Appendix G.2

Groundwater Monitoring and Mitigation Plan

GROUNDWATER MONITORING AND MITIGATION PLAN FOR THE STARLIGHT SOLAR PROJECT

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July 2025

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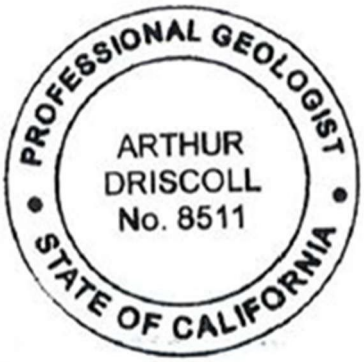
Executive Summary

Jacumba Community Services District (JCSD) has been identified as a source of non-potable water for the proposed Starlight Solar Project (Project) located south of Interstate 8 and Old Highway 80, and east of Tierra Del Sol Road near Boulevard, California. The water provided by JCSD would be used to supply construction, operation, and maintenance (O&M), and decommissioning of the Project. Following San Diego County Planning guidance, INTERA Incorporated (INTERA) has prepared this Groundwater Monitoring and Mitigation Plan (GMMP) to provide protection of groundwater resources of the Jacumba Valley Groundwater Basin underlying the community of Jacumba Hot Springs, California. This GMMP provides establishment of groundwater thresholds for potential off-site well interference and groundwater-dependent habitat, monitoring procedures and mitigation criteria, and reporting requirements.

Professional Geologist Seal

This Groundwater Monitoring and Mitigation Plan for the proposed Starlight Solar Project has been prepared under the direction of a professional geologist licensed in the State of California consistent with professional standards of practice.



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Acronyms and Abbreviations

afy	Acre-Feet per Year
amsl	Above Mean Sea Level
APN	Assessor's Parcel Number
bgs	below ground surface
BTOC	below top of casing
CEQA	California Environmental Quality Act
County	County of San Diego
GMMP	Groundwater Monitoring and Mitigation Plan
gpd	gallons per day
gpm	gallons per minute
JCSD	Jacumba Community Services District
MW	megawatt
PDS	Planning and Development Services

1.0 Introduction

The proposed Starlight Solar Project (Project) is proposing the use of two Jacumba Community Services District (JCSD) wells; the Highland Center Well with backup supply provided by the Park Well to supply water for construction, operations and maintenance, and decommissioning and dismantling of a 100 megawatt (MW) solar facility and a 200 MW battery energy storage system. INTERA Incorporated (INTERA) has prepared this Groundwater Monitoring and Mitigation Plan (GMMP) to provide protection of nearby groundwater-dependent habitat and to limit groundwater level decline in off-site groundwater wells caused by groundwater extraction by the Project.

As described in the Update Draft Groundwater Resource Investigation Report – Flat Creek Watershed Analysis Groundwater Resources Investigation Report for JCSD (Groundwater Investigation) (INTERA 2025), the Project is proposing to extract 67.9 acre-feet of groundwater over approximately 2 years of construction, 0.9 acre-feet per year for ongoing operations and maintenance, and 6.6 acre-feet for decommissioning and dismantling from the Highland Center Well and the Park Well (Figure 1, Well Interference and Potential Groundwater-Dependent Habitat).

The Highland Center Well and the Park Well are located within the JCSD water system service area on Assessor's Parcel Number 660-140-07-00, located on the south side of Old Highway 80 within the community of Jacumba Hot Springs, California.

The results of the Groundwater Investigation indicate that pumping of JCSD non-potable wells would result in a less-than-significant impact to groundwater storage. Drawdown at the nearest off-site well and potential groundwater-dependent habitat was estimated under a 1- and 5-year scenario. The estimated drawdown at the nearest off-site well, Well Km, under the 1-year scenario is 1.56 feet and under the 5-year scenario is 0.75 feet. Based on the County of San Diego well interference threshold guidance for alluvial wells, this drawdown is less than significant. The estimated drawdown at the nearest groundwater-dependent habitat, southern riparian forest, under the 1-year scenario is 1.53 feet from pumping the Highland Center Well and would be 1.56 feet from pumping the Park Well if used as a backup supply well. The estimated drawdown under the 5-year scenario is predicted to be 0.74 feet from pumping the Highland Center Well and 0.75 feet from pumping the Park Well if uses as a backup supply well. Based on the County of San Diego groundwater-dependent habitat threshold guidance for alluvial wells, drawdown would be less than significant.

This GMMP establishes protective groundwater drawdown thresholds for off-site well interference and groundwater-dependent habitat. This GMMP also describes the monitoring, mitigation, and reporting procedures by which the County of San Diego (County) Planning and Development Services (PDS) can validate that the conditions and criteria for the Proposed Project's groundwater extraction activities are continually being upheld. A 5-year monitoring period is proposed to assess the impact of groundwater extractions.

2.0 Establishment of Groundwater Thresholds

According to the County of San Diego Guidelines for Determining Significance and Report Format Content Requirements – Groundwater Resources, Proposed-Project-related groundwater extraction would incur a significant well interference impact if, after a 5-year projection of drawdown, the results indicate a decrease in water level of 5 feet or more in the off-site wells (County of San Diego 2023). If site-specific data indicates alluvium or sedimentary rocks exist, which substantiate a saturated thickness greater than 100 feet in off-site wells, a decrease in saturated thickness of 5% or more in the off-site wells would be considered a significant impact (County of San Diego 2023). The County of San Diego's Guidelines for Determining Significance and Report Format and Content Requirements – Biological Resources defines a project-related drawdown of 3 feet below historical low groundwater levels as causing a significant impact to riparian habitat of a groundwater-sensitive natural community (County of San Diego 2010). The thresholds established below incorporate these guidelines and represent a basis for monitoring and mitigating potential groundwater impacts related to the Project.

2.1 Potential Off-site Well Interference

As described in the Groundwater Investigation, alluvial aquifer production wells identified near Highland Center Well and Park Well include Gas Station Well, Well Km, and Well 4 (Figure 1). These five wells should be included in the groundwater-monitoring network, if accessible. The Highland Center Well and the Park Well are already included in a groundwater-monitoring network for Jacumba Solar operations and maintenance groundwater extraction and are equipped with pressure transducers. Pressure transducer data from these wells and manual measurements will be included in the Groundwater Monitoring and Mitigation Plan (Appendix A). The pressure transducers record the groundwater level in the wells at sub-daily, 15-minute intervals; the level is confirmed periodically through manual groundwater-level measurements recorded with a sounder.

Well Km is operated by the Jacumba Valley Ranch Water Company, which operates as a transient non-community water system. The Proposed Project should identify and contact the owners of Well Km to attempt to gain access for ongoing groundwater level monitoring. If access is granted to monitor this well, a pressure transducer should be installed. Manual measurements should be recorded at a minimum quarterly to confirm groundwater level measurement accuracy.

Groundwater wells that should be included in the groundwater-monitoring network and their distance to the Highland Center Well and the Park Well are indicated in Table 2-1 and depicted in Figure 1.

Table 2-1 Alluvial Aquifer Wells Within 0.5-Mile Radius of JCSD Non-Potable Extraction Wells

Well Name	Use	Distance from the Highland Center Well (feet)	Distance from the Park Well (feet)
Gas Station Well	Monitoring	966	505
Well Km	Small Water System	1,553	1,567
JCSD Well 4	Public/Potable/Stand-by	2,585	2,128

Static groundwater-level measurements should be collected at each of the wells in the groundwater-monitoring network, if accessible, prior to the start of construction. Baseline groundwater levels should be established for Well Km, provided the well is accessible for monitoring. Pre-construction baseline conditions for the Jacumba Valley alluvial aquifer were determined on January 18, 2017, which consisted of manually measuring groundwater levels and installing new pressure transducers into monitoring network wells. The County of San Diego PDS has requested that the baseline conditions established in January 2017 for the Highland Center Well and Park Monitoring Well be carried over to future projects. Baseline conditions from January 2017 for groundwater level threshold and current groundwater levels are presented in Table 2-2.

Table 2-2 Baseline Conditions, Groundwater Level Threshold, and Current Groundwater Levels

Well Name	Baseline Groundwater Level Measurement (Feet BTOC)[a]	Threshold Condition (Drawdown, Feet)	Groundwater Level Threshold (Feet BTOC)	Current Groundwater Level Measurement (Feet BTOC / Date)
Highland Center Well	55.05	N/A	N/A	54.8 / June 23, 2025
Park Well	57.71	N/A	N/A	56.8 / June 23, 2025
Well Km	51.62[b]	5.0	56.62	51.62 / July, 2018
Gas Station Well	64.25	5.43	69.68	65.67 / May 12, 2020

Notes: Major Use Permit (MUP) established threshold conditions per MUP PDS2014-MUP-14-041 Sections 15, 29, and 30

BTOC = below top of casing; N/A = not applicable (no water level thresholds identified in the MUP)

a. Measured on January 18, 2017

b. Measured in July 2018

To protect off-site well users and comply with County of San Diego Guidelines, a maximum drawdown of 5 feet below the baseline groundwater levels will be allowed in accessible production wells. The nearest off-site production well is Well Km. If Well Km is not accessible for groundwater level monitoring, a maximum drawdown of 5.43 feet at the Gas Station Well below the groundwater level baseline will be allowed.[1]

If Well Km is accessible, a maximum drawdown of 5 feet at off-site production well, Well Km should be established from the baseline groundwater level measurements. Baseline groundwater level measurements and groundwater level thresholds for the Gas Station Well were established in January 2017 and are provided in Table 2-2.

Results of the off-site well interference analysis detailed in the Groundwater Investigation conclude that well interference is not anticipated to result in a significant impact. A groundwater monitoring program will be implemented to establish a groundwater level baseline in the nearest off-site production wells or

[1] Maximum drawdown measurements below baseline groundwater levels for monitoring wells in the absence of accessibility to Well Km were calculated based on groundwater extraction from the Highland Center Well at a pumping rate of 311 gallons per minute for 90 days using the Theis drawdown equation (Driscoll 1986) with a transmissivity value of 10,243 square feet per day and a storativity value of 0.0000185; equivalent to 5 feet of estimated drawdown at Well Km.

monitoring wells where applicable and characterize changes in groundwater levels due to Proposed Project groundwater extraction.

2.2 Groundwater Dependent Habitat

Potential groundwater-dependent habitats present near the Highland Center Well and Park Well are depicted in Figure 1. The nearest groundwater-dependent habitat to the Highland Center Well and Park Well is a southern riparian forest located 1,720 and 1,570 feet north, respectively (Table 2-3).

Table 2-3 Groundwater-Dependent Habitat Within 0.5-Mile Radius of Extraction Wells

Well Name	Source	Distance from the Highland Center Well (feet)	Distance from the Park Well (feet)
Southern Riparian Forest	SanGIS	1,720	1,570

Notes: SanGIS = San Diego Geographical Information Source.

3.0 Monitoring Procedures and Mitigation Criteria

The groundwater-level monitoring, and if necessary groundwater-dependent habitat monitoring, procedures and mitigation criteria are outlined below and will be followed during pumping at JCSD non-potable wells. The groundwater monitoring program defined herein will be carried out under the direction of a Professional Geologist or Professional Engineer licensed in the State of California.

3.1 Groundwater Production and Groundwater Level Monitoring

Pressure transducers will be maintained in a network of four groundwater wells. Additionally, Well Km will be included if property access is granted. The pressure transducers will be programmed to record the water level sub-daily at minimum 1-hour intervals. In addition, ambient barometric pressure and temperature will be recorded at minimum 1-hour intervals with a barometric logger. Manual groundwater-level measurements may be required for Well Km if pressure transducers cannot be fitted in the well due to lack of appropriately sized port or sounding tube. Transducer data will be downloaded at all the instrumented wells for 1 month prior to the onset of Proposed-Project-related groundwater extraction. Transducer data will also be downloaded monthly during periods of pumping for construction water supply to the Proposed Project. Cumulative groundwater usage will be monitored at JCSD non-potable wells using an instantaneous flow meter. Flow rate and volume measurements will be recorded daily during pumping for the Proposed Project.

3.2 Groundwater Production and Groundwater Level Monitoring

The following monitoring program will be carried out for groundwater-dependent habitat if static groundwater levels in Well Km drop below the established threshold. The goal would be to determine if the Proposed Project's use of groundwater is affecting groundwater-dependent habitat.

3.2.1 Study Area

Baseline data will be collected within a 0.5-mile radius of Highland Center Well and Park Well (study area) (Figure 1). Potentially affected native trees within the study area will be evaluated for overall physical condition and attributes. The trees will be inventoried by an International Society of Arboriculture–Certified Arborist or Registered Professional Forester with specific experience evaluating riparian dominant species.

The baseline monitoring evaluations will include the following:

- Establishment of 18 equidistant plots or transects within the mesquite bosque and desert sink scrub habitat within 0.5 miles of the Highland Center Well and Park Well. Sample plots/transects will include the range of existing habitat conditions, including elevation, slope and aspect, and proximity to roads and other land uses.
- Tagging of trees and recording species, tag number, trunk diameter at breast height (inches), height (feet), and dominance (i.e., whether the tree is under the canopy of another tree or forms the uppermost canopy) will occur. Slope, aspect, and elevation of each tree location,

existing understory species (including proportion of natives to exotics); presence of debris and litter; and soil type, depth, and parent material will be noted for each tree or plot/transect.

- Assessment of tree status will occur, including documentation of the following:
  - Diameter at breast height measured at 4.5 feet aboveground (according to
  - standard practices)
  - Number of stems
  - Overall tree height (based on ocular estimates)
  - Tree crown spread (measurement in each cardinal direction, based on ocular estimate)
  - Overall tree health condition (good, fair, poor, dead)
  - Overall tree structural condition (good, fair, poor, dead)
  - Pest presence (type, extent—minimal, moderate, high)
  - Disease presence (type, extent—minimal, moderate, high)
  - Other specific comments
- Assessment of seedling establishment and sapling tree densities and conditions.
- The data collection procedure will include full data collection at each plot/transect so that consistency is maintained among sampling plots.
- Creation of database using GIS or similar application.

3.3 Groundwater Mitigation Criteria

The following mitigation criteria will be established to protect groundwater resources and groundwater-dependent habitat in the Project area:

- If the groundwater levels in Well Km drop 5 feet below the baseline groundwater level as a result of pumping JCSD non-potable wells, groundwater extraction from JCSD non-potable wells will cease for Project water supply until the groundwater level at the well that experienced the threshold exceedance has increased above the threshold and remained there for at least 30 continuous days. Additionally, written permission from the County of San Diego PDS must be obtained before production for the Project may be resumed. If Well Km is not accessible, then the well interference threshold will be 5.43 feet at the Gas Station Well below baseline groundwater level measurements to not exceed the maximum drawdown of 5 feet at Well Km.
- If static groundwater levels drop more than 56.62 feet below ground surface in Well Km, then monitoring of the groundwater-dependent habitat will be triggered.
- If the groundwater levels exceed 3 feet below historical low groundwater levels (54.67 feet in Well Km or 67.54 feet bgs in Gas Station Well, if Well Km is not accessible) and the arborist or forester finds evidence of deteriorating riparian habitat health, there may be a temporary or permanent cessation of pumping at the Highland Center Well and Park Well for projects requiring California Environmental Quality Act (CEQA) approval.

4.0 Reporting Requirements

A groundwater monitoring report will be completed by a Professional Geologist or Professional Engineer licensed in the State of California and will be submitted to County of San Diego PDS annually no later than 28 days following the end of the calendar year. Groundwater monitoring reports should be submitted for 5 years after Proposed Project construction has commenced. After 5 years, County of San Diego PDS should determine if continuous reporting is required based on the effects of groundwater extraction from the previous 5 years. The annual reports will include the following information:

- Groundwater level hydrographs and tabulated groundwater level data for each accessible well in the groundwater-monitoring network.
- Tabulated groundwater production volumes from JCSD Non-potable wells
- Documentation of any changes in well pumping or groundwater well conditions for wells in the groundwater-monitoring network.
- Documentation of groundwater-dependent habitat monitoring, if necessary, as described in Section 3.2.

If the baseline groundwater levels at the wells included in the groundwater monitoring network are exceeded by 5 feet, County of San Diego PDS will be notified via letter and email within 1 working day of the exceedance, or immediately after the exceedance is recognized. Additionally, if groundwater level thresholds at the off-site wells are exceeded by their respective thresholds, pumping of JCSD non-potable wells for the Project will cease and County of San Diego PDS will be notified via letter and email within 1 working day, or immediately after the exceedance is recognized.

5.0 References

County of San Diego. 2010. County of San Diego, Guidelines for Determining Significance and Report Format and Content Requirements: Biological Resources. Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. Fourth Revision. September 15, 2010.

County of San Diego. 2023. County of San Diego Report Format and Content Requirements: Groundwater Resources. Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. First Revision. September 27, 2023.

INTERA (INTERA Incorporated). 2025. Update Draft Groundwater Resource Investigation Report – Flat Creek Watershed Analysis Groundwater Resources Investigation Report for JCSD. July, 2025.

6.0 List of Preparers

This Groundwater Monitoring and Mitigation Plan was prepared by INTERA Principal Hydrogeologist, Trey Driscoll, PG, CHG.

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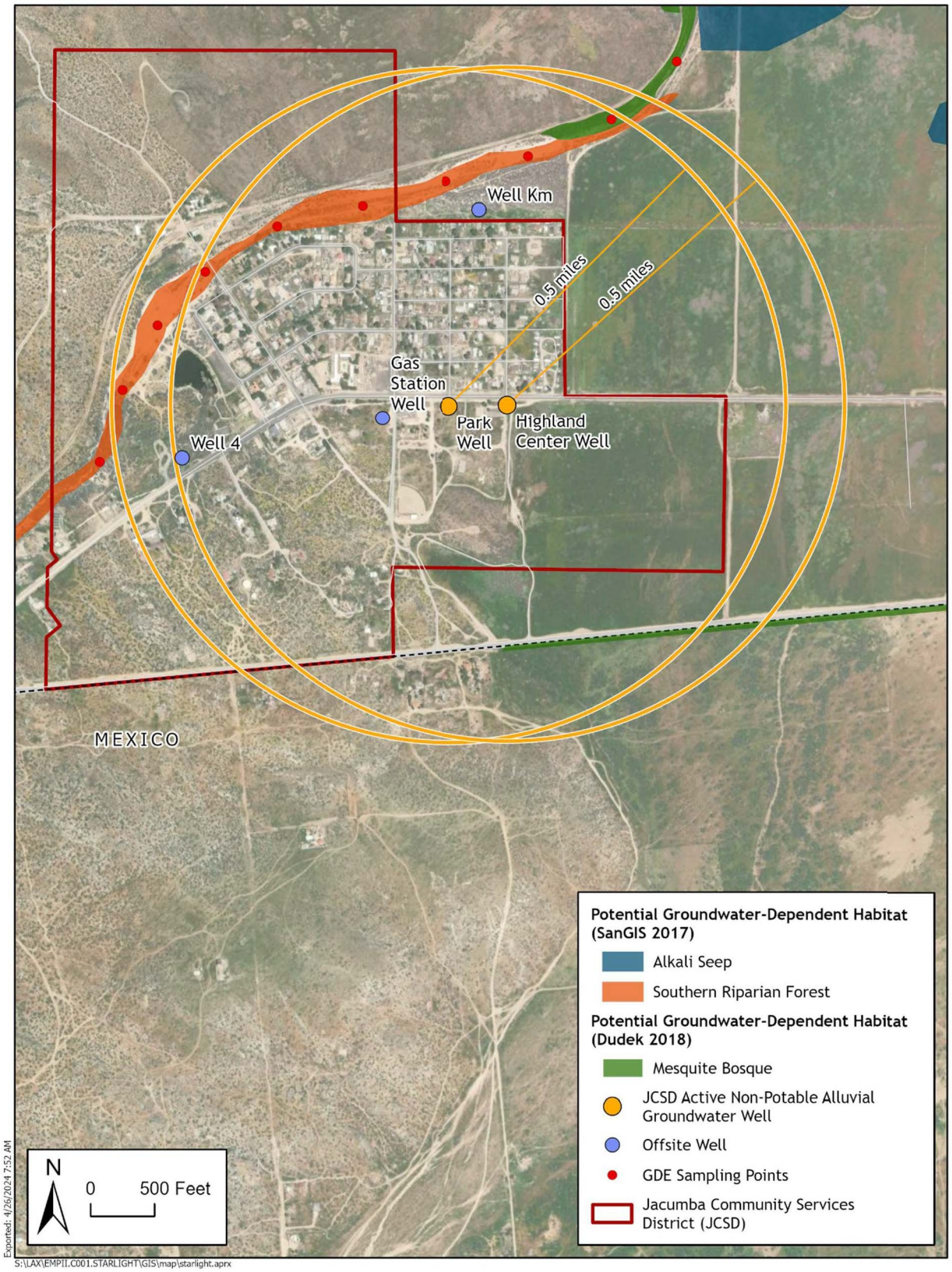

Figure 1 Well Interference and Potential Groundwater-Dependent Habitat

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