Water Supply Assessment
For the ZGlobal
Vega SES 5, LLC
Solar Energy Project
Imperial County, California

Prepared for:

ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

Prepared by:

Dr. Andrew A. Kopania
California Professional Geologist No. 4711
California Certified Hydrogeologist No. HG31
EMKO Environmental, Inc.
551 Lakecrest Drive
El Dorado Hills, California 95762

November 30, 2022

Water Supply Assessment
For the ZGlobal
Vega SES 5, LLC
Solar Energy Project
Imperial County, California

Table of Contents

LIST OF TABLES

LIST OF FIGURES

Water Supply Assessment
For the ZGlobal
Vega SES 5, LLC
Solar Energy Project
Imperial County, California

1.0 INTRODUCTION

EMKO Environmental, Inc. (EMKO) has prepared this Water Supply Assessment (WSA) as a subconsultant to ECORP Consulting, Inc. for the proposed ZGlobal Vega SES 5, LLC Solar Energy Project (Project) in Imperial County, California at the location indicated on Figure 1. Project water use includes dust control and soil conditioning requirements during construction and routine maintenance, primarily panel washing, during operation.

Water Code Sections 10910 through 10915 were amended by Senate Bill 610 (SB 610) in 2002. SB 610 requires that under specific circumstances, as detailed below, an assessment of available water supplies must be conducted. The purpose of the assessment is to determine if available water supplies are sufficient to serve the demand generated by the Project, as well as the reasonably foreseeable demand in the region over the next 20 years under average normal year, single dry year, and multiple dry year conditions. Water Code Section 10910 was further amended by SB 1262 on September 24, 2016 to require a Water Supply Assessment to include additional information regarding the groundwater basin designation and adjacent water systems. This report provides the information required for a Water Supply Assessment (WSA), as described in the October 2003 *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning*, published by the California Department of Water Resources (DWR Guidebook) along with the additional information required by SB 1262.

2.0 PROJECT DESCRIPTION

Vega SES 5, LLC is proposing to construct and operate solar energy generation and storage facilities on private lands in the Imperial Valley in Imperial County. The Project site is located approximately four miles southeast of the community of Niland and 16 miles northeast of the City of Brawley (see Figure 1).

Vega SES 5 would cover approximately 410 acres in Sections 17 and 19 of Township 11 South, Range 15 East of the San Bernardino Base and Meridian (SBB&M) within the "Iris" 7.5-minute U.S. Geologic Survey (USGS) quadrangle. The Project site includes all or part of Imperial County Assessor's Parcel Numbers (APNs) 025-260-011

(approximately 160 acres), APN 025-260-019 (approximately 90 acres) and APN 025-260-022 (approximately 160 acres). The East Highline Canal runs diagonally through APN 025-260-022 (see Figure 2). The other two parcels are located east of the East Highline Canal. Vega SES 5 would include a 50-megawatt solar photovoltaic system and integrated 100-megawatt battery energy storage system along with related substations and transmission lines. Figure 3 is a Site Plan showing the Project layout and ancillary facilities.

All parcels are located within the Imperial County Renewable Energy Overlay Zone, requiring projects to be permitted through the issuance of a Conditional Use Permit (CUP), which is a discretionary action by the County requiring compliance with the California Environmental Quality Act (CEQA). This Water Supply Assessment is intended to support and be a part of the CEQA analysis.

Domestic water and sanitation facilities would be required during construction. These would be provided through bottled water and portable facilities. A domestic/potable water connection would not be required.

Construction is anticipated to require 12 months to complete. Anticipated operational Project life is 25 to 30 years.

Figure 1. Regional Location Map

Figure 2. Project Location

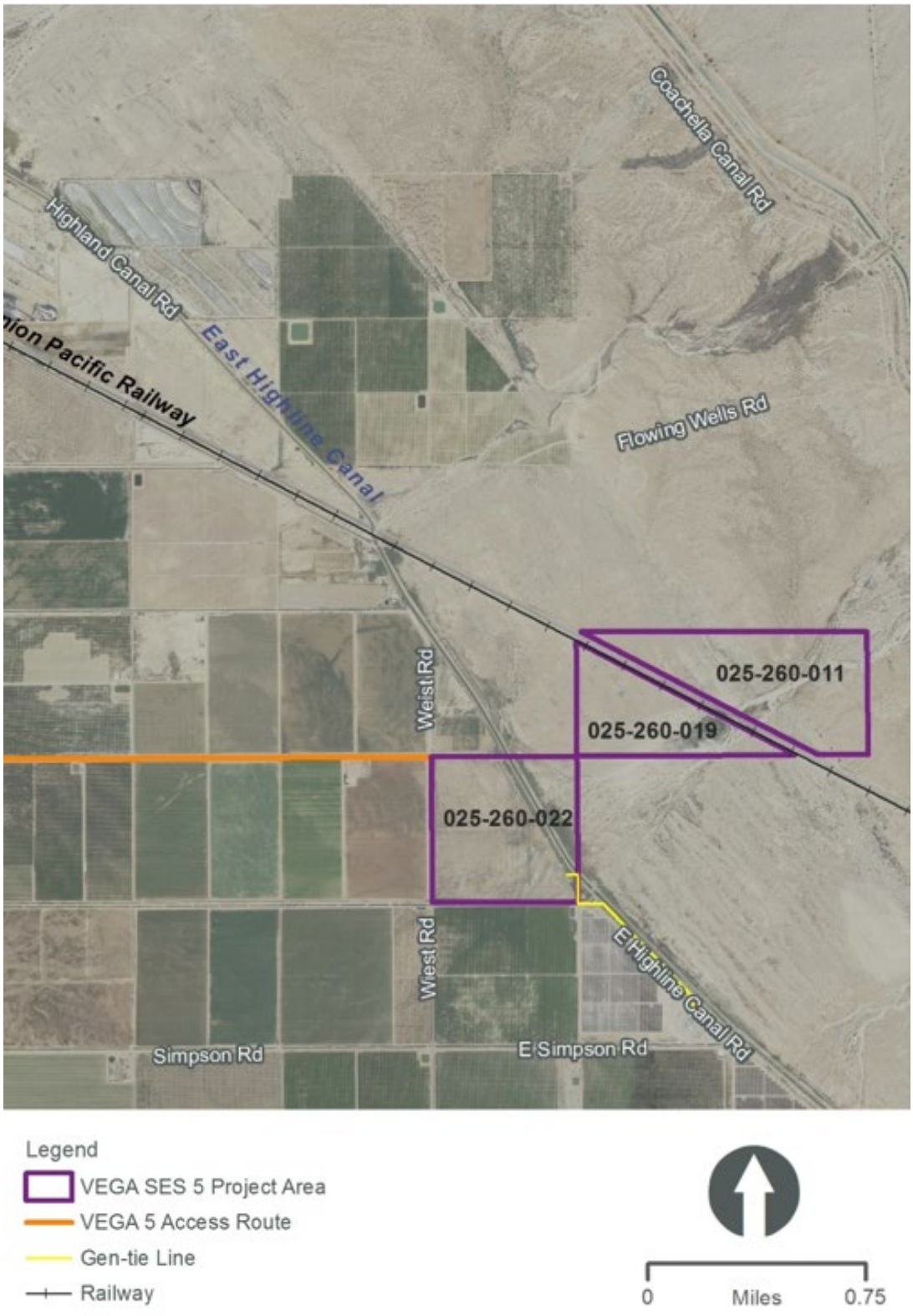
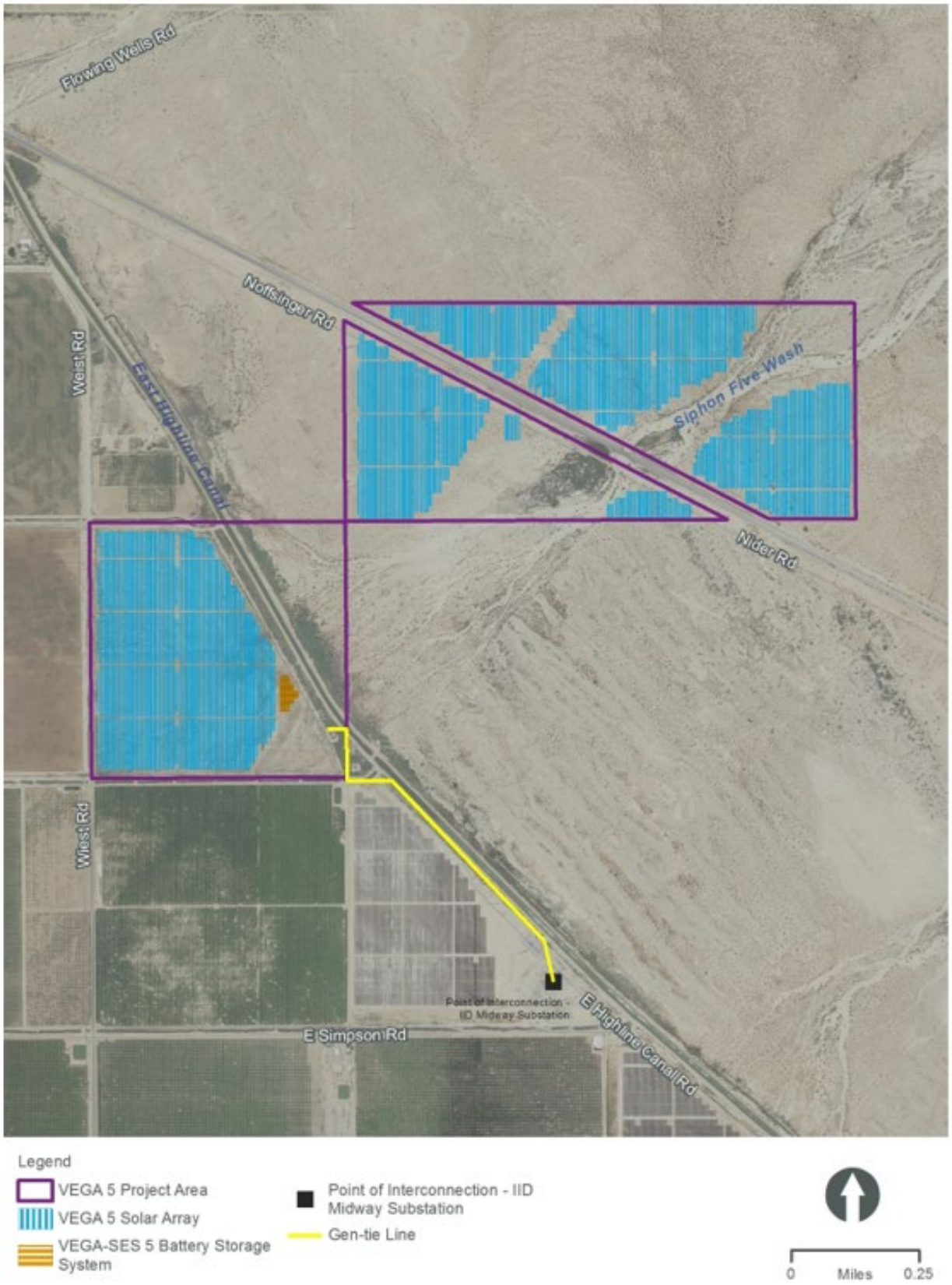


FIGURE 3. Site Plan



3.0 WATER SUPPLY PLANNING UNDER SB 610 and SB 1262

SB 610, effective January 1, 2002, amends Sections 10910 through 10915 of the Water Code by requiring preparation of a WSA for development projects subject to CEQA and other criteria, as discussed below. SB 610 also amends Section 10631 of the Water Code, which relates to Urban Water Management Plans (UWMPs). The WSA process under SB 610 is designed to rely on the information typically contained in UWMPs, where available.

On September 24, 2016, SB 1262 further amended Section 10910 of the Water Code to require additional information related to adjacent public water systems and the status of the groundwater basin. These amendments provide additional consistency with the Sustainable Groundwater Management Act of 2014, as discussed further in Section 4.4.

The first steps in the WSA process are to determine whether SB 610 applies to the proposed Project. If so, then documentation of available water supplies, anticipated Project demand, and the sufficiency of supplies must be conducted. These issues are summarized by the following questions, as outlined in the DWR Guidebook:

1. Is the proposed Project subject to CEQA?
2. Is the proposed Project a "Project" under SB 610?
3. Is there a public water system that will service the proposed Project?
4. Is there a current UWMP that accounts for the project demand?
5. Is groundwater a component of the supplies for the Project?
6. Are there sufficient supplies to serve the Project over the next twenty years?

Each of these issues are discussed in the following sections as they relate to the proposed Project.

3.1 Is the Proposed Project Subject to CEQA?

The first step in the SB 610 process is to determine whether the proposed project is subject to CEQA. Water Code Section 10910(a) states that any city or county that determines that an application meets the definition of "project", per Water Code Section 10912 (see Section 3.2, below), and is subject to CEQA, shall prepare a water supply assessment for the project. CEQA applies to projects requiring issuance of a discretionary permit by a public agency, projects undertaken by a public agency, or projects funded by a public agency. As noted in Section 2.0, the proposed Project is within the Imperial County Renewable Energy Overlay Zone, which requires discretionary approval of a CUP by Imperial County, a public agency. Therefore, the Project is subject

to CEQA. This WSA has been prepared to support the environmental review that will be conducted by Imperial County under CEQA.

3.2 Is the Proposed Project a "Project" Under SB 610?

The second step in the SB 610 process is to determine if the proposed Project meets the definition of "project" under Water Code Section 10912(a). Under Section 10912(a) a "project" is defined as meeting any of the following criteria:

1. a proposed residential development of more than 500 dwelling units;
2. a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
3. a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
4. a proposed hotel or motel, or both, having more than 500 rooms;
5. a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
6. a mixed-use project that includes one or more of the projects defined above; or
7. a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The Project encompasses 410 acres. As a result, the Project will include an industrial site that is larger than 40 acres and thus this WSA is being prepared in accordance with criterion 5, above.

3.3 Is There a Public Water System That Will Service the Proposed Project?

Section 10912(c) of the Water Code identifies a public water system as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. The Project site is approximately four miles southeast of the community of Niland and 16 miles northeast of the City of Brawley. APN 025-260-011, APN 025-260-019, and the area of APN 025-260-022 east of the East Highline Canal are located within Imperial Irrigation District's (IID's) East Mesa Unit, while 114.4 acres of the area of APN 025-260-022 west of the East Highline Canal is within IID's Imperial Unit (IID, 2022). The Project parcel areas in the East Mesa Unit do not currently have water service from IID. Although water service from IID is currently available for the area of APN 025-260-022 within the Imperial Unit, Vega SES 5, LLC does not plan to use surface water from IID to supply any area of the Project. Thus, there are no public water systems that will serve the Project. The water supply will be provided by new onsite groundwater supply wells to be drilled and installed as part of the Project.

3.4 Is There a Current Urban Water Management Plan That Accounts for the Project Demand?

The Water Code requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per year, must prepare an UWMP. The DWR Guidebook (page iii) states that SB 610 repeatedly refers to the UWMP as a planning document that can be used to meet the standards set forth in the statute, and that UWMPs act as a foundation to fulfill the requirements of the statute. As noted in Section 3.3, above, there are no public water systems that will serve the Project and, therefore, there is not an UWMP that addresses the Project area or Project demand. Since there is not an UWMP that accounts for the Project demand, this WSA is based upon available and relevant information from DWR, the USGS, and other publicly available data. As this WSA has been prepared for use by the CEQA lead agency, this document includes an evaluation of whether the total projected water supplies, determined to be available during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed Project, in addition to existing and planned future uses, including agricultural and manufacturing uses, in accordance with Water Code § 10910(c)(4).

3.5 Is Groundwater a Component of the Supplies for the Project?

Water Code Section 10910(f), paragraphs 1 through 5, must be addressed if groundwater is a source of supply for the proposed Project. As described in Section 3.3, the water supply will be provided by new groundwater supply wells that will be drilled and installed as part of the Project. One groundwater supply well is proposed to be drilled on APN 025-260-022. Additional water may be supplied from two wells to be installed as part of the ZGlobal Vega SES 2, LLC and Vega SES 3, LLC projects, located to the northeast of the Vega SES 5, LLC project area. Evaluation of available water supply from those two wells to the northeast has been conducted as part of a separate WSA for the adjacent Vega SES projects (EMKO, 2022). However, a separate assessment of groundwater conditions and availability for the Vega SES 5, LLC project is included in this document.

Water Code Section 10910(f) paragraphs 1 through 5, as modified by SB 1262, state:

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

> (1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.
>
> (2) (A) A description of any groundwater basin or basins from which the proposed project will be supplied. (B) For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to

comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. (C) For a basin that has not been adjudicated that is a basin designated as high- or medium priority pursuant to Section 10722.4, information regarding the following: (i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924; and (ii) If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan. (D) For a basin that has not been adjudicated that is a basin designated as low- or very-low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

Paragraphs 1 through 4, above, are addressed in Section 4.0, below, including a description of the groundwater basin, groundwater conditions, and available supply. Section 5.0 presents available information regarding water demand for the Project.

The Paragraph 5 requirement to provide an analysis of the sufficiency of the groundwater basin to meet the projected water demand associated with the proposed project is addressed in Section 6.0, below.

3.6 Are There Sufficient Supplies to Serve the Project Over the Next Twenty Years?

Water Code Section 10910(c)(4) requires the WSA to "*include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and future planned uses, including agricultural and manufacturing uses.*"

The sufficiency of water supply for the proposed Project is addressed in Sections 6.0 and 7.0, below.

4.0 PROJECT WATER SUPPLY

As stated in Section 3.3, above, water for the Project will be provided by new wells to be drilled for this and adjacent solar energy projects. As such, groundwater will be the sole water supply for both the construction and operational water needs. Because there are no public water systems or other significant users of groundwater in the groundwater basin, there are no Urban Water Management Plans or other planning documents that can be relied upon for this WSA. Thus, limited information is available regarding groundwater conditions in the Project vicinity.

Overall conditions within the groundwater basin are described in Section 4.1. Groundwater recharge and available supply are discussed in Section 4.2. Groundwater level trends and the status of the basin relative to the Sustainable Groundwater Management Act of 2014 (SGMA) is provided in Section 4.3, as required by SB 1262.

4.1 Groundwater Basin

Most of the Project is located within the western part of the East Salton Sea Groundwater Basin, designated as basin number 7-033, as defined by DWR (2022a) (see Figure 4). However, approximately 20 acres in the southwest corner of APN 025-260-022 overlies the adjacent Imperial Valley Groundwater Basin, designated as basin number 7-030 (DWR, 2022a). The inset on the left side of Figure 4 shows the area of the Project within the Imperial Valley Groundwater Basin. As discussed further below, all groundwater for the Project will be sourced from the East Salton Sea Groundwater Basin (Basin). Therefore, except for additional limited information provided in Section 4.3, below, the Imperial Valley Groundwater Basin is not addressed further in this WSA.

The Basin is bounded on the northeast by the Chocolate Mountains and on the southwest by the San Andreas and Banning Mission Creek fault zones (DWR, 2003). DWR (2003) reports that these faults zones may act as barriers to groundwater movement between basins. The northwest and southeast edges of the groundwater

basin are approximately defined by transitions between major surface drainages coming off of the Chocolate Mountains. The groundwater basin has an area of approximately 196,000 acres, or 306 square miles (DWR, 2003). The Basin has not been adjudicated (DWR, 2022b). Figure 4 shows the groundwater basin boundary and the approximate location of the Project.

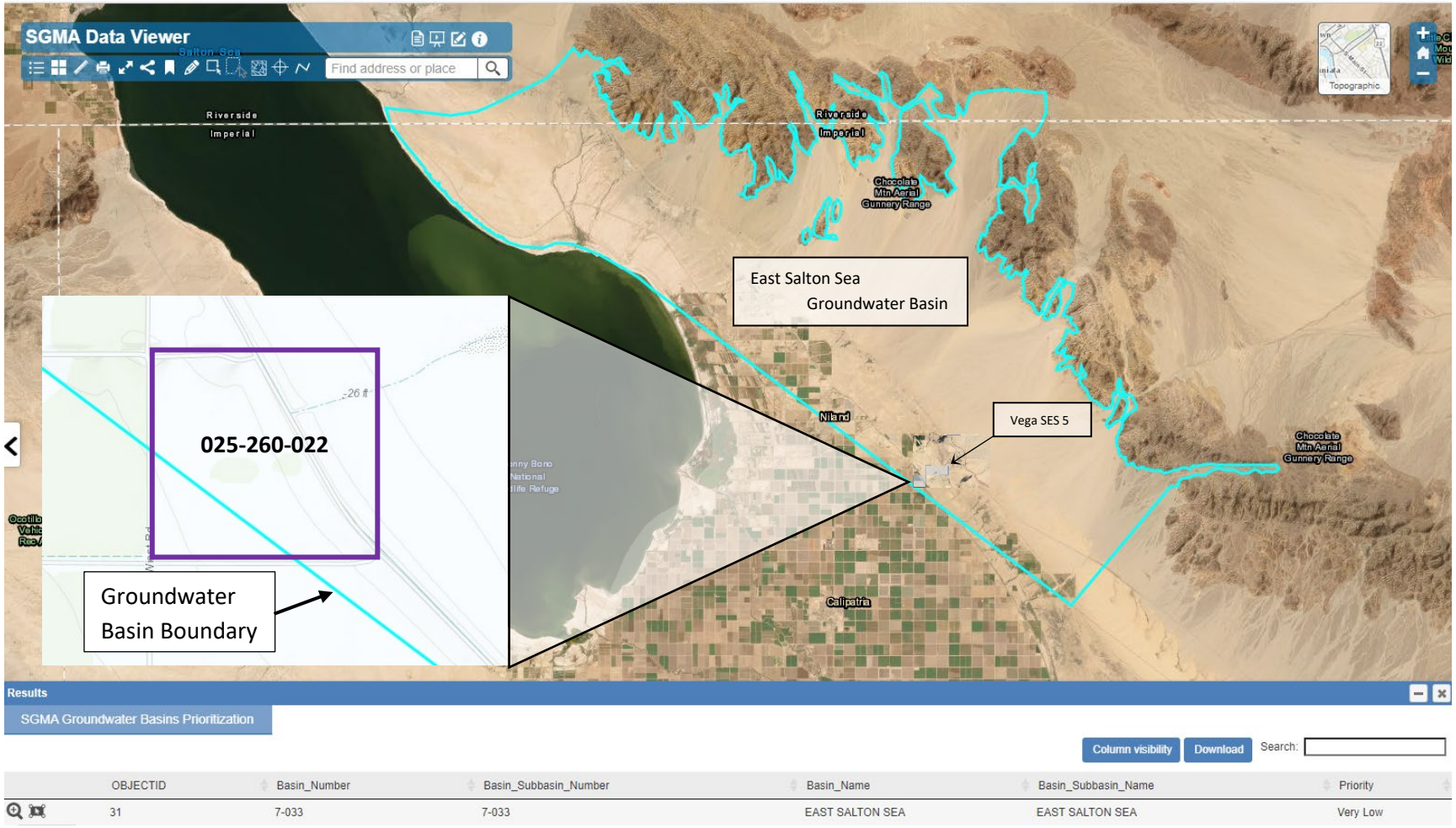
Groundwater occurs within unconsolidated to semi-consolidated coarse sediment eroded from the Chocolate Mountains (DWR, 2003). The sediment generally occurs within large alluvial fans that originate at drainages and canyons within the bedrock formations in the mountains and spread out as they decrease in elevation toward the floor of the Imperial Valley or the Salton Sea. The alluvial fan sediments range in age from Tertiary to Quaternary. DWR (2003) reports that the alluvium is at least 400 feet thick.

4.2 Groundwater Supply and Recharge

DWR (2022c) reports that the population in the Basin in 2010 was approximately 1,093 persons and that the population is expected to decrease 10 percent by 2030. There are no public water supply wells in the Basin and 11 total wells present. Only 4,906 acres of the 196,000-acre Basin, or 2.54 percent, are irrigated (DWR, 2022c). The total groundwater storage capacity of the groundwater basin is estimated to be 360,000 acre-feet (DWR, 2003).

The average annual rainfall is very low, as discussed further in Section 6.0 below, and typically does not provide a sufficient quantity of moisture to percolate deep into the alluvial sediments. As a result, recharge of groundwater occurs primarily due to runoff from the Chocolate Mountains during major storm events, which may not occur every year. The average annual recharge is estimated to be 200 acre-feet per year (DWR, 2003). That estimate is from a 1975 version of DWR Bulletin 118. No changes to basin conditions are reported in the most recent updates to DWR Bulletin 118 (DWR, 2021 and 2022a).

FIGURE 4. East Salton Sea Groundwater Basin



DWR's California Data Exchange Center website (https://cdec.water.ca.gov) and the USGS's National Water Information System mapping application (https://maps.waterdata.usgs.gov/mapper/index.html) show only one active groundwater monitoring location within the Basin at the time this report was prepared. That well is located approximately 3,600 feet southeast of the southeast corner of the Project site and 950 feet northeast of the Coachella Canal. The well has USGS identification number 331144115231501, which identifies the latitude and longitude of the well (i.e., 33°11'44" latitude, -115°23'15" longitude), and California state well number 011S015E23M001, which indicates the township, range, and quarter-quarter section (i.e., northwest quarter or the southwest quarter of township 11S, range 15E, San Bernardino Base and Meridian). The ground surface elevation at the well location is reported to be 120 feet above mean sea level (ft msl) while the borehole in which the well was installed is reported to have been drilled to a depth of 550 feet below ground surface (ft bgs) (USGS, 2022).

FIGURE 5. USGS Groundwater Level Hydrograph

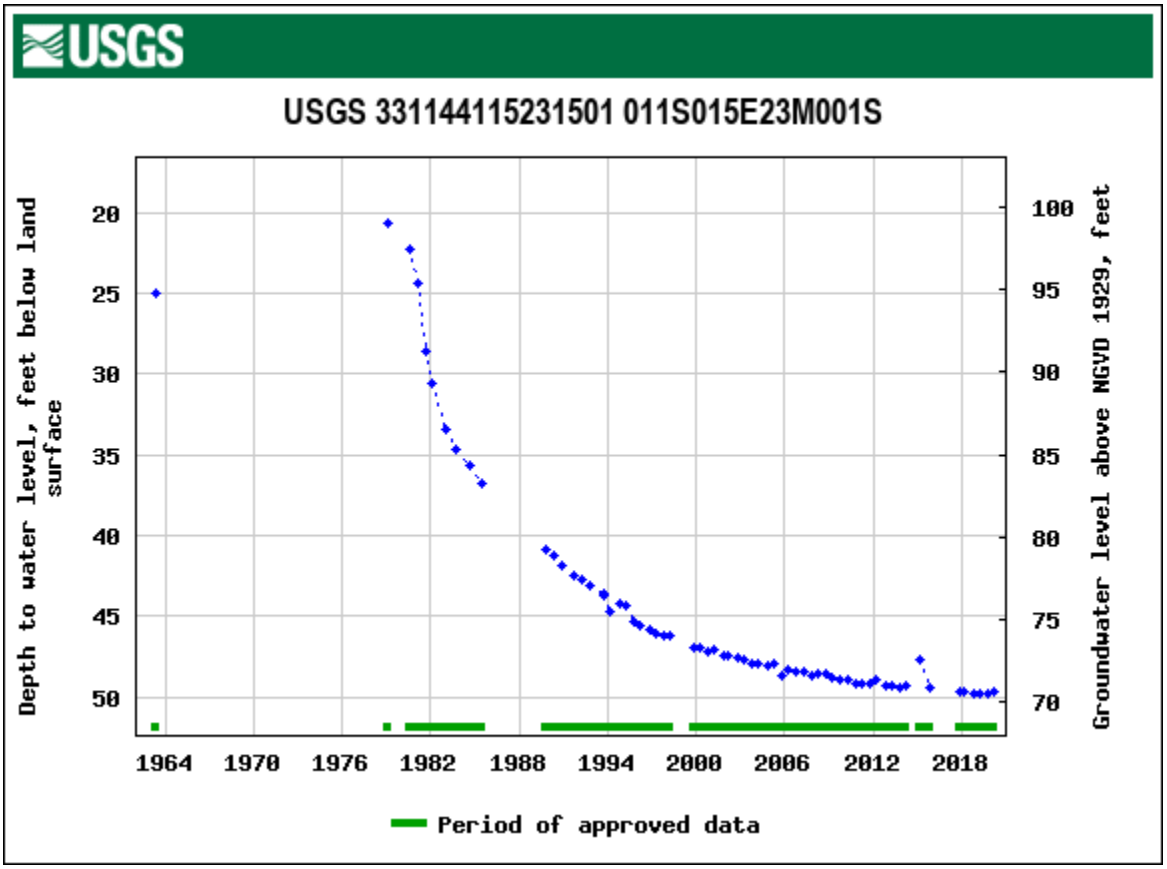


Figure 5 is a hydrograph from USGS (2022) showing the groundwater level and groundwater elevation measured since 1963 in the sole active monitoring well in the Basin. As indicated on Figure 5, the groundwater level decreased at a relatively rapid

rate from 1979 to approximately 2000, with the depth to water dropping from approximately 21 ft bgs to approximately 47 ft bgs over that period. Since 2000, the groundwater level has continued to decrease, but at a slower rate, with the level in March 2020 (the last date with a reported measurement by USGS) being approximately 50 ft bgs. While the groundwater level has decreased by almost 30 feet since 1979, it has changed by less than one foot over the past decade. Based on the depth to groundwater and the borehole depth for the monitoring well, the potential loss of aquifer volume since 1979 is only six percent of the total available storage reported by DWR (2003).

TABLE 1. USGS Water Quality Data (June 13, 1963)

Parameter	Units	Result
Temperature	Degrees Celsius (° C)	26.9
Specific Conductance	MicroSiemens per centimeter at 25° C	3630
pH	Standard units	7.4
Carbon Dioxide	Milligrams per liter (mg/L)	14
Acid Neutralizing Capacity	mg/L as calcium carbonate ($CaCO_3$)	174
Bicarbonate	mg/L	212
Carbonate	mg/L	0.0
Hardness	mg/L as $CaCO_3$	700
Non-carbonate hardness	mg/L as $CaCO_3$	530
Calcium	mg/L	106
Magnesium	mg/L	107
Sodium + Potassium	mg/L	500
Chloride	mg/L	635
Sulfate	mg/L	700
Fluoride	mg/L	1.6
Silica	mg/L as silica dioxide (SiO_2)	33
Dissolved Solids	mg/L	2190

Source:
https://nwis.waterdata.usgs.gov/nwis/qwdata?site_no=331144115231501&agency_cd=USGS&inventory_output=0&rdb_inventory_output=file&TZoutput=0&pm_cd_compare=Greater%20than&radio_parm_cds=all_parm_cds&format=html_table&qw_attributes=0&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=brief_list

Water quality samples were collected and analyzed from the monitoring well within the Basin in June and September 1963 (USGS, 2022). Table 1 shows the water quality results from June 1963. The September results were comparable. The groundwater sampled from the monitoring well has a normal pH but the levels of sodium, chloride, and sulfate are elevated compared to what would be expected from percolation of local rainfall. The dissolved solids concentration of 2,190 milligrams per liter (mg/L) is more than twice the value of the high end of the range of the secondary maximum contaminant level (MCL) for drinking water of 1,000 mg/L. The high dissolved solids concentration renders the water unsuitable for potable or agricultural uses without treatment. The existing water quality is suitable for use for construction and maintenance purposes, though.

4.3 Groundwater Sustainability

A series of three bills passed by the California legislature and were signed by Governor Brown on September 16, 2014. These three bills, Assembly Bill (AB) 1739, SB 1168, and SB 1319, together comprise the Sustainable Groundwater Management Act of 2014 (SGMA). SGMA provides a structure under which local agencies are to develop a sustainable groundwater management program. SGMA focuses on basins or subbasins designated by DWR as high or medium priority basins, and those with critical conditions of overdraft.

According to DWR (2022b), the both the East Salton Sea Groundwater Basin and the Imperial Valley Groundwater Basin are very low priority basins. DWR has not identified these two basins as being overdrafted nor has it projected that these basins will become overdrafted if present management conditions continue (DWR, 2021 and 2022c). Thus, neither groundwater basin is subject to the current requirements of SGMA, including the formation of a groundwater sustainability agency (GSA) and preparation of a groundwater sustainability plan (GSP).

5.0 PROJECT WATER DEMAND

Water demand varies depending on the Project phase. During construction, water will be needed for dust control and soil conditioning during installation of the photovoltaic panels, battery storage units, and related infrastructure. During the operational phase of the project, water will be needed for routine maintenance activities, which primarily consists of washing the photovoltaic panels to maintain generation efficiency.

Table 2 provides a summary of Project parameters that affect water demand and the estimated water needs for construction and operation. The construction water demand is primarily for dust control. Thus, the water needs are proportional to the size of the disturbed area and the local climate. Construction water demand is approximately 365

acre-feet. Construction is anticipated to require 12 months to complete. Thus, the monthly water demand during that period will average about 30 acre-feet.

Table 2. Project Water Demand

Site	Area (acres)	Output (megawatts)	Construction Water (acre-feet)	Operational Water (acre-feet per year)
Vega SES 5	410	50	365	20

The operational water demand for panel washing and other maintenance needs is based primarily on the number of panels, which relates to the energy production or output, in megawatts. The operational water demand is anticipated to be 20 acre-feet per year. The maintenance activities are anticipated to be conducted up to twice a year over a one-to-two-week period each event, so the maintenance water demand is intermittent and not spread throughout the year. The operational water demand will occur throughout the life of the Project.

For the purpose of evaluating cumulative impacts, it should be noted that the evaluations in this WSA assume that Project construction will not occur simultaneously with construction of the adjacent Vega SES 2, LLC and Vega SES 3, LLC solar energy projects. However, operational water use for all three projects will occur over the same approximate timeframe during the next 25 to 30 years.

6.0 DRY YEAR SUPPLY

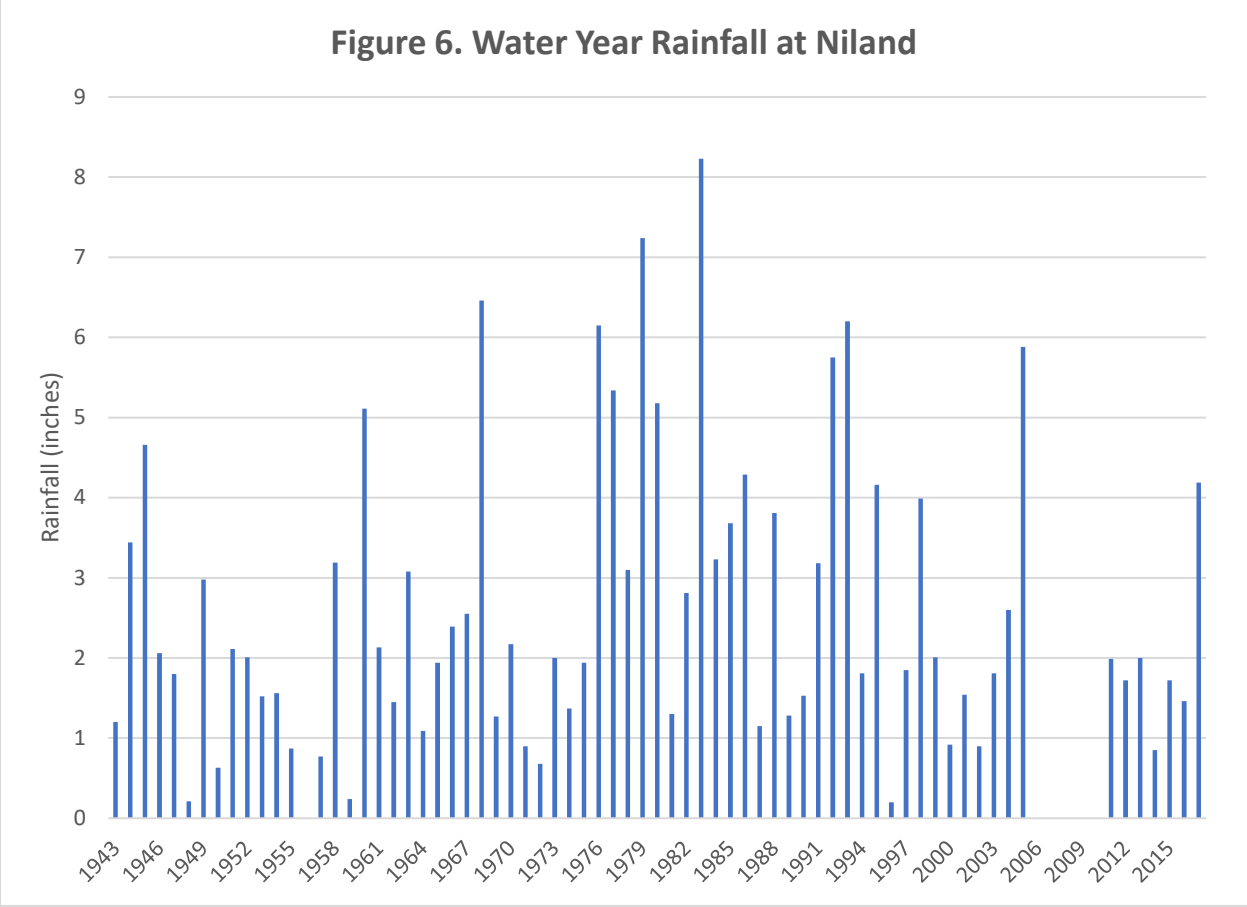
The volume and sustainability of dry-year water supply for the Project is addressed by comparing annual rainfall with changes in groundwater levels in the Basin. This comparison is made for a normal or average water year[1], for single dry year, and for multiple dry water years. Local rainfall data were obtained from the Western Region Climate Center (WRCC, 2022) for Niland, California, located approximately four miles northwest of the Project location (see Figure 1).

Figure 6 shows the annual water year rainfall for Niland, California from 1943 through 2017. The average water year rainfall during this period is 2.58 inches. The driest year was 1956, when no precipitation was recorded. The driest year during the period of available groundwater elevation data (see Figure 5) was 1996, with only 0.2 inch of rainfall

[1] In California, a water year is defined as the period from October 1 of a calendar year through September 30 of the subsequent calendar year. A water year is designated by the year in which it ends. For example, the period from October 1, 2006 through September 30, 2007 is referred to as the 2007 water year. Due to the nature of weather patterns in the state, a water year better represents hydrologic conditions related to wet and dry periods than does a calendar year.

reported. The wettest year was 1983, when 8.23 inches of rain was measured. As indicated on Figure 6, a relatively wet period occurred from 1976 to 1986, with 10 of 11 water years exceeding the average annual rainfall. In comparison, the period from 1996 to 2016 was relatively dry, with 18 of 21 water years having below normal rainfall.

The historic rainfall data on Figure 6 can be compared with the groundwater levels shown on Figure 5 to assess the effects of wet and dry periods on groundwater supply in the Basin. The wettest year recorded, 1983, and the relatively wet period from 1976 to 1986, correspond to a period when groundwater levels were dropping rapidly. In contrast, the dry period from 1996 to 2016 corresponds to a period when the rate of decline of the groundwater elevation was attenuating rapidly and beginning to stabilize. Thus, the available groundwater level and rainfall data do not indicate any relationship between wet, normal, single dry year, or multiple dry years and available groundwater supply. As noted above in Section 4.2, recharge of groundwater occurs primarily due to runoff from the mountains during individual major storm events (DWR, 2003). Such storm events typically occur infrequently and there may be many years between events that produce enough runoff to provide appreciable recharge.



The total groundwater storage capacity of the Basin is estimated to be 360,000 acre-feet (DWR, 2003) and the groundwater level decline from 1979 to 2018 decreased groundwater storage by approximately six percent (see Section 4.2). Thus, the current storage in the Basin may be in the range of 335,000 to 340,000 acre-feet. The single year construction water demand of 365 acre-feet and the annual combined operational water needs of 20 acre-feet are miniscule (0.1 percent and 0.006 percent, respectively) compared to the available groundwater in storage. Furthermore, the long term annual operational water needs are much less than the estimated annual recharge of 200 acre-feet per year. Overall, there is adequate water available to supply the Project water needs during single dry, and multiple dry year periods.

On a cumulative basis, the construction water demand for the Project and the adjacent Vega SES 2, LLC and Vega SES 3, LLC solar energy projects is equivalent to 0.3 percent of the available groundwater in storage. The annual cumulative operational water needs for all three solar energy projects is equivalent to 0.01 percent of the available groundwater in storage in the Basin. Thus, the cumulative effect on groundwater availability in the Basin would also be miniscule such that there would be adequate water available to supply the water needs of all three solar projects during single dry, and multiple dry year periods.

7.0 FINDINGS and DISCUSSION

This WSA has been prepared in accordance with SB 610 and SB 1262 to support the CEQA environmental review for the proposed Project and provides an assessment of water supply adequacy for the Project in accordance with Water Code Sections 10910 through 10915. As stated in Section 1.0, the purpose of the assessment is to determine if available water supplies are sufficient to serve the demand generated by the Project, as well as the reasonably foreseeable demand in the region over the next 20 years under average normal year, single dry year, and multiple dry year conditions. As noted in Section 4.2, above, while groundwater levels in the Basin had been declining during the period from the late 1970s to the early 2000s, over the past decade they have stabilized, indicating that current water demands are in balance with recharge and replenishment. The population, and presumably the related water demand, are anticipated to decrease over the next decade. Therefore, the Basin has adequate resources for current and anticipated future existing water needs.

The water demand for the proposed Project will consist of water needed during construction and water needed for maintenance once the Project is operational. The construction water demand is anticipated to be a combined total of 365 acre-feet over 12 months, primarily for dust control. The operational demand is anticipated to be 20 acre-

feet per year for panel washing and other maintenance activities. The operational demand will exist for the life of the Project, which is anticipated to be 25 to 30 years.

The construction water demand exceeds the reported average annual recharge to the Basin of 200 acre-feet per year (DWR, 2003). However, the construction water needs are short-term and temporary. This temporary water use is not anticipated to cause persistent and long-term lowering of groundwater levels. Therefore, the construction water demand will not cause or contribute to overdraft, exhaustion of water supplies, lowering of groundwater levels to depths that would be uneconomic for pumping, land subsidence, or significant alteration of groundwater quality. As discussed in Section 6.0, above, cumulative construction water demand from the Project and the adjacent Vega SES 2, LLC and Vegs SES 3, LLC solar energy projects would also not cause persistent and long-term lowering of groundwater levels.

The annual operational water needs are equivalent to 10 percent of the average annual recharge and 0.006 percent of the estimated current storage volume of the Basin. Therefore, the long-term operation and maintenance of the Project would not have any measurable effect or impact on groundwater resources in the Basin. As discussed in Section 6.0, above, cumulative operational water demand from the Project and the adjacent Vega SES 2, LLC and Vegs SES 3, LLC solar energy projects would also not cause any measurable effect or impact on groundwater resources in the Basin.

Based on the analysis presented in this WSA, there will be sufficient water available for existing water uses in the Basin, along with the Project water demand and the water demands for the adjacent solar energy projects during normal, single dry year, and multiple dry year periods for the anticipated life of the Project, which is anticipated to be greater than 20 years.

8.0 DOCUMENTS CONSIDERED AND REFERENCES CITED

Department of Water Resources (DWR), 2003, Bulletin 118 Update 2003 – Basin Report 7_033, https://data.cnra.ca.gov/dataset/bulletin-118-update-2003-basin-reports/resource/bf769048-ac5c-4cb5-a03b-0cf12205dc4d, accessed November 28, 2022.

Department of Water Resources (DWR), 2021, California's Groundwater Update 2020, Bulletin 118, https://data.cnra.ca.gov/dataset/calgw_update2020/resource/d2b45d3c-52c0-45ba-b92a-fb3c90c1d4be, accessed November 23, 2022.

Department of Water Resources (DWR), 2022a, Bulletin 118 Groundwater Basin Lookup, https://dwr.maps.arcgis.com/apps/Styler/index.html?appid=740d10eefd6148579321a3abcd065a36, accessed November 28, 2022.

Department of Water Resources (DWR), 2022b, SGMA Data Viewer, https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#boundaries, accessed November 22 and 30, 2022.

Department of Water Resources (DWR), 2022c, SGMA Basin Prioritization Dashboard, https://gis.water.ca.gov/app/bp-dashboard/final/, accessed November 29, 2022.

EMKO Environmental, Inc. (EMKO), 2022, Water Supply Assessment for the ZGlobal Vega SES 2, LLC and Vega SES 3, LLC Solar Energy Projects, Imperial County, California.

Imperial Irrigation District (IID), 2022, Public Water Map, https://mygis.iid.com/portal/apps/webappviewer/index.html?id=a33cfeb3714f4eb8a1c85320613a2d1b, accessed multiple times between November 22 and November 30, 2022.

U.S. Geological Survey (USGS), 2022, National Water Information System (NWIS) website, https://nwis.waterdata.usgs.gov/usa/nwis/gwlevels/?site_no=331144115231501, accessed November 29, 2022.

Western Region Climate Center (WRCC), 2022, Niland, California Climate Summary, https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6197, accessed November 29, 2022.