ANTELOPE VALLEY WATERMASTER ADVISORY COMMITTEE MEETING AGENDA

January 18, 202310:00 a.m.

CONFERENCE LINE MEETING ONLY

Join Zoom Meeting

https://us06web.zoom.us/j/88514284670?pwd=QlVodzl2di82d2lxQU9yRXhqVndjZz09

Meeting ID: 885 1428 4670 Passcode: 123456 Dial by your location+1 669 444 9171 Password 123456

- 1. Introductions
- 2. <u>Approval of November 30, 2022, meeting minutes.</u>
- 3. <u>Discussion of potential AV Watermaster Board action items as shown on draft January 25, 2023,</u> <u>AVWB agenda received January 13, 2023:</u>
- 4. Discussion of 2023 Proposed Antelope Valley Watermaster Fee Schedule
- 5. <u>Recommendations and Consideration on New Production Application</u>
 - Barrel Springs Properties LLC, (120 AF)
 - Long Valley Road L.P, (300 AF)
 - West Dony, (2 AF)
 - Galdamez Amado, (2 AF)
- 6. <u>Recommendation and Consideration on New Point of extraction</u>
 - Frankenberg

- 7. <u>Recommendation and Consideration on Transfer Application</u>
 - Craig and Marta Van Dam to AVCC (1 AF)
- 8. <u>Recommendation and Consideration on Well Application</u>
 - Alfonso Torres Replacement Well application
- 9. <u>Summary of New Production and Qualified Small Pumpers</u>
- 10. Items Requested by Committee Members or Other Producers

11. Information Items

Antelope Valley Watermaster Board Meeting Agenda <u>Wednesday, January 25, 2023 – 10:00 a.m.</u> Location: Antelope Valley – East Kern Water Agency 6450 West Avenue N, Palmdale, CA 93551

or

"The Watermaster Board meeting will be held via teleconference connection in accordance with the requirements set out in Government Code 54953(e) and pursuant to the findings and authority set out in Watermaster Resolution No. R-22-62." Due to the Coronavirus this is a Teleconference Only meeting:

Website: <u>https://zoom.us/j/687127281</u> Teleconference: (669) 900-6833 Access Code: 687 127 281 ***This meeting may be recorded***

1) Call to Order

2) Roll Call BOARD OF DIRECTORS

Robert Parris, AVEK Representative – Chairperson Kathy MacLaren, Public Water Supplier Representative – Vice-Chairperson Adam Ariki, Los Angeles County Waterworks District 40 Representative Brandon Calandri, Landowner Representative Derek Yurosek, Landowner Representative

Jim Beck, Hallmark Group – Watermaster Administrator Jessica Alwan, Hallmark Group – Watermaster Administrator Jacqueline Harris, Hallmark Group – Watermaster Administrator Joshua Montoya, Hallmark Group – Watermaster Administrator Phyllis Stanin, Todd Groundwater – Watermaster Engineer Arden Wells, Todd Groundwater Craig Parton, Price, Postel & Parma LLP – General Counsel

- **3)** Adoption of the Agenda (*Note: At the discretion of the Board, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated and may be subject to action by the Board.*)
- **4) Public comments for non-agenda items** (*This portion of the agenda allows an individual the opportunity to address the Board on any item regarding Watermaster business that is NOT ON THE AGENDA. Without acting or entering a dialogue with the public, Board members may ask clarifying questions about topics posed by the public. Your matter may be referred to the administrator and/or advisory committee.*)

5) Special Presentations – None

6) Annual Election

Item	Description
a.	Election of Officers
b.	Election of Board Secretary
с.	Election of Board Treasurer

7) Consent Agenda (Staff Report: Administrator)

Item Description

nem	Description	1 age
a.	Financial Report and Payment of bills through December 31, 2022	5
b.	Minutes of December 7, 2022, Special Meeting	21
c.	Resolution No. R-23-01; Resolution proclaiming that a local emergency persists, re-ratifying the	26
	Governor's proclamation of a state of emergency, and authorizing remote teleconference meetings	
	for a period of 30 days pursuant to the Brown Act	

8) Advisory Committee Report (Advisory Committee Chair Chaisson)

Item	Description	Page
a.	Advisory Committee Written Report	29

9) Administrative Committee Report (Staff Report: Administrator)

Item	Description	Page
a.	Administrative Committee Report	

10) Public Hearing to consider adopting the 2023 Fee Schedule (Staff Report: Administrative Staff)

Item	Description	Page
a.	Opening of the Public Hearing	
	(i) Present 2023 Fee Schedule	
b.	Closing of Public Hearing	

11) Consideration and possible action to approve the 2023 Fee Schedule (Staff Report: Administrative Staff)

Item	Resolution No	Description	Page
a.	R-23-02	Approve 2023 Fee Schedule	

12) Authorize specified individuals to transact business with Citizens Business Bank (Staff Report: Administrative Staff)

Item	Resolution No	. Description	Page
a.	R-23-03	Authorizing Signers for Citizens Bank	

13) Consideration and possible action on Hallmark Group's Amendment No. 2 (Staff Report: Administrative Staff)

Item	Description	Page
a.	Amendment No. 2 to the Consulting Services Agreement to Complete a Rate Assessment,	
	Outreach, and Develop Fiscal Policy for 2024 Fee Schedule	

Dago

14) Consideration and possible action on New Production application (Staff Report: Engineer)

Item	Resolution No	. Description	Page
a.	R-23-04	Barrel Springs (120 AF)	
b.	R-23-06	Long Valley Rd (300 AF)	
с.	R-23-07	West Dony (2 AF)	
d.	R-23-08	Galdamez Amado (2 AF)	

15) Consideration and possible action on New Point of Extraction (Staff Report: Engineering)

Item	Resolution No	. Description	Page
a.	R-23-09	Frankenberg – New Point of Extraction Application	

16) Consideration and possible action on Transfer application (Staff Report: Engineering)

Item	Resolution No	Description	Page
a.	R-23-10	Craig and Marta Van Dam to AVCC (1 AF)	

17) Consideration and possible action on Settlement agreement (Staff Report: General Counsel)

Item	Resolution No	Description	Page
a.	R-23-13	Piute Mutual Water Company	

18) Consideration and possible action on Well application (Staff Report: Administrative Staff)

Item	Resolution No	. Description	Page
a.	R-23-14	Alfonso Torres – Replacement Well Application	

19) Administrator's Report

Item	Description	Page
a.	Update on Administration Activities	

20) Watermaster Engineer's Report

Item	Description	Page
a.	Summary of New Production and Qualified Small Pumpers	
b.	Model Update	
c.	Change of Email Address for Antelope Meter Reporting	

21) General Counsel's Report

Item Description

a.	Update	on Court Proceedings
b.	Conside	eration of Policy on Delinquent RWAs

22) Board Members Request for Future Agenda Items

23) Closed Session, Conference with Legal Counsel General Counsel's Report

Item	Description	

a.	CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
	[Government Code Section 54956.9(d)(1)] Watermaster Motion against Zamrzla Parties
b.	CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
	[Government Code Section 54956.9(d)(1)] Watermaster Motion against Rancho Sierra Properties, LLC
c.	CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
	[Government Code Section 54956.9(d)(1)] Watermaster Motion against Antelope Valley Resource
	Conservation District

24) Closed Session Report

25) Adjournment – Next Meeting February 22, 2023

Resolution No. R-23-04

New Production Application – Barrel Springs



January 11, 2023

Robert Parris, Chair Antelope Valley Watermaster Board of Directors

Re: APN# 3052-016-017 (Barrel Springs Properties, LLC) New Production Application Findings

Watermaster Board:

Barrel Springs Properties, LLC, is proposing a 125-acre Farming and Farmworker Housing Development Community (Project) located northwest of the intersection of Barrel Springs Road and 40th Street East, just south of the City of Palmdale. It includes APN's 3052-16-017 & 010, and 3052-026-050. The applicant is a Party to the Judgment because they are part of the Non-Pumper Class (Willis Class) and meet the criteria described in Section 3.5-22 of the Judgment.

The proposed Project is in the Central Antelope Valley Subarea and will be used as agricultural land for grazing, crops, orchards, and small animal husbandry. The project would also include affordable housing for farmworkers. The applicant is requesting 120 AFY for this development. A proposed well located on APN 3052-016-017 would provide water for domestic use for the housing units, landscape irrigation and agricultural use on the property. This project is sponsored by The People Concern, a 501(c)(3) Non-profit Organization for Public Benefit.

The proposed development will occur on approximately 58 acres and include the following:

- 48 farmworker housing units (each 980 square feet (sf) for a total of 47,040 sf) to house an estimated 144 individuals
- multipurpose center (6,000 sf)
- dining hall (4,500 sf)
- caretaker's house (1,200 sf)
- storage garage (1,600 sf)
- produce stand (1,000 sf)
- landscaping annual grasses and flowers (357,192 sf)
- row crop vegetable gardens broccoli, carrots, potatoes, onions, peppers, lettuce (12.1 acres)
- orchard peaches, apples, oranges (24.7 acres)
- farm animals within the orchard area.

Water conservation measures will include low-flow fixtures in residential kitchens and bathrooms and drought-tolerant plants in the landscaped areas with

drip irrigation systems. The project will use water conservation practices and designed as Certified LEED Platinum for indoor and outdoor use.

Domestic Water Use. In total, there would be about 61,340 sf of buildings, with 145 bathrooms and 8 half bathrooms. The per capita use is expected to be 55 gallons per day, an equivalent of 8.87 AFY for 144 people. Additional support services would use another 10 percent (0.89 AFY) for a total domestic use of 9.8 AFY.

Landscaping and Irrigated Agricultural Water Use. The property will have about 40.1 acres of irrigated areas. The applicant calculated that irrigation needs will be approximately 108 AFY This equates to about a 3 AFY/acre water use rate (108AFY/40.1 A=2.96 AFY/ac). All landscape around building areas will be xeriscape.

Figure 1 shows the location of the proposed Barrel Springs project in the southern portion of the Central Antelope Subarea, generally located along Barrel Springs Road south of the California Aqueduct. The parcel and proposed well are located within the service area of Palmdale Water District (District). The District has notified the applicant that there is some infrastructure located within proximity of the parcel; however, the parcel lies at a higher elevation than can be served by the District's existing system, and improvements to the District's system would be necessary to serve the parcel. The owner may elect to either construct the necessary water system improvements so the District can serve the parcel or seek approval through the Antelope Valley Watermaster for the construction of a private well. The applicant has chosen a private well for water supply. The closest Palmdale Water District well is more than one mile southeast of the Barrel Springs parcel.

The District's letter also indicated that the District's Palmdale Ditch transverses the parcel along its lowest elevation. The District will require the Palmdale Ditch to be covered so that the ditch is not negatively impacted by water runoff from the parcel.

The parcel is located within the San Andreas Fault Zone, consisting of several parallel to subparallel faults that transect the property (**Figure 1**). These faults deform the subsurface geology in this area, resulting in a relatively thin veneer of older alluvial deposits on top of steeplydipping bedrock units (e.g., Anaverde Formation) of Pliocene age. Bedrock crops out along this margin of the groundwater basin within a few miles of the property. Locally, faults compartmentalize subsurface geological units and can impede and redirect groundwater flow. In this manner, faults may act as full or partial barriers to groundwater such that pumping on one side of the fault may not affect groundwater levels on the other side of the fault.

Figure 2 shows Spring 2022 groundwater level contours and water level hydrographs of USGS monitoring wells. The regional contours indicate groundwater flow from the San Gabriel mountains in the south towards the center of the Central Antelope Subarea. Locally, groundwater flow is expected to be more complex due to local faulting. The closest well monitored by USGS (#44401), is about 3 miles to the north and shows that water levels increased from 1997 to 2013 and then slightly declined between 2014 and 2022. However,

TODD GROUNDWATER

given the distance of this hydrograph (and other available hydrographs) from the project site – and in consideration of the local hydrogeologic complexity – these data may not be representative of groundwater trends on the Barrel Springs property. Nonetheless, considering the project's upgradient location within the Basin, the undeveloped lands surrounding the parcels, and the nearby proximity of Palmdale Water District service areas, local groundwater levels are not expected to be declining in this area.

Applicant's Analysis

The New Production Application included an analysis of potential physical and economic impacts from the proposed well prepared by Geosyntec (September 30, 2022). The analysis noted the geologic complexity of this area due to the San Andreas fault zone and exposed bedrock in this region, and the potential for compartmentalized small alluvial basins and limiting hydrogeologic continuity. It noted that several springs occur along the fault zone; this alignment of springs is a possible indicator of hydraulic discontinuities in the groundwater system.

The applicant's analysis calculated aquifer transmissivity and hydraulic conductivity from nearby Driller Well Reports and used these data to calculate anticipated drawdown. Although aquifer parameters were not available near the property, the analysis was based on conservative assumptions to over-estimate potential impacts to existing wells. Parameters were estimated from specific capacity data and lithology from local Driller's logs. The analysis assumed 0.5 feet/day for hydraulic conductivity, an aquifer thickness of 200 feet, and a transmissivity of 748 gallons per day per foot (gpd/ft).

The drawdown calculated for a location 1,000 feet away from the proposed well was estimated at about 25 feet if no hydraulic barrier existed between the proposed Barrel Springs well and the existing well. If a hydraulic barrier existed between the two wells, drawdown would likely be less. If an existing well were in the same small compartment bound by faulting, drawdown was predicted to increase to about 47 feet if the bounding faults were hydraulic barriers. However, this last assumption does not appear to be relevant to the current conditions at the Barrel Springs property, given the apparent lack of existing wells to the immediate northwest and southeast of the parcel (i.e., parallel to local faulting).

Material Injury Analysis

There is only sparse development in areas surrounding the parcel and no existing wells appear to be located within about 1,000 feet of the proposed well (see **Figure 3**). Geosyntec (September 30, 2022) identified potential existing wells in the vicinity of the proposed project (see Figure 2 in the attached Geosyntec report). The closest wells to the Barrel Springs property are likely domestic wells that serve several homes north and west of the property. The analysis suggested the closest well was located on a parcel about 0.25 miles (1,300 feet) north of the proposed well location, north of the California Aqueduct. However, that parcel appears to be undeveloped (no homes) according to county records and satellite imagery. The closest homes are further to the north (about 2,000 feet away) and appear to be across several faults (including the more continuous trace); as such, it seems likely that they are partially or fully hydrogeologically disconnected from the area of the proposed Barrel Springs well. Other homes to the north and northwest are served by Palmdale Water District and are not likely vulnerable to domestic well impacts.

The estimated drawdown of 25 feet estimated for any wells about 1,000 feet from the proposed Barrel Springs well could likely be accommodated by most existing wells given the relatively deep screens and local depths to water. However, the analysis assumed a pumping rate of 20 gallons per minute (gpm) while the application requests an annual groundwater extraction amount of 120 AFY. In order to produce 120 AFY, the well would need to pump 74.4 gpm on a continuous basis, making the drawdowns at this pumping rate about 3.7 times greater than the example analysis (i.e., 92 feet at a distance of 1,000 feet). The application estimated that the proposed well would have a pumping capacity up to 150 gpm. This drawdown has a greater potential to adversely impact nearby wells depending on the construction and current condition of the well. However, given the conservative assumptions for aquifer parameters and the likely barrier effects of local faulting, the applicant's analysis may be over-estimating impacts.

Collectively, local faults, thin alluvial deposits, and shallow bedrock near the proposed Barrel Springs well could negatively affect the productivity of the local aquifer and the proposed well. Determination of the estimated capacity of the applicant's new well is not within the scope of a Material Injury analysis and approval of this New Production application does not guarantee that a well drilled in this area will produce the needed 120 AFY.

Because Barrel Springs Properties will be required to pay a Replacement Water Assessment for production, there is no Material Injury associated with groundwater storage and sustainable yield. The new production is not within the historical or current areas of inelastic land subsidence and no subsidence issues are expected in this area. The proposed production will occur near the southeast margin of the Basin along the San Andreas Fault Zone which is likely a partial hydraulic barrier to groundwater flow. Due to the remote location of this project and potential hydrogeologic disconnection, the risk for material injury appears to be low, but given the uncertainty of the local complex hydrogeology, future impacts to existing wells cannot be ruled out.

Todd Groundwater has determined that Barrel Springs Properties' application for New Production is complete and is determined to have negligible material injury based on the available data. However, given the local hydrogeological uncertainty, Todd Groundwater recommends that the Watermaster require the applicant to conduct an aquifer test on the new well for an improved understanding of aquifer conditions; all well information, including lithological data, construction information, and test results, should be provided to the Watermaster. In addition to this request, the Applicant must also agree to pay Replacement Water Assessments for all future production and comply with meter installation and testing requirements. Sincerely,

Phyllis A. Stanin

Phyllis S. Stanin, P.G., C.Hg. Todd Groundwater, Antelope Valley Watermaster Engineer

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Figure 3. Parcel 3052-016-017 with Barrel Springs Well



X = Proposed Well Location

NEW PRODUCTION APPLICATION ANTELOPE VALLEY WATERMASTER

Please include an application fee according to the fee schedule posted on the Watermaster website: https://avwatermaster.net. Make check out to: Antelope Valley Watermaster

Mail to: Antelope Valley Watermaster, 5022 West Avenue N, Suite 102 #158, Palmdale, CA 93551 <u>OR</u> email to: info@avwatermaster.net

Call Watermaster Administrative staff at 661-234-8233 with questions.

Date 09-30-22

Proposed Well Site APN 3052-016-017

Property Owner/Well Owner Barrel Springs Properties, LLC

Property Owner/Well Owner Mailing Address 1719 CALIFORNIA AVE #B, SAN'TA MONICA, CA 90403

Contact Phone Number 661-816-5179 Contact email david@redbricksolution.com

New Well Latitude/Longitude (or x, y) 34.531357,-118.067000 Antelope Valley Subarea: Central Antelope Valley

Use of New Well (Agricultural, Domestic, Industrial, Municipal, Monitoring, etc.) Agricultural

If Domestic well, will well be used to supply one single family household only? Yes/No.

Do other wells exist on this property? Yes/No. If Yes, indicate if active, inactive, or abandoned and show on Site Plan.

When will a meter be installed on the well? Immediately upon installation of the well

New Production requests are to include the following (Section 18.5.13 of the Judgment):

- <u>Payment</u> of an application fee sufficient to recover all costs of application review, field investigation, reporting, and hearing, and other associated costs, incurred by the Watermaster and Watermaster Engineer in processing the application for New Production. Please attach a check to this application submittal for the fee associated with a New Production application as per the fee schedule posted on the Watermaster website. Check can be made out to Antelope Valley Watermaster.
- 2. <u>Written summary</u> describing the proposed quantity, sources of supply, season of use, purpose of use, place of use, manner of delivery, and other pertinent information regarding the New Production.
- 3. Maps¹ identifying the location of the proposed New Production, including Basin Subarea.
- 4. <u>Well information² including proposed well design, estimated annual pumping, and agreement to install a meter in accordance with the Rules & Regulations. Plus, a statement that once the well is installed, the applicant will provide water well permits, specifications and well-log reports, pump specifications and testing results, and water meter specifications associated with the New Production.</u>
- 5. <u>Written confirmation that applicant has obtained all necessary entitlements and permits</u> including all applicable Federal, State, County, and local land use entitlements and other permits necessary to commence the New Production.
- Written confirmation that applicant has complied with applicable laws and regulations including all applicable Federal, State, County, and local laws, rules and regulations, including but not limited to, the California Environmental Quality Act (Public Resources Code §§ 21000, et. seq.).
- Preparation of a water conservation plan, approved and stamped by a California licensed and registered professional civil engineer with expertise in groundwater hydrology, demonstrating that the New Production will be designed, constructed and implemented consistent with California best water management practices.
- 8. <u>Preparation of an analysis of the economic impact</u> of the New Production on the Basin and other Producers in the Subarea of the Basin.
- 9. <u>Preparation of an analysis of the physical impact</u> of the New Production on the Basin and other Producers in the Subarea of the Basin.
- 10. A written statement, signed by a California licensed and registered professional civil engineer with expertise in groundwater hydrology, determining that the <u>New Production will not cause Material Injury</u>. Material injury could be in the form of

Updated September 2021

¹ Maps are to include North arrow and scale, location of proposed well with dimensions in feet from well to nearest cross streets, and location of site features, including major buildings, landscaped areas, all existing wells, roads, etc.

² Please attach a diagram showing proposed well construction, including maximum well depth, casing diameter and materials, ground surface elevation, screen intervals, and estimated pumping capacity. A completed DWR Well Completion Report is required to be submitted to the Antelope Valley Watermaster upon completion of well.

significant and unreasonable 1. Chronic lowering of groundwater levels, 2. Reduction of groundwater storage, 3. Degraded water quality, 4. Land subsidence, 5. Depletions of interconnected surface water such that beneficial uses are impacted.

- 11. Written confirmation that the applicant agrees to pay the applicable Replacement Water Assessment for any New Production.
- 12. Other pertinent information which the Watermaster Engineer may require.

In addition, all New Production applicants who are not Parties to the Judgment³ are to comply with Section 20.9 of the Judgment, consult with the Watermaster Engineer, and seek the Watermaster's stipulation to allow them to intervene to become bound by the Judgment prior to commencing Production. The non-Party applicant must file a motion to intervene with the court that includes reference to their effort to obtain the Watermaster's stipulation to the intervention. It is strongly recommended that the non-Party applicant consult with a lawyer to assist them with compliance with Section 20.9 of the Judgment. If applicant believes they are part of the Non-Pumper Class (see footnote below) and therefore does not need to intervene in the Judgment, please provide supporting documents or statements demonstrating adherence to items 1-6 in the footnote.

SIGNATURES

Under penalty of perjury, I understand and agree to be bound by the terms of the Antelope Valley Adjudication Judgment and to pay the applicable Replacement Water Assessment for any New Production. I certify that the information provided on this Request for New Production is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I understand that it is my responsibility to notify the Antelope Valley Watermaster of any changes in any of the information provided on this form within 15 days. I also understand that additional information may be required if there is a suspected potential for a material injury as defined in the Judgment. I further understand and agree that the purpose, place and quantity of New Production, if any, approved by the Watermaster pursuant to this application shall be the only purpose and place, and the maximum amount, of New Production that I can Produce in any given Year. I certify that I will comply with the restrictions set forth in Section 14.n of the Watermaster Rules and Regulations setting forth limitations on New Production, and that my failure to comply with these restrictions may result in a revocation of my New Production rights.

Signature of Applicant

David W Larson, PE Red Brick Solution, LLC

Date 9-30-22

Updated September 2021

³ An applicant may already be a Party to the Judgment if they are part of the Non-Pumper Class (Willis Class) and meet the criteria described in Section 3.5.22 of the Judgment, as follows:

^{1.} They are a private party and not a "governmental" entity.

^{2.} They (or their successor in interest—see no.4 below) own real property within the Adjudicated Area and were not pumping water at the time of the Judgment being entered as of December 2015.

^{3.} They (or their successor in interest—see no. 4 below) did not pump water on their property "at any time during the five Years preceding January 18, 2006."

^{4.} Non-Pumper class status applies to those who are successors in title or interest (via gift or purchase or inheritance or otherwise) to a Non-Pumper Class member's land that meets the above criteria.

^{5.} Note the term "Non-Pumper Class Member" does not apply to those who opted out or to those connected to a municipal water system, public utility, or mutual water company from which they receive water service. Also, their land cannot be considered "improved" by the Assessor's Office of Los Angeles or Kern County, unless the person declares under penalty of perjury that they do not pump and have never pumped water on those properties.

^{6.} Finally, the Non-Pumper Class does not include anyone individually named in the Public Water Suppliers' crosscomplaint unless those persons opted into the Non-Pumper Class.

/atermaster Engineer Approval _	Phyllin D. Stanin	Date1/11/23
/atermaster Board Approval		Date

NOTE: This application is not for a well construction permit; a completed and approved application must be submitted to the appropriate well permitting agency (e.g., Kern or Los Angeles Counties) for a well construction permit, if the well is to be installed within the Antelope Valley Adjudicated Area.

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RED BRICK SOLUTION

CONSULTING ENGINEERS & ARCHITECTS

WWW.REDBRICKSOLUTION.COM

MAIN OFFICE:

331 S Rio Grande Street Suite 203 Salt Lake City, Ut 84101 T 801.224.5335

SOUTHERN CALIFORNIA:

10770 "1" Avenue Suite 108 Hesperia, CA 92395 M 661.816.5179

September 30, 2022

Antelope Valley Watermaster 5022 West Avenue N, Suite 102 #158 Palmdale, CA 93551

RE: New-Production Well Application, APN 3052-016-017

- 1. Payment: Will be mailed from The People Concern
- 2. Written Summary:

The new production well has a proposed quantity of 120 AFY. The use will be for agricultural and farmworker housing that will be year-round on the private property. The water will be delivered via an onsite private water system.

3. Maps:

See attached map

4. Well Information:

See attached well design included with the Water Conservation Practices. We will agree to install a meter in accordance with the Rules & Regulations. Once installed, we will provide all water well permits, specifications and well-log reports, pump specifications and testing results, and water meter specifications associated with the New Production Well.

5. Written Confirmation that applicant has obtained all necessary entitlements and permits:

A Boring/Exploratory Hole was approved by the Department of Public Health. We also have Serviceability letters from Palmdale Water District grating permission to seek approval from AV Watermaster for a Production Well. Once approved, we will obtain a well permit from the County and retain a qualified driller with a California License C-57, who will secure any additional permits needed to drill my well, including the completion of a Department of Water Resources Well Completion Report.

6. Written confirmation that applicant has complied with applicable laws and regulations:

We have complied with all applicable rules and regulations. Drilling of my well qualified for a Categorical Exemption under CEQA.

- 7. Water conservation plan: See attached Water Conservation Practices
- 8. Analysis of the Economic Impact: See attached report by Geosyntec
- 9. Analysis of the Physical Impact: See attached report by Geosyntec
- Written Statement determining New Production Well will not cause material Injury: See attached report by Geosyntec
- Written Confirmation that the applicant agrees to pay the applicable Replacement Water Assessment for any New Production: We agree to pay the applicable Replacement Water Assessment for our New Production well.

Water Conservation Practices ANTELOPE VALLEY WATERMASTER

	Agricultural	Commercial/Industrial	Municipal	Monitoring
Date 10-3-22		Proposed Well Site APN 3052-0'	16-017	
Property Owner/We	ell Owner BARREL SPRING	GS PROPERTIES LLC		
Property Owner/We	ell Owner Mailing Address 1	719 California Ave, #B, Santa M	onica, CA 90403	
Contact Phone Num	ber 661-816-5179	Contact email david@re	dbricksolution.con	n
Estimated annual pu	umping from New Well 120	Dacre-feet/year Well cap	acity Assumed 150	gallons/minute
Describe the propo farmworker hous	osed use of the New Well (ing.	attach back up information as nece	essary) Water for a	gricultural use and
Lot/Parcel Size 58	ac (a	cres)	Carago (1 60)	Deb. Corotokoro
Proposed Structure House (1,200sf), P	e(s) (e.g. home, office, barn roduce Stand (1,000sf), Di	n, etc.) and size (square feet) <u>Stora</u> ining Hall (4,500sf), Multi-Purpose C	Center (6,000sf), and	d 48 Farmworker
housing units (98	0/each totaling 47,040sf) with a total Square footage of 6	61,344sf.	
Number of full bat	hrooms <u>145</u> re be) a pool? No	_ Number of half bathrooms <u>8</u>	(gallons)	
Number of full bat Is there (or will the Is there (or will the	hrooms <u>145</u> re be) a pool? <u>No</u> re be) a spa/hot tub? No	Number of half bathrooms <u>8</u> Size of pool <u>N/A</u> Size of spa/hot tube <u>N</u> /	(gallons)	_ (gallons)
Number of full bath Is there (or will the Is there (or will the Area to contain irri Describe all propos	hrooms <u>145</u> re be) a pool? <u>No</u> re be) a spa/hot tub? <u>No</u> gated landscaping <u>357,19</u> sed landscaping (type and l	Number of half bathrooms <u>8</u> Size of pool <u>N/A</u> Size of spa/hot tube <u>N/</u> Size of spa/hot tube <u>N/</u> 92 square-feet how many) <u>Annual Grasses and</u>	(gallons) /A Flowers	_ (gallons)
Number of full bat Is there (or will the Is there (or will the Area to contain irri Describe all propos Area to contain irri Describe all propos	hrooms <u>145</u> re be) a pool? <u>No</u> re be) a spa/hot tub? <u>No</u> gated landscaping <u>357,19</u> sed landscaping (type and l gated crops or fruit trees <u>_</u>	Number of half bathrooms <u>8</u> Size of pool <u>N/A</u> Size of spa/hot tube <u>N/</u> <u>92</u> square-feet how many) <u>Annual Grasses and</u> <u>1,576,872</u> square-feet ype and how many) <u>Row Crop ve</u>	(gallons) /A Flowers getable gardens a	_ (gallons)

Updated July 2019

Water Conservation Checklist

Please indicate which of the following measures will be used:

ENERGY STAR® water-conserving appliances installed, e.g., dishwasher, washing machine appl.
Water-efficient showerhead using conventional aerator or venturi technology for flow rate < 2.5 gpm fixture
Water-efficient sink faucets/aerators < 2.2 gallons/minute
Ultra-low flow (< 1.6 gpm/flush) toilets installed
Low-volume, non-spray irrigation system installed, e.g., drip irrigation, bubblers, drip emitters, soaker hose, stream-rotator spray heads
Weather-based irrigation controllers, e.g., computer-based weather record
Collect and use rainwater as permitted by local code
Separate and re-use greywater as permitted by local code
Composting or waterless toilet as permitted by local code
Drought-resistant, native plants (site-appropriate)
Xeriscape landscaping
Evapotranspiration-based irrigation controller with a rain sensor
Soil moisture sensor-based irrigation controller

Please provide additional details here <u>Water conservation specifics have yet to be determined</u>, but we are designing the project to be Certified LEED Platinum. Attachment A contains the Water Conservation Practices summary for the project.

SIGNATURES

I understand and agree to abide by the terms of the Antelope Valley Adjudication Judgment. I certify that the information provided on this Water Conservation Practices for Single Family Home form is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I understand that it is my responsibility to notify the Antelope Valley Watermaster of any changes in any of the information provided on this form within 15 days.

Signature of Applicant

David W Larson, PE Red Brick Solution, LLC Date 10-03-22

Water Conservation Practices ANTELOPE VALLEY WATERMASTER

ATTACHMENT A

Proposed Well Site APN: 3052-016-017

Planned water conservation measures at the property of the proposed well site include the installation of low-flow fixtures and fittings in residential kitchens and lavatories across the property and implementation of drought-tolerant plants in the landscaped areas watered with drip irrigation systems, as indicated in the Water Conservation Checklist on Page 2 of the Water Conservation Form.

The plan is to attain LEED Platinum certification for the property. The certification requires (a) reduction of outdoor water use by at least 30 percent from the baseline of the property's peak watering month, calculated using the USEPA WaterSense Water Budget Tool, (b) reduction of indoor water use by at least 20 percent from the baseline, using a combination of fixtures and fittings noted in the Water Conservation Checklist, and (c) installation of permanent building water meters measuring total potable water use, as well as compilation of monthly and annual meter read summaries for at least the first 5 years of the project. Additional credits needed to obtain Platinum-level certification will be met by prioritizing Water Efficiency credits as much as feasible, including those for the optimization of process water use.

The following best management practices for high desert agricultural water conservation will also be evaluated throughout property development to identify and target opportunities for their implementation:

- Use of smart-sensor irrigation controllers to monitor weather, soil moisture, and/or evapotranspiration.
- Use of selective irrigation methods across the property, including additional drip irrigation or mobile drip irrigation, low-energy precision application, mid and low elevation spray application, and sprinkler irrigation.
- 3. Reduction of tillage across crop fields to maintain soil water storage capacity.
- Planting of cover crops, including cereals, brassicas, legumes, rye, and barley, to increase infiltration into underlying soils.
- 5. Planned crop rotation management.
- Improvement of soil structure through incorporation of aggregate and/or organic material (e.g., mulch) to increase stability, porosity, and water storage capacity.
- 7. Further selection of drought-tolerant and native vegetation for crops and/or cover crops.
- 8. Rainwater capture and use.
- 9. Fitting drainage systems with water control structures to manage water table elevation.
- 10. Management of soil salinity and plant-specific composting practices.



65 N. Raymond Ave, Suite 200 Pasadena, California 91103 PH 626.788.4683 www.geosyntec.com

September 30, 2022

John Maceri, CEO jmaceri@thepeopleconcern.org The People Concern 2116 Arlington Ave. Ste. 100 Los Angeles, CA 90018

Subject: Analysis of Potential Economic and Physical Impacts of the Proposed Well Proposed Farm and Affordable Farmworker Housing, Antelope Valley, California

Dear John,

Geosyntec has reviewed geologic, hydrogeologic, and production well information within a few miles of the property for a farm and affordable farmworker housing community that is proposed by The People Concern, which is a California 501(c)(3) Non-profit Organization for Public Benefit. The property is south of Palmdale and just south of the California Aqueduct. It is bounded on the south by Barrel Springs Road, and on the east by 40th Street East. **Figure 1**, below, shows the property boundary on an aerial photograph.



Figure 1. Aerial Photo of Property Vicinity

Based on the information from several sources including geologic maps, Water Well Drillers Reports available from the California Department of Water Resources (DWR) for wells in the vicinity, and reports on the Antelope Valley Basin available from the Antelope Valley Water Master (AVWM) website, we have estimated groundwater production potential from a proposed well on the property. In addition, we have evaluated the potential physical and economic impacts of the proposed groundwater production to the surrounding area.

Geologic and Hydrogeologic Setting

The property straddles the San Andreas Fault: most of it is southwest of the fault, but the northeast corner is northeast of the Fault. **Figure 2** shows the location of the property and the proposed well location on a geologic map¹ of the vicinity, a portion of which is underlain by the same aerial photo shown by **Figure 1**.



Figure 2. Geologic Map of Project Vicinity

¹ Jennings, C.W., and R.G. Strand, 1969. Geologic Map of California, Los Angeles Sheet. California Division of Mines and Geology. <u>https://ngmdb.usgs.gov/Prodesc/proddesc_16341.htm</u> <u>http://archives.csuchico.edu/digital/collection/coll19/id/99</u>

The property is within the boundaries of the Antelope Valley Groundwater Basin (e.g. Department of Water Resources Basin 6-044): the southwest margin is the basin is approximately 1 to 2 miles from the proposed well location. However, the property is not within the domain of the Antelope Valley Groundwater Model (USGS 2014): the southern margin of the model is a few miles northwest of the property. Consequently, we were not able to utilize aquifer properties assigned to the model to estimate aquifer properties in the vicinity of the property.

Based on the geologic map (Figure 2), the middle portion of property is underlain by deposits of unconsolidated quaternary alluvium and the western and eastern portions are underlain by Quaternary colluvium. Bedrock is exposed at the ground surface in many areas nearby. The area has a complicated geologic structure as a consequence of the proximity to the San Andreas Fault, which is actually a fault zone consisting of a several subsidiary parallel faults and local basins within the fault zone. Consequently, the rocks and alluvial deposits have much less continuity and their properties vary on a much smaller scale than within the main portion of the Antelope Valley Basin north of the fault zone.

Based on boring logs included on Well Drillers Reports for wells in the vicinity of the property, the alluvial deposits are generally a few hundred feet deep, but the clay content generally increases with depth. Some wells are completed in areas mapped as bedrock. The geologic map could be incorrect at some of these locations, but some of these wells may tap transmissive fractures associated with the fault zone.

A few areas with springs occur along Barrel Springs Road, which runs along the base of the slopes of the San Gabriel Mountains south of the property and the fault zone. The springs support local areas with trees and vegetation, which are visible on aerial photos (**Figure 1**). The springs are likely fed by groundwater discharging from the San Gabriel Mountains in drainages and fractures in bedrock. This water also likely accumulates in the local alluvial basins along the San Andreas Fault zone, which is likely a partial hydraulic barrier.

Aquifer Properties Based on Driller's Well Reports

Estimated aquifer transmissivity (T) can be calculated from specific capacity, which is pumping rate (Q) divided by drawdown (S) (lowering) of water level in a well (e.g. Heath, 1989)²:

$T \sim 300 \ge Q/S$,

where T is in units of ft²/d Q has units of gpm, and S has units of ft 31

² R. C. Heath, 1989, Basic Groundwater-Hydrology, USGS Water-Supply Paper 2220.

And average hydraulic conductivity (K) is transmissivity divided by the thickness (b) of the formation tapped by the well:

$$K (ft/d) = T (ft^2/d) / b (ft)$$

Calculations of estimated transmissivity, hydraulic conductivity, and details from two well reports in the vicinity are provided in the table below. Based on these calculations, the estimated hydraulic conductivity is approximately 0.5 ft/d, which is reasonable for heterogenous alluvium. If we account for head losses in the pumping wells, assuming well efficiencies of 70%, the transmissivity and hydraulic conductivities are higher by a factor of 1/0.7, or 1.43, which results in a hydraulic value of ~0.7 ft/d.

Well Number	Well ID on Geo Map	Pumping Rate (gpm)	Duration (hrs)	Depth to Water Before Test (ft)	Reported Drawdown (ft)	Calculated Transmissivity ¹ (ft ² /d)	Perforated or Screened Interval (ft)	Estimated Thickness of Productive Formration (ft)	Calculated Hydraulic Conductivity (ft/d)
251697	10	40	8	Flowing	250	48	32 to 292	100	0.48
287630	7	7	3	50	100	21	147 to 187	40	0.53

Notes:

1 Estimate of Transmissivity = 300 x Puming Rate / Drawdown,

T = 300xQ/S, where T has units of ft2/d, Q gpm, and S ft (Heath, 1989)

Calculated Drawdown with Distance from a New Production Well

We used the Jacob approximation of the Theis Aquifer Solution, which are both commonly used aquifer pumping solutions, to calculate theoretical drawdown with distance from the proposed production rate (e.g. Heath, 1989, see footnote above).

In addition, using the aquifer testing analysis software, AQTESOLV³, we calculated the drawdown at a range of distances from the pumping well using the Theis solution with a no-flow boundary along the San Andreas Fault, which may be a partial barrier to groundwater flow that would result in greater drawdown. This results in more drawdown than calculated with the standard Theis Aquifer Solution, which assumes the aquifer is uniform and of infinite extent. We then fitted a curve to the calculated drawdowns a few distances from the pumping well, and plotted the curve on a graph (**Figure 3**, below) of distance versus drawdown both the standard Theis solution (no hydraulic barrier along the fault) and the solution that represents a complete hydraulic barrier along the fault. This graph provides a range of potential drawdown with distance assuming a pumping rate of 20 gpm and an average hydraulic conductivity of 0.5 ft/d an aquifer thickness of 200 ft, which results transmissivity of 100 ft²/d.

³ Duffield, G.M. (2007) AQTESOLV for Windows User's Guide. Version 4.5, HydroSOLVE, Inc., Reston.

Based on our review of the boring logs included with the Drillers Well Reports for wells in the vicinity that are completed in alluvium, and our professional judgement, a hydraulic conductivity in the range of 0.5 to 1 ft/d is reasonable, so the calculations of drawdown with distance using a hydraulic conductivity of 0.5 are considered conservative.

The drawdown would be linearly proportionally greater at a given distance for greater flow rate: e.g. a drawdown in response to a pumping rate of 40 gpm would be twice as much as calculated for 20 gpm.



Figure 3. Calculated Drawdown with Distance from Pumping Well $(T = 100 \text{ ft}^2/\text{d}, b = 200 \text{ ft}, Q = 20 \text{ gpm})$

Evaluation of Potential Physical and Economic Impacts of a New Production Well

The primary potential physical impact of groundwater drawdown is subsidence of the ground surface that can occur because of compaction with of the groundwater levels. Based on existing maps of long-term subsidence in the Antelope Basin⁴, the potential for subsidence due to the proposed groundwater production for the project is expected to be negligible (<0.1 ft).

We calculated cost for the additional energy needed for potential additional lift of water in wells due to potential lowering of groundwater due to the proposed new production well. The table and graph below (**Figure 4**) show the cost per month for a range of additional pumping lift values. The assumed electricity cost is \$0.16 per kilowatt hour (kWh), which is the reported cost for the Palmdale area (<u>https://www.electricitylocal.com/states/california/palmdale/</u>).

Lift (ft)	ft-lbs/min	kWh/min	kWh/hr	Pump HP*	kWh/mo	\$/mo**
0		1	1.00			C
10	2979	0.001	0.067	0.1	49.1	\$8
30	8936	0.003	0.202	0.3	147.3	\$24
40	11914	0.004	0.269	0.4	196.4	\$31
50	14893	0,006	0.337	0.5	245.5	\$39
100	29786	0.011	0.673	0.9	491.1	\$79

Potential Additiona	I Pumping Costs	Due to Lower	Groundwater	Level
----------------------------	-----------------	--------------	-------------	-------

Notes:

Pumping rate = 25 gpm Well efficiency = 70%

*Pump HP assumes 1 kWh is equivalent to the energy of a 1.34 HP pump over 1 h ** 16 cents per KWh in Palmdale



Figure 4. Energy Cost Associated with Lower Water Level in a Well

⁴ Todd Groundwater, 2022, Antelope Valley Watermaster 2021 Annual Report.

Based on the distances of other well from the proposed new well, and the calculations of hypothetical drawdown in response to pumping the new well at 20 gpm a conservatively high estimated potential additional cost to operate the closest wells is in the range of \$20 to \$30 per month. And, as discussed above, the drawdown calculations are based on a conservatively low value of hydraulic conductivity. A factor of two less drawdown is likely more realistic.

We appreciate the opportunity to provide you with groundwater supply consulting services and collaborate with you on this important project.



Gordon Thrupp, PhD, PG, CHG Senior Consultant

Tara Rolfe, PG, CHG Senior Hydrogeologist

cc Christie Larson Christie@redbricksolution.com Dave Larson, PE david@redbricksolutions.com



65 N. Raymond Ave, Suite 200 Pasadena, California 91103 PH 626.788.4683 www.geosyntec.com

Item 10 for New Production Application Proposed Farm and Affordable Farmworker Housing, Antelope Valley, California

Geosyntec has reviewed geologic, hydrogeologic, and production well information within a few miles of the property for a farm and affordable farmworker housing community that is proposed by The People Concern, which is a California 501(c)(3) Non-profit Organization for Public Benefit. We have prepared a letter report that evaluates the groundwater production potential in the vicinity of the property and the potential economic and physical impact (*The Letter Report is also included as an Attachment to the Application Packet for Items 8 and 9 of the New Production Application*) of groundwater pumping to meet the water supply needs for the farm and housing community.

Geosyntec made calculations of the lowering of groundwater (drawdown) in response to pumping from the proposed well that are presented in the letter report. Based on the compilations of aquifer properties estimated from well reports for existing wells in the vicinity and geologic maps, and assuming A conservatively low transmissivity of 100 ft²/d¹ for was assumed for the alluvial aquifer beneath the property for screening level calculations of the potential influence of the production. With this and other conservative assumptions, the calculated lowering of groundwater at known existing wells would be a small portion of the depth to groundwater in the wells when they are pumping, which is commonly 100 ft or more based on information from Drillers Well Reports in the general vicinity available from the Department of Water Resources (DWR).

The calculations presented in our Letter Report, which is provided in the application packet to address Items 8 and 9, are intended to be serve as a basis for conservative screening-level evaluation of groundwater production potential and the resulting potential lowering of groundwater levels in the vicinity. The alluvial aquifer beneath the property may be a factor of four or more transmissive than assumed (i.e., hydraulic conductivity of 2 ft/d instead of 0.5 ft/d), which would result in less drawdown than calculated for the calculations presented using continuous pumping at 20 gpm. And, for example, if the aquifer is four times as transmissive as assumed, the same drawdown would be calculated with a factor of four higher pumping rate (80 instead of 20 gpm). Moreover, our calculations are also conservative because the analytical aquifer solution assumes no recharge to the alluvial aquifer and only horizontal radial inflow within an aquifer of infinite extent.

Based on our analysis groundwater production is feasible at the property and we make the following conclusions:

1. Chronic lowering of groundwater levels in the general vicinity is not expected to occur because groundwater discharge from the San Gabriel Mountains generally along the

¹ For example, average hydraulic conductivity of 0.5 ft/d and aquifer thickness of 200 ft.

Item 10 to Accompany the Production Permit

Proposed Farm and Affordable Farmworker Housing, Antelope Valley, California October 1, 2022

alignment of Barrel Springs Road provides recharge to the alluvial aquifer in the vicinity of the property, so the groundwater production can be sustainable.

- 2. Reduction of groundwater storage is anticipated to be minor for the same reasons that chronic lowering of groundwater levels is not expected to occur.
- 3. The groundwater production will not degrade water quality, and the well will be constructed with a proper surface seal in accordance with California Well Standards.
- 4. Based on subsidence data for the Antelope Groundwater Basin, modeling of subsidence in the basin by USGS, and the poorly graded make-up of the alluvial aquifer, subsidence due the proposed production is expected to be negligible (<0.1 ft).
- 5. The conservatively high calculations of drawdown at the distance of the nearest surface water (Bear Creek) south of Barrel Springs Road is too small to result in significant depletion of water in the creek. Moreover, like the springs, this creek too is hydraulically upgradient of the property, and is fed by groundwater discharge from the slopes and bedrock of the San Gabriel Mountains to the south to surface drainages and on-lapping alluvial aquifers. Additionally, portions of Bear Creek appear to be lined, and it is called the Palmdale Ditch. Thus, no impacts to beneficial uses of the land and water resources are expected to occur due to the proposed groundwater production.

The proposed new production of a maximum of 120 acre feet per year (AFY) will have negligible, if any, influence on the Native Safe Yield of the Antelope Valley Groundwater Basin, which is 82,300 AFY. Moreover, the proposed pumping is near the southwest margin of the Basin and is separated from the main portion of the Basin by the San Andreas Fault Zone, which is likely a partial hydraulic barrier. The Barrel Springs Properties are included in the Basin's Small Pumpers Class (SPC) but do not have an existing pumping allocation for the parcel planned for a new well.

The People Concern are committed sustainable use of water and other natural resources, and understand that pumping groundwater will be subject to a replenishment fee. If the groundwater production potential is less than the water demand, they will revise the project accordingly.

ONAL GA

CERTIFIED DROGEOLOGIST Exp. 2/29/24

Sincerely,



Gordon Thrupp, PhD, PG, CHG Senior Consultant Mark Hana, PhD, PEG, CHG Senior Principal Engineer

Attachment 1

Preliminary Proposed Well Construction



Actual depth, screened interval, slot size, filter pack sand will be based on material encountered during drilling. Anticipated maximum depth is 300 ft.

Estimated pumping capacity is 25 to 150 gpm. A suitable dedicated submersible pump will be in selected following development and testing.





ENVIRONMENTAL HEALTH

Drinking Water Program



5050 Commerce Drive, Baldwin Park, CA 91706

Telephone: (626) 430-5420 • http://publichealth.lacounty.gov/eh/ep/dw/dw_main.htm

Work Plan Approval

WORK SITE ADDRESS	CITY	ZIP	EMAIL ADDRESS
0050 010 017/D D D	Palmdale	93550	david@redbricksolution.com
3052-016-017/Barrel Springs Road			josh@vicswelldrilinginc.com

NOTICE:

. WORK JUAN APPROVALS ARE VALID FOR 180 DAYS. 30 DAY EXTENSIONS OF WORK PLAN APPROVALS ARE CONSIDERED ON AN INDIVIDUAL (CASE-BY-CASE) BASIS AND MAY BE SUBJECT TO ADDITIONAL PLAN REVIEW FEES (HOURLY RATE AS APPLICABLE).

WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH-DRINKING WATER PROGRAM.

WORK PLAN APPRIVALS ARE LIMITED TO THE DEPARTMENT OF POLICING MULTIC DIMENSION AND THE LOS ANGELES COUNTY CODE AND DOES NOT WORK PLAN APPRIVALS ARE LIMITED TO CONDUIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT GRANT ANY RIGHTS TO CONSTRUCT, RENOVATE, OR DECOMMISSION ANY WELL. THE APPLICANT IS RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS SUCH AS WATER RIGHTS, PROPERTY RIGHTS, COASTAL COMMISSION APPROVALS, USE COVENANTS, ENCROACHMENT PERMISSIONS, UTILITY LINE SETBACKS, CITY/COUNTY PUBLIC WORKS RIGHTS OF WAY, ETC. COMPLIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT

THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED BY THE DEPUTY HEALTH OFFICER. WORK SHALL NOT BE INITIATED WITHOUT A WORK PLAN APPROVAL STAMPED BY THE DEPARTMENT OF PUBLIC HEALTH-DRINKING WATER PROGRAM.

TO SE COMPLETED BY DEPARTMENT OF PUBLIC HEALTH-DRINKING WATER PROGRAM:

x	WORK PLAN APPROVED FOR. Soil Boring/Exp. Hole	PERMIT NUMBER:	SR0303673	DATE:	August 15, 2022
AC	 DITIONAL APPROVAL C Work plan approval is is modifications to the ecop As discussed, please en construction Ensure to backfill using nement grout, proceedin Ensure soil borings are s c Cement grout ministry of the former of the	ONDITION sued for sco e of work wi sure the bor a tremie pip g upward fro ealed per C ratio of 5-6 onite may be tonite chips as must cor s (Bulletins 7	S: be of work submit Il require addition ing/exploration ho e under pressure m the bottom of the alifornia Well Star gallons of water added to the cer and/or soil cutting nply with all app '4-81 and 74-90)	ted to the I al work plan ole is backfi or equivale he boring/e hdards 74-9 per 94-pour ment-based s. plicable rec and the Los	Drinking Water Program. Any n review. Illed within 24 hours of boring ent equipment with approved exploration hole to surface. 30 nd bag of Portland cement. d mix. quirements published in the s Angeles County Code, Title
Ple	ase be advised this permit omitiad for a Production W	is for an ex ell-Public W	oloratory boring ater Well.	only. A ne	w application with fee to be
APF	PROVED B 1: 26415 (Santa C (661) 24	chey, REHS Carl Boyer Dr. Clarita, Ca 913 7-7017	50 Ju	i H	acherg 5770

Antelope Valley Watermaster



Legend



AV Adjudication Area

AV Management Subareas



PALMDALE WATER DISTRICT

A CENTURY OF SERVICE

BOARD OF DIRECTORS

W. SCOTT KELLERMAN Division 1

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ALESHIRE & WYNDER LLP Attorneys Carol Sevilla Barrel Springs Properties, LLC. 1719 California Avenue Santa Monica, CA 90403

> SERVICEABILITY - PROPERTY APN 3052-016-017 W.S.M. 34-63;66 (Re-issued)

Dear Antelope Valley Watermaster:

This letter replaces the serviceability letter dated August 11, 2022, after additional information was provided on the parcel. The above-mentioned parcel is located within the service boundaries of the Palmdale Water District (District) and the District's Palmdale Ditch transverses the parcel and lies at the lowest elevation of the parcel. The District will require the Palmdale Ditch to be enclosed so that the ditch is not negatively impacted by water runoff from the parcel.



There is infrastructure located within proximity of the abovementioned parcel; however, the parcel lies at a higher elevation than can be served by the District's existing system. Improvements to the District's system would be necessary to serve the parcel. Therefore, the owner may elect to either construct the necessary water system improvements so the District can serve the parcel or seek approval through the Antelope Valley Watermaster for the construction of a private well to serve this parcel. This letter shall be valid for one year from the date the letter was issued.

Please feel free to contact me at (661) 456-1020 if you have any questions.

Very truly yours

SCOTT ROGERS, // Engineering Manager SR/jv December 12, 2022

I. INTRODUCTION

A. LOCATION OF PROPERTY

The 125-acre Project is a Farming and Farmworker Housing Development Community that is located northeast of the intersection of Barrel Springs Road and 40th Street East, just south of the City of Palmdale, CA consisting of APN's 3052-16-017 & 010, and 3052-026-050. An additional 40-acres (APN 3052-026-051) is located just east of the site will be developed as a solar farm to support the site to the west.

B. PURPOSE AND SCOPE

The purpose of this analysis is to anticipate the actual water demand upon the existing aquifer considering most of the water pumped will be infiltrated back into the aquifer on-site.

C. PROJECT DESCRIPTION

The Project Development Plan is designed as a "Self-Sustainable Living Community". The Project has been designed to create a micro-living-environment that caters to almost all the needs of its future farmworker community without placing additional burdens on the neighboring resources as it embraces a minimal-carbon footprint lifestyle that can be described in the following terms:

- 1. Farming Irrigation and Operations
- 2. 144 custom designed "farmworker-optimized" affordable dwelling Units and associated structures for services as follows
 - A Caretaker residence.
 - A Multi-Purpose Center
 - A Dining Hall with serving kitchen.
 - A Produce Stand-Market
 - An Equipment Storage Barn
 - A Detention Basin/Park

The Project will be used as agricultural land including grazing, crops, orchards, and small animal husbandry. The County has advised the Project is Statutorily exempt from the California Environmental Quality Act ("CEQA") because the Project will be reviewed via Ministerial Site Plan Review and Administrative Housing Permit.

As there are no existing sewer, water, or natural gas services currently serving the subject property and the Project will generate and provide its own utilities from entirely within the Project's property boundaries, except for LA County Sheriff and Fire services. As such the Project will meet 2040 water and sewer allowances by providing its own reclaimed system that recharges associated underlying aquifer.



D. WATER AND SEWER SERVING THE PROJECT

The Project Site is currently vacant and is consistent with the County General Plan and Zoning with a RL2-Rural Land Use Designation and an A-1-2 Light Agricultural Zone respectively for the farmworker housing and community center and includes a request for the accessory uses listed above.

II. ESTIMATED WATER CONSUMPTION GENERATED BY THE PROJECT

A. DOMESTIC DEMAND:

Per California Assembly Bill 1668 dated May 31, 2018, the per capita limit for water is 55 gpd. Figuring that the Project will house 144 Farm Workers translates to (144*55) 7,920 gallons per unit per day. In addition, the peripheral support facilities will in general reduce personal uses, so their demand is limited to foodservices. Considering that In the U.S., we use only 10% of our overall water consumption for drinking and cooking (Columbia Climate School "From Wastewater to Drinking Water" by Renee Cho April 4,2011), the rest is flushed down the toilet or drain. Thus, we expect this additional consumption to be 10% of the daily demand.

For the purposes of this Study, the Project will have a farmworker component demand of (7,920*1.1=) 8,712 gpd which is 9.8 afy (acre feet per year).

B. FIRE FLOW PROTECTION SYSTEM DEMAND:

To ensure the Fire Protection System and infrastructure will meet the requirement set forth by the Apple Valley Fire Protection District. The infrastructure will need to include the following:

- All permanent structures will have internal sprinkler systems per California sprinkler system codes
- Hydrants will be located per the requirements of the LA county Fire Protection district.
- Supply piping will be sized to adequately handle the water flow requirements (volume and pressure) to every hydrant.

The fire flow rate requirement established by LA County Fire Protection district from similar Projects is 2,250 gpm. for a two (2) hour duration. This combination of flow rate and duration consumes a water volume of 270,000 gallons.

C. EVAPOTRANSPIRATION DEMAND:

Evapotranspiration is the process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.

The Project is in the area known as the California High Desert Valleys and is classified by the California Irrigation Management Information System (CIMIS) as ETo Zone 17 which has the second highest evapotranspiration rates in the State. Monthly average rates range from 1.86 to 9.92 inches/month for a yearly rate of 66.5 inches.

Landscape water demands:

Given the following:

Each DU will be xeriscape with no with consumption =	0 square-feet
40.1-acreas of usable farmland =	1,803,384 sf
Maximum Applied Water Allowance Plant Factor =	0.20
Eto =	66.5 in/yr
Irrigation Efficiency =	0.81

Then the Estimated Water Used (Gallons per Year) is:

(Eto/12) x (PLANT FACTOR) x (HYDROZONE SQ. FT.) x (.62)/ IRRIGATION EFFICIENCY = (66.5/12) x 0.20 x 1,803,384 x 0.62/0.81 = 1,529,908 cfy = 35.12 afy

Considering that on average the Project irrigation demand is 2.7-afy per acre or (40.1*3=) 108 acrefeet per year or 31,355 gallons per day.

D. MITIGATION MEASURES TO CONSIDER:

The Project's water demand requirements can be reduced by the following innovative design features:

- Xeriscape (waterwise landscaping): the process of landscaping, or gardening, that reduces or eliminates the need for irrigation. It is promoted in regions that do not have accessible, plentiful, or reliable supplies of fresh water. Xeriscapes can reduce water consumption by 60% or more compared to regular lawn landscapes.
- Infusing Aquifer Through Hydromodification/Infiltration: The LA County Low Impact Development Watershed Water Quality Management Plan, has become standard practice for all development which requires infiltration of 2-year (85th percental) storm flows.
- 3. Water Efficient Toilets and Faucets. a
- 4. Reclaimed Water from the proposed Packaged Wastewater Treatment Plant: Use of recycled water in lieu of potable water is encouraged by the State Water Board as described below:
 - a. The State Water Board's Strategic Plan Update 2008-2012 includes a priority to increase sustainable local water supplies available for meeting existing and future beneficial uses by 1,725,000 acre-feet per year (afy) in excess of 2002 levels by 2015.
 - b. The State Water Board's Policy for Water Quality Control for Recycled Water states the following goals (in part): 1) Increase the use of recycled water over the 2002 level by at least 1 million afy by 2020 and by at least 2 million afy by 2030. 2) Increase the amount of water conserved in urban and industrial uses by 20 percent compared to 2007. 3) Substitute as much recycled water for potable water as possible by 2030



E. FINDINGS AND CONCLUSIONS

Estimated Well Flow Rate: Per the Antelope Valley water Master Groundwater Elevations Map, the groundwater elevation below this Project is 2575. Considering the proposed well site is at an elevation of 2970 then the ground water would be 415 feet down from natural grade. Information obtained by local well driller suggests that substantial water is around 400-feet and can produce 25 to 125 gpm depending on well and pump size.

Historic water reports by Everett L. Clark, Consulting Civil Engineer Dated May 5, 1952 and Tracy Bousman, Consulting Civil Engineer Dated June 3, 1969 show that a well capable of producing 100 gpm is probable below 300-feet.

To meet the demand of (31,355+8,712=)40,067 gpd a pump would be required to run at (40067/24/60) 27.82 gpm constantly which falls in lower the range listed above.

Affects of the San Andreus Fault and the Aqueduct: The historic water reports by Everett L. Clark, Consulting Civil Engineer Dated May 5, 1952 and Tracy Bousman, Consulting Civil Engineer Dated June 3, 1969 states that the "fault acts as partial barriers to northward movement of groundwater" that leads to the existence of high ground water that support localized grasslands. Their reports also claim that "Water levels and geology indicate that several hundred feet of material below the ranch may be saturated and provide a considerable storage volume for long term use." Drilling logs show the upper 26-feet is silty sand comprising of 65% sand and 35% silt before hitting clay lenses at 26, 28, 31, and 36-feet that support the perched higher ground water in this area. Drilling depths at 400-feet and below would support water draw down in a lower aquifer that most likely would have little affect on the upper aquifer.

Tank Storage Capacity: To meet the required 3-day domestic use storage capacity $(8,712 \times 3 = 26,136 \text{ gallons})$ plus the fire flow requirements (270,000 gal), a 300,000-gal water tank is required that could be achieved by using 2 tanks 40ft in dia., and 16 ft in height to achieve a total storage volume of 300,656 gallons.

Water Demand Net Effect: As an IRS 501(c)(12) public benefit corporation managing its own water supply and acting as a water company, the net effect this Project will have on the existing water supply can be attributed by the overall losses in the system. Considering that In the U.S., we use only 10% of our overall water consumption for drinking and cooking (Columbia Climate School "From Wastewater to Drinking Water" by Renee Cho April 4,2011), the rest is flush down the toilet or drain.

This Project will then take the remaining 90% or (8,712 gpd*0.9) 7,840 gpd and put back into the underground aquifer by means of infiltration through septic leach field distribution. Thus, the net water loses in the system will be the consumption for drinking and cooking along with the evaporation and evapotranspiration loses after infiltrating the excess water back into the aquifer.

The net water consumption would then be as follows:

Drinking and cooking (8,712-7,840 gpd=)	0.98 afy
Farming Evapotranspiration =	35.12afy
Total drawdown on the Aquifer=	36.1 afy

Conclusions: Although the Project when fully built out will pump (108+9.8=)118 afy of water from the underlying aquifer, our <u>true drawdown demand on the aquifer has been shown to be 36.1 afy</u> considering the remaining 81.9 afy will be infiltrated back into the underlying aquifer.

In addition, the Project will be phased during construction of housing and related farming activities which will require less water at its inception. Considering a 5-year buildout, our expectations are we will only need a portion of the water the first year and as the in-situ soils become organic over time, our irrigation demands should drop as-well.

Thus, the following is our expectations of water consumption:

		Purchased Water Demand	Drawdown on Aquife
•	Year-1	40-50 afy	< 15 afy
•	Year-2	60-70 afy	< 21 afy
•	Year-3	80-95 afy	< 29 afy
•	Year-4	95-110 afy	< 33 afy
•	Year-5	100-120 afy	< 36.1 afy
•	Future g	goal 90 -100 afy	< 30 afy

As a sustainable community, it is our goal to conserve resources as technology advances. In addition, it is our hope to close escrow on the property with the knowledge that these water resources can be available to us.

Unfortunately, the 2nd postponement of the Watermasters Board meeting has put the Project in jeopardy since significant non-refundable deposits where previously negotiated based on a December 6th Watermasters Board meeting decision. A determination of what water demands the Project has access to is paramount in the decision to close escrow. Considering that a non-refundable \$50,000-dollar deposit is required on December 7th and another \$100,000-dollars on January 26th, it is crucial to known as soon as possible that or requested water demands are reasonable and what limitations may be imposed in the future as soon as possible.

Considering that the actual Project drawdown on the aquifer is 36.1 afy, the effect on the 110,000 afy "Annual Safe Yield" established by the Court is only a miniscule fraction being 0.0328% of the total Annual Safe Yield, and thus, our demand on the aquifer will have essentially no impact on neighboring properties.

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Given the foregoing, we respectfully request that our application for water rights to drawdown 36.1 afy (purchase 120-afy) be reinstated to the December Watermaster Board Agenda as time is of the essence relative to our land acquisition."

Cordially, Red Brick Solution, LLC

David W Larson, PE Principal

