

# MEMORANDUM



**Date:** August 12, 2020

**To:** Janice P Tannehill  
4545 Vineyard Canyon Rd  
San Miguel, CA 93451

**From:** Shannon Jessica, PE  
Wallace Group  
612 Clarion Ct.  
San Luis Obispo, CA 93401

**Subject:** Water Use Evaluation for Cannabis Cultivation (DRC2018-00235)

*\*\*The following memorandum is an update to the original report, dated April 14, 2019, to include response to plan check comments from San Luis County on May 20, 2020.\*\**

Wallace Group has been retained to estimate the water demand for a proposed cannabis cultivation operation in San Luis Obispo County. The proposed cultivation, located at APN: 027-420-001 in San Miguel includes the following:

- Ancillary Nursery/Outdoor (Hoop Houses) – 0.75 acres canopy
- Outdoor cultivation in hoop houses – 3 acres canopy & gross

The recently adopted Cannabis Land Use Ordinance for San Luis Obispo County requires that applicants submit a detailed water management plan as part of the application package. The water management plan shall include proposed water supply, proposed conservation measures, and any water offset requirements. The following memorandum has been developed to outline the proposed water demand and associated offset for the proposed development.

While published water use values have not yet been consistently established in the industry, the Central Coast Regional Water Quality Control Board (RWQCB) cannabis development team uses an estimate of 0.03 gal/sf canopy/day for outdoor cannabis plants and an application rate of 0.1 gallons per square foot of canopy for indoor grow operations. These values are derived from the *Santa Cruz County Draft Environmental Impact Report (EIR) for the Commercial Cannabis Cultivation and Manufacturing Regulations and Licensing Program (August 2017)*<sup>1</sup>. In section 3.0, pages 3-16 and 3-17 of the EIR, it is described that the water application rates used are derived from a study in Humboldt County by Milewide Nursery<sup>2</sup>. The Milewide Nursery study includes a breakdown of the per yield water use. The study based their results on a 90-day cycle and estimate that two growing cycles could be completed in

<sup>1</sup>Santa Cruz County Draft Environmental Impact Report (EIR) for the Commercial Cannabis Cultivation and Manufacturing Regulations and Licensing Program (August 2017)  
[http://www.sccoplanning.com/PlanningHome/Environmental/CEQAInitialStudiesEIRs/CannabisRegulationsEnvironmentalReview/CannabisEnvironmentalImpactReport\(EIR\).aspx](http://www.sccoplanning.com/PlanningHome/Environmental/CEQAInitialStudiesEIRs/CannabisRegulationsEnvironmentalReview/CannabisEnvironmentalImpactReport(EIR).aspx)

<sup>2</sup> <https://humboldtgrower.wordpress.com/2015/05/07/may-2015-humboldt-county-cannabis-water-use-study/>

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TRANSPORTATION  
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WATER RESOURCES

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A California Corporation

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SAN LUIS OBISPO  
CALIFORNIA 93401

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a year for outdoor cultivation, and an estimated 270 days growing season, or 3 cycles per year, for indoor cultivation.

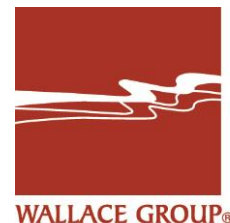
While nursery plants are not specifically identified in either of the reports referenced, previous water demand analysis have taken the conservative stance that nursery irrigation will be more constant due to the lack of a “harvest” season. Therefore, for purposes of this report the indoor water demand value has been attributed to the nursery plants. Once irrigation operations commence, it is recommended that water use values be recorded and tracked monthly to monitor actual water use. This project will not be utilizing Reverse Osmosis (RO) treatment for irrigation water, thereby reducing the overall water demand and need for brine waste disposal.

The project sits within the Paso Robles groundwater basin. Because groundwater will be used for irrigation of the cannabis crops, a 1:1 water offset will be required for the proposed development. The property has historically grown alfalfa, which has a standard water demand of 4.5 acre-feet per year (AFY) according to the San Luis Obispo County off-site Agricultural Offset Clearance (PRGWB), referenced below in Table 1. The property owner will be removing alfalfa to accommodate the proposed cannabis cultivation.

**Table 1. San Luis Obispo County Off-Site Agricultural Offset Clearance Existing Crop-Specific Applied Water by Crop Type**

Crop Group	Applied Water (AF/Ac/Yr)
Alfalfa	4.5
Citrus	2.3
Deciduous	3.5
Strawberries	2.3 <sup>(1)</sup>
Nursery	2.5
Pasture	4.8
Vegetables	1.9
Vineyard	1.25 <sup>(1)</sup>
1. Information obtained from RCD Program, UCCE, UC Davis (Strawberries 2011 data)  Source: Table 9 of the Agricultural Water Offset Program, Paso Robles Groundwater Basin, October 2014.	

Table 2 outlines the proposed annual water demand for this project and Table 3 outlines the proposed monthly water use. Local evapotranspiration data was used to extrapolate the annual outdoor water use to monthly estimates. As shown in these tables, approximately 1.09 acres of alfalfa, irrigated at 4.5 AFY/acre, will balance the proposed cannabis cultivation demand. Attachment B includes the proposed area of



existing irrigated alfalfa fields that will be removed from service as offset for the proposed cannabis cultivation water demand. The area of irrigated alfalfa that will be removed from service is 40 feet wide by 1220 feet long (1.12 acres) and is larger than the required removal of 1.09 acres. The figure and images provided in Attachment B show the identified area on a scaled map, along with historical images of the area from years 2009 to 2019.

<b>Table 2: Estimated Annual Water Demand</b>			
<b>Use</b>	<b>Rate</b>	<b>Gross Demand (gallons/ year)</b>	<b>Gross Demand (AFY)</b>
Ancillary Nursery/Outdoor Hoop House: 0.75 Acres	32,670 sf canopy x 0.1 gal/sf/day x 270 days	882,090	2.71
Outdoor Cultivation: Outdoor Hoop Houses 3 Acres	130,680 sf canopy x 0.03 gal/sf/day x 180 days	705,672	2.17
Remove 1.12 Acres existing irrigated Alfalfa	1.12 Acres x 4.5 acre-feet/year	-1,642,289	-5.04
Net Water Demand Available			0.16

<b>Table 3. Estimated Monthly Water Demand for Cannabis Cultivation &amp; Nursery</b>					
<b>Month</b>	<b>ET<sub>o</sub> (in)**</b>	<b>Outdoor ET<sub>o</sub> (%)</b>	<b>Outdoor Cultivation Water Use/Month (AF)</b>	<b>Outdoor Nursery Water Use/Month (AF)</b>	<b>Total Water Use/Month (AF)</b>
October	3.93	-	-	0.23	0.23
November	2.44	-	-	0.23	0.23
December	1.63	-	-	0.23	0.23
January	1.44	-	-	0.23	0.23
February	1.78	-	-	0.23	0.23
March	2.73	-	-	0.23	0.23
April	4.75	13.1%	0.28	0.23	0.51



May	5.54	15.3%	0.33	0.23	0.56
June	6.86	18.9%	0.41	0.23	0.64
July	7.41	20.4%	0.44	0.23	0.67
August	6.54	18.0%	0.39	0.23	0.62
September	5.18	14.3%	0.31	0.23	0.53
<b>Total</b>	<b>50.23</b>	<b>100%</b>	<b>2.17</b>	<b>2.71</b>	<b>4.87</b>

\*\*Evaporation data from Atascadero weather station - CIMIS station #163 (March 2018 to February 2019)

### **California Department of Fish and Wildlife**

Because the project will be using an existing groundwater well for water supply, the owner will not need to obtain a General Agreement or Lake or Streambed Alteration (LSA) permit through California Department of Fish and Wildlife (CDFW). However, annual licenses for cannabis cultivation issued by California Department of Food and Agriculture (CDFA) will require the owner to demonstrate by written verification from CDFW that an LSA Agreement is not required. This is accomplished by submitting a self-certification application on the CDFW webpage and obtaining written correspondence from CDFW verifying that the LSA is not required for this project.

### **Regional Water Quality Control Board**

Some cultivation activities can generate wastewater such as hydroponic solutions, irrigation tail water, and sanitation activities, etc. Typically, wastewater will be discharged either into a community collection system or to an onsite wastewater treatment system (septic tank/leachfield). These activities will be monitored through the Regional Water Quality Control Board for on-site disposal systems.

Regardless of the process wastewater discharge strategy, the RWQCB will require that outdoor cultivation operations enroll in the General Waste Discharge Requirements for Waste Associated with Cannabis Cultivation Activities (Cannabis General Order). The Cannabis Policy and General Order apply to commercial cannabis cultivation activities and enrollment in the General Order will be required for all commercial cultivation activities. Based on the proposed cultivation area and the characteristics of the property, it is likely this project will be categorized as a Tier 2, Low Risk according to RWQCB regulations. The tier determination will need to be finalized by the RWQCB once an application has been submitted and reviewed by Board staff. Tier 2 dischargers are required to submit a technical report to the RWQCB, due March 1, annually.

Coverage under the General Order is obtained by applying through the online application portal on the Regional Water Quality Control Board website. After the application is submitted and the application fee paid, the RWQCB will issue a Notice of Applicability (NOA). The NOA can be presented to the CDFA to obtain a commercial cannabis cultivation license. The application portal is located at:

[www.waterboards.ca.gov/cannabis](http://www.waterboards.ca.gov/cannabis).

**Attachment A – Well Log**





STATE OF CALIFORNIA  
**WELL COMPLETION REPORT**  
Refer to Instruction Pamphlet

Owner's Well No. CAGLIERO T/H 2 No. **E0257359**

Date Work Began 7/12/2017, Ended 7/14/2017

Local Permit Agency SAN LUIS OBISPO

Permit No. 2017-128

Permit Date 7/5/2017

DWR USE ONLY -- DO NOT FILL IN

STATE WELL NO./STATION NO.			
LATITUDE		LONGITUDE	
APN/TRS/OTHER			

**GEOLOGIC LOG**

ORIENTATION (✓)		DRILLING METHOD		FLUID		DESCRIPTION <i>Describe material, grain, size, color, etc.</i>
VERTICAL _____ HORIZONTAL _____ ANGLE _____ (SPECIFY)		ROTARY				
DEPTH FROM SURFACE						
Ft.	to	Ft.				
0	10					TOP SOIL
10	100					2"-6" ROCK
100	120					GRAVEL
120	200					BROWN CLAY
200	250					SAND W/GRAVEL
250	270					SANDY CLAY
270	300					GRAVEL
300	320					SANDY CLAY
320	350					SMALL GRAVEL
350	400					SANDY CLAY
400	430					BROWN CLAY
430	450					SANDY BROWN CLAY
450	480					BROWN CLAY

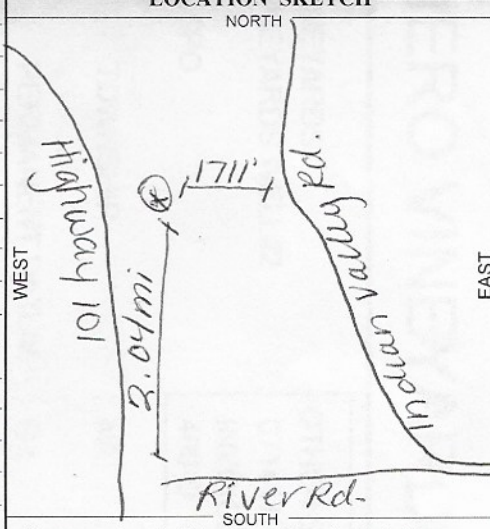
**WELL OWNER**

Name TANNEHILL RANCH  
Mailing Address PO BOX 223  
SAN MIGUEL CA 93451  
CITY STATE ZIP

**WELL LOCATION**

Address INDIAN VALLEY RD/RIVER RD  
City CA  
County SAN LUIS OBISPO  
APN Book 027 Page 420 Parcel 001  
Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_  
Latitude 35 46 805 N 120 42 599 W  
DEG. MIN. SEC. DEG. MIN. SEC.

**LOCATION SKETCH**



- ACTIVITY (✓)
- NEW WELL
  - MODIFICATION/REPAIR
    - Deepen
    - Other (Specify) \_\_\_\_\_
  - DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
- PLANNED USES (✓)
- WATER SUPPLY
- Domestic
  - Public Irrigation
  - Industrial
- MONITORING \_\_\_\_\_
- TEST WELL \_\_\_\_\_
- CATHODIC PROTECTION \_\_\_\_\_
- HEAT EXCHANGE \_\_\_\_\_
- DIRECT PUSH \_\_\_\_\_
- INJECTION \_\_\_\_\_
- VAPOR EXTRACTION \_\_\_\_\_
- SPARGING \_\_\_\_\_
- REMEDATION \_\_\_\_\_
- OTHER (SPECIFY)  **TEST HOLE**

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

**WATER LEVEL & YIELD OF COMPLETED WELL**

DEPTH TO FIRST WATER \_\_\_\_\_ (Ft.) BELOW SURFACE  
DEPTH OF STATIC WATER LEVEL \_\_\_\_\_ (Ft.) & DATE MEASURED \_\_\_\_\_  
ESTIMATED YIELD \* \_\_\_\_\_ (GPM) & TEST TYPE \_\_\_\_\_  
TEST LENGTH \_\_\_\_\_ (Hrs.) TOTAL DRAWDOWN \_\_\_\_\_ (Ft.)  
*May not be representative of a well's long-term yield.*

TOTAL DEPTH OF BORING 480 (Feet)  
TOTAL DEPTH OF COMPLETED WELL \_\_\_\_\_ (Feet)

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)							
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
Ft.	to	Ft.	BLANK	SCREEN	CON. DUCTOR				
0	480	8"							

DEPTH FROM SURFACE	ANNULAR MATERIAL					
	TYPE					
Ft.	to	Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

- ATTACHMENTS (✓)
- Geologic Log
  - Well Construction Diagram
  - Geophysical Log(s)
  - Soil/Water Chemical Analysis
  - Other \_\_\_\_\_
- ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

**CERTIFICATION STATEMENT**

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME MYERS BROS. WELL DRILLING, INC.  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

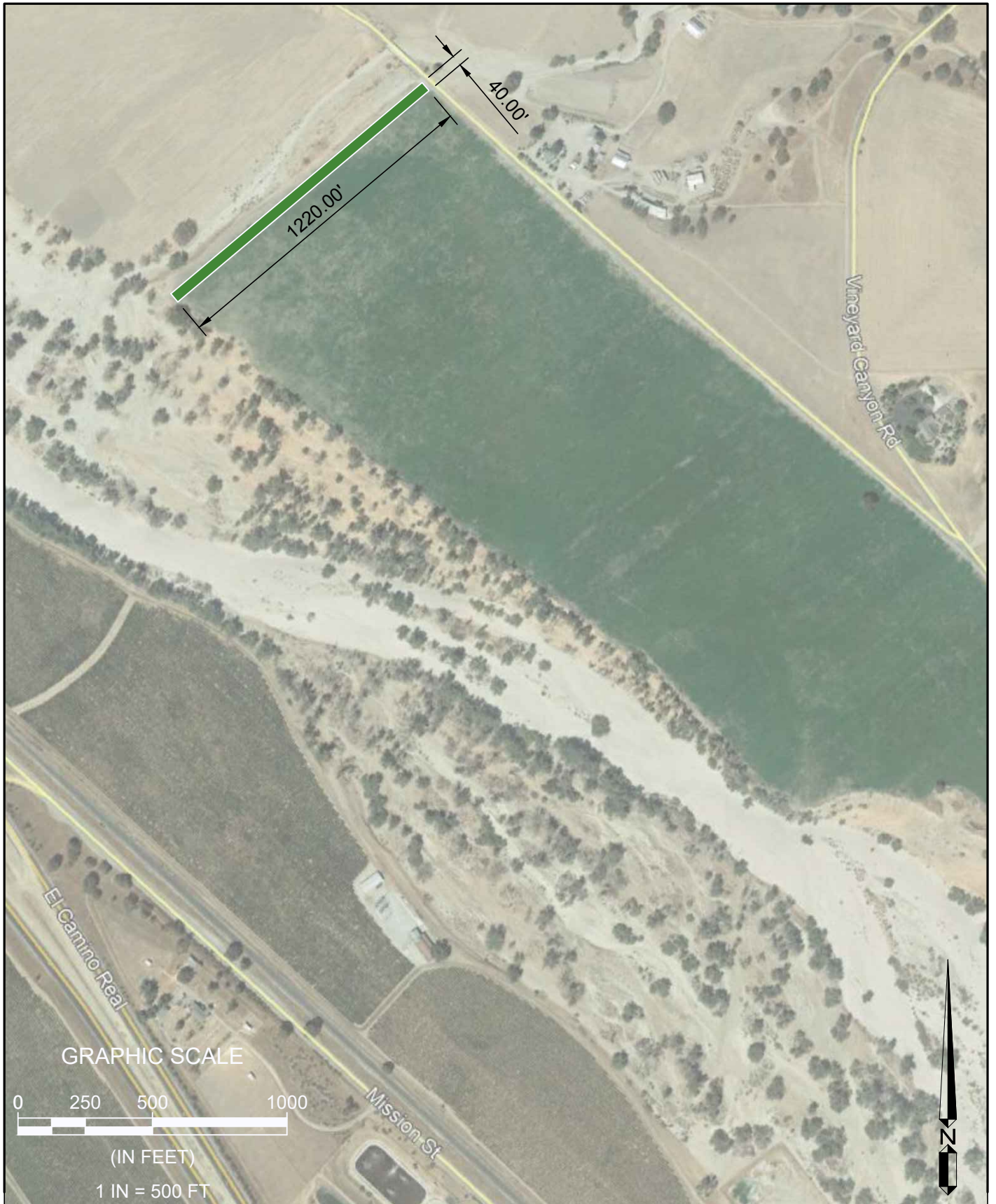
P.O. BOX 1283 HANFORD CA 93232  
ADDRESS CITY STATE ZIP

Signed Kimberly Dias 07/21/17 548214  
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

**Attachment B - Site Images**








 612 CLARION COURT  
 SAN LUIS OBISPO, CA 93401  
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 F 805 544-4294  
[www.wallacegroup.us](http://www.wallacegroup.us)

**TANNEHILL WATER DEMAND**  
**4545 VINEYARD CANYON,**  
**SAN MIGUEL, CA**  
**EXISTING IRRIGATED LANDS**

JOB No. :	314-009
DRAWING :	SITE
DRAWN BY :	SJ
DATE :	6-1-2020
SCALE :	1" = 500'



**APPLICANT:**  
 THOMAS ANDERSON  
 ANDERSONDUCE@GMAIL.COM  
 805-503-9923

**+/- 70 acres of irrigated alfalfa on subject property.**

**NO ADDRESS ASSIGNED  
 APN 027-420-010\*  
 178.4 ACRES**

**NO ADDRESS ASSIGNED  
 APN 027-420-001\*  
 76.5 ACRES**

**4994 INDIAN VALLEY RD.  
 APN 027-420-009\*  
 445.5 ACRES**



**example of 1.12 acres (40' x 1,220') of irrigated alfalfa to be retired for water off-set.**

**630 FEET ± TO PUBLIC RIGHT-OF-WAY**

**NO ADDRESS ASSIGNED  
 APN 027-420-008\*  
 52 ACRES**

**(E) RESIDENCE 3,500 FEET ± FROM PROPOSED PROJECT AREA**

**NO ADDRESS ASSIGNED  
 APN 027-011-027  
 324.5 ACRES**

**SEE L-2 FOR ENLARGEMENT**

**NO ADDRESS ASSIGNED  
 APN 027-420-002\*  
 75.5 ACRES**

**4725 VINEYARD CANYON RD.  
 APN 027-421-002  
 1,635 ACRES**

**2230 MISSION ST.  
 APN 027-011-037  
 7.85 ACRES**

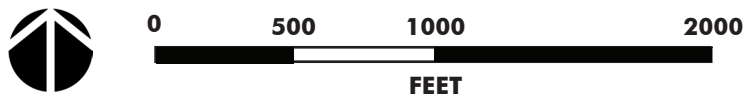
**NO ADDRESS ASSIGNED  
 APN 027-420-003\*  
 188 ACRES**

**4545 VINEYARD CANYON RD.  
 APN 027-420-007\*  
 104.5 ACRES**

**2250 MISSION ST.  
 APN 027-011-039  
 102.8 ACRES**

**KEYNOTE LEGEND**

- PARCEL BOUNDARIES
- PROPOSED PROJECT AREA
- PROPOSED PARKING AREA
- (E) D.G. ACCESS ROAD
- CLOSEST RESIDENCE TO PROPOSED SITE
- 1,000-FOOT BUFFER AROUND PROJECT AREA PROPERTY LINE
- APN UNDER COMMON OWNERSHIP - TANNEHILL RANCH LI, LLC







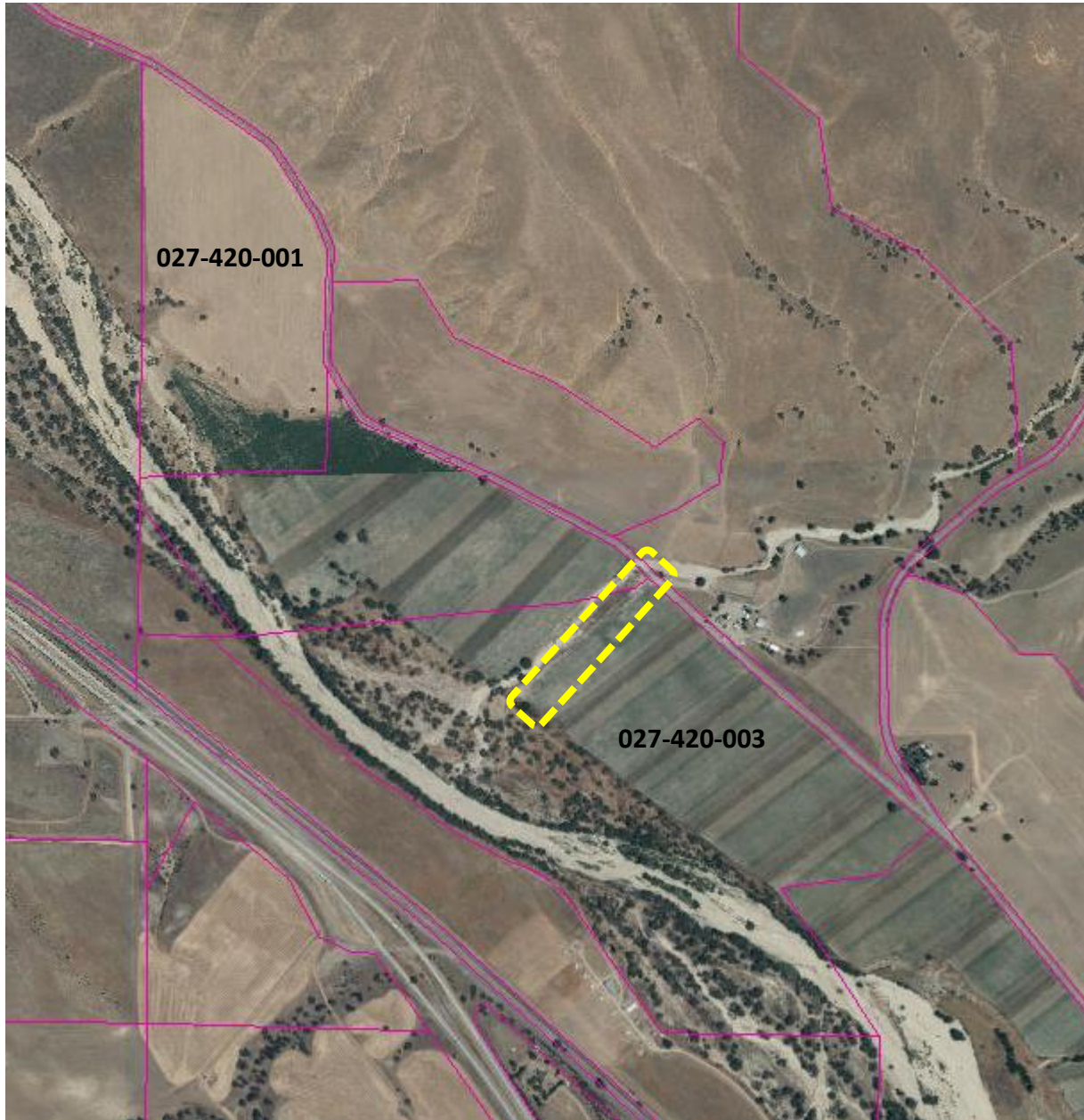
**PANKEY, PANKEY, ANDERSON & FLANNERY**  
**TANNEHILL-ANDERSON CULTIVATION MINOR USE PERMIT DRC2018-00235**  
San Miguel, CA  
July 2020

Historical aerial photographs documenting presence of irrigated alfalfa on proposed offset site. See “EXISTING IRRIGATED LANDS” exhibit (Wallace Group, 1 June 2020) for precise, scaled off-set location. Off-set parcel APN is 027-420-003. Cannabis cultivation Parcel is APN 027-420-001. Parcels are under common ownership.

**Google Earth 2009 with Offset Area (NTS)**

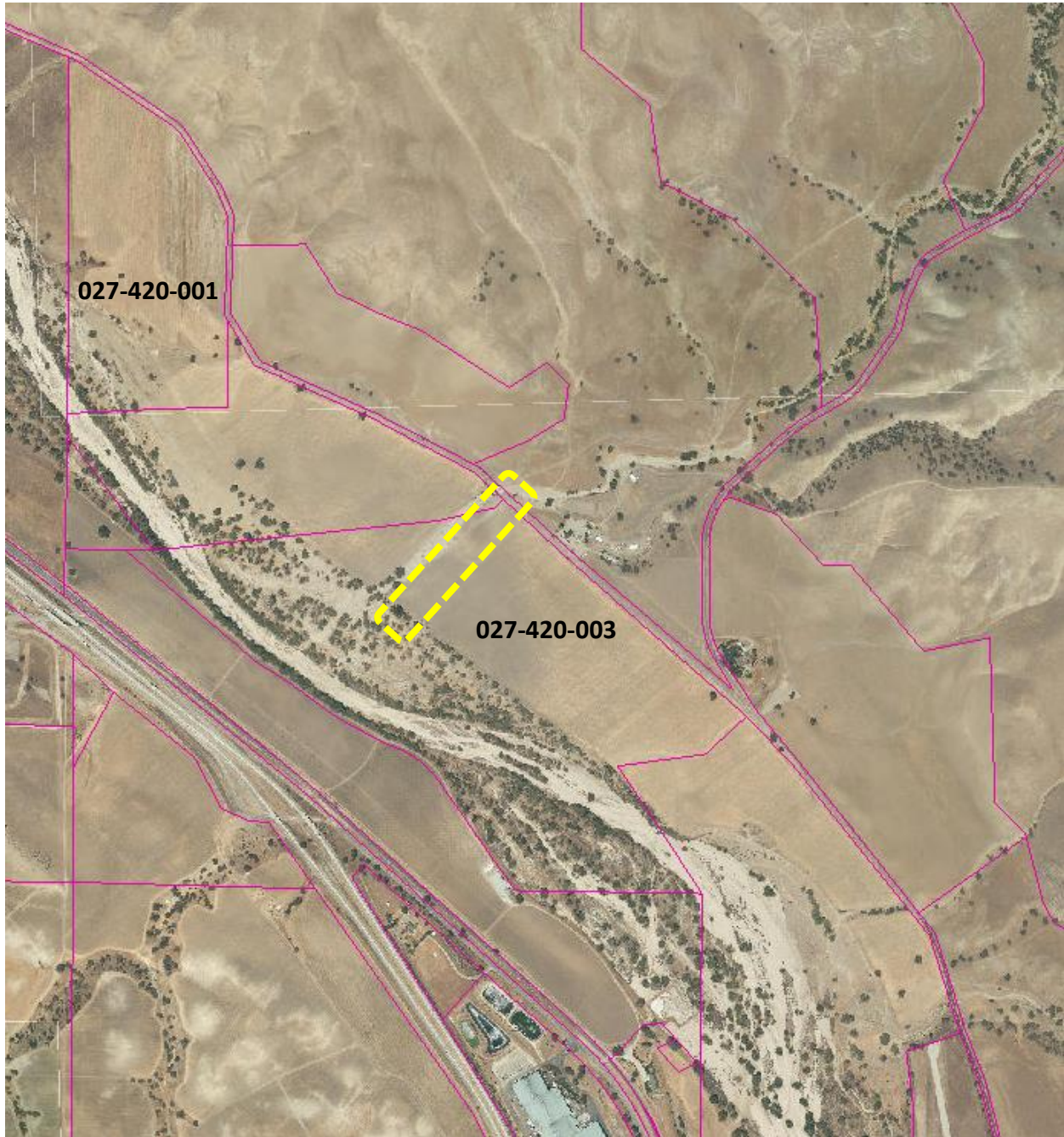


**County Permit View 2011 Aerial with Offset Area (NTS)**





### County Permit View 2014 Aerial with Offset Area (NTS)





### Planet.com 2016 Aerial with Offset Area (NTS)

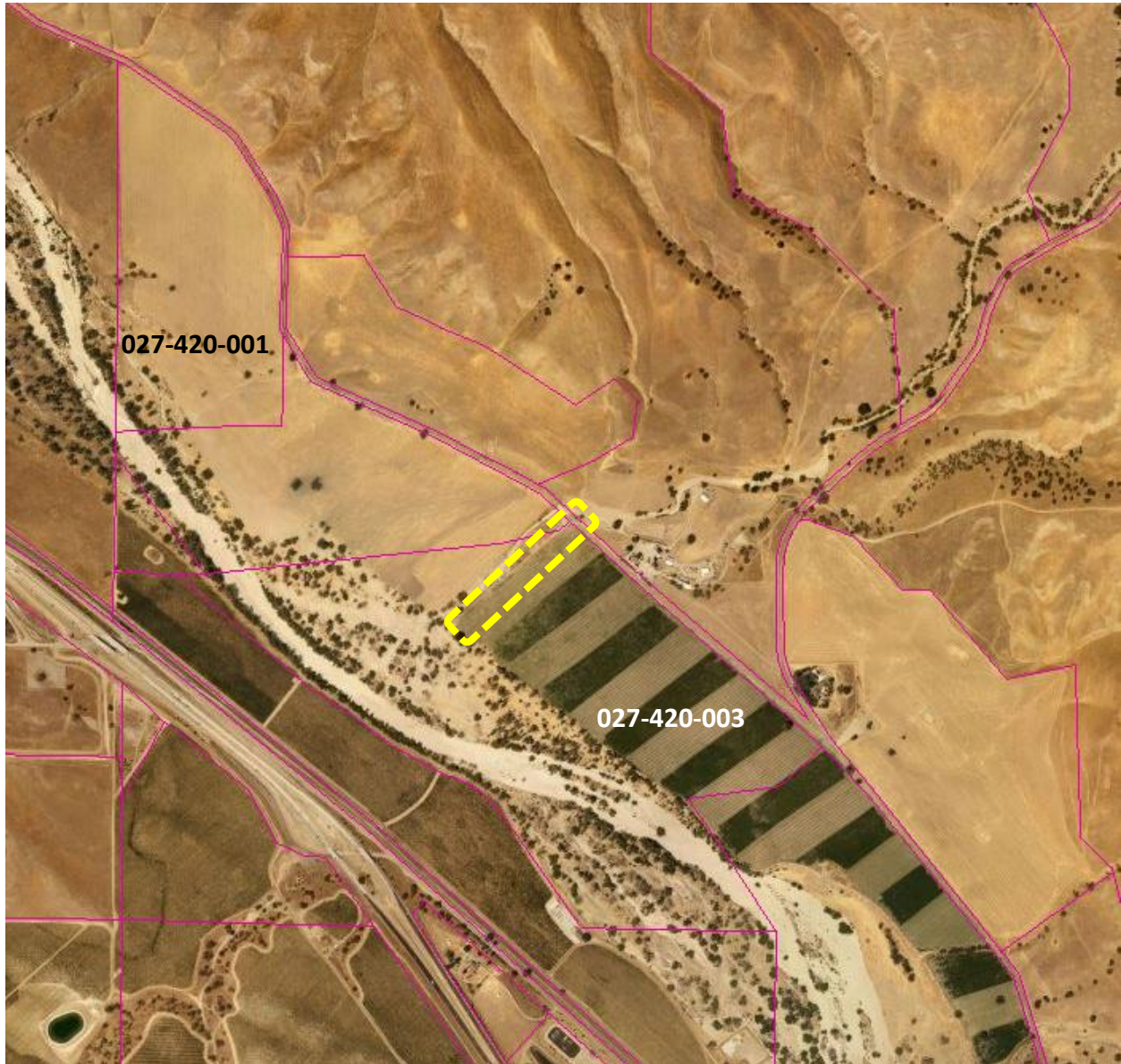


**Google Earth 2017 with Offset Area (NTS)**





**County Permit View 2018 Aerial with Offset Area (NTS)**





**Google Earth 2019 with Offset Area (NTS)**

