 13 West; portions of Sections 13, 14, 15, 16, 17, 18, 22, and 24 of Township 9 North and Range 14 West; and portions of Sections 13, 14, and 23 of Township 9 North and Range 15 West (Figure 2, Historic USGS Topographic Map).

Topography in the project site slopes from northwest to southeast, with flat areas in the southern portions and variable topography displaying gradual elevation shifts in the central portion of the project site. Elevations range from approximately 2,400 feet in the southeast corner of the transmission line at the corner of Rosamond Boulevard and 65th Street West to 2,720 feet along Dawn Road, just south of an existing water tank facility (Figure 3, Local Vicinity).

2.0 REGULATORY SETTING

2.1 U.S. Executive Order 11990 (May 24, 1977) Protection of Wetlands

This federal Executive Order sets forth a national policy “to avoid the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practical alternative.”

2.2 Waters of the United States

On August 29, 2023, the U.S. Environmental Protection Agency and the Department of the Army issued a final rule amending the "Revised Definition of 'Waters of the United States (WOTUS)," initially published in the Federal Register on January 18, 2023. This amendment aligns the definition of "waters of the United States" with the U.S. Supreme Court's decision in the case of Sackett v. Environmental Protection Agency on May 25, 2023. The Supreme Court deemed certain parts of the January 2023 Rule invalid based on its interpretation of the CWA in the Sackett decision. Consequently, the agencies have modified key elements of the regulatory text to comply with the Court's ruling. The conforming rule, titled "Revised Definition of 'Waters of the United States'; Conforming," was published in the Federal Register and became effective on September 8, 2023.

Furthermore, due to on-going litigation, the January 2023 Rule is currently not in effect in certain states and for certain parties. The agencies are applying the January 2023 Rule, as amended by the conforming rule, in 23 states, the District of Columbia, and the U.S. Territories. In the remaining 27 states and for specific parties, the agencies are interpreting "waters of the United States" in accordance with the pre-2015 regulatory framework and the Supreme Court's decision in Sackett until further notice. To summarize some of the most applicable highlights, the agencies’ new rule defines WOTUS as:

Categories of Jurisdictional Waters

1) Waters which are:

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

(ii) The territorial seas; or

(iii) Interstate waters and wetlands;

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

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

(4) Wetlands adjacent to the following waters:

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

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

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

Exclusions from the definition of "waters of the United States" are codified at paragraph (b), and key terms are defined at paragraph (c). "Adjacent" is defined at (c)(2) as "having a continuous surface connection."

- Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the CWA.
- The preamble clarifies that Wastewater Treatment Systems (WTS) constructed prior to the enactment of the CWA can still be excluded and that WTS are not limited to man-made bodies of water consistent with longstanding practice.
- Prior converted cropland designated by USDA. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. For CWA purposes, the final authority regarding CWA jurisdiction remains with the U.S. Environmental Protection Agency.
    - The preamble implies, but does not clearly state, that lands remain excluded as PCC even if they change to a non-agricultural use so long as wetland characteristics do not return.
- Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water.
    - Excluded ditches would not become jurisdictional solely by virtue of connecting to a downstream WOTUS or because wetland characteristics develop within the confines of the ditch.
- Artificially irrigated areas that would revert to dry land if the irrigation ceased.
- Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
    - The preamble says this exclusion applies only to lakes/ponds that satisfy the terms of the exclusion, so apparently other types of ponds (e.g., log cleaning ponds) would not qualify.

- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons.
- Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States.
    - Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow

2.2.1 Key Court Rulings

The definition of "waters of the United States" has been shaped by five key Supreme Court decisions. In 1985, United States v. Riverside Bayview Homes, Inc. upheld the U.S. Army Corps of Engineers' jurisdiction over wetlands near navigable waters, asserting that such wetlands are intricately connected to navigable waters and often have significant effects on water quality and aquatic ecosystems.

However, the Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC) in 2001 established that the mere use of non-navigable, isolated, intrastate waters by migratory birds does not alone justify federal authority under the CWA. This decision prompted agencies to develop guidance on the "waters of the United States" definition.

In 2006, Rapanos v. United States presented a plurality opinion defining "waters of the United States" as relatively permanent bodies with a continuous surface connection to traditional navigable waters. Justice Kennedy, in a concurring opinion, introduced the concept of a "significant nexus," requiring a water or wetland to impact the integrity of other covered waters. Dissenting Justices argued for a broader interpretation.

Following Rapanos, in 2007 and 2008, additional guidance was developed to implement the definition of "waters of the United States." These legal developments illustrate on-going complexities in interpreting and applying the regulatory framework.

On May 25, 2023, the Supreme Court ruled in Sackett v. Environmental Protection Agency, endorsing the Rapanos v. United States plurality standard for defining "waters of the United States." The Court concluded that the CWA's use of "waters" includes relatively permanent bodies of water forming geographic features such as streams, oceans, rivers, and lakes, as outlined in Rapanos. The Court also agreed with the plurality's formulation that wetlands are part of "the waters of the United States" when they have a continuous surface connection to bodies considered "waters of the United States" in their own right.

In response to the Sackett decision, on August 29, 2023, the agencies issued a final rule amending the January 2023 Rule to align with the Supreme Court's interpretation. Parts of the January 2023 Rule were deemed invalid by the Court's decision. Consequently, key aspects of the regulatory text were amended to conform to the Court's ruling. The final conforming rule, titled "Revised Definition of 'Waters of the United States'; Conforming," became effective on September 8, 2023, following its publication in the Federal Register.

2.3 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the WOTUS pursuant to Section 404 of the CWA.

2.4 Regional Water Quality Control Board

RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit, including a Section 404 permit for dredge and fill activities in Waters of the U.S. The RWQCB, as part of the State Water Resources Control Board (SWRCB), must certify that permits issued under CWA Section 404 meet California's water quality objectives. Through the Porter-Cologne Water Quality Control Act (Porter-Cologne), Division 7 of the California

Water Code, the RWQCB asserts jurisdiction over Waters of the State (WSC), which encompasses all WOTUS but may also include waters outside federal jurisdiction. Porter-Cologne establishes that the Waters of the State must be protected for use and enjoyment by the people of California and requires the RWQCBs to formulate and adopt water quality control plans to ensure activities affecting water quality meet the highest standards.

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State was adopted on April 2, 2019, by the SWRCB and became effective statewide on May 28, 2020. This rule clarifies what is considered a wetland under state jurisdiction, establishes consistent permitting procedures for dredge and fill activities, and ensures protection of wetlands and other waterways, such as rivers, streams, bays, and estuaries. The Water Boards define wetlands as areas meeting the following criteria under normal circumstances: (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, 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 altogether.

The Water Code defines WSC broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state." This definition includes all WOTUS and waters not under federal jurisdiction. Wetlands classified as Waters of the State include:

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
3. Artificial wetlands that meet any of the following criteria:
    a) Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b) Specifically identified in a water quality control plan as a wetland or other water of the state;
    c) Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d) Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (these artificial wetlands are not Waters of the State unless they also meet the criteria in 2, 3.a, or 3.b):
        I. Industrial or municipal wastewater treatment or disposal
        II. Settling of sediment
        III. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff regulated under municipal, construction, or industrial stormwater permitting programs
        IV. Treatment of surface waters
        V. Agricultural crop irrigation or stock watering
        VI. Fire suppression
        VII. Industrial processing or cooling
        VIII. Active surface mining – even if the site is managed for interim wetland functions and values
        IX. Log storage
        X. Treatment, storage, or distribution of recycled water

XI. Maximizing groundwater recharge (excluding incidental groundwater recharge benefits)

XII. Fields flooded for rice growing

Artificial wetlands smaller than one acre and not meeting the criteria in 2, 3.a, 3.b, or 3.c are not WSC.

2.5 California Department of Fish and Wildlife

CDFW regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

> *An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.*

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds. In general, under Section 1602 of the Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW 2010). CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation" (Brady and Vyverberg 2013).

> *Thus, a channel is not defined by a specific flow event, nor by the path of surface water as this path might vary seasonally. Rather, it is CDFW's practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point. CDFW's definition of a lake includes natural lakes or man-made reservoirs (Brady and Vyberg 2013).*

3.0 METHODS

3.1 Background Research

Information on waters and wetlands on the project site was obtained from a review of background information supplemented and verified by field delineation. The project site, both upstream and downstream, are herein referred to as the jurisdictional delineation "study area." Prior to conducting the delineation fieldwork, the following literature and materials were reviewed:

- Current and historical aerial photographs (Google Earth 2024) of the study area at a scale of 1:1800 to determine the potential locations of jurisdictional waters or wetlands
- USGS topographic maps to determine the presence of drainages or other mapped water features (USGS 2024a)
- U.S. Department of Agriculture (USDA) soil mapping data (USDA 2024)
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps (USFWS 2024)
- USGS National Hydrography Dataset (USGS 2024b)
- Federal Emergency Management Agency (FEMA) National Flood Hazard Map (2024)
- Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-scale Solar Power Plants (Brady and Vyverberg 2014)
- Preliminary Hydrology & Hydraulic Analysis for the Willow Rock Energy Storage Center (Kiewit 2024)

Information from the literature review was used to develop the field program. High-resolution aerial imagery was used to identify areas with evidence of flows, such as meandering paths with no vegetation, linear changes in

vegetation type and vegetation color, and clearly defined channels or braided channel systems. In the arid southwest, this evidence is typically described as meandering unvegetated areas along topographic low spots (USACE 2008b). Individual layers, including shapefiles for soils, topography, National Wetland Inventory, National Hydrology Dataset, and FEMA's National Flood Hazard were overlaid on the aerial photo imagery using a geographic information system (GIS) to better refine the hydrologic characteristics of the project site and surrounding watershed. The Preliminary Hydrology & Hydraulic Analysis for the Willow Rock Energy Storage Center (Kiewit 2024) identified the topographic low-flow areas within the energy WRESC. All areas identified as potential drainage features during the literature review were included in the GIS application Field Maps for field verification.

3.2 Jurisdictional Delineation

3.2.1 Field Survey Background

Field surveys followed standard practices for identifying jurisdictional areas in the arid Southwest, where water flows are intermittent. These surveys documented the presence and boundaries of jurisdictional WOTUS and WSC, as regulated by the USACE, RWQCB, and CDFW. If present, USACE-regulated WOTUS and RWQCB-regulated WSC were delineated according to the methods 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* (USACE 2008a). The extent of WOTUS was determined based on indicators of an Ordinary High-Water Mark (OHWM). The OHWM width was measured at points wherever clear changes in width occurred, if present.

CDFW jurisdictional "streams" are defined under Section 1600 of the California Fish and Game Code as a body of water that flows perennially or episodically and that are defined by the area in which water currently flows, or has flowed in the past, over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators. These indicators, as discussed above, include noticeable changes in vegetation types, vegetation coverage, hydrology, and soil texture as they are attributed to natural flows. Areas associated with human disturbance require additional consideration, as natural elements of any potential drainage feature may have been altered. CDFW jurisdiction also extends to the outer edge of the dripline of any associated riparian vegetation if present.

Potential federally regulated wetlands were identified based on the *Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b). Additional data were recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled to classify an area as a wetland under the jurisdiction of the USACE: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. State wetlands, if present, were delineated using the methodology outlined in USACE (1987) and USACE (2008b) and modified to allow for areas devoid of hydrophytic vegetation to be considered a wetland per the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*.

Typically, RWQCB jurisdiction mirrors that of USACE. However, based on the Porter-Cologne Act, the RWQCB Lahontan Region's jurisdictional areas more closely mirror the CDFW jurisdictional limits, as described below.

As a standard mapping practice, CDFW jurisdictional limits include all drainage features within well-defined bed and bank features, regardless of whether the drainage is considered isolated or connected to a downstream active channel. The jurisdictional limits also include landforms containing multi-thread braided channel systems, where the jurisdictional limits are extended to the furthest extent of the active channel, in areas with episodic stream processes.

The California Energy Commission provides additional guidance in *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-scale Solar Power Plants* (Brady and Vyverberg 2014). The purpose of the Brady and Vyverberg method is to identify episodic drainage features that are not clearly defined and may or may not receive flows annually, which are typically excluded from standard jurisdictional delineations. Field checks generally followed the Brady and Vyverberg method. Soil pits were excavated at each drainage to identify the soil profile. The Brady and Vyverberg method includes soil pits that are 1 meter long by 0.5-meter wide

by 1 meter deep; however, Brady and Vyverberg (2014) do not recommend using such large soil pits as part of the methods. As such, soil pits excavated during the delineation effort for the Project were approximately 0.3 meters wide by 0.3 meters long by 0.5 meters deep.

The classic drainage feature characteristics of CDFW jurisdiction typically end when drainage features transition to upland swales supporting low volume flows. These features are typically low-lying, undefined, relatively flat portions of the local landscape that have no change in vegetation types, vegetation coverage, changes in hydrology, and soil texture. Isolated CDFW jurisdictional areas occur in areas that have noticeably eroded, relict washes that received only "periodic flows" during extremely large precipitation events that affect local watersheds.

3.2.2 Field Survey Methods

Field surveys were completed by walking or driving the entire study area (with some exceptions due to private property access) stopping at locations identified in Field Maps through the background review, which are areas containing evidence of potential drainage features. At locations with evidence that flow occurred, the drained features were walked upstream and downstream to a minimum extent of 61-meter (200-foot), where possible, as recommended by Brady and Vyverberg (2014). An additional 61-meter (200-foot) were walked, where accessible, to account for and identify tributaries that may be hard to detect. This was done to better understand the local flow regime.

The survey crew conducted additional site evaluations when changes in any of the following features were observed during the field surveys: vegetation types, vegetation coverage, hydrology, and soil as well as the location of any culverts.

To determine jurisdictional boundaries of identifiable drainage features, the surveyor walked the length of all potential drainage features in the defined study area and recorded the centerline with the Field Maps application. The width of the drainage was determined by the field indicators at locations where transitions in vegetation types, vegetation coverage, changes in hydrology, and soil texture were apparent. Other data recorded included bank height and morphology, substrate type, and vegetation type within the streambed, including adjacent riparian vegetation, if present. Also included was a determination if the drainage was active, dormant, abandoned, or a relict as described in Brady and Vyverberg (2014). Soil testing was not conducted in areas that lacked evidence of hydrophytic vegetation and wetland hydrology because indicative wetland parameters were absent. Upon completion of fieldwork, data collected in the field were incorporated into GIS, which was used to quantify the extent of jurisdictional waters and prepare graphical representations.

Incidental information on drainage features was collected during the sensitive plants protocol surveys conducted in spring 2023 and 2024. The project site was initially walked by WSP biologists and wetland scientists during focused surveys for sensitive plants in early spring and summer of 2023. During these surveys, the entire WRESC, gen-tie alignment, and additional workspace was walked along transects spaced 10 meters apart, and evidence of flows was noted in Field Maps, if present. In September of 2023, additional gen-tie alternatives and additional workspace areas were added to the project and incidental information on drainage features was collected during the sensitive plants protocol surveys conducted in spring and summer of 2024.

The field investigation for jurisdictional drainage features were conducted as follows:

- WSP Senior Biologists Scott Crawford and Marshall Paymard on October 3 and 4, 2023
- WSP Senior Biologists Scott Crawford and Dale Hameister on June 21, 2024
- WSP Senior Biologists Scott Crawford, Dale Hameister, and Biologist Melanie Bucovak from December 2-6, 2024
- WSP Biologist Gracey George on January 22, 2025

Oversight of the preparation of the January 2025 Supplemental Preliminary Jurisdictional Waters Report was performed by professional wetland scientist Jeremy Paris.

Field evaluation of jurisdictional and non-jurisdictional drainages included analysis of the following features:

- Roadside ditches
- Dormant tributaries
- Creek beds
- Culverts
- Storm water runoff and overland sheet flow
- Retention basins
- Agricultural ditches

4.0 ENVIRONMENTAL SETTING

4.1 Existing Conditions

The study area is located in the central portion of the Antelope Valley and is predominately covered by Mojave creosote bush scrub. The location of the WRESC is relatively undisturbed, with several pre-existing unpaved access routes. Evidence of unauthorized off-road vehicle use, recreational shooting, and illegal dumping has also been recorded in the WRESC location. The gen-tie line passes through areas that are predominantly characterized by rural residential development. The gen-tie line follows adjacent roadways including:

- Dawn Road
- Mojave Tropico Road
- Rosamond Boulevard
- Other minor roadways as described below

The route of the preferred gen-tie line and options are as follows:

- **Preferred Gen-Tie Line Route**
    - **Eastern Portion**
        1. Begins at the northern perimeter of the WRESC site.
        2. Heads west, crossing SR-14.
        3. Turns south along the western perimeter of the Villa Haines parcel to an unpaved portion of Dawn Road.
    - **Dawn Road to Mojave Tropico Road**
        1. Follows the south side of Dawn Road.
        2. Turns north and then west to Mojave Tropico Road (a paved arterial road).
    - **Mojave Tropico Road to Rhyolite Avenue**
        1. Proceeds south along Mojave Tropico Road.
        2. Turns west onto Rhyolite Avenue, where it is undergrounded until Dacite Avenue.
    - **Dacite Avenue to 60th Street West**
        1. Continues west above ground.

2. Turns south on 60th Street West, then west along the north side of Felsite Avenue.

- **Felsite Avenue to Rosamond Boulevard**
  1. At 65th Street West, turns south, crossing Rosamond Boulevard.
  2. Proceeds west along the south side of Rosamond Boulevard (paved).
- **Rosamond Boulevard to 170th Street West**
  1. At 100th Street West: undergrounded on the north side of Rosamond Boulevard until 105th Street West.
  2. At 120th Street West: crosses underground to the south side of Rosamond Boulevard.
  3. At 140th Street West: crosses underground back to the north side of Rosamond Boulevard.
- **Termination at SCE Whirlwind Substation**
  1. Between 168th Street and Darcy Street: turns northwest from Rosamond Boulevard.
  2. Heads west along Edwards Boulevard, crossing 170th Street West.
  3. Turns southwest, terminating at the SCE Whirlwind Substation.

- **Alternative Gen-Tie Line Options**
  - **Option 1**
    1. Starts on the south side of the WRESC site.
    2. Proceeds west along Dawn Road through undisturbed Allscale Scrub, Rubber Rabbitbush Scrub, Cheesebush Scrub, and Creosote Bush-White Bursage Scrub habitats.
    3. Connects to the preferred route at the southwestern corner of the Villa Haines parcel.
  - **Option 2a**
    1. Starts at the northwestern corner of the Villa Haines parcel.
    2. Proceeds west through undisturbed Joshua Tree Woodland and Creosote Bush-White Bursage Scrub habitats until 30th Street West.
  - **Option 2b**
    1. Starts at the northwestern corner of the Villa Haines parcel.
    2. Proceeds north along 25th Street West, then turns west to 30th Street West.
    3. Heads south along 30th Street West to McConnel Avenue, crossing Joshua Tree Woodland and Creosote Bush-White Bursage Scrub habitats.
  - **Option 3a**
    1. Starts at McConnel Avenue and 30th Street West.
    2. Proceeds south through undisturbed Creosote Bush-White Bursage Scrub habitat.
    3. Connects to the preferred route at Dawn Road and 30th Street West.
  - **Option 3b**
    1. Starts at McConnel Avenue and 30th Street West.

2. Proceeds west to Werner Avenue through undisturbed Creosote Bush-White Bursage Scrub habitat.
3. Turns south along Werner Avenue and connects to the preferred route on Dawn Road.

- **Option 4**
  1. Connects Dawn Road and Mojave Tropico Road along the south side of Dawn Road.
  2. Passes through undisturbed Creosote Bush-White Bursage Scrub habitat.
- **Option 5**
  1. Starts at Felsite Avenue and Mojave Tropico Road.
  2. Proceeds south along Mojave Tropico Road, then west along Rosamond Boulevard.
  3. Passes through undisturbed Allscale Scrub and Non-Native Grassland habitats.
  4. Connects with the preferred route at 65th Street West.
- **Option 6**
  1. Connects Rosamond Boulevard and 170th Street West along the north side of Rosamond Boulevard.
  2. Passes through undisturbed Cheesebush Scrub and Creosote Bush Scrub habitats.

4.2 Topography

The study area features mostly flat terrain, with a few elevated areas in the north. Elevations in the study area range from 2,450 feet (746 meters) above mean sea level in the southern sector to 2,770 feet (844 meters) above mean sea level in the northernmost part. Generally, elevations in the study area decrease in a southerly direction. The Rosamond Hills are located northwest of the project site. Buttes along Mojave Tropico Road range from approximately 2,600 feet (792 meters) to 4,100 feet (1,250 meters).

4.3 Hydrology

Regional precipitation is typically intense, brief storms, leading to flash floods in washes and canyons, although the area generally receives low rainfall averages. The study area is situated in an endorheic basin, which is an area devoid of an outlet to the ocean. Water in these basins follows processes of evaporation, infiltration, or accumulation in salt flats. Ephemeral streams and washes are notably present in the study area, remaining dry for extended periods but swiftly filling during and after rain events. These ephemeral streambeds and washes primarily drain towards the southeast direction and terminate into Rosamond Lake approximately 3.5 miles southeast of the project site (Figure 3, Appendix A). In relatively flat areas, drainage features will often sheet flow in a topographic low spot, referred to as a swale. Sheet flow is defined as overland flow of water that happens in a continuous sheet, characterized by relatively low volume and low velocity that does not result in a change in environmental conditions, such as erosion or sediment deposition, and does not convey sufficient hydrology to change the surrounding vegetation communities or relative cover.

The study area is in the Northern Mojave basin (HUC 180902) and falls within the Antelope-Fremont Valleys subbasin (HUC 18090206). It encompasses four distinct watersheds: Sacatara Creek-Kings Canyon (HUC 1809020613), Cottonwood Creek-Tylerhorse Canyon (HUC 1809020618), Tropico Hill-Oak Creek (HUC 1809020617), and Rosamond Lake (HUC 1809020624) (Figure 4, Hydrology Map). The hydrologic units of the project area are summarized in Table 1 below.

Table 1. Hydrological Units of the Project Area

Basin	Sub-basin	Watershed
Northern Mojave (HUC 180902)	Antelope-Fremont Valleys subbasin (HUC 18090206)	Sacatara Creek-Kings Canyon (HUC 1809020613)
		Cottonwood Creek-Tylerhorse Canyon (HUC 1809020618)
		Tropico Hill-Oak Creek (HUC 1809020617)
		Rosamond Lake (HUC 1809020624)

Antelope Valley is a topographically closed basin, therefore there are no connections to navigable waters of the United States (USGS 2014).

4.4 Precipitation

The annual average total precipitation at the nearby Lancaster, CA WETS Station is 6.00 inches (15 centimeters), per data from the past 20 years (NRCS 2023). Over the last 5 years, the yearly average total precipitation has been recorded at 6.60 inches (16.8 centimeters). According to climatological data referenced at Rosamond Skypark Airport (KCAROSAM2), total rainfall for 2024 was recorded at 8.07 inches, and thus far for 2025, the rainfall total is 0.26 inches. The past two years have had well above average rainfall, making it easier to identify areas where water may flow less often. The last recorded rainfall (0.01 inches) prior to the jurisdictional delineation surveys in December 2024 was recorded on July 14, 2024.

4.5 Vegetation

The study area encompasses a total of 11 vegetation communities and land cover types, which comprise allscale scrub, creosote bush scrub, cheesebush scrub, developed/disturbed, allscale scrub, creosote bush-white bursage scrub, rubber rabbitbrush scrub, Joshua tree woodland, tamarisk thickets, non-native grassland and forbes, white bursage scrub, and needleleaf rabbitbrush scrub (Figure 5, Vegetation and Land Cover Types). The study area features a diverse range of desert vegetation cover, ranging from sparse to moderately high densities, interspersed with disturbed areas, developed lands, and both dirt and paved roads. Notably, no hydrophytic vegetation, such as desert willow (*Chilopsis linearis*), smoke tree (*Psorothamnus spinosa*), mesquite (*Prosopis* sp.), or desert broom (*Baccharis sarothroides*), were identified in drainage features in the study area. A small patch of tamarisk thickets was observed along the Rosamond Boulevard right-of-way as a man-made windrow. Although tamarisk is a facultative species per the National Wetland Plant List (Lichvar et al. 2014), it is located along a disturbed roadside area, and not in a definable drainage feature. Vegetation identified as overlapping with the mapped drainages are described below and shown in Table 2.

4.5.1 Allscale Scrub

Allscale Scrub shrublands, dominated by desert saltbush (*Atriplex polycarpa)*, form open to continuous canopies of shrubs less than 3 meters tall, with a variable herbaceous layer that includes seasonal annuals. Co-dominant species include white bursage (*Ambrosia dumosa)*, cheesebush (*Ambrosia salsola)*, four-wing saltbush (*Atriplex canescens)*, and creosote bush (*Larrea tridentata)*, among others. Emergent trees, such as honey mesquite (*Prosopis glandulosa),* may be present at low cover. This alliance occupies a range of arid habitats, including

washes, playa lake beds, alluvial fans, and terraces, often on carbonate-rich, alkaline, sandy, or sandy clay loam soils. desert saltbush is a dioecious, intricately branched shrub growing up to 2 meters tall, reproducing via wind-dispersed seeds that germinate following disturbance and adequate winter rain. As a facultative phreatophyte, it thrives in both moderately saline and xeric upland sites, demonstrating high drought tolerance and broad habitat adaptability. This alliance is one of the most widespread saltbush communities in the Mojave Desert (CNPS n.d.). The wetland indicator status for the dominant species in this alliance, desert saltbush, is “facultative upland plants” (FACU) (USACE n.d.). FACU-categorized plants are typically found in non-wetland areas but may also be present in wetlands. They primarily thrive in drier or moderately moist environments, often in geomorphic settings where water seldom saturates the soil or causes seasonal surface flooding (Lichvar et al. 2012).

4.5.2 Cheesebush Scrub

Cheesebush shrublands are characterized by an open to intermittent canopy of shrubs less than 2 meters tall, often dominated or co-dominated by cheesebush, sweetbush bebbia (*Bebbia juncea)*, woolly brickellbush (*Brickellia incana)*, or desert senna (*Senna armata)*. Associated species include silver cholla (*Cylindropuntia echinocarpa)*, brittlebush (*Encelia farinose)*, California jointfir (*Ephedra californica)*, creosote bush, and paper bag bush (*Salazaria Mexicana)*, among others. Emergent trees or tall shrubs, such as desert willow, desert lavender (*Hyptis emoryi)*, or desert ironwood (*Olneya tesota)*, may occur at low cover. The herbaceous layer is sparse or seasonally present. This alliance thrives in intermittently flooded channels, arroyos, and washes with sandy, gravelly, or disturbed desert pavement soils. It is common in upland and bottomland sites, often colonizing bare mineral soils or regenerating after floods or fires (CNPS n.d.a). The wetland indicator status for the dominant species in this alliance, cheesebush, is “none”.

4.5.3 Creosote Bush – White Bursage Scrub

Creosote bush-white bursage shrublands, co-dominated by creosote bush and white bursage, form open to intermittent canopies of shrubs less than 3 meters tall, often with a two-tiered structure. Associated species include cheesebush, desert holly (*Atriplex hymenelytra)*, diamond cholla (*Cylindropuntia ramosissima)*, jointfirs (*Ephedra spp.)*, ratanys (*Krameria spp.)*, and Mojave yucca (*Yucca schidigera)*, among others. Emergent tall shrubs or trees, such as ocotillos (*Fouquieria splendens)* or Joshua trees (*Yucca brevifolia)*, may appear at low cover. The herbaceous layer is sparse or intermittent, often featuring seasonal annuals. These shrublands thrive on well-drained alluvial and colluvial soils found in washes, bajadas, valleys, basins, and upland slopes, frequently underlain by calcareous hardpans or desert pavement (CNPS n.d.b). The wetland indicator status for the dominant species in this alliance, creosote bush and white bursage, is “none”.

4.5.4 Creosote Bush Scrub

Creosote bush shrublands, dominated or co-dominated by creosote bush, are characterized by open to intermittent canopies of shrubs less than 3 meters tall. Commonly associated species include Shockley’s goldenhead (*Acamptopappus shockleyi),* cheesebush, desert holly, California jointfir, and water-jacket *(Lycium andersonii)*. Emergent trees such as mesquite or Joshua tree may be present at low cover, adding vertical diversity. The herbaceous layer is typically sparse to intermittent, with a mix of seasonal annuals and perennial grasses. These shrublands are found on well-drained soils, sometimes with desert pavements, across alluvial fans, bajadas, upland slopes, and minor intermittent washes. (CNPS n.d.c). The wetland indicator status for the dominant species in this alliance, cresosote bush, is “none”.

4.5.5 Needleleaf Rabbitbrush Scrub

Needleleaf Rabbitbrush Scrub is characterized green rabbitbrush (*Ericameria teretifolia*) as the dominant or co-dominant shrub, alongside species like white sagebrush (*Artemisia ludoviciana*), California buckwheat (*Eriogonum fasciculatum*), and broom snakeweed (*Gutierrezia sarothrae*). The shrub canopy, generally under 2 meters, is intermittent to sparse, with an open to intermittent grassy herbaceous layer. These communities thrive in disturbed habitats, such as burns, washes, road cuts, and heavily grazed areas. Soils are variable, typically coarse, well-drained, and moderately acidic to slightly saline, supporting resilient vegetation adapted to these challenging

environments (CNPS n.d.d). The wetland indicator status for the dominant species in this alliance, green rabbitbrush, is “none”.

4.5.6 Non-Native Grassland and Forbes

The non-native classification is assigned when at least 90% cover of non-native species without evenly distributed or diverse native forbs and grasses are present at any time in the growing season (CDFW n.d.).

4.5.7 Rubber Rabbitbrush Scrub

Rubber Rabbitbrush Scrub is dominated or co-dominated by rubber rabbitbrush (*Ericameria nauseosa*) in the shrub canopy, often occurring alongside big sagebrush (*Artemisia tridentata*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), jointfir, and bitterbrush (*Purshia tridentata*). Emergent trees, including California juniper (*Juniperus californica*), Jeffrey pine (*Pinus jeffreyi*), and Joshua tree, may be present at low cover. The shrub canopy, reaching up to 3 meters, ranges from open to continuous, with a sparse or grassy herbaceous layer. This vegetation thrives across diverse topographic settings, particularly in disturbed areas, on well-drained sandy and gravelly soils. Rubber rabbitbrush typically exceeds 50% relative cover or achieves ≥2% absolute cover in these communities (CNPS n.d.e). The wetland indicator status for the dominant species in this alliance, rubber rabbitbrush, is “none”.

Table 2. Vegetation Community per Mapped Drainage

Drainage	Jurisdiction	Vegetation Community
1	WSC/CDFW	CBS
2a	Non JD	DH-DEV
2b	Non JD	Unmapped
3	Non JD	CHBS, DH-DEV
4	Non JD	CHBS, DH-DEV
5a	Non JD	DH-DEV
5b	Non JD	ASSC, DH-DEV
5c	Non JD	ASSC, DH-DEV
5d	Non JD	ASSC, DH-DEV
5e	Non JD	DH-DEV
6	WSC/CDFW	ASSC, DH-DEV
7	WSC/CDFW	ASSC, DH-DEV
8	WSC/CDFW	ASSC, DH-DEV, NNGF
9	Non JD	ASSC, NNGF
10	WSC/CDFW	ASSC, DH-DEV, NNGF, RRS
11a	Non JD	ASSC, DH-DEV
11b	Non JD	ASSC
12	WSC/CDFW	ASSC, DH-DEV
13	Non JD	DH-DEV
14	WSC/CDFW	ASSC, DH-DEV, CBS
15	WSC/CDFW	ASSC, DH-DEV, NNGF, RRS

Drainage	Jurisdiction	Vegetation Community
16	WSC/CDFW	ASSC, RRS, CBS
17	Non JD	CBS, DH-DEV
18a	Non JD	ASSC, DH-DEV, CBS
18b	Non JD	RRS, DH-DEV
19	WSC/CDFW	DH-DEV, RRS, CBS
20a	Non JD	DH-DEV
20b	Non JD	DH-DEV
20c	Non JD	DH-DEV
21a	Non JD	DH-DEV
21b	Non JD	NNGF, DH-DEV
22a	Non JD	DH-DEV
22b	Non JD	ASSC
22c	Non JD	DH-DEV
23a	Non JD	DH-DEV
23b	Non JD	DH-DEV
24	Non JD	ASSC
25	Non JD	ASSC, DH-DEV
26	WSC/CDFW	RRS, DH-DEV
27	Non JD	DH-DEV
28	Non JD	DH-DEV
29	Non JD	RRS, DH-DEV
30	WSC/CDFW	ASSC, NNGF, DH-DEV
31	Non JD	NNGF, DH-DEV
32	WSC/CDFW	ASSC, NNGF, DH-DEV
33	Non JD	DH-DEV
34	Non JD	DH-DEV
35	Non JD	DH-DEV
36	WSC/CDFW	ASSC, DH-DEV
37	WSC/CDFW	CBWS, ASSC, DH-DEV
38	Non JD	ASSC, DH-DEV
39	Non JD	CBWS, DH-DEV
40	WSC/CDFW	ASSC, DH-DEV
41	WSC/CDFW	ASSC, DH-DEV
42	WSC/CDFW	ASSC, DH-DEV

Drainage	Jurisdiction	Vegetation Community
43a	Non JD	CBWS, ASSC, DH-DEV
43b	Non JD	DH-DEV
44a	Non JD	CBWS, DH-DEV
44b	Non JD	CBWS
45	Non JD	CBWS
46	Non JD	DH-DEV
47	Non JD	CBWS, DH-DEV
48	Non JD	CBWS, DH-DEV
49	Non JD	CBWS, DH-DEV
50	Non JD	CBWS, DH-DEV
51	Non JD	CBWS, DH-DEV
52	Non JD	CBWS, DH-DEV
53	Non JD	CBWS
54	Non JD	CBWS, DH-DEV
55	Non JD	CBWS
56	Non JD	CBWS
57a	WSC/CDFW	CBWS, DH-DEV
57b	WSC/CDFW	CBWS, DH-DEV
58a	Non JD	CBWS, DH-DEV
58b	Non JD	CBWS, DH-DEV
59	Non JD	CBWS, DH-DEV
60	Non JD	DH-DEV
61	Non JD	CBWS
62	Non JD	CBWS
63a	WSC/CDFW	CBWS, DH-DEV
63b	WSC/CDFW	CBWS
63c	WSC/CDFW	CBWS, DH-DEV
64a	Non JD	CBWS
64b	Non JD	CBWS
64c	Non JD	CBWS
64d	Non JD	CBWS
64e	Non JD	CBWS
65a	Non JD	CBWS, DH-DEV
65b	Non JD	CBWS

Drainage	Jurisdiction	Vegetation Community
66	Non JD	CBWS
67	WSC/CDFW	CBWS
68a	WSC/CDFW	CBS, DH-DEV
68b	WSC/CDFW	CBWS, DH-DEV
69	Non JD	CBWS, DH-DEV
70	Non JD	CBWS
71	WSC/CDFW	CBWS, DH-DEV
72	Non JD	CBWS
73	WSC/CDFW	CBWS, RRS, WBS, DH-DEV
74	WSC/CDFW	NRS, ASSC, DH-DEV

ASSC = Allscale Scrub, CBS = Creosote Bush Scrub, CBWS = Creosote Bush-White Bursage Scrub, CHBS = Cheesebush Scrub, RRS = Rubber Rabbitbrush Scrub, NRS = Needleleaf Rabbitbrush Scrub, NNGF = Non-Native Grassland and Forbes, DH-DEV = Disturbed/Developed, WBS = White Bursage Scrub

4.6 National Wetlands Inventory

The USFWS is the principal federal agency that provides information to the public on the extent and status of the nation's wetlands. The USFWS has developed a series of maps, known as the NWI to show wetlands and deepwater habitat. This geospatial information is used by federal, state, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither designed nor intended to produce legal or regulatory products; therefore, wetlands and non-wetland waters identified by the NWI program are not always considered jurisdictional waters.

The NWI Mapper (USFWS 2024) was accessed online to review mapped wetlands and riverine areas within the study area. Twenty drainages identified in the NWI database were observed in the field, while two were determined to be absent (Figure 6, NWI Data). The majority of water features identified in the NWI Mapper and confirmed during field assessments are categorized as R4SBJ, riverine, intermittent, streambed, excavated (seasonally flooded) based on the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). Two water features were categorized as PUSJ, freshwater pond, palustrine, unconsolidated shore, intermittently flooded, and nontidal. Two water features were classified as L2USJ, lake, lacustrine, littoral, unconsolidated shore, intermittently flooded, nontidal.

4.7 National Hydrography Dataset

The National Hydrography Dataset (NHD) is a dataset that provides information about surface water features, such as rivers, lakes, and streams. It is maintained by the USGS and is widely used for various applications, including environmental research, resource management, and mapping.

The NHD includes information on the flow and relationships between different water features, helping to create a detailed and interconnected representation of the nation's hydrography. It is important to note that the dataset has its limitations in accuracy and should not be used to determine jurisdiction of waters. The NHD was accessed online to aid in the identification of potentially jurisdictional waters. Cottonwood Creek was the only drainage feature identified on the NHD that was determined to be jurisdictional. Two detentions along Rosamond Boulevard were confirmed during the field assessment to be absent or non-jurisdictional features.

4.8 Soils

In the study area, 27 soil types were delineated and mapped (USDA 2024) (Figure 7, USDA Soils). The identified soil types include the following:

- Adelanto coarse sandy loam, on slopes with a 2 to 5 percent grade
- Adelanto loamy sand, 2 to 5 percent slopes
- Arizo gravelly loamy sand, 0 to 5 percent slopes
- Arujo sandy loam, 9 to 15 percent slopes
- Cajon loamy sand, 0 to 2 percent slopes
- Cajon loamy sand, 0 to 5 percent slopes
- Cajon loamy sand, 2 to 9 percent slopes
- Cajon loamy sand, loamy substratum, 0 to 2 percent slopes
- Cajon sand, 5 to 15 percent slopes
- DeStazo sandy loam, 0 to 2 percent slopes
- Garlock loamy sand, 2 to 9 percent slopes
- Hesperia fine sandy loam, 0 to 2 percent slopes
- Hesperia fine sandy loam, 2 to 5 percent slopes
- Hesperia loam, 0 to 2 percent slopes
- Hesperia loamy fine sand, 0 to 2 percent slopes
- Hesperia loamy fine sand, 0 to 2 percent slopes hummocky
- Hi Vista sandy loam, 2 to 9 percent slopes
- Mohave coarse sandy loam, 2 to 5 percent slopes
- Muroc sandy loam, 2 to 9 percent slopes
- Porterville cobbly clay, 5 to 9 percent slopes
- Rock land; Rock outcrop; Rosamond clay loam
- Rosamond fine sandy loam; Rosamond loam
- Rosamond loamy fine sand, hummocky
- Rosamond loamy fine sand, slightly saline
- Rosamond silty clay loam
- Rosamond silty clay loam, saline-alkali
- Torriorthents-Rock outcrop complex, very steep

None of the soils listed above are considered hydric and are categorized as either well-drained, somewhat excessively drained, or excessively drained.

5.0 RESULTS

During the December 2024 field visit, 25 jurisdictional wetlands and 49 non-jurisdictional ephemeral drainages were identified within the study area (Figure 8, Jurisdictional Waters). The lateral extents of the ephemeral drainages ranged from approximately 4 inches to 16 feet in width, influenced by variations in soils, vegetation, and geomorphology compared to the surrounding uplands. While some ponded areas and detention basins were larger in width, they were excluded as they are not classified as ephemeral drainages. The ephemeral drainage soils were well-drained and coarse-textured, primarily sandy or gravelly, with low organic content.

Two hydrologic low spots along Rosamond Boulevard were documented, with widths ranging from 125 to 330 feet. Although these ponded areas showed some soil cracking, their overall composition was similar to the adjacent uplands. No hydrophytic or native riparian plant species were observed anywhere in the study area.

Paleochannels and inactive stream channel remnants, which lack recent hydrologic activity, were determined to be likely non-jurisdictional (non-JD). These features do not exhibit defining characteristics such as a distinct bed and bank, evidence of an OHWM, or sustained hydrology indicators like riparian vegetation, aquatic life, or wetland soils. Additionally, they lack hydrologic connectivity or functional contributions to downstream waters as required for jurisdictional designation under CDFW or RWQCB regulations. A total of 49 non-JD drainages were mapped, covering 9.357 acres and 26,301.41 linear feet. Table 3 details the drainage features and their related acreages, linear feet, and activity status comprised in the study area. A more detailed narrative of each drainage feature determined as jurisdictional is included below. Site photos of representative portions of the on-site drainages are included in Appendix B.

Table 3. Mapped Drainages (Study Area)

Drainage	Activity	Jurisdiction	Acres/Linear Feet
1	Active	WSC/CDFW	0.059 acres/ 1,305.84 linear feet
2a	Active	Non JD	2.744 acres/ 4,464.69 linear feet
2b	Active	Non JD	4.854 acres/ 2,139.58 linear feet
3	Active	Non JD	0.005 acres/ 172.36 linear feet
4	Active	Non JD	0.017 acres/ 323.80 linear feet
5a	Active	Non JD	0.006 acres/ 216.39 linear feet
5b	Active	Non JD	0.005 acres/ 201.85 linear feet
5c	Active	Non JD	0.020 acres/ 537.25 linear feet
5d	Active	Non JD	0.007 acres/ 179.55 linear feet
5e	Active	Non JD	0.020 acres/ 489.16 linear feet
6	Active	WSC/CDFW	0.090 acres/ 1,000.13 linear feet
7	Active	WSC/CDFW	0.042 acres/ 994.96 linear feet
8	Abandoned	WSC/CDFW	0.128 acres/ 2,018.91 linear feet
9	Abandoned	Non JD	0.072 acres/ 426.81 linear feet
10	Relic	WSC/CDFW	0.575 acres/ 901.76 linear feet
11a	Active	Non JD	0.032 acres/ 171.32 linear feet
11b	Active	Non JD	0.007 acres/ 161.51 linear feet
12	Dormant	WSC/CDFW	0.038 acres/ 889.33 linear feet
13	Active	Non JD	0.009 acres/ 294.41 linear feet

Drainage	Activity	Jurisdiction	Acres/Linear Feet
14	Active	WSC/CDFW	7.979 acres/ 1,243.47 linear feet
15	Active	WSC/CDFW	0.887 acres/ 463.24 linear feet
16	Active	WSC/CDFW	0.039 acres/ 790.88 linear feet
17	Active	Non JD	0.012 acres/ 240.68 linear feet
18a	Active	Non JD	0.030 acres/ 887.63 linear feet
18b	Active	Non JD	0.097 acres/ 1,378.22 linear feet
19	Active	WSC/CDFW	3.029 acres/ 1,158.56 linear feet
20a	Active	Non JD	0.029 acres/ 692.93 linear feet
20b	Active	Non JD	0.037 acres/ 889.49 linear feet
20c	Active	Non JD	0.002 acres/ 119.00 linear feet
21a	Active	Non JD	0.142 acres/ 192.50 linear feet
21b	Active	Non JD	0.019 acres/ 419.63 linear feet
22a	Active	Non JD	0.009 acres/ 212.28 linear feet
22b	Active	Non JD	0.002 acres/ 85.27 linear feet
22c	Active	Non JD	0.001 acres/ 57.61 linear feet
23a	Active	Non JD	0.018 acres/ 546.06 linear feet
23b	Active	Non JD	0.020 acres/ 499.95 linear feet
24	Active	Non JD	0.014 acres/ 306.12 linear feet
25	Active	Non JD	0.020 acres/ 461.90 linear feet
26	Dormant	WSC/CDFW	0.002 acres/ 65.81 linear feet
27	Active	Non JD	0.002 acres/ 56.30 linear feet
28	Active	Non JD	0.004 acres/ 63.79 linear feet
29	Active	Non JD	0.002 acres/ 58.37 linear feet
30	Dormant	WSC/CDFW	0.011 acres/ 237.51 linear feet
31	Dormant	Non JD	0.003 acres/ 72.08 linear feet
32	Dormant	WSC/CDFW	0.024 acres/ 321.67 linear feet
33	Active	Non JD	0.012 acres/ 225.70 linear feet
34	Active	Non JD	0.007 acres/ 185.97 linear feet
35	Active	Non JD	0.467 acres/ 205.36 linear feet
36	Active	WSC/CDFW	0.163 acres/ 1,290.23 linear feet
37	Active	WSC/CDFW	0.049 acres/ 1,959.47 linear feet
38	Active	Non JD	0.024 acres/ 252.08 linear feet
39	Active	Non JD	0.038 acres/ 297.55 linear feet
40	Dormant	WSC/CDFW	0.08 acres / 541 linear feet
41	Dormant	WSC/CDFW	0.22 acres / 883 linear feet
42	Active	WSC/CDFW	0.035 acres/ 525.58 linear feet
43a	Active	Non JD	0.053 acres/ 787.45 linear feet

Drainage	Activity	Jurisdiction	Acres/Linear Feet
43b	Active	Non JD	0.032 acres/ 385.60 linear feet
44a	Active	Non JD	0.213 acres/ 1,526.56 linear feet
44b	Active	Non JD	0.054 acres/ 826.27 linear feet
45	Active	Non JD	0.010 acres/ 158.25 linear feet
46	Active	Non JD	0.015 acres/ 279.42 linear feet
47	Active	Non JD	0.007 acres/ 99.21 linear feet
48	Active	Non JD	0.003 acres/ 117.24 linear feet
49	Active	Non JD	0.003 acres/ 104.10 linear feet
50	Active	Non JD	0.005 acres/ 175.00 linear feet
51	Active	Non JD	0.003 acres/ 88.79 linear feet
52	Active	Non JD	0.010 acres/ 301.95 linear feet
53	Active	Non JD	0.014 acres/ 455.30 linear feet
54	Active	Non JD	0.012 acres/ 270.01 linear feet
55	Active	Non JD	0.018 acres/ 257.90 linear feet
56	Active	Non JD	0.002 acres/ 86.41 linear feet
57a	Active	WSC/CDFW	0.005 acres/ 166.84 linear feet
57b	Active	WSC/CDFW	0.001 acres/ 77.97 linear feet
58a	Active	Non JD	0.073 acres/ 1,124.23 linear feet
58b	Active	Non JD	0.073 acres/ 1,009.26 linear feet
59	Active	Non JD	0.004 acres/ 142.23 linear feet
60	Active	Non JD	0.002 acres/ 66.42 linear feet
61	Active	Non JD	0.004 acres/ 169.23 linear feet
62	Active	Non JD	0.002 acres/ 89.01 linear feet
63a	Active	WSC/CDFW	0.365 acres/ 2,358.76 linear feet
63b	Active	WSC/CDFW	0.008 acres/ 331.76 linear feet
63c	Active	WSC/CDFW	0.072 acres/ 581.41 linear feet
64a	Active	Non JD	0.059 acres/ 661.20 linear feet
64b	Active	Non JD	0.003 acres/ 71.10 linear feet
64c	Active	Non JD	0.005 acres/ 75.36 linear feet
64d	Active	Non JD	0.005 acres/ 90.59 linear feet
64e	Active	Non JD	0.008 acres/ 167.00 linear feet
65a	Active	Non JD	0.030 acres/ 253.84 linear feet
65b	Active	Non JD	0.006 acres/ 137.79 linear feet
66	Active	Non JD	0.027 acres/ 492.82 linear feet
67	Dormant	WSC/CDFW	0.102 acres/ 613.57 linear feet
68a	Active	WSC/CDFW	0.020 acres/ 408.98 linear feet
68b	Active	WSC/CDFW	0.028 acres/ 368.62 linear feet

Drainage	Activity	Jurisdiction	Acres/Linear Feet
69	Active	Non JD	0.009 acres/ 182.27 linear feet
70	Active	Non JD	0.004 acres/ 192.96 linear feet
71	Dormant	WSC/CDFW	0.119 acres/ 627.17 linear feet
72	Active	Non JD	0.001 acres/ 140.03 linear feet
73	Active	WSC/CDFW	0.192 acres/ 1,908.70 linear feet
74	Active	WSC/CDFW	0.592 acres/ 2,534.49 linear feet
TOTAL		**24.236 acres/ 54,508.75 linear feet**	
Total Non JD		**9.357 acres / 26,301.41 linear feet**	
Total JD		**14.89 acres/ 28,207.34 linear feet**	

Description of Potentially Jurisdictional Water Features Delineated

Drainage 1

Drainage 1 is classified as an active ephemeral swale and is characterized as a naturally occurring active channel that conveys a portion of storm flows originating from a local watershed in the upland hills (Photos 1 and 2, Appendix B). This drainage feature is identified within the NWI as a riverine intermittent streambed that is intermittently flooded. The channel has a defined width of approximately 38 inches, with evidence of soil cracking, bank scouring, and meandering along its course. Bordering vegetation primarily consists of creosote bushes and grasses, further delineating the active channel. The downstream extent of this drainage terminates at the riprap associated with Drainage 2a. Although the feature lies within a FEMA-designated area of minimal flood hazard, its characteristics suggest it could potentially be considered jurisdictional by CDFW and RWQCB.

Drainage 6

Drainage 6 is characterized as an active dirt access road that currently conveys storm flows during large storm events (Photos 17 and 18, Appendix B). Flows originate from Cottonwood Creek to the northwest. During the 2023 rain season, excessive storm run-off redirected flows from the historic channel to a new active channel that flows along an active dirt access road. The low-flow channel is generally 1 to 2 feet wide, which is consistent with upstream portions of Cottonwood Creek. The active portion of the channel is 6 to 10 feet wide and correlates with the width of the previously disturbed access road. There was no evidence of flow beyond the edge of the disturbed access road. Soils within the drainage consisted of loose sand with no organic streaking.

This feature is not identified in the NWI or NHD database but is on the western edge of the FEMA National Flood Hazard Area. Although it is not a naturally occurring drainage feature, it is the current channel and therefore would be considered jurisdictional by RWQCB and CDFW. The edges of the drainage feature were identified by a change in sediment structure from sandy deposits to upland soils. The access road lacked vegetation, but due to ongoing grading to maintain the road, there was evidence of small berms along the outer edges of the road that contain the flows from extending beyond the road edge.

Drainage 7

Drainage 7 is characterized as a naturally occurring active channel that currently conveys a portion of the storm flows that originate from Cottonwood Creek. Although most of the flow from Cottonwood Creek currently flows in Drainage 6, a portion of the flow still occurs in Drainage 7. This was evident by the active channel erosion and ponding evidence on the north side of the earthen berm (Photos 19 through 22, Appendix B). This feature did not contain a similar low-flow channel like Drainage 6. This feature contains an active channel between 9 and 13 feet wide. There was no evidence of flow beyond the edge of the active channel. Soils in the drainage consisted of loose

sand with no organic streaking. As a result of clearing Rosamond Boulevard of sediment during storm events, a portion of the flows from Drainage 6 sheet flows along the southern edge of Rosamond Boulevard and enters Drainage 7 (Photos 23 and 24, Appendix B).

This feature is identified in the NWI database and is also on the western edge of the FEMA National Flood Hazard Area. This feature is a naturally occurring diversion of Cottonwood Creek and was defined by a change in sediment. There was no change in the upland areas adjacent to the channel. It is considered an active channel and therefore would be considered jurisdictional by RWQCB and CDFW.

Drainage 8

Drainage 8 is likely a remnant braid from the historic Cottonwood Creek (Photos 25 through 27, Appendix B). This feature was not identified in the NWI database but it is within the western part of the FEMA National Flood Hazard Area and is visible on an aerial photograph with an average width of approximately 2 to 4 feet. It likely collects sheet flow from the existing dirt access road, then flows over Rosamond Boulevard, and then enters a man-made earthen channel (likely to contain the drainage and reduce erosion). Although there was no definitive evidence of flows upstream of Rosamond Boulevard, the earthen berm, and downstream flows south of Rosamond Boulevard are clearly identified on an aerial photograph. Currently, this channel has no upstream connection to Cottonwood Creek; however, there is evidence that this feature conveys some amount of flow during storm events or is simply used to convey sheet flow off of Rosamond Boulevard. This feature is considered a dormant channel but is still capable of conveying flows during a storm event, and therefore would be considered jurisdictional by RWQCB and CDFW.

Drainage 10

Drainage 10 is the historic portion of Cottonwood Creek (USGS Fairmont Butte 7.5-minute topographic quadrangle), but no longer conveys active flows, even during a storm event. Due to complete flow diversion into Drainages 6 and 7, this feature is now considered a relict. Although there is historic evidence of flows (e.g., sandy soils) the feature has been used for off-road vehicle use and no longer contains evidence of recent flows (OHWM or clearly defined bed and bank features) (Photos 30 through 32, Appendix B). If the drainage contains flow, it is likely limited to the immediate surrounding area, which does not generate sufficient velocity or volume to maintain the active channel. This feature currently ranges from 26 to 48 feet in width. Downstream of Rosamond Boulevard, Drainage 10 is conveyed in an earthen berm and eventually sheet flows south of the project site.

This feature is identified in the NWI database and is also on the western edge of the FEMA National Flood Hazard Area. Since this is the historic flow channel of Cottonwood Creek, it is likely that this area may revert to an active channel if the flows upstream are naturally diverted due to a heavy storm event. For that reason, it is considered a relict channel and therefore would be considered jurisdictional by RWQCB and CDFW. Drainage 10 completely sheet flows south of Rosamond Boulevard and has no evidence of channel flow; therefore, the jurisdictional limits of CDFW and RWQCB are limited to the northern side of the road.

Drainage 12

Drainage 12 is a localized drainage feature that only has evidence of flows immediately upstream and downstream of Rosamond Boulevard. This feature is considered dormant and flows have been limited by surrounding rural residences. This feature also conveys sheet flow from Rosamond Boulevard (Photos 27 and 38, Appendix B). The portion of the channel that has evidence of flows ranges from 1 to 3 feet in width. This channel is characterized by a lack of vegetation cover and a small berm along the active channel. Since this feature contains some evidence of flows, it is considered a dormant channel and may continue to convey flows during storm events. This feature is identified in the NWI database and is located within the central portion of the edge of the FEMA National Flood Hazard Area. Therefore, Drainage 12 would be considered jurisdictional by RWQCB and CDFW.

Drainages 14, 15, and 16

Drainages 14 and 15 contain evidence of ponding, including cracked soils and a lack of dense understory vegetative cover (Photos 41 through 48, Appendix B). The ponding in drainage 14 is likely the result of either an undersized or blocked storm drain beneath Rosamond Boulevard allowing flows to back up on the north side of the road. Drainage 14 was also mapped as a freshwater pond and Drainage 15 is mapped as a lake in the NWI database. They are located on the eastern edge of the FEMA National Flood Hazard Area. The drainage 14 ponded area was mapped as 1,000 feet in length and 300 feet in width. Drainage 15 was mapped as 460 feet in length and 128 feet in width. An underground culvert conveys flows south of Rosamond Boulevard in a channel that ranges from 3 to 9 feet in width (Photo 49, Appendix B). The channel conveys flow from Drainage 14 to an extension of Drainage 15 mapped in NWI. Drainage 16 consists of a portion of the channel south of Rosamond Boulevard that contains an earthen berm and the jurisdictional limits are indicated by a change in vegetative cover. Therefore, Drainages 14, 15, and 16 are considered active and would be considered jurisdictional by RWQCB and CDFW.

Drainage 19

Drainage 19 is similar to Drainage 14 described above. It is identified as a freshwater ponded area on the NWI database and located on the eastern edge of the FEMA National Flood Hazard Area. Although this feature contains a small remnant upland drainage upstream of the ponded area, there is no downstream evidence of flows. This feature is approximately 1,158 liner feet, averages 90 to 212 feet in width, and terminates at the northern edge of Rosamond Boulevard (Photos 56 through 58, Appendix B). This feature does not continue south of Rosamond Boulevard. The portion of the channel north of Rosamond Boulevard contains an earthen berm and the jurisdictional limits are indicated by a clear change in vegetative cover. Drainage 19 is on the eastern edge of the FEMA National Flood Hazard Area. Therefore, Drainage 19 is considered active and would be considered jurisdictional by RWQCB and CDFW.

Drainages 26, 30, and 32

These features are described as underground culverts that convey sheet flow from one side of Rosamond Boulevard to the other. Flows are contained in the underground culvert (Photos 83 through 100, Appendix B). Except for Drainage 30, no evidence of flows upstream or downstream were recorded at these crossings. Drainage 30 has a small erosion feature that continues downstream of Rosamond Boulevard but is limited to about 140 linear feet and was measured no wider than 2 feet. These drainages are not identified in the NWI Map and are not in the FEMA National Flood Hazard Area. Since there is evidence of flows, Drainages 26, 30, and 32 are considered dormant, but would be considered jurisdictional by RWQCB and CDFW.

Drainages 36 and 37

Drainages 36 and 37 are characterized as naturally occurring active channels that currently convey flows from a local watershed that originates on the east side of Covington Mountain, approximately 23 miles northwest of the study area. Drainage 37 is defined as a low-flow channel that ranges between 1 and 5 feet in width. The bed and bank feature ranges from 8 to 12 feet in width (Photos 107 and 108, Appendix B). The upstream portion of drainage 37 channel was burned in 2024. The downstream portion of the channel was filled with broken pieces of concrete and asphalt presumably placed to reduce erosion. The active channel was wider and deeper than the upstream portion of the channel and the width ranged from 12 to 18 feet (Photos 111 and 112, Appendix B). Drainage 36 flows next to 65th Street West and into a roadside drainage ditch on Felsite Avenue with a channel width of 6.5 feet (Photos 107, 108, 109, 110, Appendix B). Drainages 36 and 37 are identified within the NWI database and are located within the FEMA National Flood Hazard Area. Drainages 36 and 37 are active channels and would be considered jurisdictional by RWQCB and CDFW.

Drainage 40

Drainage 40 is characterized as a naturally occurring active channel that currently conveys flows from a local watershed that originates on the west side of Rosamond Hills, approximately 2.2 miles northwest of the study area.

This drainage is a defined low-flow channel that ranges between 6 inches and 1 foot in width. The defined bed and bank feature ranges from 3 to 6 feet in width (Photos 117 and 118, Appendix B). This feature also has evidence of off-road vehicle use and therefore limits of jurisdiction are difficult to distinguish. Drainage 40 is located within the NWI database and is located within the FEMA National Flood Hazard Area. Drainage 40 is an active channel and would be considered jurisdictional by RWQCB and CDFW.

Drainages 41 and 42

Drainages 41 and 42 are characterized as naturally occurring active channels that currently convey flows from a local watershed that originates within the Rosamond Hills, approximately 2.6 miles northwest of the study area. Drainage 42 is a tributary of Drainage 41. Drainage 41 has a defined bed and bank feature that ranges from 3 to 8 feet in width with no discernable low-flow channel (Photos 119 and 120, Appendix B). The active channels are defined by a change in sediment and vegetation cover. There is no braided channel system or other evidence of flows in the upland areas adjacent to the drainage feature. This drainage eventually sheet flows with no evidence of flows just north of the Rosamond Airport. Drainages 41 and 42 are located within the NWI database and the downstream portion of this drainage is located within the FEMA National Flood Hazard Area, but not in the project study area. Drainages 41 and 42 is an active channel and would be considered jurisdictional by RWQCB and CDFW.

Drainages 57a and 57b

Drainages 57a and 57b are naturally occurring active channels classified as ephemeral swales that convey flows during storm events. Drainage 57a is located west of Werner Avenue and is characterized by a meandering depression in the soil in the upstream section, with a defined channel width ranging from 16 to 17 inches and grasses along the channel margins. The active channel is identified by a noticeable gap in vegetation (Photos 156 and 157, Appendix B). Drainage 57b, located adjacent to Werner Avenue and downstream of Drainage 57a, is similarly classified as an ephemeral swale (Photos 158 and 159, Appendix B). The northern portion of Drainage 57b forks into eastern and western channels before converging further downstream. The eastern fork appears to result from road runoff from Werner Avenue, while the western fork is likely connected to Drainage 57a. Drainage 57a or 57b are not mapped within the NWI database and fall within a FEMA-designated area of minimal flood hazard, however, their characteristics indicate potential jurisdiction under CDFW and RWQCB.

Drainages 63a, 63b, 63c

Drainage 63 is characterized as a naturally occurring active channel that currently conveys flows from a local watershed that originates within the Rosamond Hills, approximately 1 mile north of the study area. This drainage has a defined bed and bank feature that ranges from 3 to 6 feet in width with no low-flow channel (Photos 173 through 179, Appendix B). The active channel is defined by a change in sediment and vegetation cover and includes a small tributary at the northern edge of the study area. There is no braided channel system or other evidence of flows in the upland areas adjacent to the drainage feature. This drainage eventually sheet flows with no flows just north of the Rosamond Airport. The downstream portion of Drainage 63a (south of the project study area) is located within the NWI database while the tributaries comprising Drainage 63b and 63c are not. Drainage 63 is located within the FEMA National Flood Hazard Area. Drainage 63 is an active channel and would be considered jurisdictional by RWQCB and CDFW.

Drainages 67, 68a, 68b and 71

Drainages 67, 68a, 68b, and 71 are characterized as naturally occurring dormant channels that periodically convey flows and were likely impacted during the installation of Dawn Road. Both drainages 67 and 71 features have a defined channel, but only on the south side of Dawn Road (Photos 197, 198, 209, and 210, Appendix B). Flows upstream and downstream of these areas sheet flow with no evidence of flows. Drainage 68a flows into drainage 68b from the northern to southern side of Dawn Road through an underground culvert. These drainages have a defined bed and bank feature that ranges between 1 and 3 feet in width (Photos 199 through 204). There is a change in soil texture and vegetative cover. Drainages 67, 68a, 68b, and 71 are listed on the NWI database but are

not included in the FEMA National Flood Hazard Area. For these reasons, Drainages 67, 68a, 68b, and 71 are considered dormant channels and would be considered jurisdictional by RWQCB and CDFW.

Drainage 73

Drainage 73 is characterized as a naturally occurring active channel that currently conveys flows from a local watershed that originates from run-off along US Highway 14. Flows are collected along the paved road and conveyed into an underground culvert that outlets on the east side of the highway, just north of the Dawn Road intersection. This drainage has a defined bed and bank feature that ranges from 3 to 12 feet in width, with a low-flow channel that averages 1 to 3 feet (Photos 213 and 214, Appendix B). The active channel is defined by a change in sediment and vegetation cover and includes a small tributary at the northern edge of the study area. There is no braided channel system or other evidence of flows in the upland area adjacent to the drainage feature. This drainage sheet flows with no evidence of flows just south of the project study area on the south side of Dawn Road. Drainage 73 is not located within the NWI database and is not located within the FEMA National Flood Hazard Area. Drainage 73 is an active channel and would be considered jurisdictional by RWQCB and CDFW.

Drainage 74

Drainage 74 is characterized as a naturally occurring active channel that currently conveys flows from a local watershed that originates from run-off north of Champagne Avenue, south of Sopp Road, east of 30th Street, and west of US Highway 14, and conveyed into an underground culvert that outlets on the east side of the railroad tracks, just north of the Dawn Road intersection with Sierra Highway (Photos 215 and 216, Appendix B). This drainage has a clearly defined bed and bank feature that ranges from 3 to 12 feet in width with a low-flow channel that averages 1 to 3 feet. The active channel is defined by a change in sediment and vegetation cover and includes at least two small tributaries along the eastern edge of the study area. Additional tributaries occur outside of the study area. There is no braided channel system or other evidence of flows in the upland area adjacent to the Drainage feature. This drainage eventually sheet flows with no evidence of flows just south of the project study area on the south side of Dawn Road. Drainage 74 is located within the NWI database and is also located within the FEMA National Flood Hazard Area. Drainage 74 is an active channel and would be considered jurisdictional by RWQCB and CDFW.

6.0 DISCUSSION AND CONCLUSIONS

On August 29, 2023, the USACE and U.S. Environmental Protection Agency issued the final rule to amend the final Revised Definition of the “Waters of the United States” rule. This was a direct result of the U.S. Supreme Court decision on May 25, 2023, in the case of Sackett v. Environmental Protection Agency. Under the revised definition, USACE jurisdiction areas must have a hydrologic surface connection to any Relatively Permanent Water or Traditionally Navigable Waterway. Since all the drainage features are considered ephemeral and have no hydrologic connection to any downstream Relatively Permanent Waters or Traditionally Navigable Waterways, they are no longer under the USACE jurisdiction.

The jurisdictional delineation field survey identified 25 individual ephemeral drainage features in the study area that are considered jurisdictional WSC regulated by the CDFW and RWQCB. Given the episodic flow regime and well-drained soils, both CDFW streambed and RWQCB jurisdictions coincided across the study area. There was no evidence of adjacent riparian habitat at the 25 drainage features that would expand the CDFW jurisdictional limits.

Since the proposed project will be permitted through the CEC, the CEC will be issuing a final decision and will incorporate the required mitigation measures typically associated with CDFW and RWQCB state law permitting, if applicable. During the agency consultation, CDFW and RWQCB staff will assess the application information and reach out to the CEC for any necessary clarifications or site visits.

To avoid impacts to wetlands, pole location and pole construction sites were located outside a 100-foot setback from jurisdictional drainages, thereby mitigating potential impacts to jurisdictional waters. Drainages 36 and 68a

were unable to be located outside of the 100-foot setback, therefore best management practices (BMPs) and avoidance measures will be implemented to limit impacts to jurisdictional drainages. Fill of non-jurisdictional drainages will be avoided by implementation of BMPs during construction, such as barrier fencing and silt fencing.

7.0 IMPACTS TO JURISDICTIONAL WATERS

For the reasons discussed herein, WSP does anticipate that the Project will temporarily impact jurisdictional waters during construction. The jurisdictional waters within the study area are situated in the footprint of the additional workspace areas or gen-tie alignments mitigation measures and BMPs will be employed to reduce impacts on and avoid jurisdictional drainages to the extent possible. The following text details the types of activities with the potential to impact jurisdictional delineations. Tables 4 and 5 detail the jurisdictional drainages impacted.

Types of Impact Activities

Grading: Grading in the laydown areas will be limited to what is necessary to create a sufficiently level surface for the safe storage of transmission poles and materials. Grading will also take place in project work areas and along unpaved access roads to stabilize the ground and establish a safe, level workspace. Typical equipment used for grading includes motor graders, crawlers with backhoe attachments, dozers, and haul trucks. In some work areas and along unpaved access routes with uneven terrain, minor cut-and-fill operations will be required. These areas contain bumps and dips, and grading them will involve more substantial earthmoving than simple surface disturbance. Excavated material will be repurposed to fill depressions within the project area rather than being removed from the site. In certain locations, additional fill material may be needed and will be transported to the site using haul trucks.

Drive and Crush: Drive and crush refers to the intentional driving of vehicles or equipment over vegetation to flatten and compact it, typically to create temporary access routes, staging areas, or workspaces on a site.

Excavation: At transmission pole sites, excavation refers to the process of digging a hole to place the pole into the ground. This is typically done when soil conditions do not allow for direct driving, such as in rocky or compacted areas, or when a deeper foundation is required for stability. Excavation can be performed using augers, backhoes, or other earth-moving equipment.

Gravel: Gravel may be placed along access roads and temporary work areas to stabilize loose soil and provide an all-weather working surface. In temporary work areas, gravel would be laid over geotextile fabric, creating a barrier between the gravel and the ground. After construction, gravel placed on geotextile fabric would either be removed or left in place upon request if located on private land. Gravel applied to existing unpaved access roads would remain as a permanent road improvement. Typical equipment used for gravel installation includes dump trucks and dozers.

Clear and Grub: Brush and grass would be removed using all-surface vehicle mowers or similar equipment. Woody vegetation would be trimmed or manually removed with chainsaws, supported by line trucks, bucket trucks, and pull-behind chippers. Where chipper access is available, vegetative materials would be chipped and mulched onsite for use in post-construction restoration as needed. In areas without chipper access, vegetative debris would be lopped and scattered. Any green waste requiring off-site removal, such as in residential areas, would be disposed of at an appropriate facility in compliance with applicable regulations.

Table 4: Project Impacts to Jurisdictional Waters (JDs) without Berm

Project Component	Impact Activity	Impact Type	Drainages Impacted	JD (Y/N)	Drainage Acres Impacted
WRESC Site	N/A	Temporary	N/A	N/A	N/A
	Grading	Permanent	N/A		N/A
	Clear and Grub				
New Access Roads	Drive and Crush	Temporary	N/A	N/A	N/A
	Gravel				
	Grading	Permanent	N/A		N/A
Laydown Areas	Gravel	Temporary	N/A	N/A	N/A
	Grading	Permanent	N/A		N/A
Pole Sites	Drive and crush	Temporary	Drainage 5e	N	0.0028
			Drainage 13	N	0.0022
			Drainage 17	N	0.0044
			Drainage 18a	N	0.0093
			Drainage 18b	N	0.0016
			Drainage 27	N	0.0029
			Drainage 28	N	0.0013
			Drainage 31	N	0.0018
			Drainage 33	N	0.0001
	Gravel		Drainage 36	Y	0.0053
			Drainage 43b	N	0.0027
			Drainage 51	N	0.0003
			Drainage 54	N	0.0014
			Drainage 59	N	0.0032
			Drainage 60	N	0.0016
			Drainage 64a	N	0.0068
			Drainage 64d	N	0.0052
	Excavation	Permanent	Drainage 64d	N	0.0001

Project Component	Impact Activity	Impact Type	Drainages Impacted	JD (Y/N)	Drainage Acres Impacted
Pull and Tension Sites	Drive and Crush	Temporary	Drainage 18b	N	0.0175
			Drainage 20a	N	0.0006
	Gravel		Drainage 21a	N	0.0023
			Drainage 33	N	0.0105
	N/A	Permanent	N/A	N/A	N/A
Underground Trenching	Open Cut Trenching	Temporary	Drainage 18b	N	0.0004
	N/A	Permanent	N/A	N/A	N/A

N=No, Y=Yes, N/A = Not applicable

Table 5. Project Impacts to Jurisdictional Waters (JDs) with Berm

Project Component	Impact Activity	Impact Type	Drainages Impacted	JD (y/n)	Drainage Acres Impacted
WRESC Site	N/A	Temporary	N/A	N/A	N/A
	Grading	Permanent	N/A		N/A
	Clear and Grub				
New Access Roads	Drive and Crush	Temporary	N/A	N/A	N/A
	Gravel				
	Grading	Permanent	N/A		N/A
Laydown Areas	Gravel	Temporary	Drainage 69	N	0.0171
			Drainage 68a	Y	0.0086
	Grading	Permanent	N/A	N/A	N/A
Pole Sites	Drive and crush	Temporary	Drainage 5e	N	0.0032
			Drainage 13	N	0.0028
			Drainage 17	N	0.0022
			Drainage 18a	N	0.0044
			Drainage 18b	N	0.0093
			Drainage 27	N	0.0016

Project Component	Impact Activity	Impact Type	Drainages Impacted	JD (y/n)	Drainage Acres Impacted
			Drainage 28	N	0.0029
			Drainage 31	N	0.0013
	Gravel		Drainage 33	N	0.0018
			Drainage 36	Y	0.0001
			Drainage 43b	N	0.0053
			Drainage 51	N	0.0027
			Drainage 54	N	0.0003
			Drainage 59	N	0.0014
			Drainage 60	N	0.0016
			Drainage 64a	N	0.0068
	Excavation	Permanent	Drainage 64d	N	0.0001
Pull and Tension Sites	Drive and crush	Temporary	Drainage 18b	N	0.0175
	Gravel		Drainage 20a	N	0.0006
			Drainage 21a	N	0.0023
			Drainage 33	N	0.0105
	N/A	Permanent	N/A	N	N/A
Underground Trenching	Open Cut Trenching	Temporary	Drainage 18b	N	0.0004
	N/A	Permanent	N/A	N/A	N/A

N=No, Y=Yes, N/A = Not applicable

BMPs and Avoidance Measures

Where necessary, the following BMPs and avoidance measures recommended by CalTrans will be implemented to minimize impacts to potentially jurisdictional drainage features (CalTrans 2024):

- Avoidance Measures
    - **High Visibility Fencing**: Temporary fencing shall be provided prior to the start of clearing and grubbing operations or other soil-disturbing activities in areas. Clearly marking and leaving a buffer area around these unique areas during construction will help to preserve areas with potential jurisdictional drainage features as well as take advantage of natural erosion prevention and sediment trapping.

- **100-Foot Setback**: Where possible, a 100-foot setback will be implemented requiring a minimum distance of 100 feet between construction activities and a wetland to minimize impacts. This buffer helps protect wetland functions by reducing the risk of sedimentation, pollution, and habitat disturbance from construction-related activities. If a 100 setback is not possible, additional avoidance measures would be installed to prevent impacts to protected features.

- BMPs
  - **Silt Fencing**: A silt fence is a temporary linear sediment barrier of permeable fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff. Silt fences allow sediment to settle from runoff before water leaves the construction site. Silt fences may be used below the toe of exposed and erodible slopes, down-slope of exposed soil areas, around temporary stockpiles, along streams and channels, and along the perimeter of a project.
  - **Temporary Fiber Rolls**: A temporary fiber roll consists of wood excelsior, rice or wheat straw, or coconut fibers that are rolled or bound into a tight tubular roll and placed on the toe and face of slopes to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and remove sediment. Temporary fiber rolls may also be used for drainage inlet protection and as check dams under certain situations. Fiber rolls may be used as check dams in unlined ditches or as temporary drainage inlet protection down-slope of exposed soil areas. They may be implemented along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow, below the toe of exposed and erodible slopes, around temporary stockpiles, and along the perimeter of a project.

7.1 Permitting Requirements

The following details the permit requirements for activities associated with potential jurisdictional waters:

- **USACE Permitting Requirements**: Activities in, over, or under navigable waters of the United States (under Section 10 of the Rivers and Harbors Act of 1899), and the discharge (dump, placement, deposit) of dredged or fill material into WOTUS to include wetlands (under Section 404 of the Clean Water Act of 1972) (USACE n.d.). **There are no WOTUS within the project area, therefore no permit application to USACE is required.**
- **Lahontan RWQCB Permitting Requirements**: Discharging or proposing to discharge pollutants into surface water. Applicants must file a complete National Pollutant Discharge Elimination System (NPDES) permit application form(s) and appropriate application fee with the Lahontan RWQCB (California Waterboards Lahontan-R6 2018). **The mapped features do not demonstrate a connection to rivers, streams, lakes, or riparian habitats. Therefore, the applicant does not anticipate a NPDES permit to be required.**
- **CDFW Permitting Requirements**: Fish and Game Code Section 1602 requires any entity to notify CDFW before beginning any activity that may:
  - Divert or obstruct the natural flow of any river, stream, or lake;
  - Change the bed, channel, or bank of any river, stream, or lake;
  - Use material from any river, stream, or lake; or
  - Deposit or dispose of material into any river, stream, or lake.

  If it is determined that the proposed activity may substantially adversely impact fish and wildlife, a Lake and Streambed Alteration Agreement will be prepared (CDFW n.d.a). **As no lakes, streams, or riparian habitats were identified within the project area, a Lake and Streambed Alteration Agreement is not anticipated to be required.**

The project was designed to avoid impacts to jurisdictional waters under both the berm and without berm scenarios. The following summarizes potential temporary impacts to drainage features:

- **Drainage 36:** Under the scenarios with and without a berm, Drainage 36 will be temporarily impacted from activities within the pole construction sites. The pole itself will not be located within the boundaries of the drainage feature. The pole construction site will be restored following pole installation.
- **Drainage 68a:** Under the with berm scenario that potentially utilizes a portion of the Villa Haines parcel for additional laydown, parking areas, and temporary western Joshua tree storage. Under this scenario, Drainage 68a may be temporarily impacted by construction support activities. Once construction has concluded, the site would be restored to its pre-construction condition.

The project has been designed to avoid impacts to jurisdictional drainage features. As such, no permits are required from the Lahontan RWQCB, CDFW, or USACE.

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9.0 LIMITATIONS

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This report was prepared, based in part, on information obtained from historic information sources. In evaluating the subject site, WSP has relied in good faith on information provided. We accept no responsibility for any deficiency or inaccuracy contained in this report as a result of our reliance on the aforementioned information.

The findings and conclusions documented in this report have been prepared for the specific application to this project and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practicing under similar conditions in the jurisdiction.

With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time, and should be reviewed.

If new information is discovered during future work, the conclusions of this report should be re-evaluated and the report amended as required prior to any reliance upon the information presented herein.