APPENDIX N

Water Supply Assessment

Water Supply Assessment
for the
Campo Wind Project with Boulder Brush Facilities

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ACRONYMS AND ABBREVIATIONS

AF	acre-feet
AFY	acre-feet per year
AWP	Advanced Water Purification
bgs	below ground surface
btoc	below top of casing
CEQA	California Environmental Quality Act
CWA	County Water Authority
CWC	California Water Code
DEH	Department of Environmental Health
DWR	California Department of Water Resources
ECO	East County
EPA	Environmental Protection Agency
gpd	gallons per day
gpd/ft	gallons per day per foot
gpm	gallons per minute
HA	Hydrologic Area
HSA	Hydrologic Subarea
HU	Hydrologic Unit
JCSD	Jacumba Community Services District
kV	kilovolt
MCL	Maximum Contaminant Level
MGD	million gallons per day
MUP	Major Use Permit
MW	megawatts
O&M	operations and maintenance
PDMWD	Padre Dam Municipal Water District
PVC	Polyvinyl chloride
SB	Senate Bill
SGMA	Sustainable Groundwater Management Act
TDS	Total Dissolved Solids
USGS	U.S. Geologic Survey
UWMP	urban water management plan
VOCs	Volatile Organic Compounds
WSA	Water Supply Assessment
WRF	Water Recycling Facility

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EXECUTIVE SUMMARY

This Water Supply Assessment (WSA) has been prepared to assist San Diego County in satisfying the requirements of Senate Bill (SB) 610 for the Campo Wind Project with Boulder Brush Facilities (Project). SB 610 requires preparation of a WSA for any project that is subject to California Environmental Quality Act (CEQA) and meets certain requirements. A WSA associated with a project must include a discussion of the availability of an identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the Project in addition to other existing and planned future uses of the identified water supply.

An estimated maximum water demand of approximately 173 acre-feet (AF) of water would be required over the 14-month Project construction period (123 AF for Campo Wind Facilities and 50 AF for Boulder Brush Facilities). Thereafter, the Project would require approximately 0.25 acre-feet per year (AFY) (or 210 gallons per day) to support operation and maintenance (O&M) activities. Several sources of water supply have been identified for the Project, which individually or in combination, would be available and sufficient to fully supply the Project's construction and O&M water demands.

Water needed for the construction of the Boulder Brush Facilities would be purchased from the Padre Dam Municipal Water District (PDMWD) and/or the Jacumba Community Services District (JCSD), and would be trucked to the Project Site. Water sources needed for the construction of the Campo Wind Facilities would include groundwater facilities on and off the Campo Band of Diegueño Mission Indians Reservation (Reservation) groundwater facilities such as production wells on the southern end of the Reservation and non-potable water from permitted Off-Reservation (i.e., outside the Reservation Boundary) purveyors consisting of JCSD and/or PDMWD. The O&M facility water demand is anticipated to be supplied by a new On-Reservation groundwater well or existing On-Reservation (i.e., within the Reservation Boundary) groundwater wells (19 wells located in a 312-acre wellfield in the southern portion of the Project Site) or potentially supplemented by potable water delivery by a privately owned bottled water distributor licensed by the California Department of Public Health (CDPH) Food and Drug Branch (FDB). Based on the estimated Project water demands, the availability of on-site groundwater, and the availability of construction water from PDMWD and/or JCSD, there is sufficient water available for Project construction and ongoing operation.

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1 INTRODUCTION

1.1 Purpose of Document

Senate Bill (SB) 610 became effective on January 1, 2002, amending the California Water Code (CWC) by requiring detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet Campo Wind Project with Boulder Brush Facilities (Project) demands. SB 610 requires the preparation of a Water Supply Assessment (WSA) for any project that is subject to the California Environmental Quality Act (CEQA) and meets certain requirements. A WSA associated with a project must include a discussion of the availability of an identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the project in addition to other existing and planned future uses of the identified water supply.

San Diego County, acting as Lead Agency, has determined that a portion of the Project is subject to CEQA. Following this determination, the County is required to request information from public water suppliers who may serve the Project to demonstrate whether adequate water supply is available for the Project. The Project Site is not located within the service area of a public water system or regional water wholesaler and no adjacent water system will become a public water system by virtue of serving the Project. Therefore, this WSA will be included in the CEQA documentation and will be reviewed by the Lead Agency, who will make an independent determination as to whether there is adequate water supply for the Project. This WSA provides information on the Project's potential water supply and provides data to support the sufficiency of supply.

1.2 Project Location and Description

The Project consists of both the Campo Wind Facilities that would be located on land within the Campo Band of Diegueño Mission Indians Reservation (Reservation) Boundary and the Boulder Brush Facilities that would be located on adjacent private land in unincorporated southeastern San Diego County within the Boulder Brush Boundary. Collectively, land within both the Reservation Boundary and the Boulder Brush Boundary comprise the Project Area. Project disturbances associated with the construction of the Campo Wind Facilities within the Campo Corridor are expected to be approximately 800 acres, whereas Project disturbances associated with the construction of the Boulder Brush Facilities within the Boulder Brush Corridor are expected to be approximately 130 acres. Collectively, land within both the Campo Corridor and the Boulder Brush Corridor comprise the Project Site. The Project Site is located adjacent to the community of Live Oak Springs and Interstate 8 (I-8) (Figure 1, Regional Location).

The Project Site is largely undeveloped ranch land and is surrounded by rural residential homes and ranches scattered throughout the region. The Project Site's regional landscape consists of a mixture of large-lot rural residences, ranch land, and open space with mountainous terrain consisting of steep slopes, prominent ridgelines, and rock outcroppings. The 500-kilovolt Sunrise Powerlink traverses the northeast portion of the Boulder Brush Boundary. Wind turbines associated with the Tule Wind project are located immediately adjacent to the east, north, and northwest of the Boulder Brush Boundary. Wind turbines associated with the Kumeyaay Wind project are located within the Reservation and adjacent to the Campo Corridor.

Major Project components include 60 wind turbines, an approximately 8.5-mile-long generation tie-line (gen-tie line), a high-voltage substation, a 500-kilovolt (kV) switchyard, a 34.5 kV underground electrical collection system, a collector substation, temporary and permanent access roads, temporary and permanent meteorological towers, temporary concrete batch plant and laydown yard during construction and an operations and maintenance (O&M) facility. Construction of the Project is anticipated to occur over approximately 14 months, with O&M for the useful life of the facility of at least 30 years.

1.3 Water Supply Assessment Applicability

A project that is subject to CEQA requires preparation of a WSA if it is a proposed industrial facility occupying more than 40 acres of land (CWC Section 10912[a]). The Project Site encompasses approximately 2,520 acres. SB 610 amended Water Code Sections 10910 and 10912 to create a direct relationship between water supply and land use. Based on this amendment to the CWC, the Project is subject to SB 610 and therefore requires the preparation of a WSA.

The CWC, as amended by SB 610, requires that a WSA address the following questions:

- Is there a public water system that will service the project?
- Is there a current UWMP [urban water management plan] that accounts for the project demand?
- Is groundwater a component of the supplies for the project?
- Are there sufficient supplies to serve the project over the next 20 years?

The primary question to be answered in a WSA per the requirements of SB 610 is:

> ***Will the total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to existing and planned future uses of the identified water supplies, including agricultural and manufacturing uses?***

Sections 1.3.1 through 1.3.4 of this WSA address the SB 610 WSA questions as they relate to the Project.

1.3.1 Public Water Systems and/or Local Water Agencies and Service Areas

CWC Section 10912 defines a "public water system" as a system that has 3,000 or more service connections and provides piped water to the public for human consumption. The Project Site is not connected to a public water system and is not within the service area of a retail water supplier. The Project plans to use the On-Reservation wellfield and/or off-site purchased water as sources of water supply. Potential sources for Project water demand consist of local groundwater supplies, predominantly within fractured rock aquifers, and water agencies including PDMWD and JCSD.

1.3.2 Urban Water Management Plan Coverage

Urban water management plans (UWMPs) are prepared by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies. Every urban water supplier that either delivers more than 3,000 AF per year (AFY) of water annually or serves more than 3,000 connections is required to assess the reliability of its water sources over a 20-year period under normal-year, dry-year, and multiple dry-year scenarios; these are the same requirements of a WSA, as specified by SB 610. UWMPs must be updated and submitted to the California Department of Water Resources (DWR) every 5 years for review and approval.

As the Project Site is not located within an urban water supplier's service area, there is no UWMP developed for the Project Site that accounts for planned renewable wind energy development water demand. PDMWD has prepared a 2015 UWMP, revised October 26, 2016, which discusses the District's water supply sources and water demands during normal, single-dry and multiple-dry years. Additionally, a Groundwater Resources Investigation Report for JCSD was prepared in March 2015 and updated in November 2019, which discusses JCSD's groundwater wells and associated production rates (Dudek 2019a, 2019b). JCSD constructed a new groundwater supply well (the Highland Center Well) after the March 2015 Groundwater Resources Investigation Report was prepared. The sustainable production rate of this well is 174 gallons per minute (gpm), as determined by a 24-hour constant rate pumping test performed in October 2016. Highland Center Well testing and aquifer properties are discussed in the Draft Highland Center Well Completion Report (Dudek 2016). This WSA uses information provided in the November 2019 Groundwater Resources Investigation Reports for the Campo Wind Project and Boulder Brush Facilities, as well as two reports for the aquifers accessed by JCSD's non-potable groundwater wells, and the November 2016 Draft Highland Center Well Completion Report, where applicable, to assess water supply availability.

1.3.3 Groundwater as a Component of Project Water Supplies

As previously stated, water needed for the construction of the Boulder Brush Facilities is to be purchased from local water purveyors (PDMWD and/or JCSD), and would be trucked to the Project Site. Water sources needed for the construction of the Campo Wind Facilities would include On- and Off-Reservation facilities such as production wells on the southern end of the Reservation and commercially obtained non-potable water from permitted Off-Reservation purveyors such as JCSD and PDMWD. Water supplied by PDMWD would be non-potable recycled water; therefore, groundwater would not be a component of this source. Water supplied by JCSD would be groundwater from JCSD non-potable supply wells, specifically from Well 6 and/or the Highland Center Well (Figure 4, Potential Off-Site Project Water Resources). Project O&M water demands may be met by utilizing existing On-Reservation groundwater wells located in the 312-acre wellfield on the southern portion of the Project Site (Figure 3, Regional Geologic Map). The existing On-Reservation groundwater wells would draw water from the fractured bedrock underlying the Project Area. The Project Area is not located within an identified DWR Bulletin 118 groundwater basin (DWR 2016). If Project water is sourced from JCSD or from On-Reservation wells, groundwater will be used to supply the Project's water demands. Sufficiency of groundwater resources is addressed in Section 3.1.2, Groundwater, and Section 3.3, Water Supply Availability.

1.3.4 Sufficiency of Supplies over the Next 20 Years

As described in Section 2.1, Project Construction Water Demand, Section 2.2, Project Operational Water Demand, and Section 3.3, there is adequate water available within or near the Project Area to supply the Project through construction and O&M.

2 PROJECT WATER DEMAND

The Project would require an estimated maximum water demand of 173 AF of water to support construction activities over an approximately 14-month period. Thereafter, the Project would have an annual groundwater demand of approximately 0.25 AFY to support O&M activities, including sanitary water use. Project water demand is described in detail in Sections 2.1 and 2.2, and summarized in Table 1.

2.1 Project Construction Water Demand

The Project would require an estimated maximum water demand of approximately 173 AF of water to support construction activities. During Project construction, water will be used for activities such as clearing, grubbing and grading, fire water support, dust control, erosion control, road maintenance and compaction, temporary concrete batch plant operation and other miscellaneous purposes. Temporary on-site water tanks and water trucks would be made available for fire water support, dust suppression, and construction needs.

Table 1 shows how the construction water demand for the Project was calculated.

Table 1
Construction Water Demand

Construction Component (Function)	Variable	Water Use Factor	Total Volume (gallons)	Explanation
Clearing, Grubbing, Grinding (Dust Control)	930 Acres of Temporary and Permanent Disturbance	24,204 gallons/acre[1]	22,509,720	The water use factor for clearing, grubbing and grinding is based on the volume of water used for construction of the Eco Substation Project.
Earth Moving (Soil Compaction)	1,349,550 Cubic Yards of Fill Soil[2]	20 gallons/cubic yard[3]	26,991,010	This is a reasonable rate needed to hydrate arid soils to reach an optimum moisture content of 9%
Concrete Batch Plant (Structural Pads)	37,700 cubic yards of concrete required[4]	40.4 gallons/cubic yard	1,523,080	This assumes the volume of water needed to prepare concrete is 20% of its dry volume.
Fire Suppression	Water tanks for fire suppression at O&M facility (2), Substation (2), and high-voltage substation (3)	10,000 gallons/tank (fire)	70,000	Emergency fire suppression system as required by fire authorities. One-time demand.
		Total (Gallons)	**51,093,810**	

Table 1
Construction Water Demand

Construction Component (Function)	Variable	Water Use Factor	Total Volume (gallons)	Explanation
Total (Gallons) + 10% contingency			10% contingency to account for unforeseen water demands.	
		Total (Acre-Feet)	**173**	Rounded up to nearest whole.

O&M = operation and maintenance.

1 Water use factor is based on recorded water use during construction of the 42.1 acre Boulevard Border Patrol Station. This is a conservative factor when used for dust control only because water used for construction of the border patrol station included water for other purposes as well (e.g., fill compaction).

2 Mass grading volume of 26,800 cubic yards (CY) was provided by the applicant's consultant for the Boulder Brush Facilities but was not provided for the Campo Wind Project. The grading volume for the Campo Wind Project was estimated by multiplying the disturbance acreage (800 acres) by the volume of mass grading per acre (1,653 CY/acre) from the Tierra Del Sol Solar Project. This method produces an unrealistically high result because the Tierra Del Sol Solar Project required a nearly flat site on previously undulating terrain. Wind facilities are more dispersed and access roads are designed to follow topography and do not require the same level of engineering (e.g., moisture conditioning) as a structural building pad. The total grading volume was calculated as the grading volume provided for Boulder Brush Facilities (26,800 CY) plus the result of the aforementioned calculation (1,322,750 CY) for a total of 1,349,550 CY.

3 Water for soil compaction was estimated by taking the driest soil tested on the Tierra Del Sol Solar site (observed soil moisture of 2.5%), determining the dry unit weight, and calculating the volume of water required to reach an optimal soil moisture content of 9%. Although the data is from a different site, it is a reasonable proxy due to its proximal location, and similarities in climate, topography, soils, and geology.

4 Volume of concrete determined based on 60 turbine foundation, 7 pole turning structures, 3 meteorological stations, 1 collector substation, the O&M building, Boulder Brush Facilities, and San Diego Gas & Electric loop in/out structures.

Planning-level estimates of water use on renewable energy projects have a high degree of uncertainty. Ultimately, the exact amount of water required during construction activities will be a function of many factors such as soil and vegetation conditions, the weather, final design details, and the exact timing and distribution of clearing/grading activities (among other factors). However, the estimated amounts of water required for various activities utilized generous assumptions, as well as a 10% contingency, to ensure that the construction related water demand estimate of 173 AF represents a high rather than a low estimate. Examples include mass grading estimate that is likely very high, because it is based on a large contiguous proposed solar site that needed to be leveled, whereas wind facilities are dispersed across the landscape with access roads that follow topography. This minimizes the need for mass grading when compared to a concentrated solar photovoltaic site. Assuming high amounts of water ensures that the analysis of impacts of water use (e.g., to groundwater) are conservative in nature.

Daily water use would vary, depending on the weather conditions and time of year, both of which affect the need for dust control. Hot, dry, windy conditions may necessitate greater amounts of water. Tanker trucks would apply water to construction areas where needed to aid in road compaction and reduce construction-generated dust.

A minimal amount of water would be required for construction worker needs, including drinking water and sanitation facilities. Drinking water would be brought to the Project Site each day by construction workers or delivered to the site. A local sanitation company would provide and maintain appropriate construction sanitation facilities. Portable toilets would be placed at each of the staging areas. When necessary, additional facilities would be placed at specific construction locations. This component of water demand is not included in Table 1 because it is minimal (i.e., <1 AF at 2 gallons/worker/day with peak workforce of 561), and is not anticipated to come from local groundwater resources. If the contractor decides to treat on-site groundwater resources to potable standards in lieu of purchasing it from a commercial supplier, it would be accommodated by the contingency component in Table 1.

2.2 Project Operational Water Demand

Following the approximately 14-month construction period, the Project will have an annual water demand of approximately 0.25 AFY to support O&M activities. The Project would include an on-site O&M facility intended for approximately 10 to 12 full-time employees throughout the life of the Project. Employees would be present on site during normal business hours. The O&M building would require potable water services and non-potable water service for septic use. As an alternative to On-Reservation groundwater, the potable portion of O&M water demand may be purchased from and delivered by a privately owned bottled water distributor licensed by the California Department of Public Health (CDPH) Food and Drug Branch (FDB). The potable drinking water demand for the O&M portion of the Project is estimated at the OSHA-required 1 quart per hour per worker or 2 gallons per worker per day. Considering a maximum of 12 employees staffing the O&M building, the potable water demand would be approximately 20 gallons per day (gpd), equivalent to 5,200 gallons per year[1] (gpy) or 0.016 AFY. The life of the Project for CEQA purposes is estimated to be at least 30 years. The annual groundwater demand of 0.25 AFY equates to an O&M water demand of up to 7.5 AF over the life of the Project.

[1] Assuming 260 working business days in the 2019 calendar year, 260 days x's 20 gpd = 5,200 gallons per year.

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3 WATER SUPPLY ASSESSMENT

A WSA is required to identify and describe the water supply sources that will serve the Project. CWC Section 10910(d) requires that a WSA include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for a proposed project, and a description of the quantities of water received in prior years by the public water supplier.

3.1 Water Resources

3.1.1 Surface Water

The Project Site is located outside the San Diego County Water Authority service area and west of the Tecate Divide, which is a series of ridgelines separating drainages that discharge to the Salton Sea from drainages that discharge into the Pacific Ocean. The majority of the Reservation lies to the west of this divide; however, the Boulder Brush Boundary and the northeastern portion of the Reservation lie to the east of the divide. Portions of the Project that lie to the west of the Tecate Divide are located within the Clover Flat, Hill, and Hipass Hydrologic Subareas (HSAs 911.83–911.85), which are contained within the Cameron and Campo Hydrologic Areas (HA 911.70 and 911.80) all within the Tijuana Hydrologic Unit (HU 911.00) that drains toward the Pacific Ocean (Figure 2, Hydrologic Areas). The portions of the Project that lie to the east of the Tecate Divide are located within the McCain Hydrologic Subarea (HSA 722.71), which is contained within the Jacumba Hydrologic Areas (HA 722.70) all within the Anza Borrego Hydrologic Unit (HU 722.00) that drains toward the Salton Sea (Figure 2). The Project Area and surrounding areas are bound to the north and east by the In-Ko-Pah Mountains and to the west by the Laguna Mountains. Topography in the area generally consists of intermittent steep slopes with scattered rock outcroppings and other relatively flat areas with vegetation, including oak trees and alkali meadows.

3.1.2 Groundwater

The Project is not located within a defined groundwater basin listed in the Department of Water Resources (DWR) Bulletin 118 Interim Update (DWR 2016). The Project Area is underlain by Cretaceous plutonic rocks of the composite Peninsular Ranges Batholith, specifically mapped as the Tonalite of La Posta (USGS 2004; Figure 3). Generally, the Tonalite of La Posta is weathered near the surface and supports a sandy topsoil. At a regional scale, the granitic rock preferentially weathers along fractures and lineaments. Project construction water may be supplied by JCSD, which some of its wells are located in the Jacumba Valley Groundwater Basin and some wells are located within a fractured rock aquifer. This basin and the fractured rock aquifer are described in detail in the following sections. Additionally, since Project construction and O&M water may be

supplied by an on-site groundwater well (or wells), groundwater resources of the Project Area are discussed below. Project water supplied by PDMWD would be non-potable recycled water. Groundwater supplies are not available or utilized by PDMWD, therefore there would be no groundwater impacts associated with imports of recycled water from PDMWD.

JCSD Groundwater Resources

The Jacumba Valley Groundwater Basin (DWR Basin No. 7-47) covers approximately 6,400 acres (10 square miles) in East San Diego County. The majority of the JCSD service area overlies the Jacumba Valley Groundwater Basin. The basin is bounded by faults on the east and west, and by the international border with Mexico to the south. The remainder of the basin is bound by the crystalline rocks of the Peninsular Ranges (DWR 2004). Water bearing formations in the basin are the alluvium and the Table Mountain Formation (DWR 2004). The alluvial material is estimated to be up to 150 feet thick (Swenson 1981) and consists of unconsolidated gravel, sand and clay deposits (DWR 2004). Wells completed in this alluvium may produce in excess of 1,000 gpm (Roff and Franzone 1994). The Table Mountain Formation is up to 600 feet thick and consists of medium to coarse-grained sandstone and conglomerate overlying crystalline bedrock (DWR 2004; Swenson 1981). The main sources of recharge to the basin are stream recharge, rainfall recharge, and applied water return flows. Recharge from runoff in Flat Creek and Boundary Creek was calculated to be approximately 2,700 AFY (Swenson 1981).

The Jacumba Valley Groundwater Basin is not subject to a court adjudication. In 2014, the Sustainable Groundwater Management Act (SGMA) was passed, which created a basin prioritization system that ranks groundwater basins as high, medium, low, or very low priority. The DWR has designated the Jacumba Valley Groundwater Basin as a very low priority[2] basin (DWR 2018). Based on this determination, a Groundwater Sustainability Plan (GSP) is not required (per SGMA) to be prepared for the Jacumba Valley Groundwater Basin.

JCSD relies solely on groundwater as a source of water supply and is responsible for the community of Jacumba's domestic water system, which currently provides service to approximately 234 homes and commercial properties. At present, JCSD's potable water system uses one existing domestic water supply well (Well No. 4) as its source of potable water. Well No. 7 and Well No. 8, each drilled in 2008, will replace JCSD's Well No. 4 as its primary water supply upon completion of a water treatment facility funded by the U.S. Department of Agriculture (USDA) Rural Development. The facility is expected come online in 2019. JCSD Well No. 1 and

[2] DWR's priority rating is based on estimates of population density, anticipated growth, well density, the amount of irrigated agriculture, the degree to which water demands are met from wells (versus surface water), and the existence of documented impacts (e.g., overdraft). The rankings from lowest to highest are: very low, low, medium, high, very high.

Well No.2 were completed in 1956 and 1963, respectively, however these wells have been inactive and are being abandoned as part of the USDA project. Additionally, JCSD has three non-potable groundwater wells; Well 6, the Park Well and the Highland Center Well, from which water has historically been purchased for off-site construction water use on local projects. The Project would obtain construction water from Well 6, the Highlands Center Well or a combination of both wells, via purchase from JCSD. Sufficiency of groundwater supply from these two wells is discussed in Section 3.3.3, Groundwater Resource Availability. Table 2 provides a summary of JCSD groundwater wells.

Table 2
Jacumba Community Services District Well Descriptions and Completion Summary

Well Number	Well Completion Depth (feet bgs)/ (Year Drilled)	Depth to Water (feet btoc);date	Approximate Production Capability (gpm)	Alluvium/ Residual Soil (feet bgs)	Decomposed Granite (DG) (feet bgs)	Fractured Granite Bedrock (feet bgs)
Well 1	124 (1956)	43.0; 1955	148	120	—	124 (volcanic)
Well 2	140 (1963)	57.05; 6/2018	—	—	—	—
Well 4	39[c]	13.51; 2/2018	175[a]	0–39[b]	—	—
Well 6	465 (2003)	5.50; 6/2018	600+	—	—	—
Well 7	518 (2008)	31.2; 6/2018	300+	0–10	10–23	23–520
Well 8	518 (2009)	31.4; 2/2018	275+	0–42	42–55	55–524
Highland Center Well	125 (2016)	56.98; 6/2018	174	0–177	—	177–182 (volcanic)
Park Well	124 (2005)	59.74; 6/2018	80	0–127	—	127 (volcanic)

bgs = below ground surface; btoc = below top of casing; gpm = gallons per minute; — = no data.
a. Reported pumping capacity provided by Jacumba Community Services District (JCSD).
b. Alluvial depth based on total depth of Well 4.
c. Approximate completion depth.

With a round-trip distance of approximately 28 miles from the Project Site (approximately 14 miles one way), JCSD is the closest off-site proposed water supply source for the Project. According to the Groundwater Resources Investigation Report for the Boundary Creek Watershed (Dudek 2019a), groundwater pumped from JCSD Well 6 may be supplied at the discretion of JCSD and has historically been limited to a production cap of up to 100,000 gallons per day (gpd), which is approximately 11.6% of the tested production capacity of Well 6. Historically, when pumping Well 6 (at the production cap of 100,000 gpd) for off-site uses, there have been no reported significant well interference issues or impacts to groundwater storage. The Groundwater Investigation Report analyzed potential impacts of supplying construction water demand for all proposed foreseeable projects (consisting of Campo Wind Project with Boulder Brush Facilities, Torrey Wind, Cameron Solar and Rugger Solar) from Well 6 and found that the groundwater

production of 100,000 gpd (112 AFY) would not result in significant impacts, per County of San Diego CEQA significance thresholds (Dudek 2019a). Additionally, according to the Flat Creek Groundwater Resources Investigation Report dated November 2019 (Dudek 2019b), up to 290 AFY (which is the combined demand of the all projects requesting non-potable water service for construction) can be pumped from the existing Park Well (maximum pumping rate of 40 gpm) and the Highland Center Well (maximum pumping rate of 174 gpm) without significant impacts to groundwater resources.

The two Groundwater Resources Investigation Reports above (Dudek 2019a, 2019b) describe how the Jacumba Solar Project utilized Well 6 and the Highland Center Well for construction water. These wells provided construction water to that project under Major Use Permit (MUP) PDS2014-MUP-14-041, MUP Attachment C – Form of Decision Approving PDS2014 MUP-041, dated October 19, 2016, which describes specific pre-construction, during construction, and post-construction groundwater monitoring requirements. A summary of groundwater production and groundwater resources monitoring is provided in the Jacumba Solar Major Use Permit – 2017 Annual Groundwater Monitoring Report (Dudek 2018), which indicates no significant impacts from the Jacumba Solar Project's use of groundwater from these wells for construction water supply. Other local projects that have purchased water from JCSD include the construction of a U.S. Border Patrol Facility, the East County (ECO) Substation project and the Tule Wind project.

Proposed Projects in the Jacumba Valley Groundwater Basin

The proposed Jacumba Valley Ranch Energy Park Project (JVR Project) consists of approximately 692-acres of solar facilities within the Jacumba Valley Groundwater Basin, just east of the town of Jacumba Hot Springs and adjacent to the service area of JCSD. The proposed JVR Project is currently in the CEQA permitting and review phase and proposes to obtain an estimated 112 AF of construction water from existing groundwater wells on the JVR Project site. The estimated annual O&M water demand of 10 AFY (3,258,510 gallons per year) and decommissioning demand of 50 AF is also proposed to be supplied to the JVR Project by groundwater wells on the JVR Project site. While not yet reviewed by the County, based on recent well testing, performed by Dudek, the existing groundwater wells on the JVR project site have production capacity to supply all water needs for the JVR project.

Historical, current and estimated future groundwater extraction rates for the alluvial aquifer in the basin are presented in Table 3.

Table 3
Jacumba Valley Alluvial Aquifer Groundwater Demand

Land Use	Historical Water Demand (afy)	Current Water Demand (afy)	Future Demand for JCSD Non-potable Water (afy)	Future Maximum Demand (afy)	Future Demand During O&M (afy)
Jacumba Valley Ranch (Jacumba Valley Ranch; Bornt Farms; JVR Energy Park)	2,066; 741–995	0	112[a]	112	10
Jacumba Valley Ranch Water Company	242	5	5	5	5
Private Domestic[b]	3	3	3	3	3
JCSD (Potable)	80–146[c]	119.5	0[d]	119.5	0
JCSD (Non-Potable)	53.6	2[e]	290	345[f]	9.28[g]
Total Estimated Water Demand	**2,212[h]**	**129.5**	**410**	**584.5**	**27.28**

Source: Barrett 1996; Dudek 2019b; Troutt, pers. comm. 2015.
afy = acre-feet per year; JCSD = Jacumba Community Services District; O&M = operation and maintenance; JVR = Jacumba Valley Ranch.

[a] The JVR Energy Park is proposing to use 112 acre-feet (af) for the construction of a solar energy facility. Although unlikely, groundwater extraction could occur for all proposed projects during the same time. O&M demand for JVR is proposed to be 10 af.

[b] Not all domestic wells are currently active or known; however, a consumptive water demand of 0.5 afy has been assigned to up to six potential domestic wells.

[c] JCSD Wells No. 1 and No. 2 supplied all potable demands for the town of Jacumba Hot Springs until JCSD Wells No. 3 and No. 4 were drilled in the early 1970s.

[d] Future JCSD potable water demand will be supplied from Wells No. 7 and No. 8, completed in the fractured rock aquifer.

[e] Assumes current groundwater O&M demand based on metered data.

[f] Assumes maximum groundwater extraction based on tested well yields from the Highland Center Well and the Park Well. This maximum use would be a one-time construction demand.

[g] Total assumes 7 afy for Torrey Wind, 0.25 afy for Campo Wind, 2 afy for Jacumba Solar, and 0.03 afy for Cameron Solar.

[h] Assumes maximum concurrent water demand from JCSD potable demand and Jacumba Valley Ranch.

Groundwater Quality in the Jacumba Valley Groundwater Basin

Generally, groundwater quality in the Jacumba Valley Groundwater Basin ranges from sodium sulfate and calcium chloride to sodium chloride type water. Total dissolved solids (TDS) ranges from 296 mg/L to 6,100 mg/L and electrical conductivity (EC) ranges from 499 µmhos to 8,030 µmhos (Roff and Franzone 1994). Additionally, groundwater in some areas may contain elevated TDS, fluoride and temperature due to impacts from poor quality spring water (Dudek 2019a; DWR 2004). As part of the Jacumba Solar Groundwater Resources Investigation prepared in 2015 (Dudek 2019a) for JCSD, a groundwater quality sample was collected from Well 6 and analyzed for inorganic minerals, general physical/mineral properties, nitrate, bacteria (fecal and total coliform), VOCs and radionuclide activity. The water quality laboratory report for Well 6 is included in Appendix A of this WSA. The water quality analyses of Well 6 indicated elevated pH, odor, temperature and fluoride. As Well 6 is a non-potable well that has water quality suitable for construction use, it was

determined that groundwater impacts from water quality would be less than significant for use on the Jacumba Solar Project (Dudek 2019a).

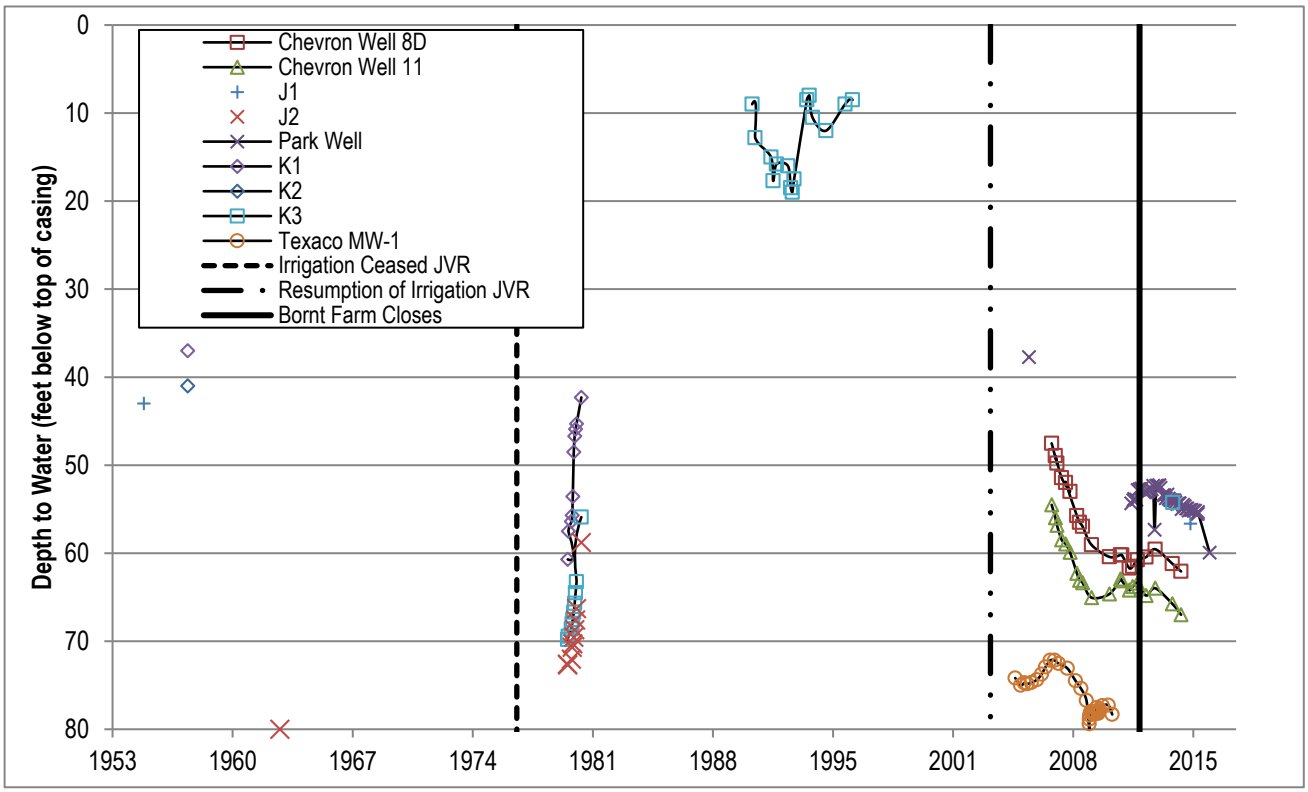
As detailed in the Highland Center Well Completion Report (Dudek 2016), a groundwater sample was collected from Highland Center Well on October 13, 2016, and was analyzed for inorganic minerals, general physical/mineral properties, nitrate and VOCs. Results of the analysis indicate that groundwater produced from the Highland Center Well is suitable for non-potable construction use as no constituents were detected above primary or secondary U.S. Environmental Protection Agency (EPA) or California maximum contaminant levels (MCLs). The Highland Center Well water quality laboratory report is included in Appendix B of this WSA.

The Park Well was initially intended for use as a potable water well; however, low concentrations of volatile organic compounds were detected during drilling. Toluene was detected at concentrations of 291 micrograms per liter (µg/L), 199 µg/L, and 520 µg/L in water quality samples collected from the Park Well in 2006 (Petra 2006). A subsequent water quality sample was collected from the Park Well on November 5, 2015, by Dudek staff. Results from the sample collected on November 5, 2015, indicated no detections above the reporting limits for all constituents analyzed, including toluene, which was previously detected in the Park Well above the drinking water maximum contaminant level of 150 µg/L. It is possible that the toluene was introduced into the Park Well as a result of drilling or from chemicals (Scotchkote™) used in splicing the submersible cable for installation of the submersible pump and motor when the well was originally tested. Dudek has previously detected toluene in other water wells after the use of Scotchkote (EnviroMatrix Analytical 2015).

Groundwater Levels in the Jacumba Valley Groundwater Basin

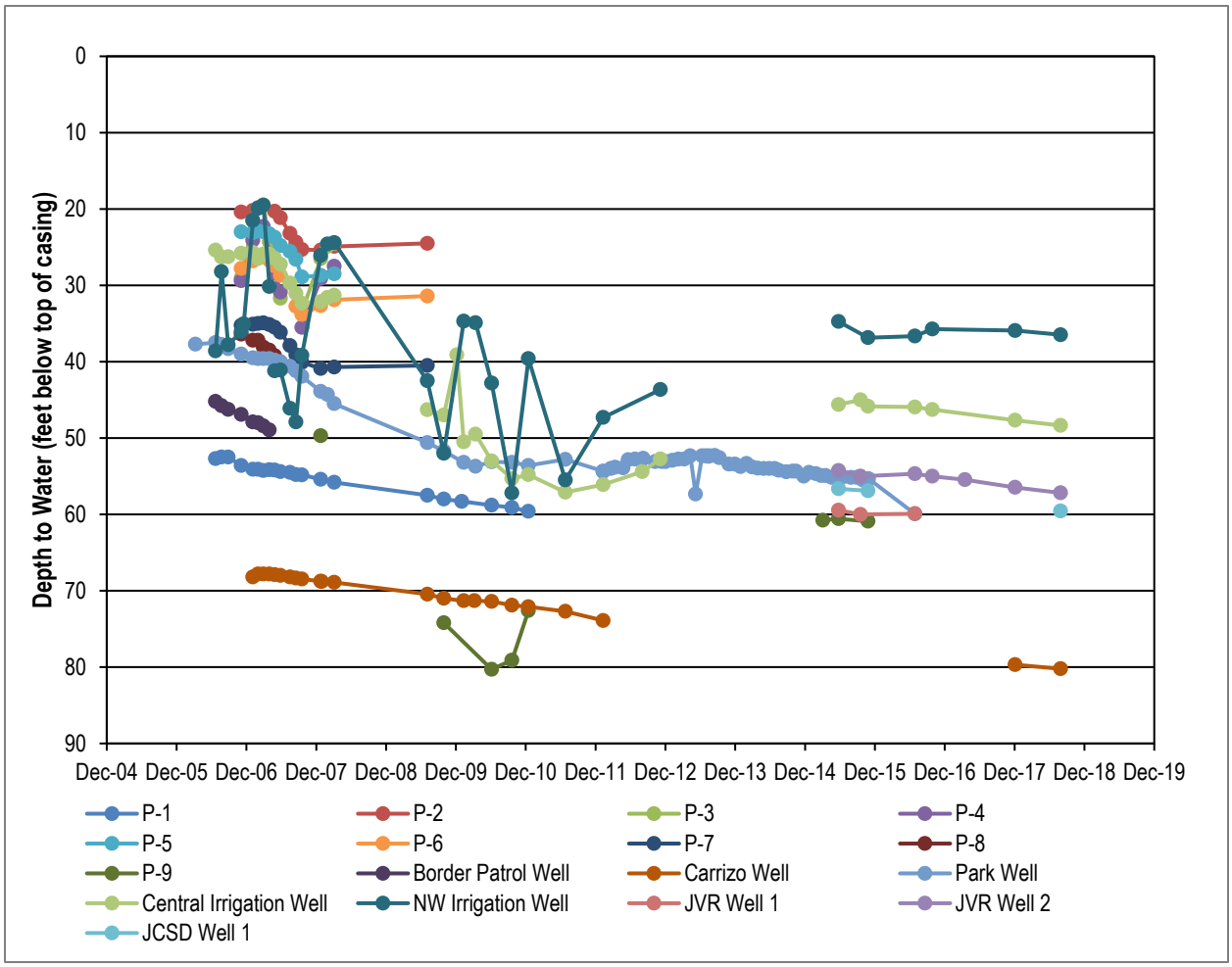
Groundwater level data in the Jacumba Valley Groundwater Basin were obtained and compiled from multiple sources including JCSD, Dudek, Barrett Consulting Group (Barrett 1996), Geotracker (2015), and Swenson (1981). Historical groundwater level data were available for the Jacumba Valley Basin dating back to 1955, however the historical groundwater level record is not continuous. From 2006, a more complete groundwater level data record for the Jacumba Valley Groundwater Basin has been compiled within the Basin. Exhibits 1 and 2 show the historical and recent groundwater level data for the Jacumba Valley Groundwater Basin, respectively.

Exhibit 1
Historical Alluvial Groundwater Levels in the Jacumba Valley Groundwater Basin



Source: Barrett 1996; Geotracker 2015; JCSD 2015; Swenson 1981.

Exhibit 2
Recent Alluvial Groundwater Levels in the Jacumba Valley Groundwater Basin



Source: Dudek 2018.

Historical fluctuations in groundwater levels of the Jacumba Valley alluvial aquifer of up to 61 feet (Well K3, see Exhibit 1) have been observed, and are most likely a result of groundwater pumping for agricultural land use and varying aquifer recharge from precipitation infiltration. From 1932 to 1977, Jacumba Valley Ranch extracted on average 2,066 AFY from the Jacumba Valley alluvial aquifer (Barrett 1996). Jacumba Valley Ranch pumping in combination with lower than average precipitation in the late 1960s through the mid-1970s resulted in a groundwater level decline in the Jacumba Valley alluvial aquifer (Dudek 2019b). In 1977, pumping for agricultural irrigation ceased on the Jacumba Valley Ranch and in 1979, the groundwater level in Well K3 was approximately 70 feet bgs, more than 30 feet lower than the initial groundwater level recorded in 1955. By 1990 groundwater levels had risen to less than 10 feet of land surface in several of the Jacumba Valley alluvial aquifer wells (see Exhibit 1). This was due to higher recharge rates during

a period of above average precipitation in the late 1970s and mid 1980s and decreased groundwater extraction during this time period (Dudek 2019b). Between 2002 and 2012, alluvial groundwater levels decreased due to groundwater pumping for irrigation use, as Bornt Farms resumed agricultural land use practices on the Jacumba Valley Ranch (see Exhibit 1). Bornt Farms stopped agricultural practices in the Jacumba Valley Groundwater Basin in 2013, and there has not been significant groundwater pumped for irrigation use since 2013. As a result, alluvial groundwater levels have been recovering (i.e., Northwest Irrigation Well, Central Irrigation Well and P-9, Exhibit 2) and/or the rate of groundwater level decline has slowed (Park Well, JVR Well-2, Exhibit 2) between 2013 and 2018.

A discussion of groundwater levels at the two JCSD production wells identified as potential sources of construction water for the Project (Highland Center Well and Well 6) is presented in Section 3.3.3.

On-Site Project Groundwater Resources

The annual O&M water demand, which is estimated to be approximately 0.25 AFY (Section 2.2) is proposed to be supplied by either an existing or new on-site groundwater well On-Reservation. If on-site groundwater is not available, potable water would be trucked in and delivered by a privately owned bottled water distributor licensed by the CDPH FDB and non-potable water (if needed) would be purchased from JCSD or PDMWD. The Project is not located within a DWR Bulletin 118 groundwater basin. The underlying geology consists of upper Cretaceous plutonic rocks of the composite Peninsular Ranges Batholith, specifically mapped as the Tonalite of La Posta (USGS 2004). During the Groundwater Resource Evaluation performed by Dudek in April 2019, 19 existing groundwater wells were identified in a wellfield on the southern portion of the Project Area, appearing to be completed in the fractured bedrock. Hydrographs for nine of these wells, including four supply wells, are located in Appendix A of the Groundwater Resources Evaluation performed for the Project (Dudek 2019c).

Of the 19 groundwater wells located on site, at least four supply wells have the potential to serve as a source of groundwater for the Project O&M demand of 0.25 AFY. Based on a review of DWR well logs in the region, reported well yield from wells completed in the fractured bedrock range from 0 gpm to 30 gpm (48 AFY). While specific production rates of Reservation wells are considered confidential, historical pumping demonstrates that at least four wells located On-Reservation have sufficient capacity to supply Project O&M water.

3.1.3 Imported Water

Regionally, within the western metropolitan portion of San Diego County, imported water comes from the San Diego County Water Authority (CWA), which derives its water from a diverse network of sources including the Colorado River, the Metropolitan Water District (State Water Project supplied by reservoirs in Northern California and the Sacramento–San Joaquin River Delta), water transfers, local groundwater and surface water sources, recycled water, seawater desalination, water conservation and potable reuse (SDCWA 2018). The Project Site is located east of the CWA service area and has no direct connection to imported water.

3.1.4 Recycled Water

Recycled water provided by PDMWD is a proposed source for Project construction water demand. PDMWD provides water, wastewater, recycled water and recreation services to 100,000 residents in the East County San Diego suburbs of Santee, El Cajon, Lakeside, Flinn Springs, Harbison Canyon, Blossom Valley, Alpine, Dehesa and Crest, within its 72-square-mile service area (PDMWD 2016). The District imports 100% of its potable water supply and treats up to 2 million gallons per day (MGD) of wastewater at its Water Recycling Facility. Approximately 1 MGD of non-potable recycled water goes into the Santee Lakes. The remainder is utilized for irrigation at community parks, schools, city streetscapes and community decorative fountains. Recycled water rates are 90% of the potable irrigation rates and there is no capacity fee to connect to the recycled water system (PDMWD 2016).

3.2 Water Resources Plans and Programs

As stated in Section 1.3.2, the Project is not located within an urban water supplier's service area (it is located east of the San Diego CWA service area), therefore there is no UWMP developed for the Project Site. PDMWD has prepared a 2015 UWMP, revised October 26, 2016, which discusses the District's water supply sources and water demands during normal, single-dry and multiple-dry years. Additionally, two Groundwater Resources Investigation Reports are available (Dudek 2019a, 2019b) which discuss the availability and sufficiency of proposed water sources from JCSD.

3.3 Water Supply Availability

3.3.1 Water Demand Projections

An estimated maximum water demand of approximately 173 AF (56,372,223 gallons) of water would be required over the 14 month Project construction period. During Project operations, water demand would be approximately 0.25 AFY. Over a 20-year water supply availability horizon, Project O&M water demand is estimated to be 5 AF of water.

3.3.2 Padre Dam Municipal Water District Supply Availability

PDMWD has been identified as a potential source for Project construction water supply and has provided the Developer with a will-serve letter PDS Form 399W (Appendix C of this WSA). This indicates the District is willing to make up to 100,000 GPD of recycled water available for Project construction. Additionally, the adoption of General Water Discharge Requirements for Recycled Water Use (SWRCB Order WQ-2014-090-DWQ) encourages the use of recycled water for non-potable use (such as dust control) and provides a mechanism by which the District may obtain authorization to distribute recycled water to appropriate users. The Developer would be responsible for contracting water trucks to deliver water from PDMWD to the Project.

The District can maintain a constant flow of up to 2 MGD at its Ray Stoyer Water Recycling Facility (WRF), which treats wastewater to a tertiary treatment level (PDMWD 2016). PDMWD's recycled water meets Title 22 standards and is approved for full body contact and accidental ingestion, however, it is not approved for potable use (PDMWD 2018). In 2015, the water recycling facility produced 1,731 acre feet of tertiary treated recycled water, which represents an average of 1,545,337 gallons per day (or about 77% of the 2 MGD production capacity) (PDMWD 2016). Table 4 presents recycled water use within PDMWD's service area from 2015 and projections through 2040.

Table 4
Padre Dam Municipal Water District Current and Projected Recycled Water Direct Beneficial Uses within Service Area

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	2030	2035	2040
			Acre-Feet					
Landscape Irrigation	Parks, medians, HOA landscapes, dust control	Tertiary	883	896	896	896	896	896
Recreational Impoundment	Santee Lakes Replenishment and Flushing	Tertiary	847	1,120	1,120	1,120	1,120	1,120
Other	Construction		1					
		Total (Acre-Feet)	**1,731**	**2,016**	**2,016**	**2,016**	**2,016**	**2,016**

Source: PDMWD 2015, Table 6-4.
HOA = homeowner's association.

According to Section 6.4.2 of the 2015 PDMWD UWMP, there is a potential for increased future recycled water treatment and use associated with the East County Advanced Water Purification (AWP) Project. The expansion of the Ray Stoyer WRF, planned for implementation in 2023, with an expected increase in recycled water use of 1,008 AFY (328,457,808 gallons per year) is contingent on the East San Diego County AWP Project (PDWMD 2016). The East County AWP Project Draft Initial Study/Mitigated Negative Declaration, prepared by Helix Environmental in

September 2018 states that major WRF improvements would increase the WRF wastewater treatment capacity from 2 MGD to a maximum of 18 MGD (Helix 2018).

3.3.3 Groundwater Resource Availability

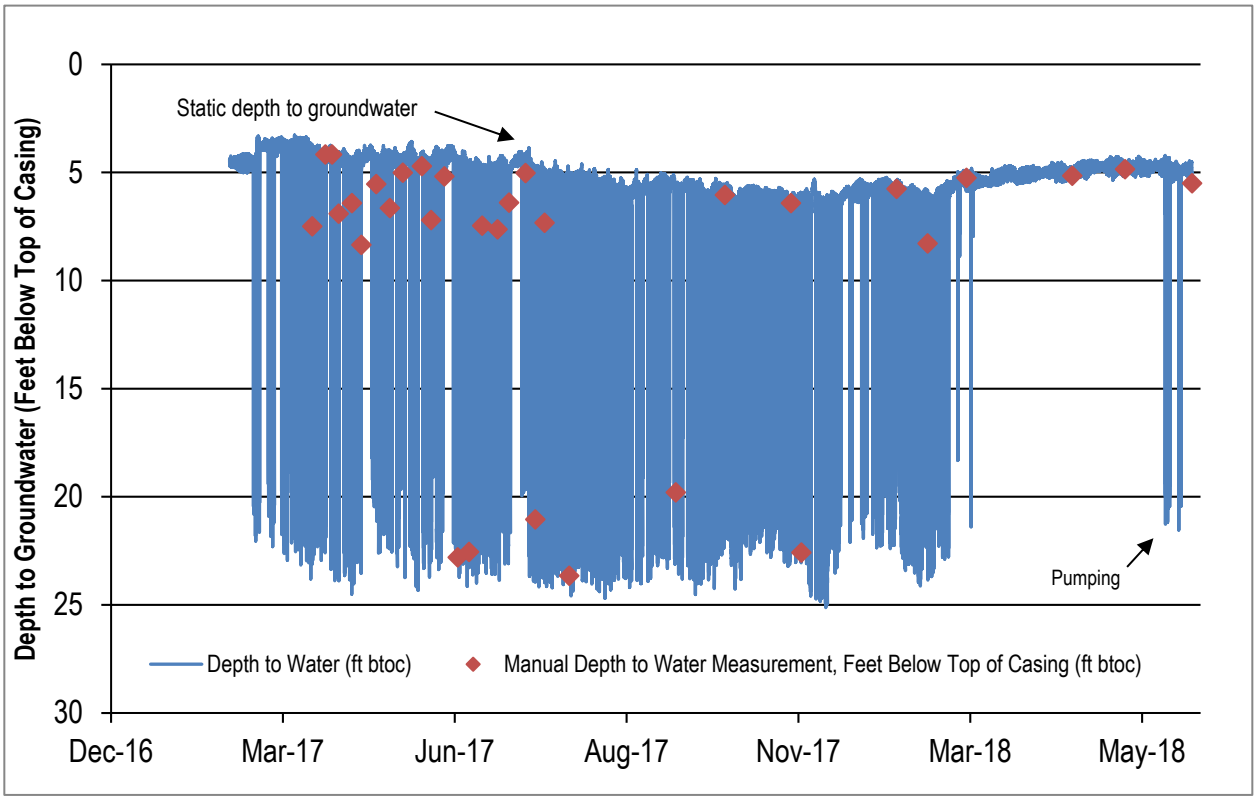
Jacumba Community Services District Supply Availability

JCSD has been identified as a potential source for Project construction water supply and has provided the Developer with a will-serve letter PDS Form 399W (Appendix C). This indicates the District is willing to make water available for construction of the Project. Groundwater would be provided by JCSD from Well 6 and/or the Highland Center Well, with the Park Well serving as backup to the Highland Center Well. The Park Well is approved for non-potable use by JCSD. The potential for concurrent construction water demand from the Project, Torrey Wind, Rugged Solar and Cameron Solar is possible. Based on recent well testing performed by Dudek, the existing groundwater wells on the JVR Project site have production capacity to supply all project water for the JVR Project. If construction schedules of the Project, Torrey Wind, Rugged Solar and Cameron Solar overlap, the available construction water sources (Well 6 and the Highland Center and Park Wells) have combined capacity to supply water demand from all four competing projects (Sections 3.3.3.1 and 3.3.3.2). Therefore, it is anticipated that JCSD will have the capacity to supply Project water demand. The Project contractor would be responsible for contracting water trucks to deliver water from JCSD to the Project.

3.3.3.1 Well 6

Well 6 is completed in fractured bedrock outside of the alluvium associated with the Jacumba Valley Groundwater Basin. A 24-hour stepped flow rate pumping test was performed at Well 6 by Fain Drilling on April 24, 2003. The purpose of the 24- hour step test was to obtain an approximate production rate for the well. The pumping rates during this test were 200 gpm, 300 gpm, 400 gpm, and 600 gpm. The average pumping rate was 527 gpm over the duration of the 24 hour pump test and after 24 hours of pumping, the maximum observed drawdown was 90 feet. (Dudek 2019a). Based on results of this pumping test, Dudek calculated the transmissivity at Well 6 to be 809.8 ft^2/day or 6,057.3 gallons per day per foot (gpd/ft) (Dudek 2019a). No drawdown was measured in the nearest observation well, JCSD Well 4, located approximately 60 feet from Well 6. Although the testing performed in 2003 suggests that Well 6 has a sustainable pumping rate that is greater than that of Well 4, groundwater production for supply outside the JCSD has been historically capped at 100,000 gpd, or 68 gpm. Assuming a production limit of 100,000 gpd for a Project construction period of 14 months, an estimated 42,000,000 gallons of water (129 AF) would be available from Well 6 for Project construction water demand. This would not be sufficient to satisfy the entirety of the estimated construction demand of 56,372,223 gallons (173 AF). Historical depth to water for Well 6 is shown in Exhibit 3.

Exhibit 3
Jacumba Community Services District Well 6 Groundwater Level



Source: Dudek 2018.
ft btoc = feet below top of casing.

To evaluate the impacts to the fractured rock aquifers (fractured rock and alluvial) intercepted by Well 6, Dudek performed a watershed-scale soil moisture balance analysis to evaluate the cumulative impacts of pumping Well 6 to supply construction water (a total of 224 AF) over a 2-year period from the Boundary Creek Watershed. The analysis included existing water demands, the Proposed Project, along with reasonably foreseeable future project including the Torrey Wind, Rugged Solar and Cameron Solar, along with JCSD pumping for municipal demand assuming full buildout according to the existing General Plan. The soil moisture balance analysis incorporated historical climate data (using a minimum 30-year precipitation record), which includes historical periods of increased rainfall and periods of extended drought. Results of this analysis indicated that reduction in groundwater storage, well interference impacts, impact to groundwater dependent habitat and water quality would be less than significant (Dudek 2019a). It is reasonable to expect that the capped production of 100,000 gpd would be available from Well 6 during an average, single-dry and 3-year-dry period. Therefore, no significant impacts, according to San Diego

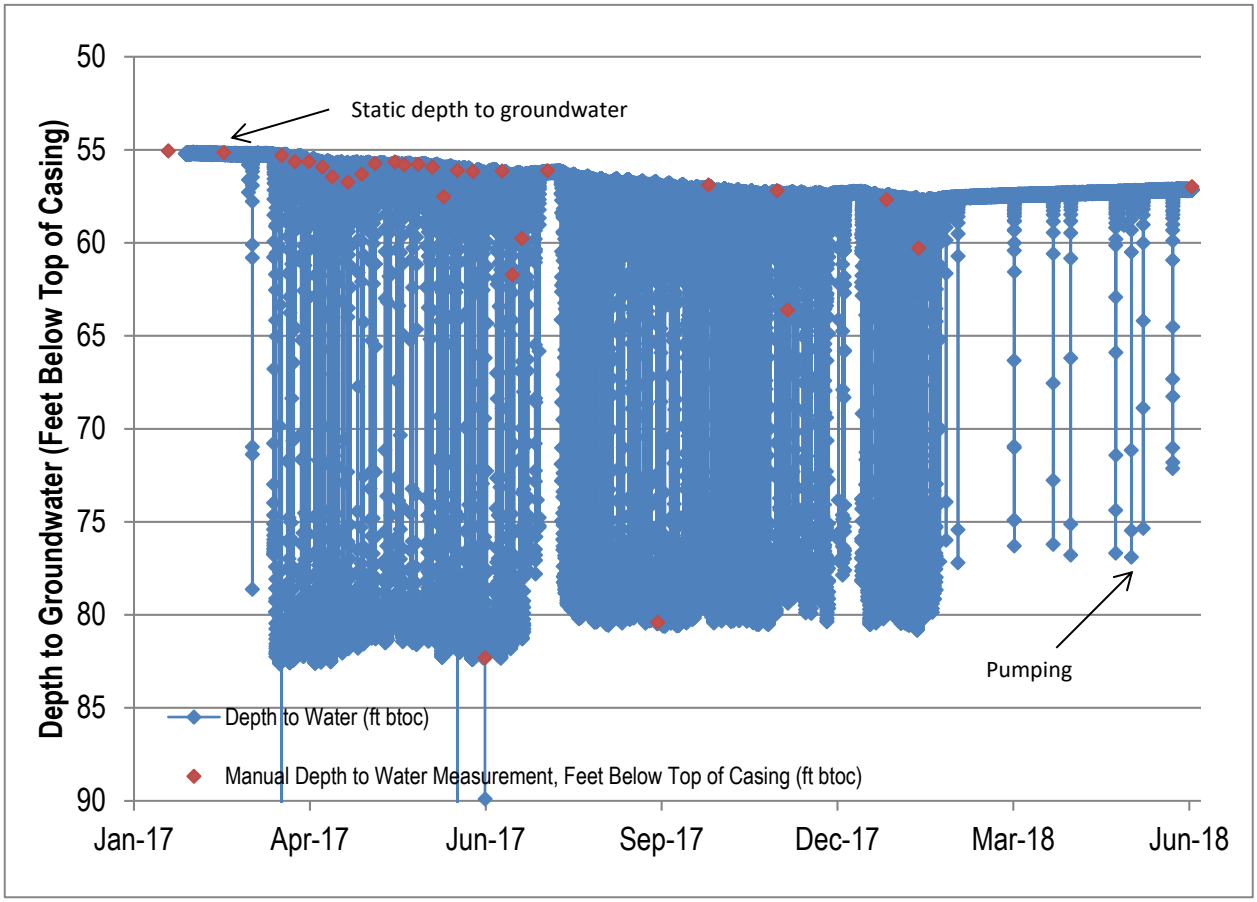
County's Guidelines for Determining Significance, would result from obtaining Project construction water from Well 6.

3.3.3.2 Highland Center Well

The Highland Center Well is located in the alluvium of the Jacumba Valley Groundwater Basin. Based on the 2016 Highland Center Well Completion Report (Dudek 2016), the Highland Center well was drilled to a depth of 182 feet below ground surface (bgs) by Fain Drilling of Valley Center, California, in September 2016. Following well construction, a step test and a 24-hour constant rate pumping test were performed. The constant rate test was performed at a flow rate of 174 gpm with a maximum water level drawdown of 24.7 feet. Static water level prior to pump testing was 54.85 feet. During pump testing, a maximum of 1.9 feet of drawdown was measured at the nearby JCSD Park Well.

JCSD maintains a monitoring well network required as part of the Jacumba Solar Project specific conditions detailed in the Major Use Permit (MUP) PDS2014-MUP-14-041, MUP Attachment C – Form of Decision Approving PDS2014-MUP-041, dated October 19, 2016. The network of monitoring wells and baseline conditions are described in the Draft Groundwater Monitoring and Mitigation Plans – Boundary Creek Watershed, Jacumba Community Services District, dated November 2019 (Dudek 2019c); and Flat Creek Watershed, Jacumba Community Services District, dated November 2019 (update to report dated April 2015) (Dudek 2019d). Additionally, based on the information provided in the 2017 Annual Groundwater Monitoring Report (Dudek 2018), a total of 21.37 AF was pumped from the Highland Center well and the Park Well between March 13, 2017, and January 1, 2018, for the Jacumba Solar Project. Assuming the tested production rate of 174 gpm from the Highland Center Well pumping 8 hours per day for a construction period of 14 months, an estimated 35,078,400 gallons of water (108 AF) would be available from the Highland Center Well for Project construction demand. Depth to groundwater at the Highland Center Well is shown in Exhibit 4.

Exhibit 4
Jacumba Community Services District Highland Center Well Groundwater Level



Source: Dudek 2018.
ft btoc = feet below top of casing.

In 2019, Dudek performed a groundwater balance analysis to evaluate the cumulative impacts of pumping 290 AF per year from the Jacumba Valley alluvial aquifer for additional water supply for future local projects, in addition to pumping for agricultural use, the Ketchum Ranch Water Company and groundwater demand of the Mexican town of Jacume. The withdrawal of up to 290 AFY was compared to historical groundwater extraction from the Jacumba Valley alluvial aquifer (of which agricultural irrigation was the primary use averaging a demand of 2,066 AFY between 1932 and 1977) and the estimated volume of groundwater in storage (Swenson 1981; Barrett 1996). The analysis evaluated whether water demands for the JCSD maintain at least 50% groundwater in storage over the 2,060-acre Jacumba Valley alluvial aquifer. Results of the analysis indicated that the volume of groundwater in storage would remain above the 50% significance threshold provided water level monitoring thresholds be placed on groundwater extraction.

Therefore, it was determined that groundwater impacts to storage based on the withdrawal of 290 AFY were less than significant (Dudek 2019b).

Based on results of the groundwater balance analysis (Dudek 2019b) and issuance of the will-serve letter PDS Form 399W by JCSD, it is reasonable to expect that the Project construction water demand of 173 AF would be available from Well 6 and the Highland Center Well during an average, single dry and 3-year dry period.

On-Site Project Groundwater Availability

Although production capacity of individual wells located On-Reservation is considered confidential information, Dudek conducted a soil moisture balance analysis as part of the November 2019 Draft Groundwater Resources Evaluation for the Campo Wind Project with Boulder Brush Facilities to evaluate potential Project impacts on groundwater storage within a tributary watershed of a wellfield located in the southern portion of the Project Area. Rainfall, runoff, evapotranspiration, and groundwater recharge were calculated in monthly intervals using historical rainfall data for a span of 59 years, which includes historical periods of elevated rainfall and drought. Pumping-induced changes to the volume of groundwater in storage due to Project water demand were evaluated over the 59-year period

Based on results of the soil moisture balance analysis, 23 of the 59 years in the historical record had zero acre-feet of rainfall recharge. In these years, the anticipated groundwater extraction for Project O&M represents approximately 0.008% loss of groundwater in storage. In the remaining 36 years considered, the rainfall recharge was greater than O&M demand and extraction would result in no net loss of groundwater in storage. The average annual groundwater recharge rate over the 59-year period examined is approximately 250 afy.

The analysis indicated that the volume of groundwater in storage would remain well above the 50% significance threshold established by the County of San Diego, with Project O&M water demands accounting for a mere 0.008% loss of groundwater in storage during years with no aquifer recharge. The calculated maximum volume of groundwater in storage within the in the upper 530 feet of the aquifer is approximately 2,978 acre-feet.

On-Site Project Groundwater Quality

As part of a proposed landfill project, limited groundwater quality sampling within the Project Area occurred between 1994 and 2004. Constituents measured in water quality samples include chloride, fluoride, pH, sulfate, total dissolved solids (TDS), title 22 metals, and volatile organic compounds. On-site groundwater was primarily sodium-bicarbonate type water, with water quality ranging from good to relatively poor (DOI 2010). Poor groundwater quality encountered in some

wells was the result of elevated concentrations of naturally occurring metals, primarily arsenic, manganese, iron, and TDS (DOI 2010). The study found that TDS concentrations were generally elevated in the shallower parts of the groundwater flow system, with deeper parts generally having lower TDS concentrations and therefore generally better groundwater quality. While the majority of water used for the Project is not expected to be used for potable purposes, water quality samples collected within the Project Area in 2004 generally met drinking water maximum contaminant levels (MCLs) for constituents sampled (DOI 2010). Exceedances of primary MCLs for arsenic occurred in three (of 34) monitoring wells sampled in 2004. Exceedances of secondary MCLs for TDS occurred in four wells sampled, and exceedances of secondary MCLs for manganese occurred in one well sampled. No volatile organic compounds were detected in any of the wells sampled.

While specific water quality of individual wells located on the Reservation is considered confidential information, potable water sourced from on-site groundwater wells for Project O&M will be provided in accordance with all federal regulations and will be treated when required to comply with any and all federal MCLs.

3.3.4 Water Supply and Demand Comparison

Two potential water supply sources have been identified to supply the approximately 173 AF of Project construction water demand over a 14-month construction period. The Project intends to source water from on site if possible, with construction water from JCSD and/or PDMWD serving as alternative sources of supply (JCSD being the most likely). Both on-site wellfield and/or JCSD's non-potable supply wells are sufficient to supply the entire construction demand of 173 AF (Table 5), therefore the Project may rely on one or a combination of both sources to satisfy construction water demand. The JCSD source for Project water demand is located approximately 14 miles east (one-way driving distance) of the Project Site and the PDMWD source for Project water is located approximately 57 miles (one-way driving distance) west of the Project Site (Figure 4). To obtain water from JCSD or PDMWD, the Project contractor would be responsible for contracting water trucks following the appropriate permitting and coordination with JCSD and/or PDMWD. The estimated O&M water demand of 0.25 AFY would be supplied by an on-site groundwater well. Otherwise, an on-site water tank would be located within the footprint of the O&M facility in the event that groundwater is not available. The nominal potable drinking water demand of 20 gpd or 0.016 AFY associated with the O&M building may be supplied by an on-site groundwater well or purchased from and delivered by a privately owned bottled water distributor licensed by the California Department of Public Health (CDPH) Food and Drug Branch (FDB).

Table 5 compares the projected available 20-year supply for construction and operation for normal, single-dry and multiple-dry water years for the Project. Based on identified water supply sources and the potential volume of water the Project could obtain from each source, sufficient water supply is available to meet Project construction and operational water demands under normal, dry,

and multiple-dry-year conditions. Table 5 demonstrates that sufficient water is available to the Project (such that there will be surplus supply).

Table 5
Water Supply and Demand Comparison from Construction through 2039

Available Sources	Construction (2019–2020)			Operation and Maintenance (2020–2039*)		
	Normal Water Year	*Single Dry Year*	*3rd Year of Drought*	*Normal Water Year*	*Single Dry Year*	*3rd Year of Drought*
Projected Available Supply (AF)						
JCSD Well 6[a]	112	112	112	—	—	—
JCSD Highland Center Well[b]	94	94	94	—	—	—
JCSD Park Well[c]	32	32	32	—	—	—
PDMWD	112[d]	112[d]	112[d]	—	—	—
On-Site Groundwater Supply	250[e]	250[e]	250[e]	250[e]	250[e]	250[e]
Total	**488**	**488**	**488**	**250**	**250**	**250**
Projected Demand (AF)						
Campo Wind Facilities (Project)	123	123	123	0.25	0.25	0.25
Boulder Brush Facilities (Project)	50	50	50	—	—	—
Torrey Wind[f]	76	76	76	—	—	—
Rugged Solar[f]	37	37	37	—	—	—
Cameron Solar[f]	4	4	4	0.03	0.03	0.03
Total	**290**	**290**	**290**	**0.31**	**0.31**	**0.31**
Surplus (AF)	**198**	**198**	**198**	**250**	**250**	**250**

AF = acre-feet; JCSD = Jacumba Community Services District; — = no data; PDMWD = Padre Dam Municipal Water District.

* It is reasonable to assume that the estimated on-site well yield values presented in Table 5 are representative of well yield through the year 2039, in order to evaluate a 20-year projection as part of this Water Supply Assessment.

a. JCSD Well 6 annual available supply based on JCSD established production cap of 100,000 gallons per day (gpd) for Well 6.

b. JCSD Highland Center Well annual available supply based on pumping 8 hours a day at the maximum tested production capacity of 174 gallons per minute (gpm).

c. JCSD Park Well annual available supply based on production capacity of 20 gpm.

d. There is no projected available surplus for recycled water listed in the PDMWD 2015 Urban Water Management Plan. However, the will-serve letter provided by PDMWD indicates that up to 100,000 gpd (112 AFY) of non-potable water is available to the Project on a first come first served basis, subject to availability. Because the availability depends on supply available at any given time, and the letter expires in November 2020, this volume of water is not assumed to be available in the calculation of surplus.

e. Average annual groundwater recharge of the Project Area calculated by the Soil Moisture Balance Analysis (Appendix J-1 of the Campo Wind Project with Boulder Brush Facilities EIR). Actual capacity of On-Reservation wells considered confidential but at least four wells have sufficient capacity to meet project and operation and maintenance demand based on historical pumping.

f. Torrey Wind, Rugged Solar, and Cameron Solar are discretionary projects being processed by the County. They are included in projected demand since each project proposes to use groundwater from JCSD.

4 CONCLUSIONS

JCSD and PDMWD have each provided 399W will-serve letters indicating the availability to serve water for the construction phase of the Project (Appendix C). A total of 173 AF is required, and anticipated to be served from the On-Reservation wellfield, and/or JCSD and PDMWD Off-Reservation supply sources. A 2019 groundwater investigation prepared by Dudek (2019a) indicates JCSD Well 6 can provide up to 100,000 gpd (112 AFY) of untreated non-potable groundwater for construction use. A separate groundwater investigation prepared by Dudek (2019b) indicates JCSD Highland Center Well can provide up to 174 gpm (and a maximum of 20 GPD from the Park Well) of untreated non-potable groundwater for construction use. Groundwater supplies from JCSD are adequate to supply the Project and other reasonably foreseeable projects over a 14-month construction period. The two groundwater investigations conclude that when taking into account water required by the Project and all other reasonably foreseeable projects, that reduction in groundwater storage, well interference impacts, impact to groundwater dependent habitat and water quality would be less than significant.

The project also includes a GMMP as a project design feature, which includes setting thresholds protective of groundwater resources; regular monitoring of non-potable water production and water levels in surrounding monitoring wells, annual reporting to the County of San Diego Planning and Development Services, and provisions to cease pumping if groundwater level thresholds are exceeded to ensure that groundwater impacts remain less than significant. Over the long-term, groundwater production from the Jacumba Valley alluvial aquifer is expected to decrease substantially as a result of JCSD switching its potable water supply source to the fractured rock aquifer, the completion of planned construction projects and limited pumping for the O&M of the JVR Project of up to 10 AFY.

Based on an analysis of PDMWD's UWMP and the issuance of the 399W will-serve letter, non-potable recycled water treated to a tertiary standard and meeting Title 22 water quality standards is available for Project construction water demand. The Project O&M water demand of approximately 0.25 AFY will be supplied either by existing on-site groundwater wells or (for non-potable uses) purchased from PDMWD or JCSD. At least four (4) On-Reservation groundwater wells have sufficient capacity individually to supply O&M water based on historical pumping rates. Based on a soil moisture balance prepared as part of the Groundwater Resources Investigation Report for the Project, the average annual groundwater recharge rate for the Jacumba Alluvial Aquifer over the 59-year period examined is approximately 250 AFY (Dudek 2019b). The estimated groundwater extraction for Project O&M of 0.25 AFY represents an approximately 0.008% loss of groundwater in storage during drought years when no rainfall recharge occurs. In years with normal to above average rainfall, sufficient recharge (i.e., greater than 0.25 AFY) occurs to replenish the fractured rock aquifer of water extracted for O&M purposes. Taking into account

severe drought, there is sufficient groundwater supply from On-Reservation groundwater wells to support Project O&M demand over 20 years, and other current and projected future uses.

This WSA has evaluated the available water supply under normal year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the Project and the general projected demand for groundwater in the Basin. Based on this WSA evaluation, adequate water supplies for Project construction and annual O&M are available. The temporary water demand of 173 AF (during the Project construction period) could potentially be supplied by one, or a combination of the identified water sources. Based on this assessment, it is determined that long-term Project O&M water demand would be met by existing On-Reservation groundwater wells.

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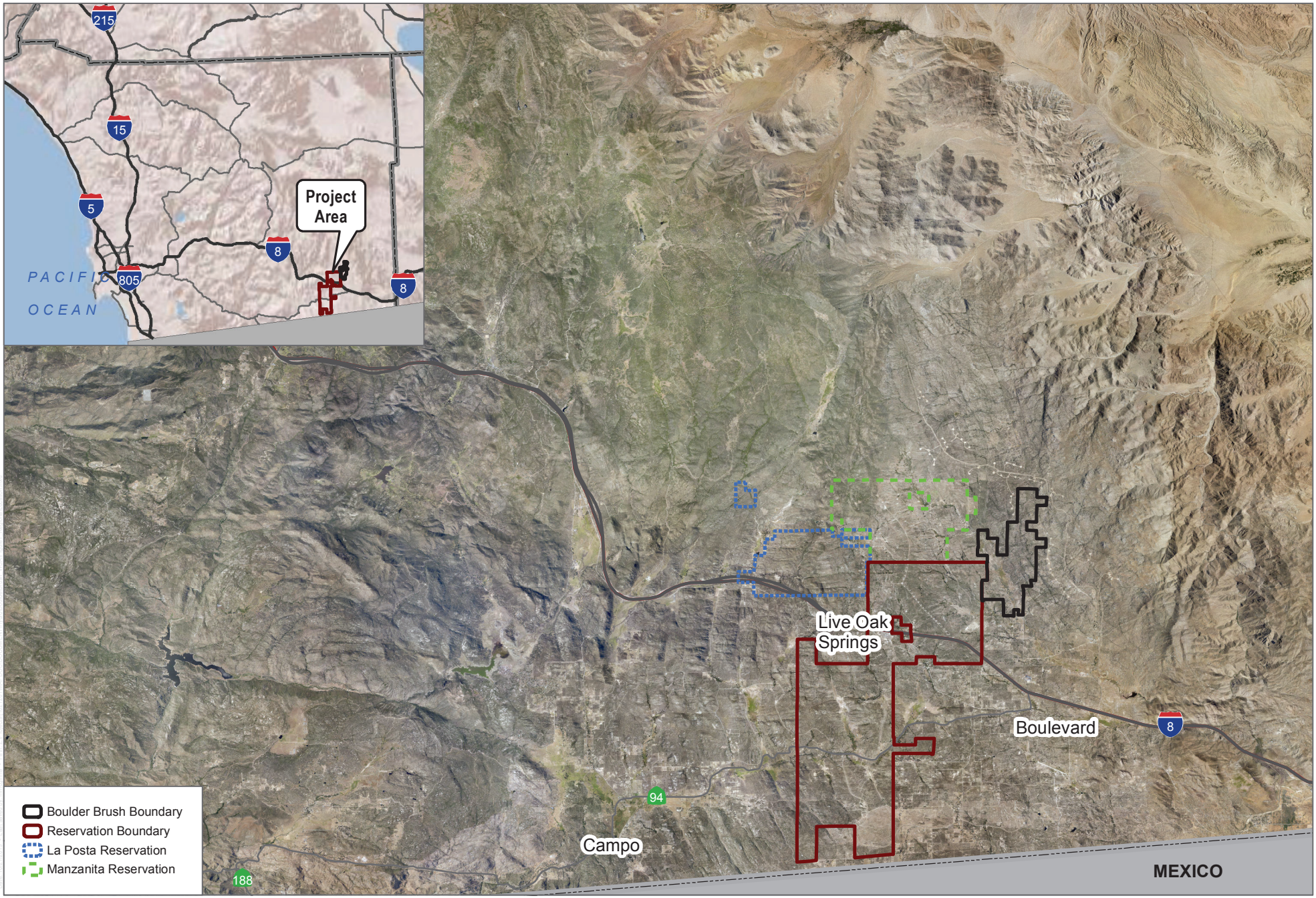


SOURCE: ESRI; SANDAG; SANGIS

DUDEK

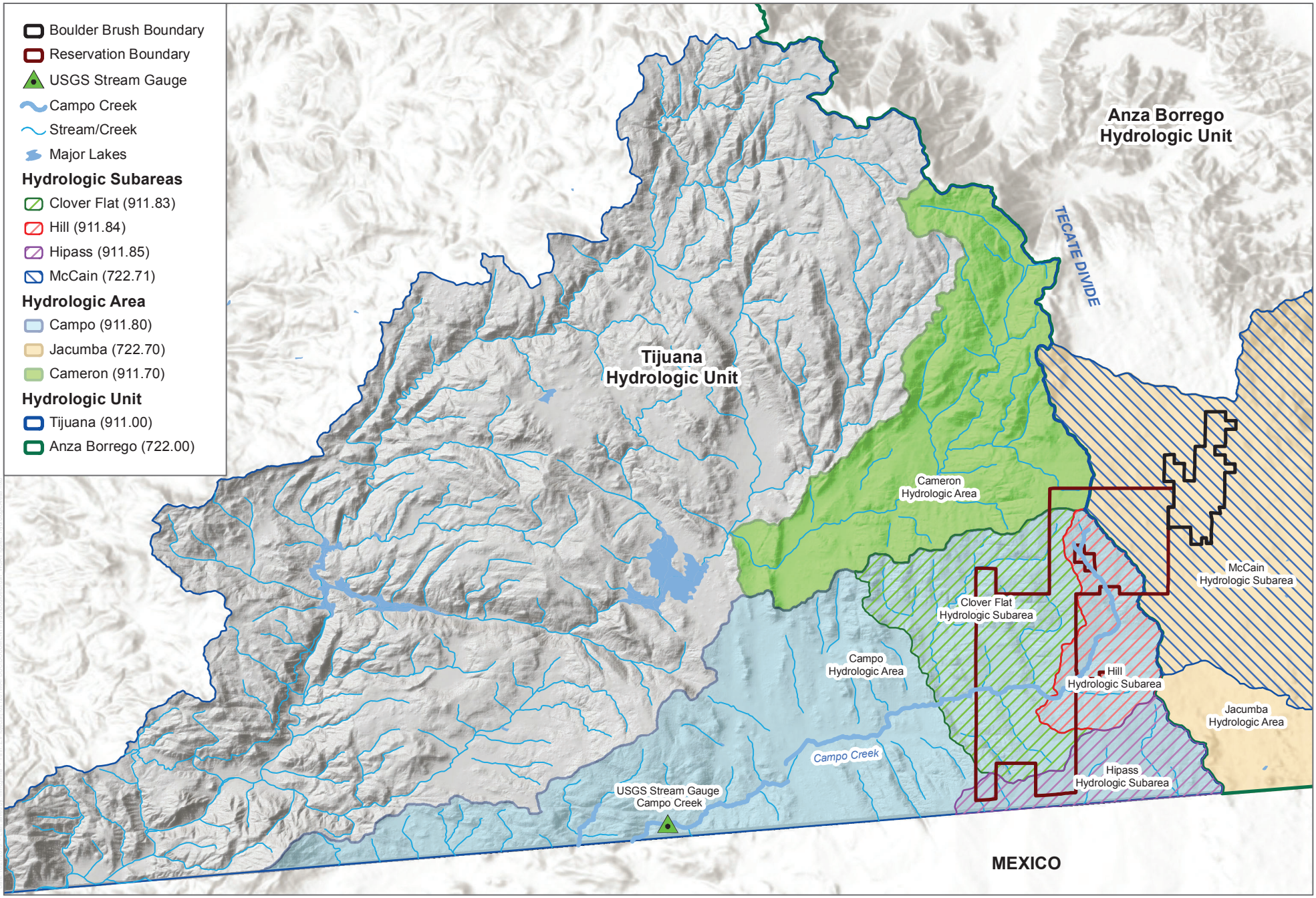
0 2 4 Miles

FIGURE 1

Regional Location

Water Supply Analysis - Campo Wind Project

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2019; USGS 2018

DUDEK

0 2 4 Miles

FIGURE 2

Hydrologic Areas

Campo Wind Project with Boulder Brush Facilities

INTENTIONALLY LEFT BLANK

- Boundary Brush Boundary
- Reservation Boundary
- Campo_well_field

Geologic Contacts and Faults

- contact, certain
- contact, queried
- fault, approx. located; fault, approximately located
- fault, certain; fault, certain, apparent scarp
- fault, concealed; fault, concealed, apparent scarp; fault, concealed, queried
- fault, inferred
- water boundary

Geologic Unit, Name

- Jcr, Granodiorite of Cuyamaca Reservoir
- Jhc, Gneiss of Harper Creek
- Jsp, Migmatitic schist and gneiss of Stephenson Peak
- JTRm, Metasedimentary and metavolcanic rocks
- Kc, Cuyamaca Gabbro
- Kgm, Tonalite of Granite Mountain
- Kih, Indian Hill granodiorite of Parrish and others
- KJem, Quartz Diorite of East Mesa
- Klb, Tonalite of Las Bancas
- Klp, Tonalite of La Posta
- Ktg, Tonalite and grabbro
- MzPzm, Rocks of Jacumba Mountains
- Qt, Terrace deposits
- Qya, Young alluvium
- Ta, Anza Formation
- Tj, Jacumba Volcanics

Campo Creek Alluvium

- Chino fine sandy loam
- Fallbrook rocky sandy loam
- Loamy alluvial land
- Mottsville loamy coarse sand
- Sheephead rocky fine sandy loam
- Tujunga sand

Note: Campo Creek Alluvium Inferred from USDA Soils Data

SOURCE: USGS 2018; USDA 2018

DUDEK

0 0.5 1 Miles

FIGURE 3

Regional Geologic Map

Campo Wind Project with Boulder Brush Facilities

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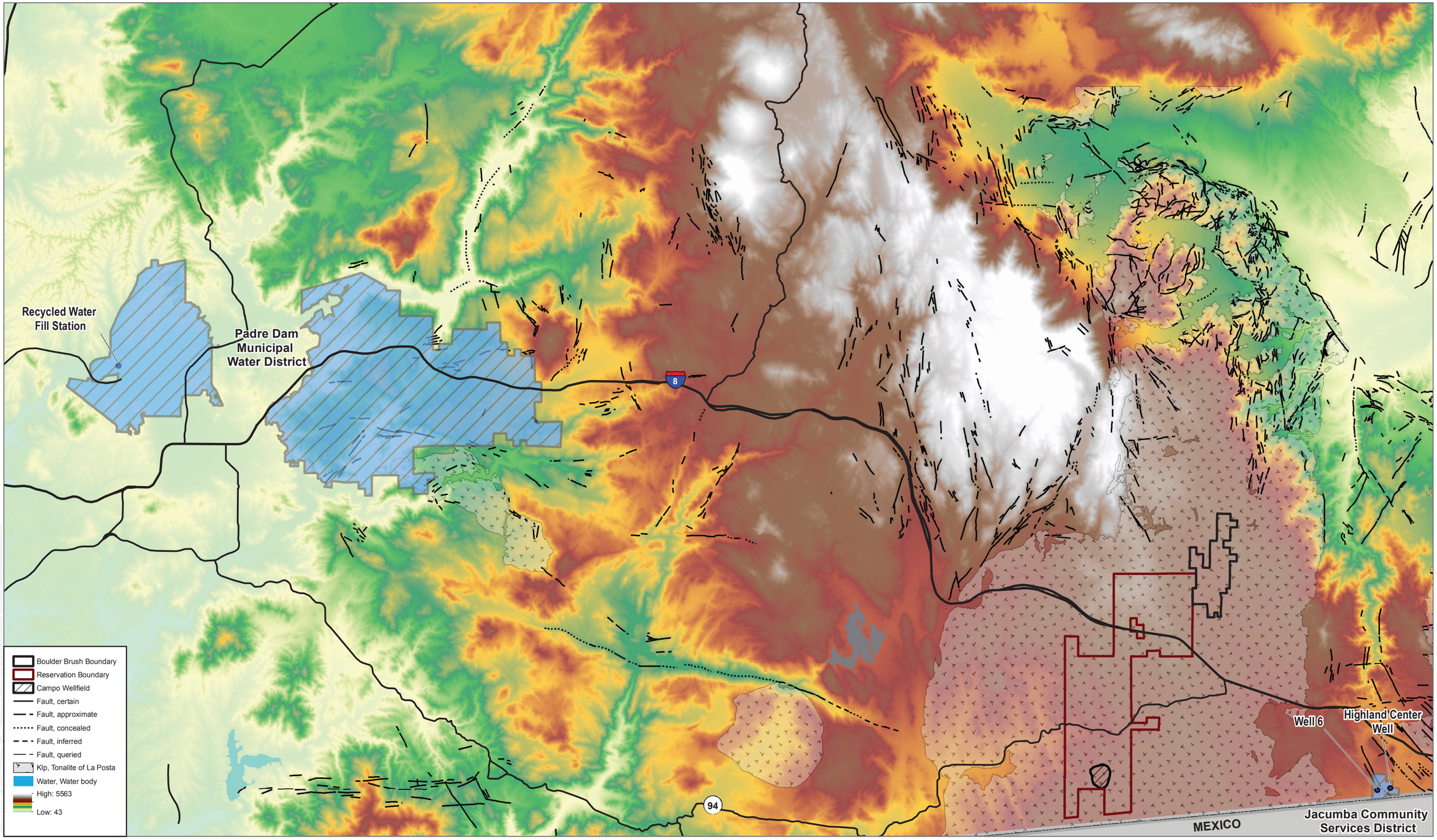

SOURCE: NOAA 2018; USGS 2018

DUDEK

0 2.5 5 Miles

FIGURE 4

Potential Off-Site Project Water Resources

Campo Wind Project with Boulder Brush Facilities

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APPENDIX A

JCSD Well 6 Water Quality Laboratory Report

Institute for Environmental Health
Environmental Engineering Laboratory, Inc.
3538 Hancock St. San Diego, CA 92110 | P: (619) 298-6131 | F: (619) 298-6141

TEST REPORT

Recipient:	Tom Lindenmeyer JACUMBA COMM.SERVICE DIST. P.O. BOX 425 JACUMBA, CA 91934	**Report Date:**	09/20/2007
		Matrix:	WATER
		Sampled:	08/22/2007 8:20
		Received:	08/22/2007 11:41
		Collection Address:	
Reference:	0736168	**Sample Location:**	Well #4 "Other"
Lab ID:	0736168-001	**Description:**	
Sample #:		**Date Started:**	08/22/2007
Project#:		**Date Completed:**	09/20/2007
Comment:		**PS Code:**	WAT

RECEIVED SEP 2 5 2007

Coliform Total (2-10) Colilert

Parameter	Result	Units	RL	MCL	Dilution Factor	Method	Analyzed	Analyst
Coliform, E. Coli.	Absent	None	0	0	1	SM 9223	08/22/2007 14:15	HD
Total Coliform	Absent	None	0	0	1	SM 9223	08/22/2007 14:15	HD

Recipient:	Tom Lindenmeyer JACUMBA COMM.SERVICE DIST. P.O. BOX 425 JACUMBA, CA 91934	**Report Date:**	09/20/2007
		Matrix:	WATER
		Sampled:	08/22/2007 8:15
		Received:	08/22/2007 11:41
		Collection Address:	
Reference:	0736168	**Sample Location:**	Well #6 "Other"
Lab ID:	0736168-002	**Description:**	
Sample #:		**Date Started:**	08/22/2007
Project#:		**Date Completed:**	09/20/2007
Comment:		**PS Code:**	WAT

Coliform Total (2-10) Colilert

Parameter	Result	Units	RL	MCL	Dilution Factor	Method	Analyzed	Analyst
Coliform, E. Coli.	Absent	None	0	0	1	SM 9223	08/22/2007 14:15	HD
Total Coliform	Absent	None	0	0	1	SM 9223	08/22/2007 14:15	HD

Recipient:	Tom Lindenmeyer JACUMBA COMM.SERVICE DIST. P.O. BOX 425 JACUMBA, CA 91934	**Report Date:**	09/20/2007
		Matrix:	WATER
		Sampled:	08/22/2007 8:00
		Received:	08/22/2007 11:41
		Collection Address:	
Reference:	0736168	**Sample Location:**	Sample Station #4
Lab ID:	0736168-003	**Description:**	
Sample #:		**Date Started:**	08/22/2007
Project#:		**Date Completed:**	09/20/2007
Comment:		**PS Code:**	WAT

Coliform Total (2-10) Colilert

Parameter	Result	Units	RL	MCL	Dilution Factor	Method	Analyzed	Analyst
Coliform, E. Coli.	Absent	None	0	0	1	SM 9223	08/22/2007 14:15	HD
Total Coliform	Absent	None	0	0	1	SM 9223	08/22/2007 14:15	HD

L = Reporting Limit MCL = Maximum Contaminant Level MDL = Method Detection Limit N/A = Not Applicable

Institute for Environmental Health
Environmental Engineering Laboratory, Inc.
3538 Hancock St. San Diego, CA 92110 | P: (619) 298-6131 | F: (619) 298-6141

TEST REPORT

Recipient:	Tom Lindenmeyer JACUMBA COMM.SERVICE DIST. BOX 425 JACUMBA, CA 91934	**Report Date:**	07/05/2007
		Matrix:	WATER
		Sampled:	05/09/2007
		Received:	05/09/2007 11:24
		Collection Address:	
Reference:	0735093	**Sample Location:**	PS Code 3710011-006(Well #6)
Lab ID:	0735093-002	**Description:**	
Sample #:		**Date Started:**	05/09/2007
Project#:		**Date Completed:**	
Comment:		**PS Code:**	3710011-006

Radium (228)

Parameter	Result	Units	RL	MCL	Dilution Factor	Method	Analyzed	Analyst
Radium 228	0.0363	pCi/L	1.0	2.0	1	EPA Ra5	06/01/2007	FGL
Radium 228 Counting Error	0.576	pCi/L	-	-	1	EPA Ra5	06/01/2007	FGL

Test Parameters

Parameter	Result	Units	RL	MCL	Dilution Factor	Method	Analyzed	Analyst
Uranium	ND	pCi/L	2.0	20	1	EPA200.8	05/17/2007	BSK

U = The analyte was analyzed for but not detected at the sample specific level reported.

Approval: _____ QA/QC Officer _____ Director

RL = Reporting Limit MCL = Maximum Contaminant Level MDL = Method Detection Limit N/A = Not Applicable

ENVIRONMENTAL ENGINEERING LABORATORY, INC.
3538 Hancock St. San Diego, CA 92110 | P:(619)298-6131 | F:(619)298-6141 | ELAP Cert.#2616

Recipient:	Tom Lindenmeyer	**Matrix:**	WATER	
	JACUMBA COMM.SERVICE DIST.	**Sampled:**	07/19/2006	8:40
	BOX 425	**Received:**	07/19/2006	11:15
	JACUMBA, CA 91934	**Collection Address:**		
Reference:	0632439	**Sample Location:**	well # 6 other	
Lab ID:	0632439-005	**Description:**		
Sample #:		**Date Started:**	07/19/2006	
Project#:		**Date Completed:**	08/08/2006	
Comment:		**PS Code:**	WAT	

Coliform Total (2-10) Colilert

Parameter	Result	Units	RL	MCL	Dilution Factor	Method	Analyzed	Analyst
Chlorine Residual	NA	mg/L	0.1	0	1	SM4500G	07/19/2006 15:05	Jli
Coliform, E. Coli.	Absent	None	0	0	1	SM 9223	07/19/2006 15:05	Jli
Total Coliform	Absent	None	0	0	1	SM 9223	07/19/2006 15:05	Jli

U = The analyte was analyzed for but not detected at the sample specific level reported.

Report Date: 08/08/2006

Approval: _____
Director

RL = Reporting Limit MCL = Maximum Contaminant Level MDL = Method Detection Limit N/A = Not Applicable

Environmental Engineering Laboratory
3538 Hancock Street
San Diego, CA 92110
(619) 298-6131

ELAP certificate number 1738

JACUMBA COMM.SERVICE DIST.
BOX 425
JACUMBA , CA
92034

Customer #: 47 Sample #: 30406312
Reference : WELL #6
Sampled : 04/24/03 08:30AM
Received : 04/24/03 11:05AM P.O. #
Comment : COPY: STATE HEALTH DEPT.

Date Started : 04/24/03
Date Completed: 06/05/03

Test Run:	Result:	MCL	DL	Method:
Sulfide, Iodometric	5.8 mg/L		0.1	SM4500
Arsenic	ND ug/L	50	2.0	SM3120B
Barium	ND ug/L	1000	100.0	SM3120B
Cadmium	ND ug/L	5	1.0	SM3120B
Chromium, Total	1.1 ug/L	50	1.0	SM3120B
Fluoride	2.72 mg/L	2.0	0.1	EPA300.
Lead	ND ug/L	15	5.0	SM3113B
Mercury	ND ug/L	2	1.0	SM3112B
Nitrogen, Nitrate (as NO_3)	ND mg/L	45	0.18	EPA300.
Selenium	ND ug/L	50	5.0	SM3113B
Silver	ND ug/L	100	10.0	SM3120B
Aluminum	ND ug/L	1000	50.0	SM3120B
Thallium	ND ug/L	2	1.0	EP200.9
Antimony	ND ug/L	6	6.0	SM3113B
Bromodichloromethane	ND ug/L		0.5	524.2
Bromoform	ND ug/L		0.5	524.2
Chloroform	ND ug/L		0.5	524.2
Dibromochloromethane	ND ug/L		0.5	524.2
Total Trihalomethanes	ND ug/L	100	0.5	524.2
Benzene	ND ug/L	1.0	0.5	524.2
Carbon Tetrachloride	ND ug/L	0.5	0.5	524.2
1,2-Dichlorobenzene	ND ug/L	600	0.5	524.2
1,4-Dichlorobenzene	ND ug/L	5	0.5	524.2
1,1-Dichloroethane	ND ug/L	5	0.5	524.2
1,2-Dichloroethane	ND ug/L	0.5	0.5	524.2

ND = None Detected DL = Detection Limit MCL = Max Contaminant Levels

Reported by Robert L. Chambers M.S. Michael M. Chambers M.S., P.E. Michael Harris PhD

06/10/03
Date

JACUMBA COMM.SERVICE DIST.

Received : 04/24/03 11:05AM Sample# 30406312

1,1-Dichloroethylene	ND ug/L	6	0.5	524.2
cis-1,2-Dichloroehylene	ND ug/L	6	0.5	524.2
trans-1,2-Dichloroethylene	ND ug/L	10	0.5	524.2
Dichloromethane	ND ug/L	5	0.5	524.2
1,2-Dichloropropane	ND ug/L	5	0.5	524.2
1,3-Dichloropropene	ND ug/L	0.5	0.5	524.2
Ethylbenzene	ND ug/L	700	0.5	524.2
Monochlorobenzene	ND ug/L	70	0.5	524.2
Styrene	ND ug/L	100	0.5	524.2
1,1,2,2-Tetrachloroethane	ND ug/L	1	0.5	524.2
Tetrachloroethylene (PCE)	ND ug/L	5	0.5	524.2
Toluene	ND ug/L	150	0.5	524.2
1,2,4-Trichlorobenzene	ND ug/L	70	0.5	524.2
1,1,1-Trichloroethane	ND ug/L	200	0.5	524.2
1,1,2-Trichloroethane	ND ug/L	5	0.5	524.2
Trichloroethylene (TCE)	ND ug/L	5	0.5	524.2
Trichlorofluoromethane	ND ug/L	150	5.00	524.2
TrichloroTrifluoromethane (Freon 113)	ND ug/L	1200	10.0	524.2
Vinyl Chloride	ND ug/L	0.5	0.5	524.2
Xylenes	ND ug/L	1750	0.5	524.2
Methyl tert-Butyl Ether (MTBE)	ND ug/L	5	3.0	524.2
Bromochloromethane	ND ug/L		0.5	524.2
Bromobenzene	ND ug/L		0.5	524.2
n-Butylbenzene	ND ug/L		0.5	524.2
sec-Butylbenzene	ND ug/L		0.5	524.2
Bromomethane	ND ug/L		0.5	524.2
Chlorodibromomethane	ND ug/L		0.5	524.2
Chloroethane	ND ug/L		0.5	524.2
tert-Butylbenzene	ND ug/L		0.5	524.2
Chloromethane	ND ug/L		0.5	524.2
2-Chlorotoluene	ND ug/L		0.5	524.2
4-Chlorotoluene	ND ug/L		0.5	524.2
Dibromomethane	ND ug/L		0.5	524.2
1,3-Dichlorobenzene	ND ug/L		0.5	524.2
Dichlorodifluoromethane	ND ug/L		0.5	524.2
1,3-Dichloropropane	ND ug/L		0.5	524.2
2,2-Dichloropropane	ND ug/L		0.5	524.2
1,1-Dichloropropene	ND ug/L		0.5	524.2
1,1,1,2-Tetrachloroethane	ND ug/L		0.5	524.2
1,2,3-Trichloropropane	ND ug/L		0.5	524.2
Hexachlorobutadiene	ND ug/L		0.5	524.2
Isoporopylbenzene (Cumene)	ND ug/L		0.5	524.2
p-Isopropyltoluene	ND ug/L		0.5	524.2
Naphthalene	ND ug/L		0.5	524.2
n-Propylbenzene	ND ug/L		0.5	524.2
1,2,3-Trichlorobenzene	ND ug/L		0.5	524.2

ND = None Detected DL = Detection Limit MCL = Max Contaminant Levels

Reported by Robert L. Chambers M.S. Michael M. Chambers M.S., P.E. Michael Harris PhD 06/10/03 Date

JACUMBA COMM.SERVICE DIST.

Received : 04/24/03 11:05AM Sample# 30406312

1,3,5-Trichlorobenzene	ND	ug/L		0.5	524.2
1,2,3-Trimethylbenzene	ND	ug/L		0.5	524.2
1,2,4-Trimethylbenzene	ND	ug/L		0.5	524.2
1,3,5-Trimethylbenzene	ND	ug/L		0.5	524.2
cis-1,3-Dichlorpropene	ND	ug/L		0.5	524.2
trans-1,3-Dichloropropene	ND	ug/L		0.5	524.2
Spike-Vinyl Chloride	82.3	%			524.2
Spike-1,1,Dichloroethene	107	%			524.2
Spike-Benzene	97.6	%			524.2
Spike-Chlorobenzene	96.0	%			524.2
Spike-Toluene	100	%			524.2
Spike-Trichloroethylene (TCE)	97.3	%			524.2
Surrogate-4-Bromofluorobenzene	112	%			524.2
Surrogate-1,2-Dichlorobenzened4	108	%			524.2
Alkalinity - Total	65.2	mg/L		0.2	SM2320B
Alkalinity - Hydroxide	0.0	mg/L		0.2	SM2320B
Alkalinity - Carbonate	8.4	mg/L		0.2	SM2320B
Alkalinity - Bicarbonate	62.5	mg/L		0.2	SM2320B
Calcium	2.8	mg/L		1.0	SM3120B
Chloride	84.4	mg/L		0.2	EPA300.
Conductance, Specific	498	uMHO		1	SM2510B
Copper	ND	ug/L	1000	50.0	SM3120B
Hardness	8.1	mg/L		2.0	SM2340B
Iron	ND	ug/L	300	100.0	SM3120B
Magnesium	0.28	mg/L		1	SM3120B
Manganese	ND	ug/L	50	20.0	SM3120B
Ph	9.48				EPA150.
Sodium	105	mg/L		1	SM3120B
Solids, Dissolved	296	mg/L		10	SM2450C
Sulfate	21.4	mg/L		0.5	EPA300.
Sulfonated Detergent - MBAS	ND	mg/L	0.5	0.05	SM5540C
Zinc	ND	ug/L	5000	50.0	SM3120B
Color, Visual	ND	UNITS		3	SM2120B
Odor	8	UNITS		1	EPA2150
Turbidity	0.22	NTU	1.0	0.10	SM2130B
Dibromochloropropane (DBCP)	ND	ug/L			EPA 504
Ethylene Dibromide (EDB)	ND	ug/L			EPA 504
Glyphosate	ND	ug/L	700	25	547
Endothall	ND	ug/L	100	45	548.1
Diquat	ND	ug/L	20	4.0	549
Additional Test	SEE REPORT				
2,3,7,8-TCDD (Dioxin)	ND	ug/L	0.005	.000006	EPA1613
Cyanide, Total	ND	ug/L	200	100	SM4500E
Nitrogen, Nitrite	ND	ug/L	1000	400	EPA300.
Agressive Index	12.1	mg/L			
Langlier Index	0.16	mg/L			

ND = None Detected DL = Detection Limit MCL = Max Contaminant Levels

06/10/03

Reported by Robert L. Chambers M.S. Michael M. Chambers M.S., P.E. Michael Harris PhD Date

JACUMBA COMM.SERVICE DIST.

Received : 04/24/03 11:05AM Sample# 30406312

Perchlorate	ND ug/L	4.0	EPA 314

ND = None Detected DL = Detection Limit MCL = Max Contaminant Levels

06/10/03

Reported by Robert L. Chambers M.S. Michael M. Chambers M.S., P.E. Michael Harris PhD Date

Pace AnalyticalServices, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612-607-6444

Drinking Water Analysis Results
2,3,7,8-TCDD -- USEPA Method 1613B

Sample ID.....6312 WELL 6
Client.....Environmental Engineering Lab
Lab Sample ID.....104462098

Date Collected.....04/24/2003
Date Received.....04/29/2003
Date Extracted.....04/30/2003

	Sample 104462098	Method Blank	Lab Spike	Lab Spike Dup
[2,3,7,8-TCDD]	**ND**	ND	--	--
PRL	5 pg/L	5 pg/L	--	--
2,3,7,8-TCDD Recovery	--	--	83%	85%
Spike Recovery Limit	--	--	73-146%	73-146%
RPD			3.2%	
IS Recovery	**82%**	90%	92%	90%
IS Recovery Limits	31-137%	31-137%	25-141%	25-141%
CS Recovery	**88%**	90%	83%	87%
CS Recovery Limits	42-164%	42-164%	37-158%	37-158%
Filename	A30501C_1	A30501B_3	A30501B_1	A30501B_2
Analysis Date	05/01/2003	05/01/2003	05/01/2003	05/01/2003
Analysis Time	18:50	17:39	16:39	17:09
Analyst	BAL	CMP	CMP	CMP
Volume	1.000L	0.980L	1.006L	1.014L
Dilution	NA	NA	NA	NA
CCAL Filename	A30501A_2	A30501A_2	A30501A_2	A30501A_2

!	= Outside the Control Limits
ND	= Not Detected
PRL	= Pace Reporting Limit
Limits	= Control Limits from Method 1613 (10/94 Revision), Tables 6A and 7A
RPD	= Relative Percent Difference of Lab Spike Recoveries
IS	= Internal Standard [2,3,7,8-TCDD-$^{13}C_{12}$]
CS	= Cleanup Standard [2,3,7,8-TCDD-$^{37}Cl_4$]

Project No.....1072035

BSK ANALYTICAL LABORATORIES

Mike Chambers
Environmental Engineering Laboratory
3538 Hancock Street
San Diego, CA 92110

Certificate of Analysis

ELAP Certificate #1180

Report Issue Date: 05/16/2003

BSK Submission #: 2003041665

BSK Sample ID #: 315982

Project ID: Project Desc:

Submission Comments:

Sample Type: Liquid
Sample Description: 6312
Sample Comments:

Date Sampled: 04/24/2003
Time Sampled: 0830
Date Received: 04/25/2003

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Conductivity - Specific (EC)	SM 2510 B	510	µmho/cm	1	1	1	04/25/03	04/25/03
Perchlorate (ClO4)	EPA 314.0	ND	µg/L	4	1	4	05/01/03	05/01/03

Organics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Dibromochloropropane	EPA 504.1	ND	µg/L	0.01	1	0.01	04/29/03	05/05/03
Ethylenedibromide	EPA 504.1	ND	µg/L	0.02	1	0.02	04/29/03	05/05/03
Aldrin	EPA 505	ND	µg/L	0.075	1	0.075	04/29/03	05/07/03
Chlordane	EPA 505	ND	µg/L	0.1	1	0.1	04/29/03	05/07/03
Chlorothalonil (Daconil,Bravo)	EPA 505	ND	µg/L	5.0	1	5	04/29/03	05/07/03
Dieldrin	EPA 505	ND	µg/L	0.02	1	0.02	04/29/03	05/07/03
Endrin	EPA 505	ND	µg/L	0.1	1	0.1	04/29/03	05/07/03
Heptachlor	EPA 505	ND	µg/L	0.01	1	0.01	04/29/03	05/07/03
Heptachlor epoxide	EPA 505	ND	µg/L	0.01	1	0.01	04/29/03	05/07/03
Hexachlorobenzene	EPA 505	ND	µg/L	0.50	1	0.5	04/29/03	05/07/03
Hexachlorocyclopentadiene	EPA 505	ND	µg/L	1	1	1	04/29/03	05/07/03
Lindane	EPA 505	ND	µg/L	0.2	1	0.2	04/29/03	05/07/03
Methoxychlor	EPA 505	ND	µg/L	10	1	10	04/29/03	05/07/03
PCBs: Arochlor Screen	EPA 505	ND	µg/L	0.2	1	0.2	04/29/03	05/07/03
Toxaphene	EPA 505	ND	µg/L	1.0	1	1	04/29/03	05/07/03
Trifluralin	EPA 505	ND	µg/L	1.0	1	1	04/29/03	05/07/03
2,4,5-T	EPA 515.3	ND	µg/L	1.0	1	1	04/30/03	05/02/03
2,4,5-TP (Silvex)	EPA 515.3	ND	µg/L	1.0	1	1	04/30/03	05/02/03
2,4-D	EPA 515.3	ND	µg/L	10	1	10	04/30/03	05/02/03
Bentazon (Basagran)	EPA 515.3	ND	µg/L	2.0	1	2	04/30/03	05/02/03
Dalapon	EPA 515.3	ND	µg/L	10	1	10	04/30/03	05/02/03
Dicamba (Banvel)	EPA 515.3	ND	µg/L	1.5	1	1.5	04/30/03	05/02/03
Dinoseb (DNBP)	EPA 515.3	ND	µg/L	2.0	1	2	04/30/03	05/02/03
Pentachlorophenol (PCP)	EPA 515.3	ND	µg/L	0.2	1	0.2	04/30/03	05/02/03

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

BSK ANALYTICAL LABORATORIES

Mike Chambers
Environmental Engineering Laboratory
3538 Hancock Street
San Diego, CA 92110

Certificate of Analysis

ELAP Certificate #1180

Report Issue Date: 05/16/2003

BSK Submission #: 2003041665
BSK Sample ID #: 315982

Project ID: Project Desc:
Submission Comments:
Sample Type: Liquid
Sample Description: 6312
Sample Comments:

Date Sampled: 04/24/2003
Time Sampled: 0830
Date Received: 04/25/2003

Organics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Picloram	EPA 515.3	ND	µg/L	1.0	1	1	04/30/03	05/02/03
Alachlor (Alanex)	EPA 525.2	ND	µg/L	1.0	1	1	05/01/03	05/04/03
Atrazine (AAtrex)	EPA 525.2	ND	µg/L	1.0	1	1	05/01/03	05/04/03
Benzo(a)pyrene	EPA 525.2	ND	µg/L	0.1	1	0.1	05/01/03	05/04/03
bis(2-ethylhexyl) adipate	EPA 525.2	ND	µg/L	3.0	1	3	05/01/03	05/04/03
bis(2-ethylhexyl) phthalate	EPA 525.2	ND	µg/L	3.0	1	3	05/01/03	05/04/03
Bromacil (Hyvar)	EPA 525.2	ND	µg/L	10	1	10	05/01/03	05/04/03
Butachlor	EPA 525.2	ND	µg/L	0.38	1	0.38	05/01/03	05/04/03
Diazinon	EPA 525.2	ND	µg/L	0.25	1	0.25	05/01/03	05/04/03
Dimethoate (Cygon)	EPA 525.2	ND	µg/L	10	1	10	05/01/03	05/04/03
Metolachlor	EPA 525.2	ND	µg/L	0.5	1	0.5	05/01/03	05/04/03
Metribuzin	EPA 525.2	ND	µg/L	0.5	1	0.5	05/01/03	05/04/03
Molinate (Ordram)	EPA 525.2	ND	µg/L	2.0	1	2	05/01/03	05/04/03
Prometryn (Caparol)	EPA 525.2	ND	µg/L	2.0	1	2	05/01/03	05/04/03
Propachlor	EPA 525.2	ND	µg/L	0.5	1	0.5	05/01/03	05/04/03
Simazine (Princep)	EPA 525.2	ND	µg/L	1.0	1	1	05/01/03	05/04/03
Thiobencarb (Bolero)	EPA 525.2	ND	µg/L	1.0	1	1	05/01/03	05/04/03
3-Hydroxycarbofuran	EPA 531.1	ND	µg/L	3.0	1	3	05/08/03	05/09/03
Aldicarb	EPA 531.1	ND	µg/L	3.0	1	3	05/08/03	05/09/03
Aldicarb Sulfone	EPA 531.1	ND	µg/L	2.0	1	2	05/08/03	05/09/03
Aldicarb Sulfoxide	EPA 531.1	ND	µg/L	3.0	1	3	05/08/03	05/09/03
Carbaryl	EPA 531.1	ND	µg/L	5.0	1	5	05/08/03	05/09/03
Carbofuran	EPA 531.1	ND	µg/L	5.0	1	5	05/08/03	05/09/03
Methomyl	EPA 531.1	ND	µg/L	2.0	1	2	05/08/03	05/09/03
Oxamyl	EPA 531.1	ND	µg/L	20.0	1	20	05/08/03	05/09/03
Glyphosate	EPA 547	ND	µg/L	25	1	25	05/05/03	05/06/03
Endothall	EPA 548.1	ND	µg/L	45	1	45	04/28/03	04/29/03
Diquat	EPA 549.1	ND	µg/L	4	1	4	04/26/03	05/06/03

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
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H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
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Report Authentication Code:

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BSK ANALYTICAL LABORATORIES

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Certificate of Analysis

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BSK Submission #: 2003041665

BSK Sample ID #: 315982

Project ID: Project Desc:

Submission Comments:

Sample Type: Liquid
Sample Description: 6312
Sample Comments:

Date Sampled: 04/24/2003
Time Sampled: 0830
Date Received: 04/25/2003

Organics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Surrogate								
Bromoform	EPA 504.1	112.0	% Rec	-	1	N/A	04/29/03	05/05/03
Tetrachloro-m-xylene	EPA 505	87	% Rec		1	N/A	04/29/03	05/07/03
DCPAA	EPA 515.3	75	% Rec		1	N/A	04/30/03	05/02/03
1,3-Dimethyl-2-nitrobenzene	EPA 525.2	100	%Rec		1	N/A	05/01/03	05/04/03
BDMC	EPA 531.1	97	% Rec	-	1	N/A	05/08/03	05/09/03
AMPA	EPA 547	124.1	% Rec	-	1	N/A	05/05/03	05/06/03

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

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APPENDIX B

JCSD Highland Center Well Water Quality Laboratory Report

BABCOCK Laboratories, Inc.
The Standard of Excellence for Over 100 Years

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley
Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B6J1433-01	HC Well	Water	10/13/16 06:45	Patrick Rentz	10/13/16 17:50	Courier (Ray C.)
B6J1433-02	HC Well (Dissolved)	Water	10/13/16 06:45	Patrick Rentz	10/13/16 17:50	Courier (Ray C.)

mailing
P.O Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

CA ELAP No. 2698
EPA No. CA00102
NELAP No. OR4035
LACSD No. 10119

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley
Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Laboratory Reference Number
B6J1433-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
HC Well	Water	10/13/16 06:45	10/13/16 17:50

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Cations							
Total Hardness	120	3.0	mg/L	SM 2340B/EPA 2(	10/20/16 19:00	kya	
Calcium	35	1.0	mg/L	EPA 200.7	10/20/16 19:00	kya	
Magnesium	8.2	1.0	mg/L	EPA 200.7	10/20/16 19:00	kya	
Sodium Percentage	63	0.10	%	EPA 200.7	10/20/16 19:00	kya	
Sodium	98	1.0	mg/L	EPA 200.7	10/20/16 19:00	kya	
Potassium	1.8	1.0	mg/L	EPA 200.7	10/20/16 19:00	kya	
Total Cations	6.7	0.05	me/L	Calculation			
Sodium Adsorption Ratio	6.9	0.20	N/A	EPA 200.7	10/20/16 19:00	kya	
Adjusted Sodium Adsorption Ratio	3.9	0.20	N/A	EPA 200.7	10/20/16 19:00	kya	
Anions							
Total Alkalinity	170	3.0	mg/L	SM 2320B	10/19/16 15:25	nc	
Hydroxide	ND	3.0	mg/L	SM 2320B	10/19/16 15:25	nc	
Carbonate	ND	3.0	mg/L	SM 2320B	10/19/16 15:25	nc	
Bicarbonate	210	3.0	mg/L	SM 2320B	10/19/16 15:25	nc	
Chloride	83	1.0	mg/L	EPA 300.0	10/14/16 01:36	dcb	
Sulfate	37	0.50	mg/L	EPA 300.0	10/14/16 01:36	dcb	
Nitrate as N	ND	0.20	mg/L	EPA 300.0	10/14/16 01:36	dcb	
Fluoride	1.8	0.1	mg/L	SM 4500F C	10/21/16 13:10	jdw	
Nitrate	ND	1.0	mg/L	EPA 300.0	10/14/16 01:36	dcb	
Total Anions	6.60	0.05	me/L	Calculation			
Aggregate Properties							
pH	7.8	1.0	pH Units	SM 4500H+ B	10/17/16 15:50	gv	
Specific Conductance	710	1.0	umhos/cm	SM 2510 B	10/17/16 15:50	gv	
Aggressive Index	12.0	1.0	N/A	Calculation			
Langlier Index @ 25 C	0.20		N/A	SM 2330 B	10/14/16 14:35	ljc	

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley

Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Laboratory Reference Number

B6J1433-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
HC Well	Water	10/13/16 06:45	10/13/16 17:50

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Solids							
Total Dissolved Solids	400	20	mg/L	SM 2540C	10/20/16 12:35	cmr	
General Physical							
Color	3.0	3.0	Color Units	SM 2120B	10/13/16 20:45	nc	
Odor	ND	1.0	T.O.N.*	SM 2150	10/13/16 20:45	nc	
Turbidity	0.39	0.10	NTU	SM 2130 B	10/13/16 20:45	nc	
Surfactants							
MBAS	ND	0.08	mg/L	SM 5540C	10/13/16 19:40	aza	
General Inorganics							
Cyanide	ND	100	ug/L	SM 4500CN E	10/14/16 18:39	sll	
Perchlorate	ND	4.0	ug/L	EPA 314.0	10/14/16 22:56	dcb	
Nutrients							
Nitrite as N	ND	0.10	mg/L	SM 4500NO2 B	10/13/16 19:40	nc	
Volatile Organic Compounds by EPA 524.2							
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,1,1-Trichloroethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,1,2-Trichloroethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,1-Dichloroethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,1-Dichloroethene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,1-Dichloropropene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,2,3-Trichlorobenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,2,4-Trichlorobenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,2,4-Trimethylbenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,2-Dichlorobenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,2-Dichloroethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,2-Dichloropropane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,3-Dichlorobenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,3-Dichloropropane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,3-Dichloropropene (total)	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
1,3,5-Trimethylbenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	

Client Name: Dudek & Associates
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Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley

Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Laboratory Reference Number

B6J1433-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
HC Well	Water	10/13/16 06:45	10/13/16 17:50

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Volatile Organic Compounds by EPA 524.2							
1,4-Dichlorobenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
2,2-Dichloropropane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
2-Butanone(MEK-EPA 8260)	ND	5.0	ug/L	EPA 524.2	10/19/16 07:10	eec	
2-Chlorotoluene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
4-Chlorotoluene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
4-Methyl-2-Pentanone(MIBK)	ND	5.0	ug/L	EPA 524.2	10/19/16 07:10	eec	
Benzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Bis(2-chloroethyl)ether'''	ND	5.0	ug/L	EPA 524.2	10/19/16 07:10	eec	
Bromobenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Bromochloromethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Bromodichloromethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Bromoform	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Bromomethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Carbon Tetrachloride	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Chlorobenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Chloroethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Chloroform	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Chloromethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
cis-1,2-Dichloroethene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
cis-1,3-Dichloropropene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Dibromochloromethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Dibromomethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Dichlorodifluoromethane	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Ethylbenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Hexachlorobutadiene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Isopropylbenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Methyl tert butyl Ether	ND	3.0	ug/L	EPA 524.2	10/19/16 07:10	eec	
Methylene Chloride	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
n-Butylbenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
n-Propylbenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Naphthalene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
p-Isopropyltoluene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
sec-Butylbenzene	ND	0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	

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Contact: Partrick Rentz
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Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley

Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Laboratory Reference Number

B6J1433-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
HC Well	Water	10/13/16 06:45	10/13/16 17:50

Analyte(s)	Result		RDL	Units	Method	Analysis Date	Analyst	Flag
Volatile Organic Compounds by EPA 524.2								
Styrene	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
tert-Butylbenzene	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Tetrachloroethene	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Toluene	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
trans-1,2-Dichloroethene	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
trans-1,3-Dichloropropene	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Trichloroethene	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Trichlorofluoromethane	ND		5.0	ug/L	EPA 524.2	10/19/16 07:10	eec	
Trichlorotrifluoroethane	ND		10	ug/L	EPA 524.2	10/19/16 07:10	eec	
Vinyl Chloride	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Xylenes (m+p)	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Xylenes (ortho)	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Xylenes (Total)	ND		0.50	ug/L	EPA 524.2	10/19/16 07:10	eec	
Surrogate: 1,2-Dichloroethane-d4	118	%	50-150		EPA 524.2	10/19/16 07:10	eec	
Surrogate: Bromofluorobenzene	98.3	%	50-150		EPA 524.2	10/19/16 07:10	eec	
Surrogate: Toluene-d8	98.3	%	50-150		EPA 524.2	10/19/16 07:10	eec	

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley
Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Laboratory Reference Number
B6J1433-02

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
HC Well (Dissolved)	Water	10/13/16 06:45	10/13/16 17:50

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Metals and Metalloids							
Aluminum	ND	50	ug/L	EPA 200.7	10/20/16 19:02	kya	N_pFilt
Antimony	ND	6.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Arsenic	ND	2.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Barium	170	20	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Beryllium	ND	1.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Boron	400	100	ug/L	EPA 200.7	10/20/16 19:02	kya	N_pFilt
Cadmium	ND	1.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Total Chromium	ND	1.0	ug/L	EPA 200.8	10/19/16 11:58	AP	N_pFilt
Copper	ND	50	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Iron	ND	100	ug/L	EPA 200.7	10/20/16 19:02	kya	N_pFilt
Lead	ND	5.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Manganese	31	20	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Mercury	ND	1.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Nickel	ND	10	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Selenium	ND	5.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Silver	ND	10	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Thallium	ND	1.0	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt
Zinc	ND	50	ug/L	EPA 200.8	10/18/16 13:30	mel	N_pFilt

* NELAP does not offer accreditation for this analyte/method/matrix combination

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley

Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Notes and Definitions

pH:	Regulatory 15 minute holding time exceeded B6J1433-01
N_pScr:	Cyanide Determination: Sample screened for interference and preserved upon receipt at the lab B6J1433-01
N_pFilt	Sample filtered and preserved upon receipt to the laboratory.
ND:	Analyte NOT DETECTED at or above the Method Detection Limit **(if MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)
NR:	Not Reported
RDL:	Reportable Detection Limit
MDL:	Method Detection Limit
* / '" :	NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

Nancy H. Boulineau For Cindy A. Waddell

cc:

e-Short_No Alias.rpt

BABCOCK Laboratories, Inc.
The Standard of Excellence for Over 100 Years

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Analytical Report: Page 1 of 3
Project Name: Dudek - Lucerne Valley
Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

EnviroMatrix Analytical, Inc.
4340 Viewridge Ave., Ste. A - San Diego, CA 92123 - Phone (858) 560-7717 - Fax (858) 560-7763

EMA LOG #:
Client: DUDEK
Attn: Partrick Rentz
Samplers(s): Partrick Rentz
Address: 605 Third St
Encinitas, CA 92024
Phone: 760-815-0143 Fax:
Email: prentz@dudek.com
Billing Address:
Project ID: Highland Center Well
Project #: PO #:

ID #	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container # / Type	Oil & Grease □ 413.1 □ 413.2 □ 1664	8015 (TPH) □ Gas □ Diesel □ Ext	624/8260 (VOC) (Full) BTXE MTBE Oxy Nap TPH	625 / 8270 (SVOC) □ PAH only	608 / 8081 (Organochlorine Pesticides)	608 / 8082 (Polychlorinated Biphenyls)	8141 (Organophosphorus Pesticides)	TBT (Organotin Compounds)	□ pH □ EC □ TSS □ TDS	□ Nitrate □ Nitrite □ TKN □ NH3	CAC Title 22/CAM17 Metals □ TTLC □ STLC	TCLP (RCRA) □ Metals □ Organics	Cd Cr Cu Pb Ni Ag Zn □ Dissolved	Coliform, □ Total (MTF) □ Fecal (MTF)	Colifert, T+E.Coli □ P/A □ Enumeration	Enterococcus, □ MTF □ Enterolert	Heterotrophic Plate Count (HPC)	□ BOD □ COD □ Cyanide	General Minerals / physical	Metals
1	HC Well	10/13	6:45	W	6			X																X	X
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

Matrix Codes: A = Air, DW = Drinking Water, GW = Groundwater, SW = Storm Water
WW = Wastewater, S = Soil, SED = Sediment, SD = Solid, T = Tissue, O = Oil, L = Liquid
Shipped By: □ Courier □ UPS □ FedEx □ USPS □ Client Drop Off □ Other
[1]Turn-Around-Time: □ Same Day □ 1 day □ 2 day □ 3 day □ 4 day □ 5 day □ STD (7 day)
[1]Reporting Requirements: □ Fax □ PDF □ Excel □ Geotracker/EDF □ Hard Copy □ EDT
[1]Sample Disposal: □ By Laboratory □ [2]Return to Client: P/U or Delivery □ Archive

Sample Integrity

Correct Containers: Yes No N/A
Containers Properly Preseved: Yes No N/A
Custody Seals Intact: Yes No N/A
Temp @ Receipt:
COC/Labels Agree: Yes No N/A
Sampled By: Client EMA Autosampler

	RELINQUISHED BY	DATE/TIME	RECEIVED BY
Signature		10/13/16 13:00	
Print	Partrick Rentz		MALCO
Company:	DUDEK		EXPRESS
Signature		10/13/16 1750	
Print	MALCO		JB
Company:	EMA		ESB
Signature			
Print			
Company:			

Project/Sample Comments: 6° ON ICE / INTACT

B6J1433 AB
OCT 13 2016

[1]Additional costs may apply. Please note there is a $35 minimum charge for all clients.
[2]EMA reserves the right to return any samples that do not match our waste profile.
NOTE: By relinquishing samples to EMA, Inc., client agrees to pay for the services requested on this COC form and any additional analyses performed on this project. Payment for services is due within 30 days from date of invoice. Samples will be disposed of 7 days after report has been finalized unless otherwise noted. All work is subject to EMA's terms and conditions.

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley
Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Project Information

Dudek & Associates
605 Third Street
Encinitas, CA 92024
Laboratory PM: **Cindy A. Waddell**

Phone:(800) 450-1818
Fax:(760) 632-0164

0283M
10/13/2016

Project Name:	Dudek - Lucerne Valley	**Invoice To:**	Dudek & Associates
Project Number:	Dudek - Lucerne Valley	**Invoice Bid:**	Dudek - Lucerne Valley
Client PM:	Partrick Rentz	**Invoice Manager:**	Partrick Rentz
Comments:			

Analysis	Comment
Courier Services-150	
Lang Index-at 25 C	
GP	
GMIO-DW	
B_ICP_DW	
Aggressive Index	
SAR-ICP_DW	
SAR adj-ICP_DW	
Na percentage-DW	
GMIO-DW subanalyses:	
K_ICP_DW	
HG_ ICPMS_DW	
Hardness Total-DW	
Fluoride	
FE_ICP_DW	
EC	
AG_ICPMS_DW	
CR_ICPMS_DW	
MG_ICP_DW	
Cl	
CD_ICPMS_DW	
CA_ICP_DW	
BE_ICPMS_DW	
AS_ICPMS_DW	
Alkalinity	
AL_ICP_DW	
Cyanide Total	
xNI_ICP_DW	
xMN_ICP_DW	
xCU_ICP_DW	
xBA_ICP_DW	
Total Cations-ICP_DW	
Total Anions	
TL_ICPMS_DW	
Solids-Total Diss	
SO4	

mailing
P.O Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

CA ELAP No. 2698
EPA No. CA00102
NELAP No. OR4035

Client Name: Dudek & Associates
Contact: Partrick Rentz
Address: 605 Third Street
Encinitas, CA 92024

Report Date: 24-Oct-2016

Project Name: Dudek - Lucerne Valley
Project Number: Highland Center Well

Work Order Number: B6J1433

Received on Ice (Y/N): Yes Temp: 6 °C

Project Information

Dudek & Associates
605 Third Street
Encinitas, CA 92024
Laboratory PM: **Cindy A. Waddell**

Phone:(800) 450-1818
Fax:(760) 632-0164

0283M
10/13/2016

Project Name:	Dudek - Lucerne Valley	**Invoice To:**	Dudek & Associates
Project Number:	Dudek - Lucerne Valley	**Invoice Bid:**	Dudek - Lucerne Valley
Client PM:	Partrick Rentz	**Invoice Manager:**	Partrick Rentz
Comments:			

Analysis	Comment
MBAS	
SB_ICPMS_DW	
Metals-Turbidity	
pH	
Perchlorate-Aqueous	
PB_ICPMS_DW	
NO3-N	
Nitrite-N	
NA_ICP_DW	
xZN_ICP_DW	
SE_ICPMS_DW	
GP subanalyses:	
Color	
Turbidity	
Odor	

mailing
P.O Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

CA ELAP No. 2698
EPA No. CA00102
NELAP No. OR4035
LACSD No. 10119

APPENDIX C

JCSD and PDMWD PDS 399W Will-Serve Letters

County of San Diego, Planning & Development Services
PROJECT FACILITY AVAILABILITY - WATER
ZONING DIVISION

Please type or use pen

GM Gabrych Family Partnership LP, et al 760-521-6913
Owner's Name Phone

2006 Old Highway 395
Owner's Mailing Address Street

Fallbrook, CA 92028
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____

W

AMT $_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A.
- ☐ Major Subdivision (TM)
- ☐ Minor Subdivision (TPM)
- ☐ Boundary Adjustment
- ☐ Rezone (Reclassification) from_____ to _____ zone.
- ☒ Major Use Permit (MUP), purpose: Campo Wind Project PDS2019-MUP-19-002
- ☐ Time Extension...Case No._____
- ☐ Expired Map...Case No._____
- ☐ Other_____
- ☐ Specific Plan or Specific Plan Amendment
- ☐ Certificate of Compliance:_____

B.
- ☐ Residential . . . . . Total number of dwelling units_____
- ☐ Commercial. . . . . Gross floor area_____
- ☐ Industrial . . . . . Gross floor area_____
- ☒ Other . . . . . Gross floor area N/A - Wind Energy Facility

C. ☒ Total Project acreage 4,200 Total number of lots N/A

D. Is the project proposing the use of groundwater? ☒ Yes ☐ No
Is the project proposing the use of reclaimed water? ☒ Yes ☐ No

Assessor's Parcel Number(s)
(Add extra if necessary)

528-220-02; 528-220-03	529-050-01; 529-060-01
529-090-02; 529-090-03	529-100-02; 529-100-03; 529-100-01
529-120-01; 529-120-03; 611-050-05	529-130-01; 611-010-01; 611-050-04
611-010-02; 611-010-03; 611-020-01	and Tribal Lands (land within Campo Reservation)

Thomas Guide Page _____ Grid _____

Ribbonwood Road
Project address Street

Boulevard Planning Area 91905
Community Planning Area/Subregion Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT

Applicant's Signature:_____ Date: 9/20/19

Address: 11455 El Camino Real, Suite 160, San Deigo, CA 92130 Phone: 858-764-3737

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: PADRE DAM MWD *EXPIRES 11/12/2020 Service area OUT OF DISTRICT

A.
- ☐ Project is in the district.
- ☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
- ☒ Project is not in the district and is not within its Sphere of Influence boundary.
- ☐ The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached_____. (Number of sheets)

☐ Project will not be served for the following reason(s):_____

C. ☒ **District conditions are attached. Number of sheets attached:** 1
☐ **District has specific water reclamation conditions which are attached. Number of sheets attached:**_____
☐ **District will submit conditions at a later date.**

D. ☐ **How far will the pipeline(s) have to be extended to serve the project?**_____

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized Signature:_____ Print Name THOMAS MARTIN

Print Title ENG. TECH / PROJECT MGR Phone 619-258-4638 Date 11/12/2019

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
Planning & Development Services – Zoning Counter, 5510 Overland Ave, Suite 110, San Diego, CA 92123

PADRE DAM
Municipal Water District

9300 Fanita Parkway, Santee
619-258-4635

WATER AVAILABILITY ATTACHMENT
CONDITIONS OF APPROVAL

PROJECT NAME GM Gabrych Boulder Planning FOR Construction Recycled Water Use - Out of District

A.P.N. (s)

The main project site consists of the following Assessor Parcel Numbers (APNs):

· 528-220-02-00	611-020-01-00
· 528-220-03-00	529-050-01-00
· 529-090-02-00	529-060-01-00
· 529-090-03-00	529-100-02-00
· 529-120-01-00	529-100-01-00
· 529-120-03-00	529-130-01-00
· 611-050-05-00	611-010-01-00
· 611-010-02-00	611-050-04-00
· 611-010-03-00	Campo Reservation

FACILITIES

The proposed project is outside of Padre Dam's sphere of influence and service area. However Padre Dam would be able to serve Recycled water for construction.

SPECIAL CONDITIONS

[X] Abide by the rules governing the use of recycled water established by the California Department of Health Services in the Code of Regulations, Title 22 and 17.

[X] An authorized representative must attend Recycled Water Supervisor Training and meet with Padre Dam Recycled Water Technician prior to start of work.

[X] Obtain approval from the City of Santee for trucks carrying recycled water within the City.

[X] Recycled water use for construction purposes only, including grading and dust suppression. Recycled water cannot be used on the solar panels for cleaning.

[X] Construction equipment must meet PDMWD requirements for carrying recycled water as noted in Water Agency Standards.

[X] Drop tanks, water trucks, hoses, etc. should be disinfected with a chlorine solution before use with other than recycled water. Modified street sweepers designed for duel source filling of water and recycled water are exempt.

[X] Do not connect the recycled water system with any potable water system.

[X] When using recycled water for construction sites the following safety precautions shall be observed:
- Do not drink recycled water.
- Wash your hands before eating or drinking.
- Do not spray anyone with recycled water.
- Do not wash or rinse down equipment using recycled water.

[X] Developer would be restricted to a maximum of 100,000 Gallons per day

Note:
Approval for recycled water use for construction purposes is based on recycled water availability during the winter months of November through March. Requests for out of District recycled water during the remainder of the year will be considered by Padre Dam MWD based on seasonal circumstances and approved on a case by case basis when surplus recycled water is available.