PJC & Associates, Inc.
Consulting Engineers & Geologists

August 29, 2017 Job No. S1411.01

Applicant: Joey Ereñeta, Terra Luna Farms, LLC

Subject: Preliminary Hydrogeologic Assessment
Proposed Cannabis Cultivation
12201 Highway 12
APN: 053-130-009 & 053-100-015
Glen Ellen, California

PJC & Associates (PJC) is pleased to submit this letter presenting our preliminary hydrogeologic assessment for the proposed cannabis cultivation located at 12201 Highway 12 in Glen Ellen, California. The preliminary assessment is based on our review of the available hydrogeologic literature and limited well log data from the area.

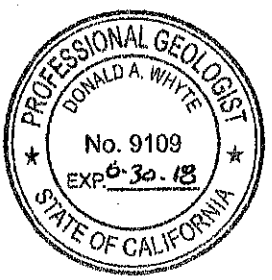
It is our understanding that the project will consist of developing three separate parcels for cannabis cultivation. We anticipate that two of the three parcels will have a one acre, outdoor cannabis development. The cannabis development on the third parcel will consist of utilizing a combination of green houses and outdoor cultivation for a total of approximately one acre of cannabis development. The cannabis operation for the three parcels will be serviced by a shared, single groundwater well.

Information regarding groundwater usage estimates for the project was provided by the client, and was incorporated into our water budget analysis for groundwater recharge. Based on our water budget analysis and highly conservative estimates on maximum potential water usage in the surrounding cumulative impact area, the proposed groundwater demand in the area is significantly less than the groundwater recharge. However, due to the lack of groundwater well completion reports available to PJC at this current time, we are unable to adequately perform a thorough analysis of the underlying aquifer system, including aquifer thickness, storativity, transmissivity, specific capacities and well yields in the area, and the potential for drawdown interference on neighboring wells. PJC is currently awaiting well completion reports from the California Department of Water Resources (DWR) to complete our analysis and report. Typically, well completion reports can be provided within two weeks from the initial request. According to the DWR, well log requests are now taking an indeterminate amount of time. Therefore, our groundwater availability report will be provided shortly after we receive the required well completion reports necessary to perform our analysis.

We trust that this is the information that you require at this time. If you have any questions concerning the content of this letter, please call.

Sincerely,
PJC & Associates

Donald A. Whyte
Professional Geologist
PG 9109, California



PJC & Associates, Inc.
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October 27, 2017 S1411.03
Revised: June 28, 2019

"Parcel 1"
APN:053-130-009 & 053-100-015
12201 Highway 12
Glen Ellen, CA 95442

Subject: **Revised Groundwater Availability Evaluation**
Proposed 3-Lot Cannabis Development
Trinity Road & Sonoma Highway
APN: 053-110-076, 053-110-001 & 053-130-009
Glen Ellen, California

1. INTRODUCTION

PJC & Associates, Inc. (PJC) is pleased to submit this report which presents the results of our revised hydrogeologic investigation to determine groundwater availability for the proposed 3-lot cannabis development located at the northeast corner of Sonoma Highway and Trinity Road in Glen Ellen, California. The approximate location of the site is shown on the Site Location Map, Plate 1. Based on the information provided by you, and information provided by Hogan Land Services, it is our understanding that the project will consist of developing three separate parcels for cannabis cultivation. We anticipate that two of the three parcels will have a one acre, outdoor cannabis development. The cannabis development on the third parcel will consist of a mixed-light, combination of green houses and outdoor development for a total of one acre of development. It is our understanding that the cannabis operation will be serviced by one, existing groundwater well.

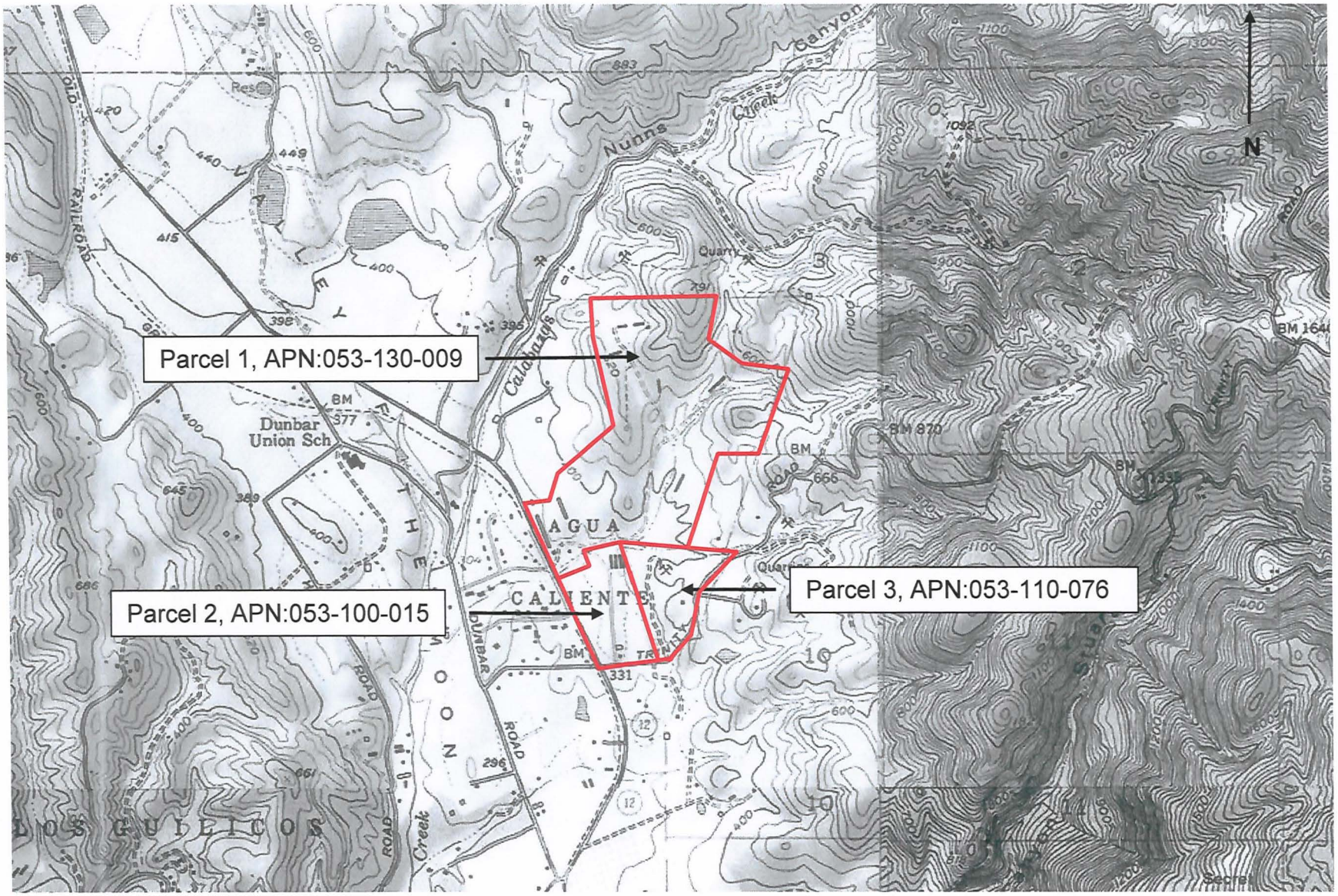
2. SCOPE OF SERVICES

Our services were completed in accordance with our proposal dated May 18, 2017. The scope of our investigation included the following tasks:

a. Research to determine the locations, depths and production of wells and springs within the Cumulative Impact Area (CIA).

b. Review of data from the Department of Water Resources concerning project wells and wells near to the project site.

c. Research and analyses of groundwater hydrogeology of the site and vicinity.



SCALE 1:24,000

Reference: USGS Kenwood, California Quadrangle, 1980
Reference: USGS Rutherford, California Quadrangle, 1973
Reference: USGS Glen Ellen, California Quadrangle, 1980
Reference: USGS Sonoma, California Quadrangle, 1980

SITE LOCATION MAP
PROPOSED 3-LOT CANNABIS DEVELOPMENT
TRINITY ROAD & SONOMA HIGHWAY
APN: 053-110-076, 053-110-001 & 053-130-009
GLEN ELLEN. CALIFORNIA

Proj. No: S1411.03
Date: 05/19
App'd By: PJC

PJC & Associates, Inc.
Consulting Engineers & Geologists

PLATE 1

d. Conversations will local well companies and residents.

e. Addressing comments provided by the Sonoma County PRMD, dated March 18, 2019, in regards to the original Groundwater Availability Report for the project prepared by PJC & Associates, Inc., dated October 27, 2017.

f. Preparation of this report with our findings and conclusions regarding the potential hydrogeologic impacts of the project.

3. SITE CONDITIONS

a. General. For the purposes of this report, the subject property consists of three parcels. APN 053-130-009 (parcel 1) consists of 26.15 acres and is proposed to develop one acre of outdoor cannabis. However, it is our understanding that a lot line adjustment is proposed for parcel 1 which will incorporate a significant amount of acreage from the neighboring lot (APN 053-100-015) which will result in an increase in size of parcel 1 to approximately 160 acres. APN 053-110-001 (parcel 2) consists of 19.67 acres and proposed to develop minor amounts of outdoor cannabis, as well as mixed light, indoor cannabis utilizing several greenhouses for a total of one acre. However, an additional lot line adjustment is proposed for parcel 2 which will incorporate acreage from parcel 1, resulting in an increase in size of parcel 2 to 29.2 acres. APN 053-110-076 (parcel 3) consists of 25.16 acres and proposed to develop one acre of outdoor cannabis.

The subject property is located in a heavily forested, rural residential and agricultural area of northeast Glen Ellen. The three, adjacently located parcels are generally situated at the northeast corner of the intersection of Sonoma Highway and Trinity Road. The subject property is generally bounded by large parcels developed in vineyards, single family residences and the Nuns Canyon Rock Quarry to the north, single family residences on large parcels and undeveloped land to the east, Trinity Road and single family residences on moderately sized lots to the south, and Highway 12 and the Trinity Oaks residential subdivision to the west. Additionally, Weise Road transects parcel 1 from east to west. At the time of our investigation, each parcel was occupied by an existing single family residence, with granny units on parcel 1 and parcel 2. Additionally, there are also several large agricultural buildings utilized for cattle and chickens, vegetable gardens, and an existing rock quarry. The remaining portions of the property were undeveloped and covered in native grasses and moderately forested areas. At the time of our investigation, there were six existing groundwater wells located on the subject property. The well locations are shown on the Study Area Map, Plate 2.

b. Topography. The subject property, situated near the northern end of the Valley of the Moon, extends partially into the valley floor and partially into

the west facing, hilly terrain. The subject property generally consists of a combination of gently to steeply sloping topography with maximum estimated natural gradients of three horizontal to one vertical (3H:1V). According to the United States Geological Survey (USGS) Kenwood, California, 7.5 Minute Quadrangle Maps (Topographic), site elevations vary from approximately 350 feet above mean sea level (MSL) near the southwestern corner of the subject property, to approximately 750 feet near the northeastern corner of the subject property.

c. Drainage. The subject property is located near the base of the low-lying hills on the east side of the Valley of the Moon. Site drainage appears to consist of sheet flow and surface infiltration. Two main creek tributaries of Calabazas Creek serve to drain surface runoff from the higher elevations north and east of the subject property. One creek tributary borders parcel 3 to the north, and comes to a confluence with the other creek tributary at the existing north boundary of parcel 2, and then transects parcel 1, south of Weise Road. The creek tributary then flows westward toward Calabazas Creek, which is located approximately one-half mile west of the western boundary of parcel 1.

d. Existing Land Use: The subject property, as well as properties to the north, is located within the Land Intensive Agricultural area (LIA) with a 100 acre per unit density. The majority of the area to the east and south of the subject property is located within the LIA with a 20 acre per unit density. The area to the west of the subject property, within the Trinity Oaks Subdivision is located in the Rural Residential area (RR) with a five acre per unit density. The subject property and surrounding area is located in the Groundwater Availability Zone 4, with areas of low to highly variable water yields.

At the time of our investigation, the subject property consisted of three parcels. Parcel 1 (APN 053-130-009) was occupied by an existing single family residence and granny unit. Three groundwater wells (well #1, well #2 & well #3) are located on parcel 1. Well #1 was drilled in January, 2018, and will service the proposed cannabis development on all of the three lots. Well #2 currently services the existing residence and granny unit, and well #3 is currently out of service, due to construction degradation. Additionally, after the proposed lot line adjustment occurs, parcel 1 will also be occupied by several agricultural buildings, and a 6-acre vineyard. The remaining portions of the subject property are undeveloped.

At the time of our investigation, parcel 2 (APN 053-110-001) was occupied by an existing single family residence and granny unit, several large agricultural buildings currently being utilized for 12 head of cattle and approximately 300 chickens, and a one-acre vegetable garden. Furthermore, there is one existing groundwater well located on parcel 2 (well #4).

At the time of our investigation, parcel 3 (APN 053-110-076) was occupied by a single family residence and a rock quarry. At the time of this report, the quarry permit for parcel 3 was still active. However, it is our understanding that the quarry is not in use, and is undergoing the closure process. There are two existing groundwater wells on parcel 3 (well #5 & well #6). One well currently services the existing residence, and the other services the irrigation needs for the existing, 6-acre vineyard on parcel 1.

e. Proposed Land Use: It is our understanding that each of the three parcels will be developed with a one-acre cannabis development. It is our understanding that it is proposed to develop parcel 1 and parcel 3 with a one-acre outdoor plot. It is our understanding that it is proposed to construct several greenhouses on parcel 2, for a combined, mixed light indoor and outdoor cultivation area of one acre. Additionally, a central processing facility will also be constructed on parcel 2.

It is our understanding that the existing residential structures, vineyard, vegetable garden and agricultural/livestock operation will remain.

4. LOCAL GEOLOGY

The geologic information portrayed on Plate 2 was obtained from the Geologic Map of the Kenwood 7.5' Quadrangle and Special Report 120, Geologic Map of Sonoma County.

Based on the geologic mapping, and well drillers logs, the subject property is generally underlain by bedrock deposits of the Sonoma Volcanics Series (Tsrf & Tsram). Additional geologic units mapped within the subject property are Quaternary alluvial deposits (Qa, Qpf & Qoa). Based on well drillers logs and the site geology, the Sonoma Volcanics Series is considered the primary water bearing unit and aquifer for the project site. The alluvial deposits within the subject property are relatively thin and, locally, do not likely extend to great depths below the site. The Hydrogeologic Cross Section, provided on Plate 3, is a generalized interpretation of the hydrogeology, geologic structure and orientation of rock units in the area based on available well log data and our geologic literature review. Well drillers logs for wells included on Plate 3, where completed logs were available, are presented in Appendix A.

The majority of the subject property consists of two units (Tsrf & Tsram) of the Sonoma Volcanic Series. The Sonoma Volcanics has highly variable specific yields and is considered to be a good water producer where unwelded tuffs, scoria, and volcanic sediments are present. The wells within the subject property are located within the Tsram unit of the Sonoma Volcanics. The Tsram unit is the Rhyolite of Arrowhead Mountain, and is described as a highly variable sequence of light-colored, rhyolitic flows, tuffs, breccias and plugs. The Tsrf unit conformably overlies, and is likely interbedded with the Tsram unit of the Sonoma Volcanics Series. The Tsrf unit is described as pinkish-purple, porphyritic rhyolite flows with phenocrysts of sanidine and quartz, and well developed flow banding.

Quaternary alluvial deposits (Qa, Qpf & Qoa) are also present within the subject property. These deposits consist of alluvial fan, stream terrace and basin deposits, generally consisting of sand, gravel, silt and clay.

The site is generally located within an area of active seismicity. The nearest, mapped active fault is the Rodgers Creek Fault, which is located approximately six miles southwest of the site. According to recent published geologic mapping, an unnamed strike-slip fault is questionably mapped as extending through parcel 3, and partially into parcel 1 and parcel 2. Furthermore, there are two additional, unnamed strike-slip faults located in the near vicinity to the subject property. However, based on the available literature, the faults are not considered Holocene active and are not located in the Alquist-Priolo Earthquake Fault Studies Zone.

5. LOCAL HYDROGEOLOGY

According to the California Statewide Groundwater Elevation Monitoring Program (CASEGEM), the subject property is not located in a prioritized groundwater basin. The nearest prioritized groundwater basin is the Napa-Sonoma Valley basin, which is located approximately 500 feet west of the western boundary of the subject property. The Napa-Sonoma Valley basin is considered a medium prioritized groundwater basin, and within the Groundwater Availability Zone 3.

As previously mentioned, the Sonoma Volcanics Series is considered the primary water bearing unit and aquifer for the project site. According to the "Evaluation of Groundwater Resources, Sonoma County Volume 4: Sonoma Valley" (Bulletin 118-4), prepared by the California Department of Water Resources (DWR), the Sonoma Volcanics is considered to have highly variable specific yields, between 0 and 15%. According to published literature, the Sonoma Volcanics is considered to be a good water producer where unwelded tuffs, scoria, and volcanic sediments are present. Furthermore, PJC assumes that the Sonoma Volcanics underlying the subject property and the near vicinity is a confined to partially confined aquifer. Our assumption is based on the available well drillers logs, the presence of confining alluvial deposits over the underlying bedrock, artesian conditions after an 8-hour pump test of project well #1, the depth of the screened intervals within the groundwater wells, and our previous experiences encountering perched groundwater in areas within close proximity to the project site.

According to Bulletin 118-4, the specific yield of the Quaternary deposits is variable, depending on the amount of clay present and the thicknesses of the deposits. Specific yields generally range between 3 to 15%. The Quaternary alluvial deposits within the subject property are considered to represent a separate aquifer from the project aquifer. However, due to the estimated thicknesses of the Quaternary alluvial deposits and the close proximity to the Sonoma Volcanics in the area, we assume some groundwater communication between the aquifers in the form of groundwater recharge through the shallow

alluvial deposits, and into the underlying bedrock deposits of the Sonoma Volcanics.

5. WELLS AND WATER SOURCES

In order to assess the availability of groundwater in the area, and the potential for negative effects on nearby wells, it is necessary to establish a cumulative impact area (CIA) around the subject property. For the purposes of this report, the CIA was conservatively estimated to include parcels adjacent, or within 1500 feet, of the subject property (parcels 1, 2 & 3). The factors used to determine the CIA are topography, geologic formations, hydrologic divides and watersheds, aquifer conditions and proximity to nearby wells.

At the time of our investigation, there were six existing groundwater wells located on the subject property. The locations of the wells are shown on the Study Area Map, Plate 2. The project well is located on parcel 1, approximately 300 feet east of Sonoma Highway.

The majority of known wells within the CIA, are located within the Sonoma Volcanics. According to the recent geologic literature, four of the six onsite wells are located in areas mapped within Quaternary alluvial deposits (Qpf). However, based on the screened intervals indicated on the available well log data, the wells mapped in the Qpf unit extend through the shallow alluvial deposits, and extend into the underlying bedrock deposits of the Sonoma Volcanics. Groundwater well information was obtained from the Well Completion Report Map Application provided by the California Department of Water Resources, and included in Table 1. The locations of wells on adjoining properties within the CIA are also plotted on Plate 2. However, when exact locations of neighboring wells were unable to be determined, well locations were inferred based on aerial photos, topography, geology or assumed to be near the center of the parcel.

a. Local Well Log Data: The limited available data for the wells on the subject property, and neighboring wells within the CIA, record static water levels between eight and 100 feet below the existing ground surface, with an artesian condition at well #1 (see Table 1). The limited well log data indicates that wells developed in the Sonoma Volcanics are viable, with highly variable yields between eight and 300 gallons per minute (gpm), and specific capacities from 0.03 to 1.43 gpm/ft.

   Based on the published geologic literature and the well drillers logs, the Sonoma Volcanics are considered to be confined to partially confined aquifers. First encountered water levels were not generally recorded for the water wells within the CIA, except for the project well, where an artesian condition was encountered during the initial drilling of the well. However, based on a well yield test of the project well, a static water level of 74 feet below the ground surface was recorded. Based on well log data provided by the Department of Water Resources, dry holes can be encountered within the Sonoma Volcanics. However, these aquifers are

highly variable, and it is not uncommon to find a viable well after relocating or drilling deeper.

TABLE 1

Well # (Plate 1)	Year of construction	Total Depth, ft	Static Water Level, ft	Perforated Interval Thickness, ft	Driller's Yield, gpm	Specific Capacity (gpm/ft)
1	2018	420	74	195	28	0.10
2	n/a	292	20	n/a	8	0.03
3*	1999	680	n/a	300	150	0.5
4	2002	220	100	120	50	0.25
5	1983	610	n/a	100	30	n/a
6	2000	175	55	60	200	1.43
7	2002	220	100	120	50	0.25
8	1998	200	70	80	50	0.28
9	1997	135	35	60	100	1.0
10	1995	255	55	108	15	0.05
11	1996	955	40	330	45	0.14
12	1995	495	n/a	95	300	n/a
13	1994	440	n/a	n/a	150	0.75
14	1991	250	n/a	40	40	n/a
15*	1961	265	8	217	30	0.17

*Wells not in use or planned abandonment

6. GROUNDWATER SUPPLY

a. Groundwater Storage; The following groundwater storage calculations assume that the aquifers underlying the CIA are confined to partially confined aquifers. This model assumes that there is groundwater communication between aquifers contained within the Sonoma Volcanics (Tsrf & Tsram). The volume of groundwater stored in the project aquifer is equal to the volume of the saturated aquifer multiplied by the specific yield of the aquifer. The volume of the saturated aquifer is calculated by multiplying the area of the CIA area by the saturated thickness. The CIA for groundwater storage is estimated at 800 acres. The thickness of the saturated aquifer, for the purposes of this report, is conservatively estimated to equal the average length of the perforated intervals of the well casings.

According to the well log data, the screened portions of the well casings vary between 40 and 330 feet in length. Therefore, the average thickness of the saturated aquifer is conservatively assumed to be approximately 140 feet. The area of the CIA is determined to be 800 acres. Therefore, the volume of the saturated aquifer within the CIA is 112,000 acre-feet (800 acres x 140 feet = 112,000 acre-feet). According to the Evaluation of Groundwater Resources, Bulletin 118-4, the specific yield of the Sonoma Volcanics is considered highly variable, generally 15% or less. Using a conservative value of 3%, a groundwater storage of 3,360 acre-feet (112,000 acre-feet x 0.03 = 3,360 acre-feet) is calculated.

b. Groundwater Recharge; Groundwater recharge for the project parcel was developed as part of a water budget, as follows:

Inflows (rainfall) = Outflows (surface runoff + evapotranspiration + groundwater recharge)

This simply states that rainfall on the ground surface either runs off, infiltrates into the soil to be later evaporated or transpired by plants, or recharges the underlying aquifer.

Mean annual precipitation at the project parcel is approximately 35 inches, according to the Sonoma County Water Agency Rainfall Map, Plate 4. Mean annual surface runoff at the project parcel is estimated to be 15 inches or 43% of annual precipitation (McKee and others, 2003). According to McKee (2003, p. 30), annual actual evapotranspiration (ET_a) for the North Bay averages 16.3 inches.

Groundwater recharge cannot be directly measured. It is estimated from the water budget (Table 2), as follows:

Rainfall = surface runoff + evapotranspiration + groundwater recharge

Thus, by rearranging the equation:

Rainfall - surface runoff - evapotranspiration = groundwater recharge

35 - 15 - 16.3 = 3.7 inches

TABLE 2

Mean Annual Rainfall, inches/year	35
Evapotranspiration, percent	47%
Surface Runoff, percent	43%
Groundwater Recharge, percent	10%
Cumulative Impact Area, acres	800
Total Annual Precipitation, acre-feet/year	2,333
Evapotranspiration, acre-feet/year	1,097
Surface Runoff, acre-feet/year	1,003
Groundwater Recharge, acre-feet/year	233

7. GROUNDWATER DEMAND

Water demand for the CIA will be equivalent to the sum of maximum proposed/potential cannabis irrigation, domestic water use, vineyard irrigation, and livestock demand.

a. Cannabis Water Use; Water usage for cannabis cultivation can be highly variable based on the plant size and spacing, climate, strain, soil type, irrigation techniques, etc. Furthermore, reports on water usage supplied by growers, researchers and law enforcement have also been highly variable, which leads to difficulties in quantifying accurate amounts required for successful cultivation. However, according to the available published literature on the topic, usage can vary from 0.5 acre-feet/acre/year (O'Neil, 2015), to 1.9 acre-feet/acre/year (Bauer and others, 2015). Based on estimated water usages for the cannabis development provided by the client to PJC, it is our understanding that the one acre outdoor cultivation for parcel 1 and parcel 3 will each require approximately 2.2 acre-feet/acre/year (expected, plus 10%) and the mixed light indoor/outdoor cultivation for parcel 2 will require 3.7 acre-feet/acre/year (expected, plus 20%).

It is our understanding that current regulations allow for one acre of cannabis cultivation per parcel. Therefore, the potential amount of acreage to cultivate cannabis in the CIA is equal to the number of cultivatable parcels (CP's) within the CIA. The number of CP's in the CIA is based on the number of parcels with the available acreage to cultivate at least one acre of cannabis. Residential parcels of approximately one acre or less were excluded as CP's, due to space restrictions and the current regulations excluding the cultivation of cannabis in plain view of the street. We assume this to be the case for the residential parcels within the Trinity Oaks Subdivision, west of the subject property. We have included 21 potential CP's within the CIA. For the purposes of this report, we assume a conservative estimate of 1.5 acre-feet/acre/year for the additional CP's within the CIA. Therefore, the maximum estimated potential groundwater demand for cannabis cultivation in the CIA, excluding the subject property, is estimated at 31.5 acre-feet per year (21x 1.5 = 31.5 afy).

b. Domestic/Commercial Water Use; Domestic water use for an individual family dwelling varies considerably based on landscape irrigation and the number of occupants. Typically, water use ranges from 0.5 to 1.0 acre-feet/yr. The parcels within the CIA also have a potential for second dwelling units. Therefore, groundwater demand for the individual dwelling units (DU's) within the CIA is conservatively estimated at 1.5 afy. Domestic water use at build out is calculated as the number of existing/potential DU's multiplied by 1.5 afy. The existing/potential DU's is based on the maximum number of DU's within the CIA that can be created by subdividing existing parcels under the applicable zoning densities. The existing parcel sizes in the CIA preclude any further subdividing. The existing/potential DU's is equal to the number of cultivated parcels (CP's). Therefore, the estimated domestic water use at build out is conservatively estimated at 31.5 afy.

As previously mentioned, the Trinity Oaks Subdivision is located west of the subject property, and within the CIA. However, the domestic water use of the roughly 56 parcels located within the Trinity Oaks Subdivision were excluded from the groundwater demand calculations, as the subdivision obtains water from the Valley of the Moon Water District (VMWD), which is supplied from groundwater wells outside the CIA. According to information supplied by the Valley of the Moon Water District, well #15 was previously utilized as the groundwater supply well for the Trinity Oaks Subdivision, but is no longer in use due to insufficient recharge rates required to supply the entire subdivision. Well log information of the inactive Trinity Oaks Subdivision well was obtained from VMWD.

A commercial rock quarry, Nuns Canyon Quarry, is located adjacent to the northeast corner of the parcel 1, approximately three-quarter miles northeast of the subject wells. There are no groundwater wells located on the property of the rock quarry. It is our understanding that water usage at the rock quarry is derived from a pond, which is supplied from a combination of surface water runoff and near surface groundwater seepage. According to conversations with the quarry management, water usage for the quarry consists of water requirements for three full-time employees, and periodic dust control of the quarry material. Therefore, due to the quarries minimal water use, not likely derived from the underlying bedrock aquifer, we consider the quarries impact on groundwater demand as negligible.

c. Vineyard Irrigation Demand; There are no plans to develop the subject property for any additional vineyard use. At the time of our investigation, vineyard cultivation within the subject property was limited to a six acres development. Irrigation demands for the existing vineyard on the subject property are currently being met by an existing agricultural well on parcel 3. Based on our visual observations and estimates from recent aerial photos, additional vineyard development within the CIA consists of approximately 27 acres.

Irrigation demands for vineyards in Sonoma County are commonly cited to be a maximum of 0.5 acre feet/acre/yr. Based on the recent aerial photos and available topographic information, additional potential suitable acreage for vineyard development within the CIA is considered minor (conservatively estimated to be approximately 50 acres) due to potential building envelopes, logistical access, leach fields, creeks and required setbacks. Furthermore, significant areas within the CIA are not suitable for cultivation because they are densely forested or are too steep and rocky.

Additionally, there is an existing, one-acre vegetable garden located on parcel 2. Actual water usage for the garden is unknown, but for the purposes of this report, it is conservatively estimated to be equal to vineyard requirements, 0.5 acre feet/acre/yr.

d. Livestock Demand; Water use for livestock on the subject property consists of water requirements for 12 head of cattle and approximately 300 chickens. Water requirements for livestock can vary and are influenced by several factors, including rate of gain, pregnancy, lactation, activity, type of diet, feed intake, and environmental temperatures. Water requirements for cattle in the CIA are conservatively estimated based on daily averages of lactating beef cows, bred cows, dry cows and bulls, dairy cattle, and growing and finishing beef cattle. Horses, sheep and pigs generally require much less water than cattle. According to published data, water usage for cattle is conservatively estimated to be 10.5 gallons per head per day, or 0.012 acre-feet per year per head. Furthermore, according to published data, water requirements for egg laying chickens are approximately 71 gallons per day per 1000 chickens, or 0.08 acre-feet per year per 1000 chickens. Therefore, the groundwater demand for livestock on the subject property is conservatively estimated to be 0.25 acre-feet per year.

   Based on our reconnaissance and review of aerial photos, the land within the CIA is not being utilized for any significant amounts of livestock. Furthermore, determining the actual numbers of livestock in the CIA is not considered practical. The CIA is primarily heavily forested, with significant areas consisting of steeply sloping topography. Furthermore, areas within the CIA considered suitable for cattle are already taken into account for potential water usage by areas considered suitable for vineyard development. Therefore, the amount of land suitable for livestock in the CIA is considered minimal with negligible groundwater usage.

Total expected/potential groundwater demand for the subject property and within the CIA is equal to the sum of cannabis water use, domestic/commercial water use, vineyard irrigation and agricultural livestock use.

TABLE 3*

Proposed cannabis water use (parcel 1, outdoor), afy	2.2
Proposed cannabis water use (parcel 2, mixed light), afy	3.7
Proposed cannabis water use (parcel 3, outdoor), afy	2.2
Additional potential cannabis water use for CIA (21 CP's), afy	31.5
Total proposed/potential water use for CIA, afy	**39.6**
Existing domestic water use for subject property (3 parcels), afy	4.5
Additional existing/potential domestic water use for CIA (21 DU's), afy	31.5
Total existing/potential water use for CIA, afy	**36.0**
Existing vineyard irrigation demand for subject property (6 acres), afy	3.0
Additional existing/potential vineyard irrigation demand for CIA (77 acres), afy	38.5
Total potential water use for vineyard irrigation, afy	**41. 5**
Total Existing/Potential livestock water use for CIA, afy	**0.25**
Total existing/potential groundwater demand, afy	**117.4**
Groundwater recharge, afy	**233.0**
Total Groundwater in storage, acre-feet	**3,240**

***Groundwater demand, recharge and storage. The table shows that maximum potential groundwater demand is approximately 50% of the groundwater recharge and less than 4% of groundwater storage.**

8. GROUNDWATER DEMAND OF NEARBY PARCELS

An irregular shaped pumping cone, or cone of depression, may form in a fractured bedrock aquifer around a pumping well as the water level declines. Therefore, it is important to consider the potential impacts of the proposed subject well to the other wells on the subject property, as well as other existing wells on nearby properties within the CIA.

Table 4 shows drawdown interference as a function of distance from the proposed project well, and shows that drawdown interference decreases as distance from the project well increases. Specific capacity and transmissivity values were based on an 8-hour well pump test performed on October 12, 2018. The construction of a monitoring well to determine an accurate storativity (S), or storage coefficient, value was not feasible for this project. Therefore, a range of storage coefficients were utilized. The storage coefficient is obtained by multiplying the specific storage by the thickness of the aquifer. The values for specific storage of fissured bedrock range between $1x10^{-6}$ ft^{-1} and $2.1x10^{-5}$ ft^{-1} (Batu, V. 1998). The thickness of the aquifer for the purposes of this report is equal to the screened intervals of the project well (195 ft).

Based on our investigation, the nearest off-site wells are well #12 and well #15, and both are located approximately 1,000 feet from the proposed project well. As previously mentioned, well #15 is no longer used as a supply well for the Trinity Oaks Subdivision. The subdivision now obtains water from a supply well within the city of Sonoma. Therefore, well #12 is the closest offsite well to potentially

experience drawdown interference from the project well. Based on information obtained from the Well Completion Report Map Application provided by the California Department of Water Resources, well #12 is 495 feet in depth, with 95 feet of screened perforations, and had a driller's yield of 300 gallons per minute (gpm). No information was available for the static water level of well #12. However, according to the available well log data, static water levels within the cumulative impact area (CIA) are reported at depths between 8 and 100 feet below ground surface, with an average of 54 feet below ground surface. PJC conservatively assumed a static water level of 100 feet below the ground surface for well #12. Therefore, based on using a range of storativity values, drawdown interference on well #12 would be between 4.9 feet and 15.7 feet. Assuming the most conservative estimates of drawdown (15.7 feet), potential interference would represent a reduction in the well water column of less than four percent. PJC assumes a drawdown interference of less than five percent of the water column on a neighboring well to be within an acceptable range. Therefore, we judge this to be within tolerable limits, and should likely not negatively impact well #12. Furthermore, the drawdown estimate of 15.7 feet is based on the most conservative values, and the actual drawdown is likely to be considerably less than 15.7 feet.

TABLE 4

Distance From Proposed Project Well (ft)	Drawdown Interference (ft) (S=0.004)*	Drawdown Interference (ft) (S=0.0002)*
100	21.9	33.4
200	16.6	28.0
300	13.5	24.9
400	11.4	22.7
500	9.7	21.0
600	8.4	19.6
700	7.3	18.5
800	6.4	17.4
900	5.6	16.6
1,000	4.9	15.7

Drawdown interference was calculated using the Theis equation and the following assumptions:
Duration of pumping = 6 months (length of the dry season);
Proposed New Well average dry season discharge = 7.5 gpm or 10,800 gpd
(1.5 times the annual average discharge of 5.0 gpm or 8.1 acre-feet/year);
Storativity (S)*= Values range between 0.004 & 0.0002
Transmissivity = 225 gpd/ft or 30 ft^2/day
(300 times the specific capacity of 0.10 gpm/ft; Heath, 1989, p.61.)

9. GROUNDWATER QUALITY

In order to assess the groundwater quality for the on site wells, groundwater samples were taken for well #1 and well #3, on January 20, 2017, and tested for boron, iron, magnesium, total dissolved solids (TDS), pH, alkalinity and specific conductance by Brelje and Race Laboratories, Inc. Based on the laboratory results, the groundwater quality at the site is judged to be acceptable and within

tolerable limits for domestic and agricultural use. However, according to the testing summary, a filter to lower the iron content should be utilized, and measures should be taken to increase the pH level.

As previously mentioned, at the time of this report, the proposed well for the project had not been drilled. Based on conversations with local area well drillers, deeper wells developed within the Sonoma Volcanics bedrock aquifer could be susceptible to water quality hazards caused by specific mineral constituents, as well as excessive TDS and hardness. Therefore, water quality testing should be performed, as necessary, on the new groundwater well.

10. SURFACE WATER / AQUATIC HABITAT

The groundwater availability evaluation requires that the scope of the assessment encompass potential impacts to surface waters and aquatic habitats, to ensure that the proposed groundwater use will not reduce the critical flow of nearby streams. No major creeks or streams are located within the CIA. However, there are several unnamed creek tributaries of Calabazas Creek located within the CIA that serve to discharge surface run-off and shallow groundwater to Calabazas Creek to the west. Furthermore, Calabazas Creek borders portions of the northern and northeastern boundary of the CIA. It is our understanding that Calabazas Creek is considered critical habitat for Steelhead, as well as other sensitive flora and fauna. In an effort to ascertain a better understanding of the Calbazas Creek watershed, PJC consulted the Calabazas Creek Open Preserve Resource Management Plan (RMP), prepared by the Sonoma County Agricultural Preserve & Open Space District, dated May 2016.

The project well is located approximately two and three-quarter miles southwest of the headwaters of Calabazas Creek. Additionally, the upland watershed of Calabazas Creek is fed by the smaller creek tributaries of Decker Creek, Oak Wood Creek, Spencer Creek, Johnson Creek, Warsaw Creek and Alder Creek. According to the RMP, the Calabazas Creek watershed conducts a considerable amount of water, as evidenced by year-round stream flow and several deep pools along the length of the creek. Additionally, the RMP goes on to state that the abundance of water within the creek may be primarily due to the upland creek tributaries, as well as numerous upland springs and seeps. The project well is not located in the upland watershed of Calabazas Creek, and does not draw groundwater from the underlying aquifer until the first screened interval of the well, at a depth of 200 feet below the existing ground surface. Therefore, as previously stated, due to the project well accessing groundwater from the deep aquifer, we would not expect the proposed project to negatively impact the seasonal streamflows of Calabazas Creek.

A quantitative assessment on the impacts of the project to Calabazas Creek was requested by the Sonoma County PRMD. PJC was unable to find data on current or historical streamflow rates of Calabazas Creek, and Calabazas Creek does not appear to be actively monitored for streamflow. However, PJC was able to

find an instantaneous streamflow reading from May 27, 2003, as part of a USGS study titled, Geohydrologic Characterization, Water-Chemistry, and Groundwater Flow Model, Sonoma County, California. The USGS paper recorded an instantaneous streamflow of 1.06 ft^3/sec, where Calabazas Creek crosses Highway 12, approximately 1000 feet northwest of the project well. Additionally, the RMP report characterized the Calabazas Creek sub-basin as having a peak, 2-year storm, annual discharge of 233 ft^3/sec. For the purposes of this report, PJC conservatively assumed a streamflow rate of one-half the instantaneous streamflow reading from May 27, 2003, to determine potential stream depletion rates from the proposed project. Therefore, based on our highly conservative estimates, potential stream depletion after 180 days would represent between 1.7 percent and 2.8 percent of streamflow. We judge this to be within an acceptable range for a creek with year-round stream flow, in an area considered by the RMP study, to have an abundance of water. Furthermore, the depletion rates are considered highly conservative, as the computer model for depletion assumes a stream condition that fully penetrates the underlying aquifer. The degree to which Calabazas Creek penetrates the underlying aquifer, and/or a near surface perched aquifer, is beyond the scope of this report.

TABLE 5

Time Series for Depletion (days)	Stream Depletion (ft^3/sec) (S=0.004)*	Stream Depletion (ft^3/sec) (S=0.0002)*
20	0.0011	0.0114
40	0.0033	0.0129
60	0.0049	0.0136
80	0.0060	0.0140
100	0.0069	0.0143
120	0.0076	0.0145
140	0.0082	0.0147
160	0.0087	0.0148
180	0.0091	0.0149

Stream depletion: STRMDEPL08 (Barlow & Leake) and using the following assumptions:
Duration of pumping = 6 months (length of the dry season);
Proposed New Well average dry season discharge = 7.5 gpm or 10,800 gpd
(1.5 times the annual average discharge of 5.0 gpm or 8.1 acre-feet/year);
Storativity (S)*= Values range between 0.004 & 0.0002
Transmissivity = 225 gpd/ft or 30 ft^2/day
(300 times the specific capacity of 0.10 gpm/ft; Heath, 1989, p.61.)

11. CONCLUSIONS-GROUNDWATER AVAILABILITY

The preceding analysis of hydrogeologic data pertaining to groundwater supply at Sonoma Highway and Trinity Road in Glen Ellen, California indicates that the project well draws from a confined to partially confined bedrock aquifer, at depths in excess of 200 feet below the existing ground surface. The project aquifer is recharged via direct precipitation on the ground surface area of the CIA.

The groundwater demand within the CIA was based on maximum potential demand, and the drawdown interference and stream depletion calculations were based on a range of values. Therefore, it is assumed that the conclusions regarding groundwater demand, drawdown interference and stream depletion are highly conservative, and actual groundwater demand, drawdown interference and stream depletion may likely be significantly less than shown.

The project aquifer within the CIA has in excess of 3,240 acre-feet of groundwater in storage. Average annual aquifer recharge is calculated to be 233 acre-feet/yr. Total potential groundwater demand and withdrawal from the project aquifers within the CIA is conservatively expected to be 117.4 acre-feet/year, (see Table 3). The demand, based on the unlikely scenario of maximum development within the CIA, is approximately 50% of the groundwater recharge of 233 acre-feet per year and less than 4% of groundwater storage. We judge that drawdown interference of off-site neighboring wells from the increased groundwater demand to be within tolerable limits, and should not negatively impact neighboring wells, (see Table 4). Additionally, the aquifer is not expected to be in a state of overdraft, and the demand associated with the proposed cannabis cultivation is not expected to have a negative impact on groundwater supply in the area. Furthermore, based upon the proposed groundwater usage, the depth and characteristics of the underlying aquifer system, the depth of the screened intervals of the project well, and the distance to the major creeks and streams, it is considered highly unlikely that the proposed groundwater use will have a negative effect on the aquatic and riparian habitats, or the critical flow of nearby streams or creeks (see Table 5).

12. LIMITATIONS

This report has been prepared for the exclusive use of "Parcel 1" APN: 053-130-0009 & 053-100-015 for the proposed project described in this report. Our services consist of professional opinions and conclusions developed by a certified engineering geologist in accordance with generally-accepted engineering geologic principles and practices. We provide no other warranty, either expressed or implied. Our conclusions and recommendations are based upon the information provided us regarding the proposed project and professional judgment. Conditions and cultural features described in the text of this report are those existing at the time of our field work and may not necessarily be the same or comparable at other times.

The scope of our services did not include an environmental assessment or an investigation of the presence or absence of hazardous, toxic or corrosive materials in the soil, surface water, groundwater or air, on or below, or around the site, nor did it include an evaluation or investigation of the presence or absence of wetlands.

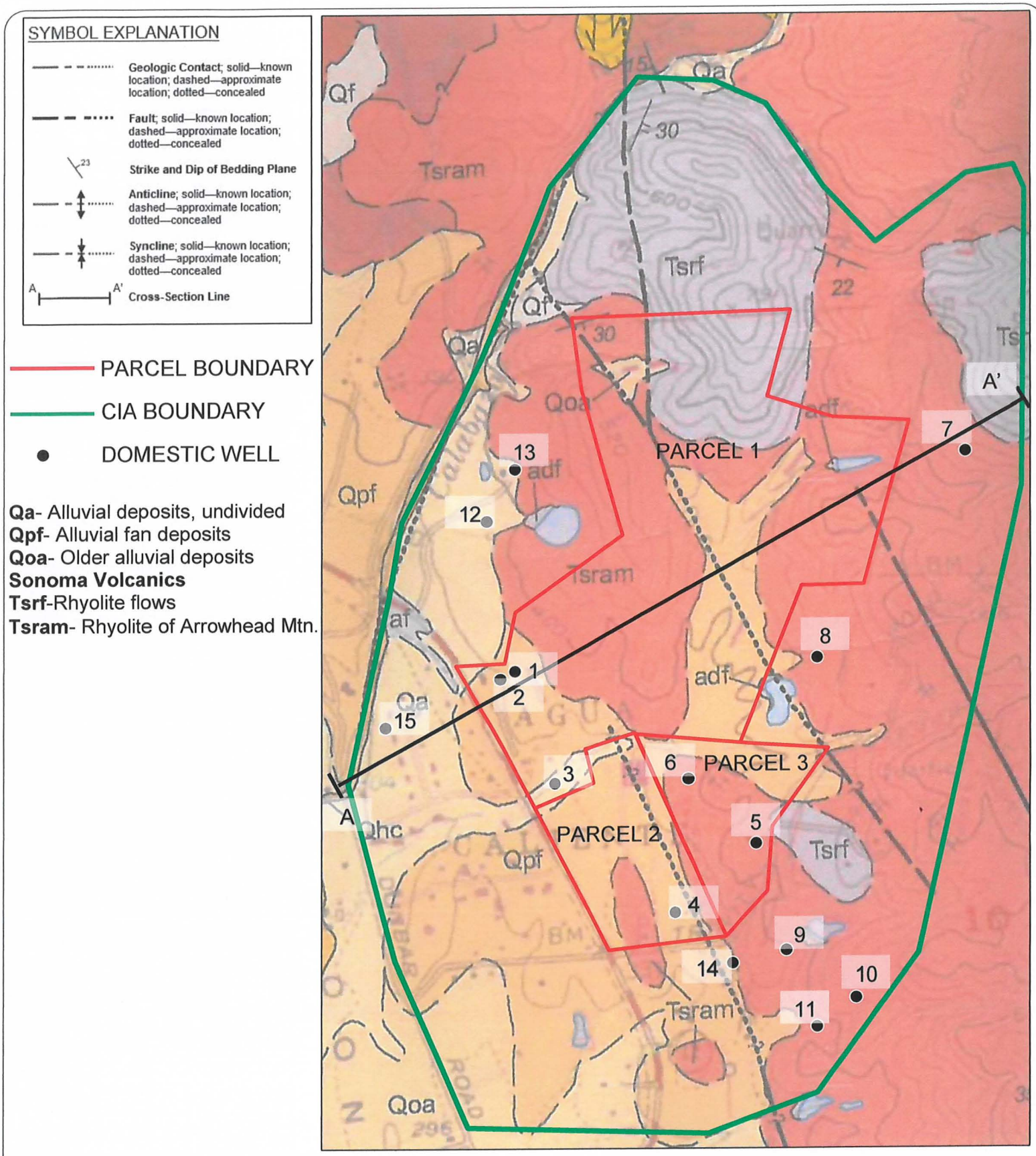
We trust that this is the information that you require at this time. If you have any questions concerning the content of this letter, please call.

Sincerely,

PJC & Associates, Inc.

Donald A. Whyte
Project Geologist
PG 9109, California

Patrick J. Conway
Certified Engineering Geologist
CEG 2452, California



Reference: Geologic Map of the Kenwood 7.5' Quadrangle, Sonoma and Napa Counties, California, compiled by M.P. Delattre, C.T. Wiggins, R.C. Witter, and J.M. Sowers, California Geologic Survey, 2007.

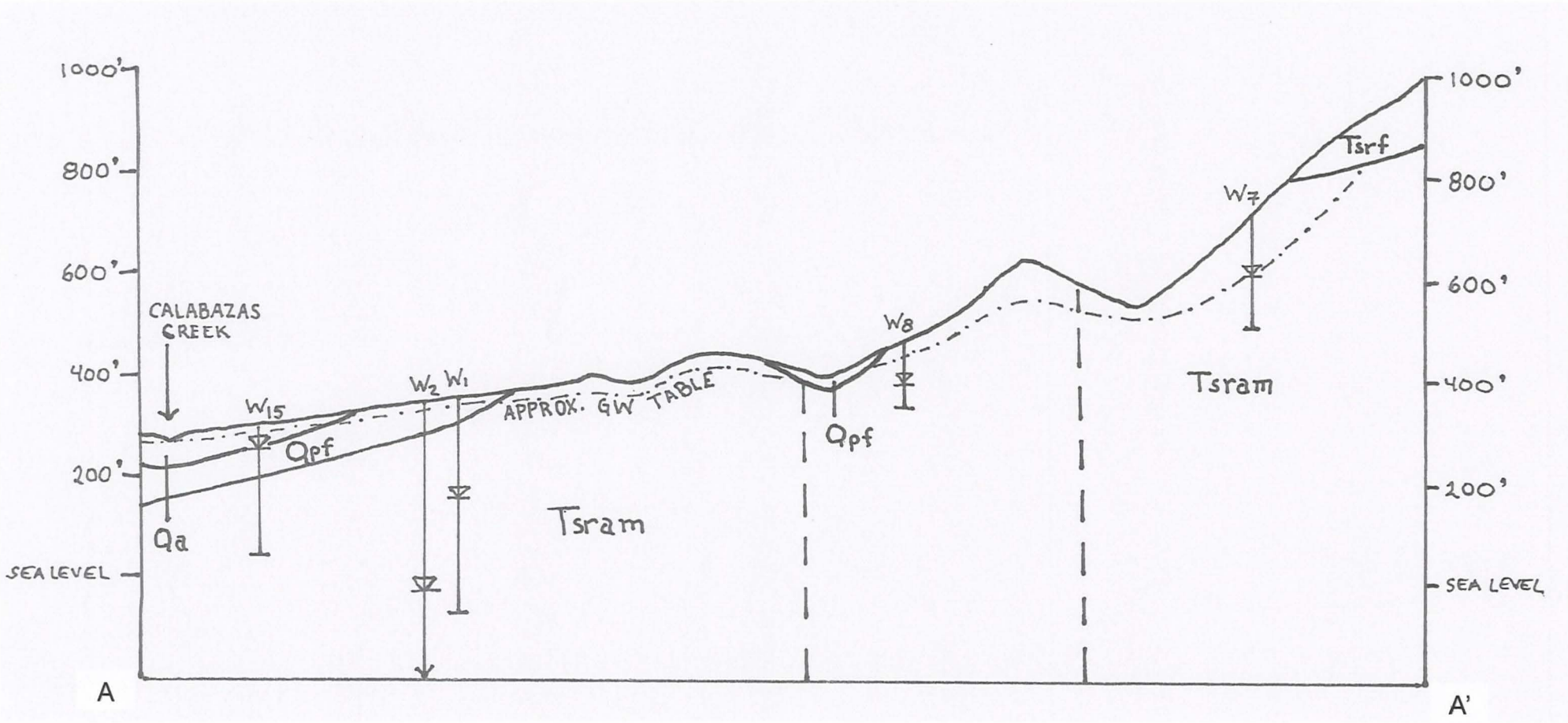
SCALE 1:12,000

PJC & Associates, Inc.
Consulting Engineers & Geologists

STUDY AREA MAP
PROPOSED 3-LOT CANNABIS DEVELOPMENT
TRINITY ROAD & SONOMA HIGHWAY
APN: 053-110-076, 053-110-001 & 053-130-009
GLEN ELLEN, CALIFORNIA

PLATE **2**

Proj. No: S1411.03 Date: 05/19 App'd by: PJC



LEGEND

Qa- Alluvial deposits
Qpf-Alluvial fan deposits
Tsrf- Rhyolite flows
Tsram- Rhyolite of Arrowhead Mtn.

Approximate groundwater table

W# Domestic groundwater well

Top of screened interval

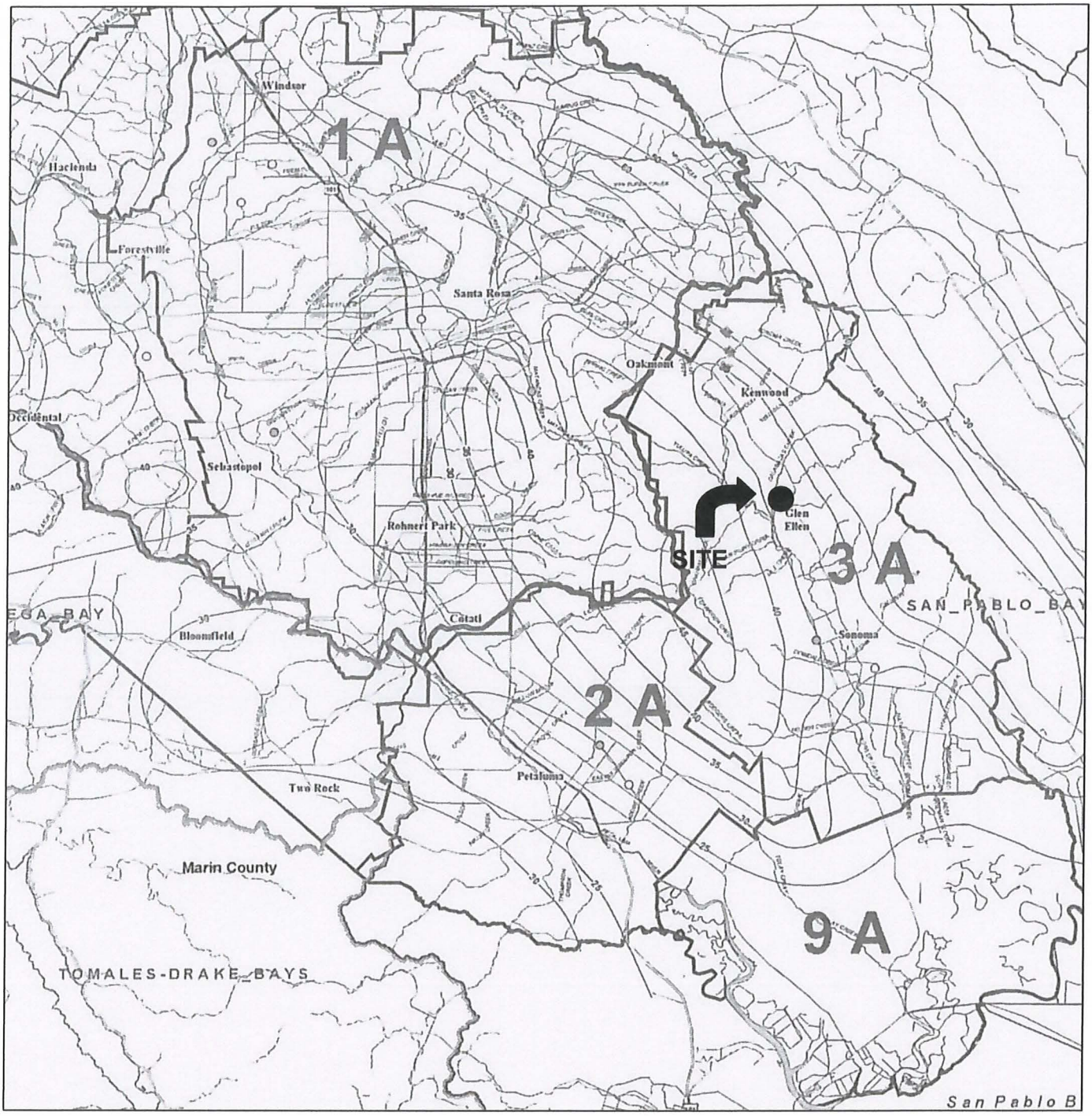
1"=800' horizontal
1"=300' vertical

HYDROGEOLOGIC CROSS-SECTION
PROPOSED 3-LOT CANNABIS DEVELOPMENT
TRINITY ROAD & SONOMA HIGHWAY
APN: 053-110-076, 053-110-001 & 053-130-009
GLEN ELLEN. CALIFORNIA

Proj. No: S1411.03
Date: 05/19
App'd By: PJC

PJC & Associates, Inc.
Consulting Engineers & Geologists

PLATE 3



REFERENCE: COUNTY WIDE RAINFALL MAP, PREPARED BY SONOMA COUNTY WATER AGENCY, JANUARY, 2008

PJC & Associates, Inc.
Consulting Engineers & Geologists

RAINFALL MAP
PROPOSED 3-LOT CANNABIS DEVELOPMENT
TRINITY ROAD & SONOMA HIGHWAY
APN: 053-110-076, 053-110-001 & 053-130-009
GLEN ELLEN, CALIFORNIA

PLATE
4

Proj. No: S1411.03 Date: 05/19 App'd by: PJC

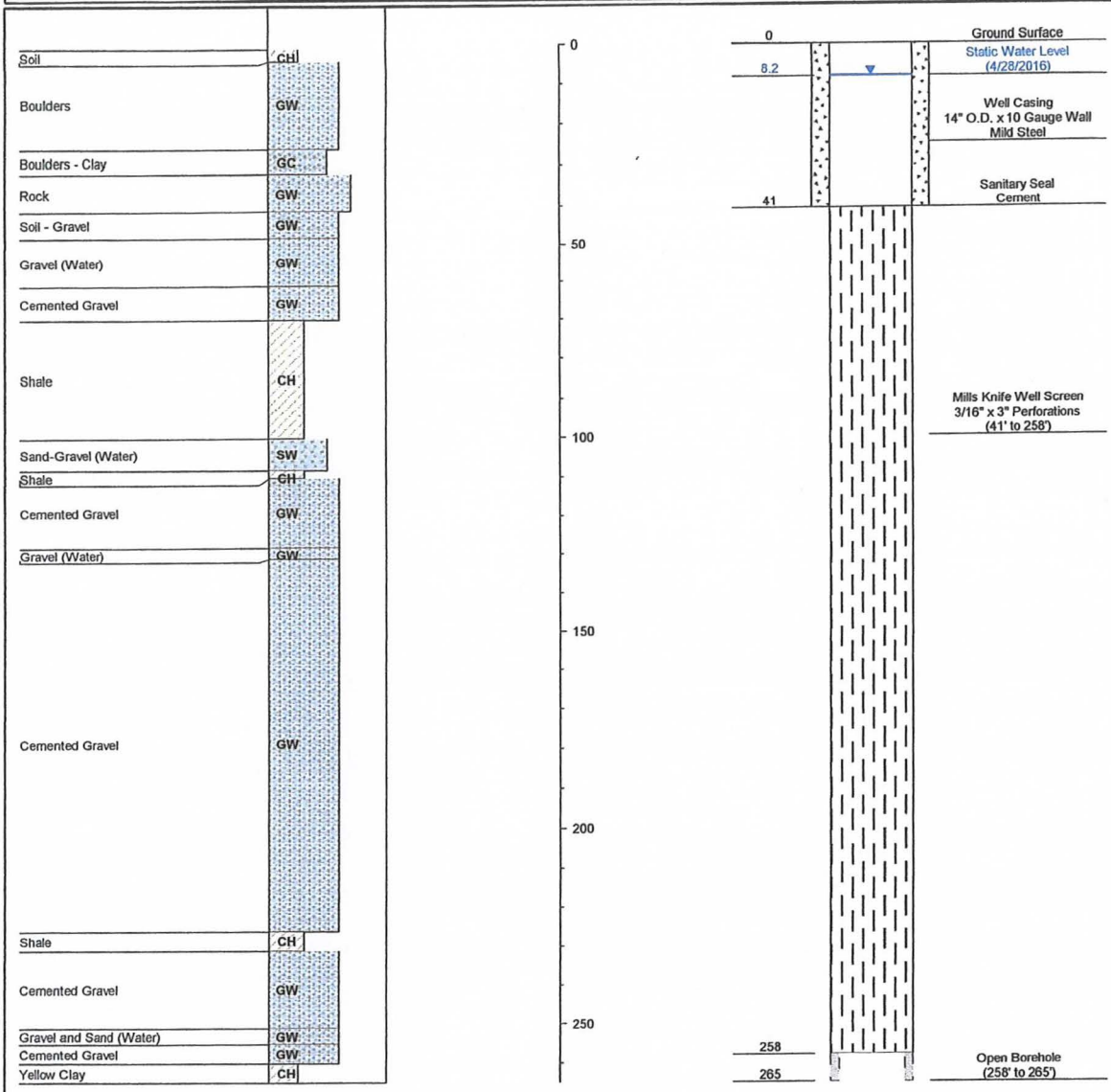
APPENDIX A

WELL LOGS

BOREHOLE DATA
DWR WCR 7079

WELL #15

TRINITY OAKS WELL
PRODUCTION WELL PROFILE



WELL TESTING INFORMATION

April 1961

SWL = 4 ft
Q = 42 gpm
Drawdown (s) = 185 ft
Q/s = 0.23 gpm/ft of drawdown

April 28, 2016

SWL = 8.21 ft
Q_{avg} = 30 gpm
24-Hr PWL = 183 ft
24-Hr Q/s = 0.17 gpm/ft of drawdown

PROJECT NO. 8463.003	PRODUCTION WELL PROFILE FOR VOMWD TRINITY OAKS WELL SONOMA COUNTY, CALIFORNIA	WOOD RODGERS DEVELOPING INNOVATIVE DESIGN SOLUTIONS 3301 C Street, Bldg. 100-B Sacramento, CA 95816 Tel: 916.341.7760 Fax: 916.341.7767	DATE: 6/10/16 10:05 SCALE: V: 1" = 30' DRAWN BY: J.REISCHE DESIGNED BY: UNKNOWN CHECKED BY: LERNST
FIGURE 2			J:\Jobs\8463_VOMWD\8463.003_Trinity_Oaks_Well_Reactivation\Strute

NO.	DESCRIPTION	ENGR. INIT	BY APPROVED	DATE

PROJECT WELL #1

STATE OF CALIFORNIA

WELL COMPLETION REPORT

No. e0330236

DWR USE ONLY --- DO NOT FILL IN

STATE WELL NO. STATION NO.

LATITUDE LONGITUDE

APN / TRS / OTHER

OWNER'S WELL No. 10008

Date Work Began 1/18/18 Ended 1/22/18

Local Permit Agency SONOMA

Permit No. WEL17-0247 Permit Date 10/02/2017

GEOLOGIC LOG

ORIENTATION Vertical Degree of Angle .....

DEPTH TO FIRST WATER .....(ft) BELOW SURFACE

DEPTH FROM SURFACE Ft.	Ft.	DESCRIPTION
0	40	light brown and blue volcanic rock and clay
40	125	light brown volcanic rock and clay
125	220	red and brown welded ash
220	240	red volcanic rock
240	300	red and brown ash
300	365	white and yellow ash and clay
365	393	clay
393	420	white and yellow volcanic rock

recommended pump setting of 400

390' SBS

WELL OWNER

GORDENKER TURKEY FARM, INC.

6010 COMMERCE BLVD., #41

ROHNERT PARK CA 94928

WELL LOCATION

Address 12201 HIGHWAY 12

City GLEN ELLEN County SONOMA

Apn Book 053 Page 130 Parcel 009

or

Township ..... Range ..... Section ..... 1/4 ..... 1/4

or

Latitude 38.... 23.... 8.42 NORTH Longitude 122.. 31.... 1.24 WEST

Deg Min Sec Deg. Min. Sec.

LOCATION SKETCH

ACTIVITY NEW WELL PLANNED USE(S) Irrigation Water

DRILLING METHOD ROTARY MUD FLUID

DEPTH OF STATIC WATER LEVEL ARTESIAN (Ft) & DATE MEASURED Jan.22, 2018

ESTIMATED YIELD * 30 (G.P.M) & TEST TYPE .....Airlift.....

TEST LENGTH 2 (Hrs) TOTAL DRAWDOWN ..... (FT.)

*May not be representative of a well's long-term yield

TOTAL DEPTH OF BORING 420 (Feet)

TOTAL DEPTH OF COMPLETED WELL 420 (Feet)

CASING

DEPTH FROM SURFACE Ft	To Ft	BORE-HOLE DIA	TYPE	Material / Grade	Dia.	Gauge	Slot size
0	200	12	BLANK	F480 PVC	5	200	
200	340	11	PERF	F480 PVC	5	200	.032
340	360	10	BLANK	F480 PVC	5	200	
360	415	10	PERF	F480 PVC	5	200	.032
415	420	10	BLANK	F480 PVC	5	200	w/cap

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft	To Ft	Seal Material	Filter Pack (Type / Size)
0	120	Bentonite	
120	420		8 X 16

Attachments

no Geologic Log

no Well Construction Diagram

no Geophysical Logs

no Soil Water Chemical Analyses

no Other

CERTIFICATION STATEMENT

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

NAME Fisch Bros. Drilling, Inc.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

5001 Gravenstein Hwy No. Sebastopol CA. 95472

Signed Steve Unterseher 1/23/18 399226

WELL DRILLER / AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

STATE OF CALIFORNIA

WELL COMPLETION REPORT

No. 746702

WELL #2

- NOT IN USE -

DWR USE ONLY --- DO NOT FILL IN

STATE WELL NO. STATION NO.

LATITUDE LONGITUDE

APN / TRS / OTHER

OWNER'S WELL No. 4075

Date Work Began 9/27/99 Ended 10/1/99

Local Permit Agency Sonoma

Permit No. WEL99-0058 Permit Date 3-2-99

GEOLOGIC LOG

ORIENTATION Vertical Degree of Angle ____

DEPTH FROM SURFACE DEPTH TO FIRST WATER ____ (ft.) BELOW SURFACE

Ft.	Ft.	DESCRIPTION
0	4	Topsoil
4	52	Clay
52	110	Ash
110	300	Volcanic Rock
300	350	Ash
350	410	White Clay
410	520	Ryolite White
520	560	Volcanic Rock
560	590	Ryolite
590	680	Volcanic Rock w/ Clay Stringers

TOTAL DEPTH OF BORING 680 (Feet)

TOTAL DEPTH OF COMPLETED WELL 680 (Feet)

WELL OWNER

Gordenker Turkey Farm

P.O. Box 341

Glen Ellen CA

WELL LOCATION

Address 12201 Sonoma Hwy.

City Glen Ellen County Sonoma

Apn Book 053 Page 130 Parcel 009

or

Township ____ S Range ____ E Section ____ ____ 1/4 ____ 1/4

or

Latitude ____ ____ ____ NORTH Longitude ____ ____ ____ WEST

Deg. Min. Sec. Deg. Min. Sec.

LOCATION SKETCH

ACTIVITY NEW WELL PLANNED USE(S) Irrigation Water

DRILLING METHOD ROTARY MUD FLUID

DEPTH OF STATIC WATER LEVEL 0 (Ft.) & DATE MEASURED Oct 1, 1999

ESTIMATED YIELD * 150 (G.P.M.) & TEST TYPE Airlift

TEST LENGTH. 2 (Hrs.) TOTAL DRAWDOWN 300 (FT.)

*May not be representative of a well's long-term yield.

CASING

DEPTH FROM SURFACE Ft.	To Ft.	BORE-HOLE DIA.	TYPE	Material / Grade	Dia.	Gauge	Slot size
0	20	20	Blank	Steel	12	156	
20	380	12.25	Blank	Steel	6 5/8	156	
380	485	12.25	Screen	Steel	6 5/8	156	1/8
485	680	12.25	Screen	F480 PVC	3		1/32

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	To Ft.	Seal Material	Filter Pack (Type / Size)	
0	30	Bentonite		
30	680		Gravel	3/8

Attachments

no Geologic Log

no Well Construction Diagram

no Geophysical Logs

no Soil Water Chemical Analyses

no Other

CERTIFICATION STATEMENT

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

NAME Fisch Bros. Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

5001 Gravenstein Hwy No. Sebastopol CA 95472

Signed Ed Fisch Carol Hughes 10-5-99 399226

WELL DRILLER / AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

STATE OF CALIFORNIA

WELL COMPLETION REPORT

No. 807047

WELL #7

DWR USE ONLY --- DO NOT FILL IN

STATE WELL NO. STATION NO.

LATITUDE LONGITUDE

APN / TRS / OTHER

OWNER'S WELL No. 4775

Date Work Began 7/26/02 Ended 7/29/02

Local Permit Agency Sonoma

Permit No. WEL02-0266 Permit Date 7/9/2002

GEOLOGIC LOG

ORIENTATION Vertical Degree of Angle _____

DEPTH TO FIRST WATER _____ (ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	Ft.	DESCRIPTION
0	10	light brown ash
10	110	hard brown & blue volcanic rock
110	180	blue volcanic rock & ash
180	220	dark blue volcanic rock & ash

WELL OWNER

Allan Gordenker
P.O. Box 341
Glen Ellen CA 95442

WELL LOCATION

Address 1101 Trinity Rd.

City Glen Ellen County Sonoma

Apn Book 053 Page 040 Parcel 020

or Township _____ Range _____ Section _____ 1/4 _____ 1/4

or Latitude _____ Deg. Min. Sec. NORTH Longitude _____ Deg. Min. Sec. WEST

LOCATION SKETCH

ACTIVITY NEW WELL PLANNED USE(S) Domestic Water

DRILLING METHOD ROTARY AIR FLUID

DEPTH OF STATIC WATER LEVEL 100 (Ft.) & DATE MEASURED Jul 29 2002

ESTIMATED YIELD * 50 (G.P.M.) & TEST TYPE Airlift

TEST LENGTH. 2 (Hrs.) TOTAL DRAWDOWN 200 (FT.)

*May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 220 (Feet)

TOTAL DEPTH OF COMPLETED WELL 220 (Feet)

CASING

DEPTH FROM SURFACE Ft.	To Ft.	BORE-HOLE DIA.	TYPE	Material / Grade	Dia.	Gauge	Slot size
0	50	10	Blank	F480 PVC	5	200	
50	100	7.5	Blank	F480 PVC	5	200	
100	220	7.5	Perfs	F480 PVC	5	200	Factory

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	To Ft.	Seal Material	Filter Pack (Type / Size)
0	50	Bentonite	
50	220		Gravel
			1/4 X 1/8
			2 1/2 Yds

Attachments

no Geologic Log

no Well Construction Diagram

no Geophysical Logs

no Soil Water Chemical Analyses

no Other

CERTIFICATION STATEMENT

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

NAME Fisch Bros. Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

5001 Gravenstein Hwy No. Sebastopol CA 95472

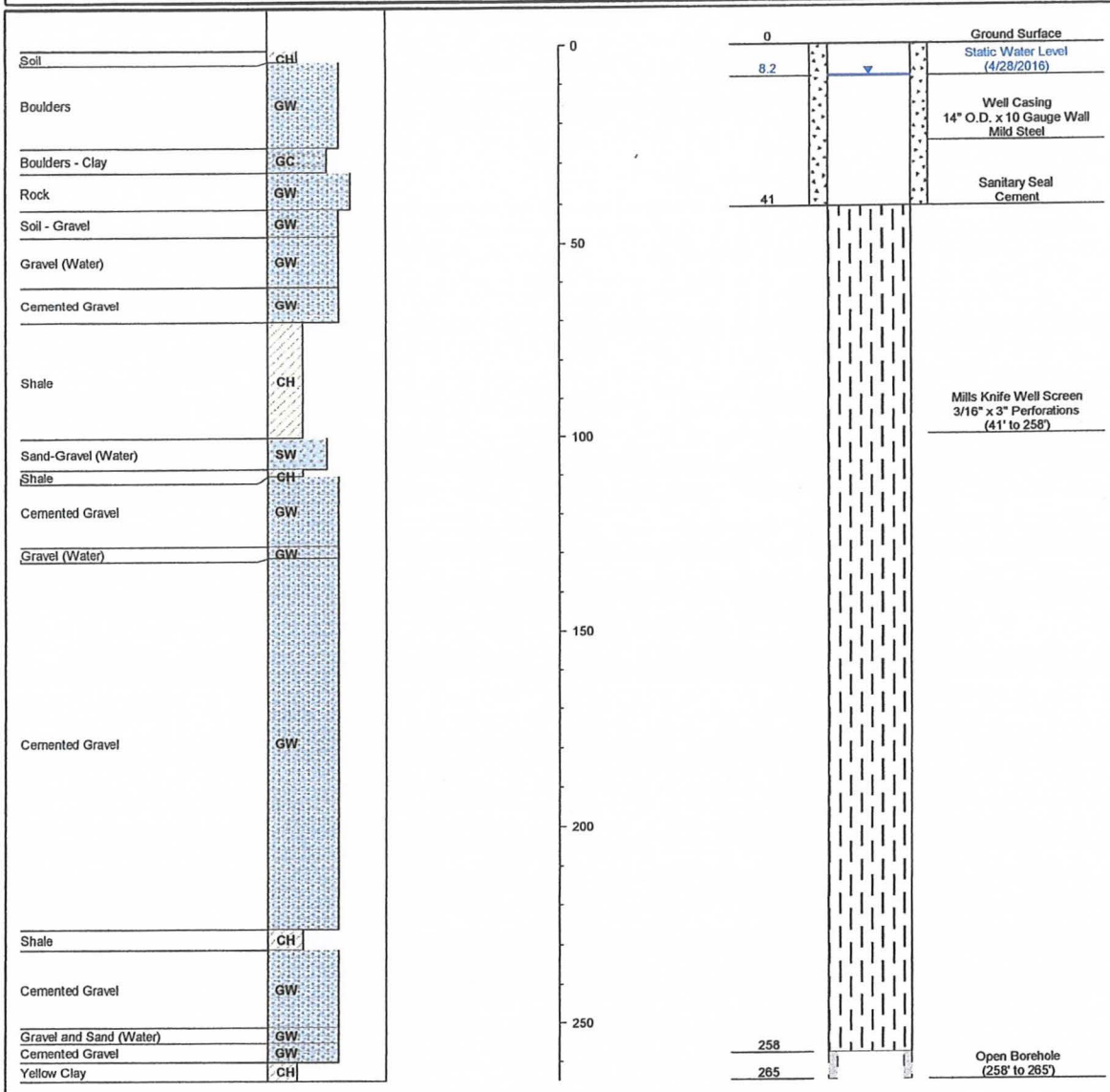
Signed Steve Unterseher Carol Haynes 7-30-02 399226

WELL DRILLER / AUTHORIZED REPRESENTATIVE DATE SIGNED C- 57 LICENSE NUMBER

BOREHOLE DATA
DWR WCR 7079

WELL #15

TRINITY OAKS WELL
PRODUCTION WELL PROFILE



WELL TESTING INFORMATION

April 1961

SWL = 4 ft
Q = 42 gpm
Drawdown (s) = 185 ft
Q/s = 0.23 gpm/ft of drawdown

April 28, 2016

SWL = 8.21 ft
Q_{avg} = 30 gpm
24-Hr PWL = 183 ft
24-Hr Q/s = 0.17 gpm/ft of drawdown

PROJECT NO. 8463.003	PRODUCTION WELL PROFILE FOR VOMWD TRINITY OAKS WELL SONOMA COUNTY, CALIFORNIA	WOOD RODGERS DEVELOPING INNOVATIVE DESIGN SOLUTIONS 3301 C Street, Bldg. 100-B Sacramento, CA 95816 Tel: 916.341.7760 Fax: 916.341.7767	DATE: 6/10/16 10:05
FIGURE 2			SCALE: V: 1" = 30'
			DRAWN BY: J.REISCHE
			DESIGNED BY: UNKNOWN
			CHECKED BY: L.ERNST

J:\Jobs\8463_VOMWD\8463.003_Trinity_Oaks_Well_Reactivation\Strater

NO.	DESCRIPTION	ENGR. INIT	BY APPROVED	DATE

APPENDIX B
REFERENCES

1. Geologic Map of the Santa Rosa Quadrangle, Scale: 1:250,000, compiled by D.L Wagner and E.J. Bortugno, 1982.

2. Geology for Planning in Sonoma County, Special Report 120, California Division of Mines and Geology, 1980.

3. Geologic Map of the Kenwood 7.5-Minute Quadrangle, Sonoma and Napa Counties, California, by Marc P. Delattre, David L. Wagner, Chris T. Higgins, Robert C. Witter, and Janet Sowers, 2007.

4. Calabazas Creek Open Space Preserve Resource Management Plan, in accordance with the Sonoma County Agricultural Preservation & Open Space District, May 2016.

5. "Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada", California Department of Conservation Division of Mines and Geology, Dated February 1998.

6. "Evaluation of Ground Water Resources Sonoma County. Volume 1: Geologic and Hydrologic Data", Department of Water Resources, Bulletin 118-4, 1975.

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10. Murray, W.A. & Farnsworth, D.R., Hydraulic Characterization of a Fractured Bedrock Aquifer. https://clu-in.org/products/siteprof/2007fracrock/010Murray,W.pdf

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PJC & Associates, Inc.
Consulting Engineers & Geologists

October 17, 2019 Job No. S1411.03

"Parcel 1"
APN: 053-130-009 & 053-100-015
12201 Highway 12
Glen Ellen, CA 95442

Subject: Supplemental Groundwater Availability Evaluation
Proposed 3-Lot Cannabis Development
Trinity Road & Sonoma Highway
APN: 053-110-076, 053-110-001 & 053-130-009
Glen Ellen, California

References: Report titled, "Groundwater Availability Evaluation, Proposed 3-Lot Cannabis Development, Trinity Road & Sonoma Highway, APN: 053-110-076, 053-110-001 & 053-130-009, Glen Ellen, California," prepared by PJC & Associates, Inc., revisions dated June 28, 2019.

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1. INTRODUCTION

PJC & Associates, Inc. (PJC) is pleased to submit this letter presenting our supplemental groundwater availability evaluation for the proposed 3-Lot cannabis development located at the northeast corner of Sonoma Highway and Trinity Road in Glen Ellen, California. The supplemental information presented in this letter is based on our previous work performed at the site, and the dry season stream flow data on Calabazas Creek from 2017 and 2018, provided by the Sonoma Ecology Center. This letter was prepared in an effort to better and more accurately determine the potential stream depletion of Calabazas Creek as a result of the proposed groundwater usage for the above referenced project.

2. SURFACE WATER / AQUATIC HABITAT

The project well is located approximately two and three-quarter miles southwest of the headwaters of Calabazas Creek. Additionally, the upland watershed of Calabazas Creek is fed by the smaller creek tributaries of Decker Creek, Oak Wood Creek, Spencer Creek, Johnson Creek,

Warsaw Creek and Alder Creek. According to the Calabazas Creek open Space Resource Management Plan (RMP), the Calabazas Creek watershed conducts a considerable amount of water, as evidenced by year-round stream flow and several deep pools along the length of the creek. Additionally, the RMP goes on to state that the abundance of water within the creek may be primarily due to the upland creek tributaries, as well as numerous upland springs and seeps. The upland watershed is not located within the cumulative impact area (CIA) of the project. Furthermore, the project well is located approximately 1000 feet from Calabazas Creek, and does not draw groundwater from the underlying aquifer until the first screened interval of the well, at a depth of 200 feet below the existing ground surface. Therefore, due to the project well accessing groundwater from the deep aquifer, the distance of the well from Calabazas Creek, and the distance of the well from the upland watershed, we would not expect the proposed project to negatively impact the seasonal streamflows of Calabazas Creek.

However, a quantitative assessment on the potential impacts of the project to Calabazas Creek was performed by PJC, as requested by the Sonoma County PRMD. In our above referenced report, PJC previously assumed a flow rate of 0.5 cubic feet per second (ft^3/sec), based on extremely limited data, for our analysis of stream flow depletion. However, subsequent to our above referenced report, a 2-year sample size of stream flow rates on Calabazas Creek was provided to PJC by the Sonoma Ecology Center, from monitoring gauges located on Highway 12 and Dunbar Road. The data provided by the Sonoma Ecology Center included stream flow for the months of June through September of 2017, and June through October of 2018. Based on the data, it appears that the stream flow varied greatly throughout the dry season months. In 2017, the lowest recorded flow was approximately 0.2 ft^3/sec in September of that year. In 2018, the lowest recorded flow was approximately 0.05 ft^3/sec in October of that year. Therefore, PJC assumed the 2018 stream flow of 0.05 ft^3/sec for our stream flow depletion calculations. This is considered highly conservative, as the model assumes a constant flow rate of 0.05 ft^3/sec for the entire dry season.

In our above referenced report, PJC utilized a range of storativities for our stream depletion calculations. The values of storativity were obtained from the literature (Fetter, 4th ed., 2001), and based on general values for leaky confined bedrock aquifers. In an effort to provide a more accurate storativity value, PJC utilized a computer model (AQTESOLV, 2019) to calculate storativity (S) by way of the specific storage of the aquifer (Ss) and the thickness of the aquifer (b). The range of storativity values are based on the possible thickness of the aquifer. The low range of storativity is 0.012, and is based on an aquifer thickness equal to the average screened intervals (140 ft) of all the known wells in the CIA. The high range of storativity is 0.016, and is based on an aquifer thickness equal to the screened interval thickness (195 ft) of the project well. Additional

inputs into the computer model, including aquifer compressibility and porosity, were representative values based on the known aquifer and bedrock conditions. The ranges of values are assumed to be highly conservative, as the bottom depths of the aquifer is unknown, and is likely much thicker than assumed. The stream depletion for Calabazas Creek based on the range of storativites is presented on Table 1 and Table 2.

TABLE 1
LOW RANGE STORATIVITY (0.012)*

Time Series for Depletion (days)	Stream Depletion (ft^3/sec) (S=0.012)*	Stream Depletion as a Percentage of Flow (%)
20	0.0000	0
40	0.0004	0.8
60	0.0011	2.2
80	0.0019	3.8
100	0.0026	5.2
120	0.0033	6.6
140	0.0039	7.8
160	0.0044	8.8
180	0.0049	9.8

Stream depletion: STRMDEPL08 (Barlow & Leake) and using the following assumptions:
Duration of pumping = 6 months (length of the dry season);
Proposed New Well average dry season discharge = 7.5 gpm or 10,800 gpd
(1.5 times the annual average discharge of 5.0 gpm or 8.1 acre-feet/year);
Storativity (S)= 0.012 (*Aquifer depth = average of screened intervals of known wells in the CIA)
S=Ss(b)
Transmissivity = 225 gpd/ft or 30 ft^2/day
(300 times the specific capacity of 0.10 gpm/ft; Heath, 1989, p.61.)

TABLE 2
HIGH RANGE STORATIVITY (0.016)*

Time Series for Depletion (days)	Stream Depletion (ft^3/sec) (S=0.016)*	Stream Depletion as a Percentage of Flow (%)
20	0.0000	0
40	0.0002	0.4
60	0.0006	1.2
80	0.0011	2.2
100	0.0017	3.4
120	0.0023	4.6
140	0.0028	5.6
160	0.0033	6.6
180	0.0037	7.4

Stream depletion: STRMDEPL08 (Barlow & Leake) and using the following assumptions:
Duration of pumping = 6 months (length of the dry season);
Proposed New Well average dry season discharge = 7.5 gpm or 10,800 gpd
(1.5 times the annual average discharge of 5.0 gpm or 8.1 acre-feet/year);
Storativity (S)= 0.016 (*Aquifer depth = screened interval of project well)
S=Ss(b)
Transmissivity = 225 gpd/ft or 30 ft^2/day
(300 times the specific capacity of 0.10 gpm/ft; Heath, 1989, p.61.)

3. CONCLUSIONS

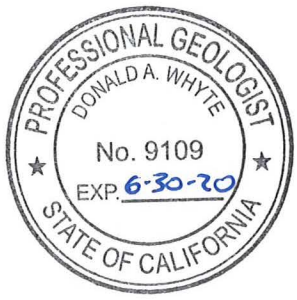
Based on our analysis, potential stream depletion on Calabazas Creek after 180 days would represent a less than 10 percent reduction of streamflow, based on the most conservative dry-season stream flow data of 0.05 ft^3-sec. We judge this to be a negligible amount for a creek with year-round stream flow, in an area considered by the RMP study, to have an abundance of water. Furthermore, the depletion rates are considered highly conservative, as the computer model (STRMDEPL08) for depletion assumes a stream condition that fully penetrates the underlying aquifer. The degree to which Calabazas Creek penetrates the underlying aquifer, and/or a possible near surface perched aquifer, is beyond the scope of this report. Additionally, based on the significant depth of the screened intervals of the project well, the distance of the project well to Calabazas Creek, and the distance of the project well from the upland watershed of Calabazas Creek, it is entirely plausible that the proposed groundwater usage for the project may not have any measurable effect on Calabazas Creek.

We trust that this is the information that you require at this time. If you have any questions concerning the content of this letter, please call.

Sincerely,

PJC & Associates

Donald A. Whyte
Project Geologist
PG 9109, California



PJC & Associates, Inc.
Consulting Engineers & Geologists

December 17, 2021 Job No. S1411.03

"Parcel 1"
APN: 053-130-009 & 053-100-015
12201 Highway 12
Glen Ellen, CA 95442

Subject: Supplemental Groundwater Availability Evaluation
Proposed Groundwater Usage Expansion
Trinity Road & Sonoma Highway
APN: 053-110-076, 053-110-001 & 053-130-009
Glen Ellen, California

References: Report titled, "Groundwater Availability Evaluation, Proposed 3-Lot Cannabis Development, Trinity Road & Sonoma Highway, APN: 053-110-076, 053-110-001 & 053-130-009, Glen Ellen, California," prepared by PJC & Associates, Inc., revisions dated June 28, 2019.

Letter titled, "Supplemental Groundwater Availability Evaluation, Proposed 3-Lot Cannabis Development, Trinity Road & Sonoma Highway, APN: 053-110, 053-110-001 & 053-130-009, Glen Ellen, California," prepared by PJC & Associates, Inc., dated October 17, 2019.

Report titled, "Gordenker Farms Dry Season 2020 Well and Streamflow Monitoring Final Report, Prepared for Gordenker Farms Cannabis Projects," prepared by Sonoma Ecology Center, dated December, 2020.

Report titled, "Gordenker Farms Dry Season 2021 Well and Streamflow Monitoring Final Report, Prepared for Gordenker Farms Cannabis Projects," prepared by Sonoma Ecology Center, dated December, 2021.

1. INTRODUCTION

PJC & Associates, Inc. (PJC) is pleased to submit this letter presenting our supplemental groundwater availability evaluation for the proposed groundwater usage expansion for the 3-Lot cannabis development located at the northeast corner of Sonoma Highway and Trinity Road in Glen

Ellen, California. The supplemental information presented in this letter is based on our previous work performed at the site, and the dry season stream flow data on Calabazas Creek from 2017 and 2018, provided by the Sonoma Ecology Center (SEC). This letter was prepared to address the proposed increase in groundwater usage for the project, from the original 8.1 acre-feet per year (afy), to the newly proposed 12.7 afy. As a result of the proposed increase in demand, PJC has re-evaluated the impacts to the aquifer groundwater storage and drawdown interference to neighboring wells. PJC also reviewed the streamflow monitoring reports for 2020 and 2021, prepared by the SEC, to better evaluate the potential stream flow depletion to Calabazas Creek from the proposed pumping regime.

2. GROUNDWATER DEMAND

Water demand for the cumulative impact area (CIA) will be equivalent to the sum of maximum proposed/potential cannabis irrigation, domestic water use, vineyard irrigation, and livestock demand. The following table 1 reflects the updated proposed ground water usage.

TABLE 1*

Proposed cannabis water use (parcel 1, outdoor), afy	4.5
Proposed cannabis water use (parcel 2, mixed light), afy	3.7
Proposed cannabis water use (parcel 3, outdoor), afy	4.5
Additional potential cannabis water use for CIA (21 CP's), afy	31.5
Total proposed/potential water use for CIA, afy	**44.2**
Existing domestic water use for subject property (3 parcels), afy	4.5
Additional existing/potential domestic water use for CIA (21 DU's), afy	31.5
Total existing/potential water use for CIA, afy	**36.0**
Existing vineyard irrigation demand for subject property (6 acres), afy	3.0
Additional existing/potential vineyard irrigation demand for CIA (77 acres), afy	38.5
Total potential water use for vineyard irrigation, afy	**41. 5**
Total Existing/Potential livestock water use for CIA, afy	**0.25**
Total existing/potential groundwater demand, afy	**122.0**
Groundwater recharge, afy	**233.0**
Total Groundwater in storage, acre-feet	**3,240**

***Groundwater demand, recharge and storage. The table shows that maximum potential groundwater demand is approximately 52% of the groundwater recharge and less than 4% of groundwater storage.**

3. GROUNDWATER DEMAND OF NEARBY PARCELS

An irregular shaped pumping cone, or cone of depression, may form in a fractured bedrock aquifer around a pumping well as the water level

declines. Therefore, it is important to consider the potential impacts of the proposed subject well to the other wells on the subject property, as well as other existing wells on nearby properties within the CIA.

Specific capacity and transmissivity values were based on an 8-hour well pump test performed on October 12, 2018. The construction of a monitoring well to accurately estimate the storativity (S), or storage coefficient, value was not feasible for this project. Therefore, a range of storage coefficients were utilized. In an effort to provide a more accurate storativity value, PJC utilized a computer model (AQTESOLV, 2019) to calculate storativity (S) by way of the specific storage of the aquifer (Ss) and the thickness of the aquifer (b). The range of storativity values are based on the possible thickness of the aquifer. The low range of storativity is 0.012, and is based on an aquifer thickness equal to the average screened intervals (140 ft) of all the known wells in the CIA. The high range of storativity is 0.016, and is based on an aquifer thickness equal to the screened interval thickness (195 ft) of the project well. Additional inputs into the computer model, including aquifer compressibility and porosity, were selected based on the aquifer and bedrock conditions. The ranges of values are assumed to be highly conservative, as the bottom depths of the aquifer is unknown, and is likely much thicker than assumed.

As previously mentioned in our above referenced report, the nearest off site well is located approximately 1,000 feet from the project well. Based on information obtained from the Well Completion Report Map Application provided by the California Department of Water Resources, the nearest off site well is 495 feet in depth, with 95 feet of screened perforations, and had a driller's yield of 300 gallons per minute (gpm). No information was available for the static water level of the well. However, according to the available well log data, static water levels within the cumulative impact area (CIA) are reported at depths between 8 and 100 feet below ground surface, with an average of 54 feet below ground surface. PJC conservatively assumed a static water level of 100 feet below the ground surface for the nearby well. Therefore, based on using a range of storativity values, drawdown interference on the closest neighboring well would be between 4.6 feet and 5.9 feet. Assuming the most conservative estimates of drawdown (5.9 feet), potential interference would represent a reduction in the well water column of less than two percent. PJC assumes a drawdown interference of less than five percent of the water column on a neighboring well to be within an acceptable range. Therefore, we judge this to be within tolerable limits, and should likely not negatively impact the nearest neighboring well.

Table 2 shows drawdown interference as a function of distance from the proposed project well, and shows that drawdown interference decreases as distance from the project well increases.

TABLE 2

Distance From Proposed Project Well (ft)	Drawdown Interference (ft) (S=0.012)*	Drawdown Interference (ft) (S=0.016)*
100	32.1	30.4
200	23.8	22.1
300	18.9	17.3
400	15.6	13.9
500	13.1	11.5
600	11.1	9.5
700	9.4	7.9
800	8.0	6.6
900	6.9	5.5
1,000	5.9	4.6

Drawdown interference was calculated using the Theis equation and the following assumptions:
Duration of pumping = 6 months (length of the dry season);
Proposed New Well average dry season discharge = 11.8 gpm or 16,992 gpd
(1.5 times the annual average discharge of 7.9 gpm or 12.7 acre-feet/year);
Storativity (S)*= Values range between 0.012 & 0.016
Transmissivity = 225 gpd/ft or 30 ft^2/day
(300 times the specific capacity of 0.10 gpm/ft; Heath, 1989, p.61.)

4. SURFACE WATER / AQUATIC HABITAT

The project well is located approximately two and three-quarter miles southwest of the headwaters of Calabazas Creek. Additionally, the upland watershed of Calabazas Creek is fed by the smaller creek tributaries of Decker Creek, Oak Wood Creek, Spencer Creek, Johnson Creek, Warsaw Creek and Alder Creek. According to the Calabazas Creek Open Space Resource Management Plan (RMP), the Calabazas Creek watershed conducts a considerable amount of water, as evidenced by semi-perennial stream flow and several deep pools along the length of the creek. Additionally, the RMP goes on to state that the abundance of water within the creek may be primarily due to the upland creek tributaries, as well as numerous upland springs and seeps. The upland watershed is not located within the cumulative impact area (CIA) of the project. Furthermore, the project well is located approximately 1000 feet from Calabazas Creek, and does not draw groundwater from the underlying aquifer until the first screened interval of the well, at a depth of 200 feet below the existing ground surface. Therefore, due to the depth at which the project well accesses groundwater from the aquifer, the distance of the well from Calabazas Creek, and the distance of the well from the upland watershed, we would not expect the proposed project to negatively impact the seasonal streamflows of Calabazas Creek.

PJC was able to obtain streamflow measurements of Calabazas Creek from the SEC for the years of 2017 and 2018. Additionally, the Gordenker

Farms Cannabis Project engaged the SEC to conduct dry season stream flow monitoring of Calabazas Creek during 2020 and 2021 to better ascertain the connection between the project groundwater pumping regime and its potential effects on the Calabazas Creek stream flow. In 2017, the lowest recorded flow was approximately 0.2 ft^3/sec. In 2018, the lowest recorded flow was approximately 0.05 ft^3/sec. In 2020, the lowest recorded flow was approximately 0.055 ft^3/sec, and 0.0001 ft^3/sec in 2021. Therefore, PJC calculated the stream flow depletion based on the four-year average of the lowest recorded dry season flows. The resulting four-year average of the lowest dry season streamflows of Calabazas Creek equates to 0.076 ft^3/sec. This is considered to be highly conservative, as years 2020 and 2021 represent the two lowest consecutive rainfall years on record. The degree to which the drought conditions will persist is beyond the scope of this report.

The stream depletion for Calabazas Creek based on the range of storativites, and reflecting the newly proposed usage expansion is presented on Table 3 and Table 4.

TABLE 3
LOW RANGE STORATIVITY (0.012)*

Time Series for Depletion (days)	Stream Depletion (ft^3/sec) (S=0.012)*	Stream Depletion as a Percentage of Flow (%) (0.076 ft^3/sec)
20	0.0000	0
40	0.0004	0.5
60	0.0012	1.6
80	0.0020	2.6
100	0.0028	3.7
120	0.0035	4.6
140	0.0041	5.4
160	0.0046	6.1
180	0.0051	6.7

Stream depletion: STRMDEPL08 (Barlow & Leake) and using the following assumptions:
Duration of pumping = 6 months (length of the dry season);
Proposed New Well average dry season discharge = 11.8 gpm or 16,992 gpd
(1.5 times the annual average discharge of 7.9 gpm or 12.7 acre-feet/year);
Storativity (S)= 0.012 (*Aquifer depth = average of screened intervals of known wells in the CIA)
S=Ss(b)
Transmissivity = 225 gpd/ft or 30 ft^2/day
(300 times the specific capacity of 0.10 gpm/ft; Heath, 1989, p.61.)

TABLE 4
HIGH RANGE STORATIVITY (0.016)*

Time Series for Depletion (days)	Stream Depletion (ft^3/sec) (S=0.016)*	Stream Depletion as a Percentage of Flow (%) (0.076 ft^3/sec)
20	0.0000	0
40	0.0002	0.3
60	0.0006	0.7
80	0.0012	1.6
100	0.0018	2.4
120	0.0024	3.2
140	0.0029	3.8
160	0.0035	4.6
180	0.0039	5.1

Stream depletion: STRMDEPL08 (Barlow & Leake) and using the following assumptions:
Duration of pumping = 6 months (length of the dry season);
Proposed New Well average dry season discharge = 11.8 gpm or 16,992 gpd
(1.5 times the annual average discharge of 7.9 gpm or 12.7 acre-feet/year);
Storativity (S)= 0.016 (*Aquifer depth = screened interval of project well)
S=Ss(b)
Transmissivity = 225 gpd/ft or 30 ft^2/day
(300 times the specific capacity of 0.10 gpm/ft; Heath, 1989, p.61.)

5. CONCLUSIONS

Based on our analysis, potential stream depletion on Calabazas Creek after 180 days, as a result of the new groundwater usage expansion, would potentially represent an approximately seven percent reduction of streamflow, based on the average minimum dry-season stream flow data of 0.076 ft^3/sec. We judge this to be a relatively negligible amount for a semi-perennial creek, in an area considered by the RMP study, to have an abundance of water. Furthermore, the depletion rates are considered highly conservative, as the computer model (STRMDEPL08) for depletion assumes a stream condition that fully penetrates the underlying aquifer. The degree to which Calabazas Creek penetrates the underlying aquifer, and/or a possible near surface perched aquifer, is beyond the scope of this report. Additionally, based on the significant depth of the screened intervals of the project well, the distance of the project well to Calabazas Creek, and the distance of the project well from the upland watershed of Calabazas Creek, it is entirely plausible and potentially likely that the proposed groundwater usage for the project may not have any measurable effect on Calabazas Creek.

Additionally, the increased groundwater usage from 8.1 afy to 12.7 afy remains a relatively small percentage of the overall groundwater in storage (less than 4 percent), and not likely to result in an overdraft condition of the underlying aquifer. Likewise, we judge that drawdown interference of off-site neighboring wells, as a result of the increased

groundwater usage, to be within tolerable limits, and should not significantly impact neighboring wells.

It should be noted however, that the SEC streamflow monitoring report for 2021 yielded data with a potentially worse case scenario for streamflow in Calabazas Creek. The SEC report does acknowledge the difficulties in determining stream flow in low flow conditions, and the possibility of sampling error. However, according to the 2020 and 2021 SEC reports, the slow, but steady decline in groundwater elevations in the monitoring well were not reflected in the streamflows of Calabazas Creek. The SEC report goes on to conclude that given the data collected, a relationship between stream flow and groundwater pumping from the project well was not evident. Moreover, the degree to which the pumping regime exacerbated the low flow conditions of the creek remains inconclusive, and may have no effect. Additionally, it is the opinion of PJC that it is possible, and potentially likely, that the extremely low flow rates of Calabazas Creek in the vicinity of the Gordenker Farms Cannabis Project were primarily the result of the two lowest consecutive rainfall years on record. Due to the semi-perennial nature of Calabazas Creek, it is also plausible that the low flow rates were inevitable, despite the current pumping regime of the project well. Regardless, the ongoing and continued monitoring of Calabazas Creek will provide additional yearly flow data, and could provide more conclusive results regarding the connectivity, or lack thereof, between the water level drops in the monitoring well and the cessation of flow in Calabazas Creek.

We trust that this is the information that you require at this time. If you have any questions concerning the content of this letter, please call.

Sincerely,

PJC & Associates

Donald A. Whyte
Project Geologist
PG 9109, California