REALM
Engineering
1767 Market Street, Suite C, Redding, CA 96001

HYDROLOGY REPORT

11250 CERRITO DRIVE, CLEARLAKE OAKS, CA

AUGUST 18, 2021

Contents

INTRODUCTION

The purpose of this Hydrology Study/Report is to provide adequate information regarding the water usage for a proposed cannabis cultivation operation and its impacts to surrounding areas. This report was written to meet the requirements of an Urgency Ordinance requiring land use applicants to provide enhanced water analysis during a declared drought emergency, approved by the Lake County Board of Supervisors on July 27th, 2021 **(Attachment A – Urgency Ordinance No. 3106)**.

PROJECT DESCRIPTION

Monte Cristo Vineyards, LLC (MCV) is seeking a Major Use Permit and an Early Activation of Use Permit from the County of Lake, for a proposed commercial cannabis cultivation operation at 11250 Cerrito Drive near Clearlake Oaks, California on Lake County APNs 006-007-17, 23, & 30 (Project Property). MCV's proposed commercial cannabis cultivation operation will be composed of twenty-two (22) A-Type 3 "Medium Outdoor" cultivation areas (with a total combined cultivation/canopy area of 958,320 ft^2), a 120 ft^2 Security Center/Shed, a 6,000 ft^2 Processing & Harvest Storage Facility, two 3,000 ft^2 Immature Plant Areas/Greenhouses, and two 120 ft^2 Pesticides & Agricultural Chemicals Storage Areas. The growing medium of the proposed outdoor cultivation/canopy area(s) will be an amended native soil mixture at or below grade, with drip irrigation systems to conserve water resources. Irrigation water for the proposed cultivation operation will come from the five existing onsite groundwater wells. Water from the onsite groundwater wells will discharge to an existing onsite 20-acrefoot off-stream water storage reservoir. Irrigation water will be pumped from the off-stream water storage reservoir to the proposed cultivation/canopy areas.

The 452-acre Rural Lands-zoned Project Property is located approximately 5 miles northwest of the City of Clearlake, CA, and situated along an east-west trending ridgeline between Clear Lake and High Valley in the central portion of Lake County. Topography of the Project Property is hilly, with elevations ranging between 1,670 and 2,405 feet above mean sea level. Current and past land uses of the Project Property are/were rural residential and intensive agriculture, with a 128-acre commercial vineyard that has been in continuous operation for the last two decades. The proposed cultivation/canopy areas will be established within existing vineyard blocks, utilizing infrastructure currently utilized to cultivate grapes. As a result, approximately 40 acres of vines will be removed to establish the proposed cultivation operation.

The Project Property is within the Schindler Creek – Frontal Clear Lake Watershed (HUC 12), with multiple ephemeral Class III watercourses flowing off of the Project Property towards Schindler Creek to the north and Clear Lake to the south. Soils of the Project Property are identified as the Maymen-Hopland-Etsel association and the Maymen-Etsel-Snook complex, and characterized as gravelly loam/residuum derived from sandstone and shale. The United States Geological Survey Map of the Ukiah Sheet defines the area in the vicinity of the Project Property as the Franciscan Formation, composed mostly of sandstone, shale, conglomerate, chert, greenstone, and metagraywacke. The Project Property is not located within any of the 13 groundwater basins/source areas identified in the 2006 Lake County Groundwater Management Plan.

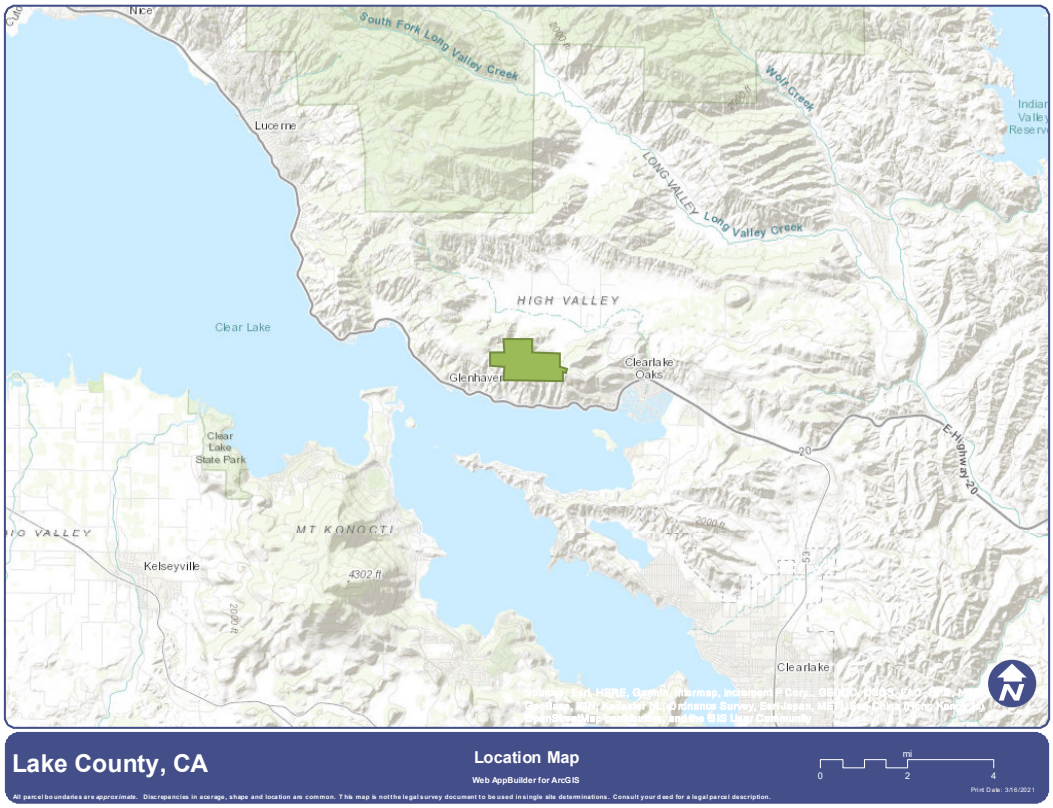


Figure 1 – Site Location Map

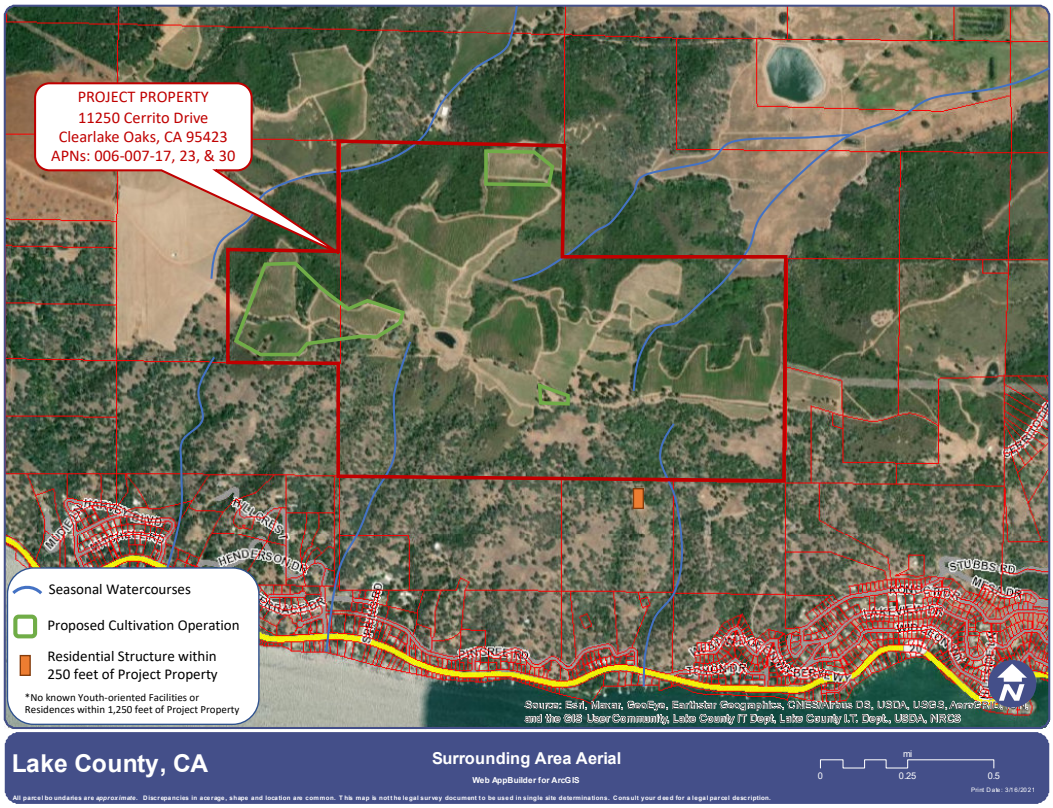


Figure 2 – Surrounding Area Aerial Image

WATER USAGE

Cannabis has often been characterized as a high-water-use plant. Bauer et al. (2015)[1] and Carah et al (2015)[2] estimate that cannabis plants can consume up to approximately 6 gallons per plant per day, whereas grapes consume approximately 3.5 gallons per plant per day in the North Coast region of California. Other authors, however, have reported that water use requirements for cannabis plants are similar to those of other agricultural crops, such as corn and hops, with an estimated water use requirement of 25-35 inches per year (Hammon et al. 2015[3]). According to a recent study published in the Journal of Environmental Management (Dillis et al. 2020[4]), outdoor and mixed-light cannabis cultivation uses the most water during the month of August, with an estimated water use of approximately 58,704 gallons per acre during the month of August.

According to MCV's Water Use Management Plan, they expect a total annual water use requirement of 45.8 acre-feet or 14,934,000 gallons for irrigation purposes, with the greatest daily water usage coming in the months of August and September (approximately 97,767 gallons). The following table (from MCV's Water Use Management Plan) presents the expected water use of the proposed cultivation operation by month during the cultivation season in gallons and acre-feet.

May	June	July	August	September	October	November
1,238,000	2,281,000	2,607,000	2,933,000	2,933,000	2,281,000	652,000
3.8	7	8	9	9	7	2

MCV's water usage estimates are based on an estimated water use requirement of 25 inches per year, which is greater than the water use estimates outlined in the recent study published in the Journal of Environmental Management (Dillis et al. 2020[4]). The onsite groundwater wells and off stream water storage reservoir have supported a 128-acre commercial vineyard for two decades. A UCANR report concerning vineyard water use in Lake County (McGourty et al. 2014[5]) indicates that vineyards that do not use water for frost protection, such as MCV's vineyard, have a water use requirement of 8 inches per year. This equates to an estimated annual water use requirement of 85.3 acre-feet (or 27,805,952 gallons) per year for MCV's existing 128-acre vineyard. MCV will be removing four vineyard blocks from production, and part of a fifth vineyard block, to establish the proposed outdoor cultivation/canopy areas. As a result, approximately 40 acres of vines will be removed, reducing the estimated annual water use requirement of the commercial vineyard operation from 85.3 acre-feet (or 27,805,952 gallons) to 58.7 acre-feet (or 19,116,592 gallons). The table below presents the expected monthly water use in acre-feet on the Project Property before and after cannabis cultivation operations have started.

	May	June	July	August	September	October	November
Vineyard Cultivation (128 acres)	1.3	21.6	24	21.6	16.8	0	0
Vineyard Cultivation (88 acres)	0.8	14.9	16.5	14.9	11.6	0	0
Cannabis Cultivation (22 acres)	3.8	7	8	9	9	7	2
Vineyard and Cannabis Cultivation	4.6	21.9	24.5	23.9	20.6	7	2

In summary, the estimated water use for irrigation on the Project Property will increase approximately 22.5 percent, from 85.3 acre-feet / 27,805,952 gallons to 104.5 acre-feet / 34,051,430 gallons (58.7 acre-feet / 19,116,592 gallons for commercial vineyard cultivation, plus 45.8 acre-feet or 14,934,000 gallons for commercial cannabis cultivation).

WATER AVAILABILITY

Irrigation water for the proposed cultivation operation will come from an existing 20-acrefoot off stream water storage reservoir, filled with water from five existing onsite groundwater wells. In February of 2021, the five onsite groundwater wells were evaluated by Power Services, Inc. via an Agricultural Pump Test to determine the production capacity of the wells with current/existing equipment (**Attachment C - Pump Test Reports**). The results and conclusions of these tests, indicate that:

- The groundwater well located at Latitude 39.03150° and Longitude -122.71285° (Groundwater well "A" on the attached Site Plans and Monte Cristo Vineyard Well 7 of the attached Pump Test Reports) can produce more than 41 gallons per minute.
- The groundwater well located at Latitude 39.03155° and Longitude -122.71005° (Groundwater well "B" on the attached Site Plans and Monte Cristo Vineyard Well 6 of the attached Pump Test Reports) can produce more than 48 gallons per minute.
- The groundwater well located at Latitude 39.03079° and Longitude -122.70880° (Groundwater well "C" on the attached Site Plans and Monte Cristo Vineyard Well 1 of the attached Pump Test Reports) can produce more than 27 gallons per minute.
- The groundwater well located at Latitude 39.02982° and Longitude -122.70010° (Groundwater well "D" on the attached Site Plans and Monte Cristo Vineyard Well 5 of the attached Pump Test Reports) can produce more than 15 gallons per minute.
- The groundwater well located at Latitude 39.03578° and Longitude -122.71002° (Groundwater well "E" on the attached Site Plans and Monte Cristo Vineyard Well 8 of the attached Pump Test Reports) can produce more than 24 gallons per minute.

The Well Completion Reports for the five onsite groundwater wells that will be supplying irrigation water to the proposed cannabis cultivation operation are included in this report as **Attachment B: Onsite Well Completion Reports**. The proposed cultivation operation will utilize the existing buried water supply lines of the existing vineyard blocks, to deliver irrigation water from the off stream water storage reservoir to the proposed cultivation/canopy areas. Prior to cultivation, inline water meters compliant with California Code of Regulations, Title 23, Division 3, Chapter 2.7 will be installed on the main irrigation water supply lines running between the off stream water storage reservoir and the proposed cultivation areas. The water supply lines are equipped with safety valves, capable of shutting off the flow of water so that waste of water and runoff is prevented/minimized when leaks occur and the system needs repair. The irrigation systems of the proposed cultivation/canopy areas will be composed of PVC lay flat hoses and drip tapes/lines.

The peak anticipated daily demand for water of the proposed cannabis cultivation operation is approximately 97,767 gallons per day, with an average daily water demand of approximately 71,067 gallons during the cultivation season. Based on Power Services, Inc.'s Pump Test Reports, the five onsite groundwater wells can produce at least 155 gallons per minute (collectively) or 223,200 gallons per day, and as much as 81 million gallons per year. The proposed cultivation

operation is expected to use a total of approximately 15 million gallons per year, or approximately 18.5 percent of the water that the five existing onsite groundwater wells could produce in a given year.

In response to the current drought, and in anticipation of cannabis cultivation, MCV decided to experiment with their irrigation practices to conserve water during the 2021 cultivation season. Until 2021, MCV would irrigate their vines with 4-6 gallons of water each over an eight-hour irrigation cycle, one to two days a week (May through September). In May of 2021, MCV started implementing shorter but more frequent irrigation cycles, every other day for ninety minutes (~1 gallon per vine per irrigation cycle). As a result, the vines are each receiving ~3.5 gallons per week on average, instead of 5 to 10 gallons per week on average. According to MCV, their water usage for irrigation to date has been cut in half, and they have not observed any reductions in the quality and quantity of the grapes produced by their vines.

As outlined above in the Water Usage section of this report, until 2021 MCV used approximately 85.3 acre-feet ,or 27,805,952 gallons, per year to irrigate their 128-acre vineyard. Establishment of the proposed cannabis cultivation operation would reduce their vineyard from 128 acres to approximately 88 acres. If MCV continues to implement the water conserving irrigation practices described above, then we can estimate that the water needed to support their 88-acre vineyard will be reduced from approximately 59 acre-feet, to 29.5 acre-feet per year. As outlined above in the Water Usage section of this report, the proposed cannabis cultivation operation will require approximately 46 acre-feet per year. As a result, it appears that MCV's overall annual water usage for both the proposed cannabis cultivation operation and remaining vineyard could be less than or equal to their annual water usage prior to 2021 (29.5 acre-feet plus 46 acre-feet equals 75.5 acre-feet, less than 85.3 acre-feet). Ultimately, it is MCV's responsibility to sustainably manage their water resources to ensure the success of their agricultural operations. It is obvious that they have sustainably managed their water resources over the last two decades, and we have no reason to believe that they would not continue to do so in the future.

AQUIFER/GROUNDWATER RECHARGE

Groundwater recharge is the replenishment of an aquifer with water from the land surface. It is usually expressed as an average rate of inches of water per year, similar to precipitation. Thus, the volume of recharge is the rate times the land area under consideration times the time period, and is usually expressed as acre-ft per year. In addition to precipitation, other sources of recharge to an aquifer are stream and lake or pond seepage, irrigation return flow (both from canals and fields), inter-aquifer flows, and urban recharge (from water mains, septic tanks, sewers, and drainage ditches). The Project Property is situated along an east-west trending ridgeline between Clear Lake and High Valley. Topography of the Project Property is hilly, with gravelly loam soils over volcanic and metasedimentary rock.

To estimate the groundwater recharge at the site, we first must assume that the recharge to the aquifer is primarily through rainfall across the 452-acre Project Property (Lake County APNs 006-007-17, 23 and 30). Therefore, the annual precipitation available for recharge onsite can initially be estimated using the following data and equation.

452 acres x 2.6 feet (Average Annual Precipitation for Clearlake, CA[6]) = 1175 acre-feet
Estimated Annual Precipitation Onsite = 1175 acre-feet/year

However, this estimate does not account for surface run-off, stream underflow, and evapotranspiration that occurs in all watersheds. According to the USGS, the long-term average precipitation that recharges groundwater in the northern California region is approximately 15 percent. Since the soils of and geology under the Project Property are typical for the northern California region, we estimate that the long-term average precipitation that recharges groundwater within the entire site to be approximately 15 percent. With this data and the precipitation data presented above, we can estimate the groundwater recharge of the Project Property by using the following equation.

1175 acre-feet/year (annual precipitation onsite) x 0.15 (long term average recharge) =
Estimated Groundwater Recharge = 176.25 acre-feet/year

Based on the estimated average annual recharge to the aquifer under the Project Property (176.25 acre-feet/year) and MCV's estimated annual water usage for both commercial cannabis and vineyard cultivation (between 75.5 and 104.5 acre-feet/year), it appears that MCV would have enough water to meet their demands without causing overdraft conditions.

POTENTIAL IMPACTS TO STREAMS & NEIGHBORING WELLS

We must first identify onsite and nearby surface water bodies and groundwater wells to evaluate potential impacts from the project's well pumping/water usage. The Project Property is situated along an east-west trending ridgeline between Clear Lake and High Valley, with multiple ephemeral Class III watercourses flowing off of the Project Property towards Schindler Creek to the north and Clear Lake to the south. We can determine that pumping of the onsite groundwater wells would not impact the ephemeral water bodies on and surrounding the Project Property, since pumping for irrigation occurs during the summer months, when the ephemeral watercourses are dry.

The California Department of Water Resources' Well Completion Report Map Application indicates that there are fourteen groundwater wells in the same Sections as the Project Property (Township 14N, Range 08W, Sections 25 and 26). However, upon further review, it is apparent that one of the wells shown on the Well Completion Report Map Application as being located within Section 26, is actually located within a Section that is over five miles northwest of the Project Property (not within Section 26). Additionally, two of the wells shown on the Well Completion Report Map Application as being located within Section 25, were drilled in the 1950s and the well completion reports for these two wells do not indicate their location. Finally, seven of the wells shown on the Well Completion Report Map Application as being located within Sections 25 and 26 are MCV's wells, five on the Project Property and two on MCV's property located at 11830 and 11906 Cerrito Drive. The locations of all the wells with Sections 25 and 26, who's location was identifiable via their well completion reports, were plotted on the map below (Figure 3 – Nearest Known Wells Location Map).

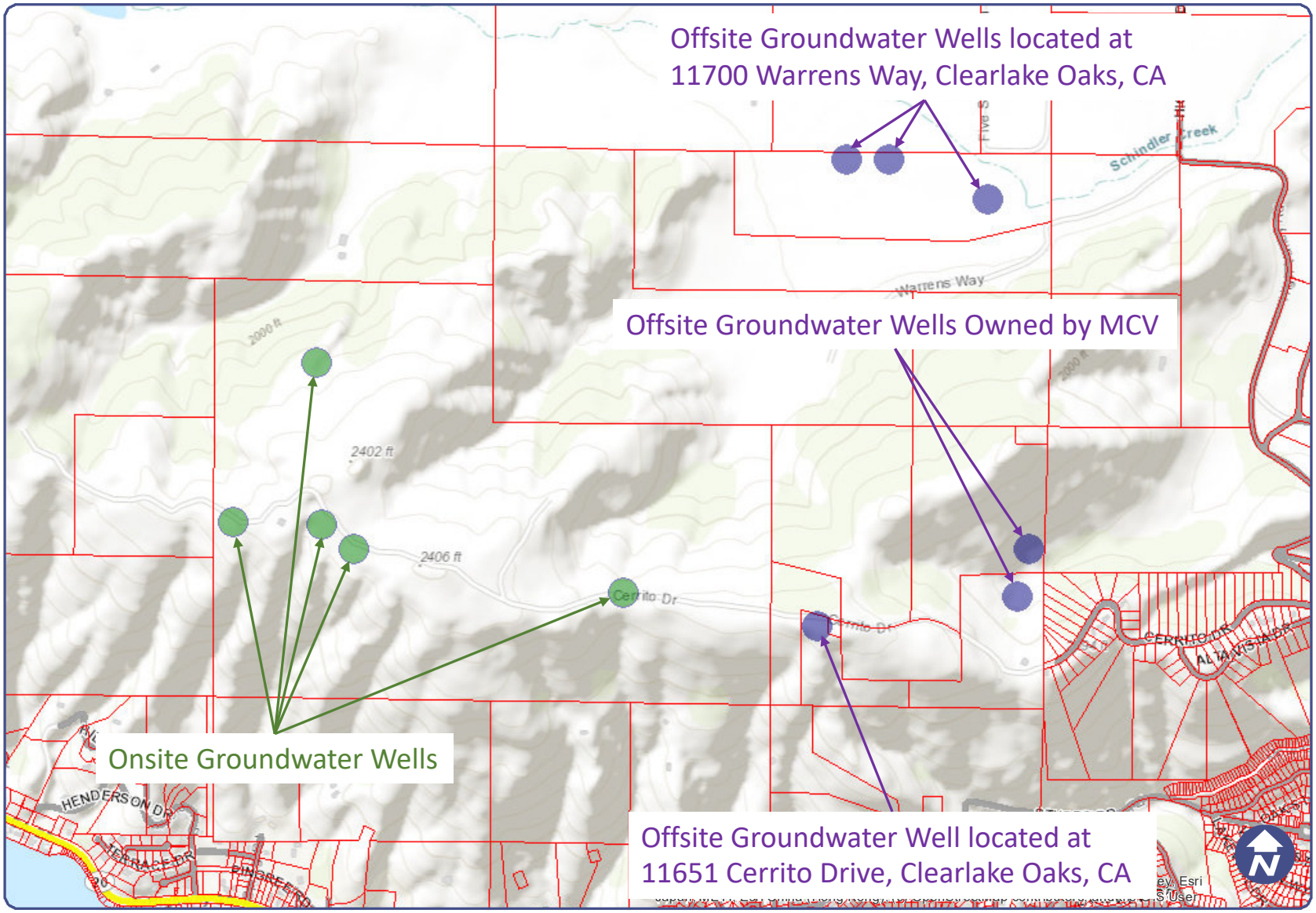


Figure 3 – Nearest Known Wells Location Map

As demonstrated in the map above (Figure 3 – Nearest Known Wells Location Map), there are only four offsite groundwater wells, who's location was identifiable via their well completion reports, that are not owned by MCV. Three of those offsite groundwater wells are located adjacent to Schindler Creek off of Warrens Way, and were drilled into an alluvial aquifer that is unlike the aquifer(s) under the Project Property **(Attachment D: Well Completion Reports for Nearest Known Wells)**. This leaves us with only one offsite groundwater well that is not owned by MCV and that could be impacted by pumping from MCV's agricultural activities. This well is located directly east of the Project Property at 11651 Cerrito Drive (Lake County APN 006-007-31), approximately 1,900 feet east of groundwater well "D" on the attached Site Plans (**Attachment F – Radius of Influence Analysis)**, and was drilled in 1993 to a depth of 445 feet, but completed at a depth of 332 feet.

To evaluate potential onsite well pumping impacts to the groundwater well located at 11651 Cerrito Drive, the potential lateral extent of pumping from groundwater well "D" was estimated. For this analysis and with MCV's assistance, we conducted a 14-hour well yield test on August 13th, 2021. During the well yield test, groundwater well "D" was pumped continuously at 20.3 gallons per minute (gpm) for 14 hours, and the water level in the well was recorded every hour using a submerged airline that was previously installed in the well at 680 feet below ground surface (bgs). Over the course of the 14-hour well yield test, the water level in groundwater well "D" dropped 14 feet, from 611 feet bgs to 625 feet bgs. Using this data, we can calculate a Specific Capacity of 1.45 (20.3 gpm / 14 feet = 1.45).

Using general relationships discussed in Driscoll (1986)[7], we estimate the lateral pumping influence using information from the August 13, 2021 well yield test. An approximate relationship between specific capacity calculated from the well yield test and aquifer transmissivity was used to obtain aquifer characteristics and estimate a potential radius of pumping influence. Transmissivity was estimated for an unconfined aquifer, using the relationship of specific capacity (yield/drawdown) multiplied by the coefficient of 2,000 (for a confined aquifer). To develop the slope of the drawdown curve from the pumping well, the value of Δs (drawdown over one log graph cycle) was calculated for a distance-drawdown relationship, where $T = 528Q/\Delta s$ (Driscoll, 1986, equation 9.11). The analysis is shown on the attached semi-log plot (**Attachment F – Radius of Influence Analysis)**.

Using data from the August 13, 2021 well yield test and the general relationships outlined above, we calculated a zone of pumping influence extending approximately 1,300 feet from groundwater well "D". The well located at 11651 Cerrito Drive (Lake County APN 006-007-31), is approximately 1,900 feet east of groundwater well "D". Therefore, it does not appear that pumping the onsite groundwater wells for cultivation will have a significant effect, if any, on neighboring wells.

DROUGHT MANAGEMENT PLAN

The Urgency Ordinance approved by the Lake County Board of Supervisors on July 27th, 2021 (Ordinance No. 3106) requires applicants to provide a plan depicting how the applicants plan to reduce water use during a declared drought emergency. MCV's proposed commercial cannabis cultivation operation will have up to 958,320 ft^2 of outdoor cultivation/canopy area, with an estimated annual water use requirement of 45.8 acre-feet or 14,934,000 gallons. Additionally, for the last two decades MCV has operated a 128-acre commercial vineyard on the Project Property, which will be reduced from 128 acres to 88 acres as a result of establishing the proposed commercial cannabis cultivation operation. The estimated annual water use requirement of the 88-acre commercial vineyard is 58.7 acre-feet or 19,116,592 gallons, when utilizing standard vineyard management and irrigation practices.

In response to the current drought, and in anticipation of cannabis cultivation, MCV decided to experiment with their irrigation practices to conserve water during the 2021 cultivation season. Until 2021, MCV would irrigate their vines with 4-6 gallons of water each over an eight-hour irrigation cycle, one to two days a week (May through September). In May of 2021, MCV started implementing shorter but more frequent irrigation cycles, every other day for ninety minutes (~1 gallon per vine per irrigation cycle). As a result, the vines are each receiving ~3.5 gallons per week on average, instead of 5 to 10 gallons per week on average. According to MCV, their water usage for irrigation to date has been cut in half, and they have not observed any reductions in the quality and quantity of the grapes produced by their vines.

In response to future emergency drought declarations, and to ensure both success and decreased impacts to the surrounding areas, MCV will implement the water conserving irrigation practices described above to irrigate the remaining 88-acre vineyard. This will reduced the estimated annual water use requirement of the remaining vineyard from approximately 58.7 acre-feet or 19,116,592 gallons to 29.5 acre-feet or 9,612,603 gallons, during a drought emergency. Prior to 2021, the estimated water use requirement for MCV's existing 128-acre vineyard was 85.3 acre-feet per year. As outlined above in the Water Usage section of this report, the proposed cannabis cultivation operation will require approximately 46 acre-feet per year. By implementing the water conserving irrigation practices described above to irrigate the remaining 88-acre vineyard during drought emergencies, it appears that MCV's overall annual water usage for both the proposed cannabis cultivation operation and remaining vineyard would be less than their annual water usage prior to 2021 (29.5 acre-feet plus 46 acre-feet equals 75.5 acre-feet, less than 85.3 acre-feet).

CONCLUSIONS

MCV has operated a 128-acre commercial vineyard on the Project Property for decades. MCV proposes to establish a commercial cannabis cultivation operation on the Project Property, composed of twenty-two (22) A-Type 3 "Medium Outdoor" cultivation areas, with a total combined outdoor cultivation/canopy area of 958,320 ft^2. The proposed cultivation/canopy areas will be established within existing vineyard blocks, resulting in the removal of approximately 40 acres of vines.

Historically, MCV has used approximately 85.3 acre-feet per year to irrigate their 128-acre vineyard. Establishment of the proposed commercial cannabis cultivation operation would reduce their vineyard from 128 acres to approximately 88 acres. The estimated water use requirement for irrigation on the Project Property after establishing the proposed commercial cannabis cultivation operation ranges from 75.5 to 104.5 acre-feet, depending on the irrigation practices implemented for commercial vineyard cultivation. MCV has practiced water conserving irrigation practices that could reduce the amount of water needed to irrigate their vineyard by as must as 50 percent when necessary (such as drought emergency).

From our analysis, it appears that MCV has sufficient onsite water resources to support the proposed cannabis cultivation operation and remaining vineyard. Ultimately, it is MCV's responsibility to sustainably manage their water resources to ensure the success of their agricultural operations. It is obvious that they have sustainably managed their water resources over the last two decades, and we have no reason to believe that they would not continue to do so in the future.

The Project Property is not located within any of the 13 groundwater basins/source areas identified in the 2006 Lake County Groundwater Management Plan, and there are no perennial or intermittent surface water bodies on or directly adjacent to the Project Property that could be impacted by pumping of the onsite wells. The nearest known neighboring well is located approximately 1,900 feet east of MCV's easternmost onsite groundwater well. A Radius of Influence Analysis, using data from a 14-hour yield test of MCV's easternmost onsite groundwater well, indicates that pumping of this well would not impact the nearest known neighboring well.

LIMITATIONS

Realm Engineering is not responsible for the independent conclusions, opinions or recommendations made by others based on the records review, site inspection, field exploration, and interpretations presented in this report.

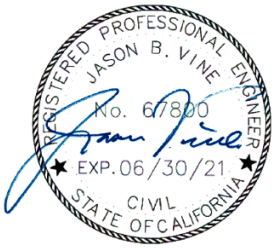
Groundwater systems of Lake County are typically complex, and available data rarely allows for more than general assessment of groundwater conditions and delineation of aquifers. Hydrologic interpretations are based on Well Completion Reports made available to us through the California Department of Water Resources, available geologic maps and hydrological studies and professional judgment. This analysis is based on limited available data and relies significantly on interpretation of data from disparate sources of disparate quality.

It should be noted that hydrological assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Additionally, the passage of time may result in a change in the environmental characteristics at this site and surrounding properties. This report does not warrant against future operations or conditions, nor does this warrant operations or conditions present or a type or at a location not investigated.

This report is for the exclusive use of Monte Cristo Vineyard, LLC, their affiliates, designates and assignees, and no other party shall have any right to rely on any service provided by Realm Engineering without prior written consent.

Please feel free to contact me with any questions that you may have regarding this Hydrology Study/Report.

Sincerely,
Jason Vine, P.E. 67800



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REFERENCES

[1]Bauer, S., Olson, J., Cockrill, A., et al. 2015. Impacts of surface water diversions for marijuana cultivation on aquatic habitat in four northwestern California watersheds. PLOS ONE, 10(9): e0137935

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[3]Hammon, B., Rizza, J. and Dean, D. 2015. Current impacts of outdoor growth of cannabis in Colorado. Colorado State University Extension, Fact Sheet No. 0.308

[4]Dillis, C.R., Grantham, T.E., Mcintee, C., McFadin, B., Grady, K.V. 2020. Water storage and irrigation practices for cannabis drive seasonal patterns of water extraction and use in Northern California. Journal of Environmental Management, Volume 272, 15 October 2020, 110955

[5]McGourty, G., Keiffer, R., Zoller, B. 2014. Vineyard Water Use in Lake County, California. University of California Agriculture and Natural Resources

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ATTACHEMENT A

URGENCY ORDINANCE NO. 3106

BOARD OF SUPERVISORS, COUNTY OF LAKE, STATE OF CALIFORNIA

ORDINANCE NO. 3106

AN URGENCY ORDINANCE REQUIRING LAND USE APPLICANTS TO PROVIDE ENHANCED WATER ANALYSIS DURING A DECLARED DROUGHT EMERGENCY

WHEREAS, the Sheriff, acting as the OES Director of Lake County, declared a local emergency due to drought conditions on May 6, 2021; and

WHEREAS, the Lake County Board of Supervisors approved the ratification of the declaration of a local emergency due to drought conditions on May 11, 2021; and

WHEREAS, the Board of Supervisors wish to ensure continued access to drinking water from private wells or from water purveyors throughout the county; and

WHEREAS, the Board of Supervisors wish to ensure that all current agricultural activities and projects find success during this declared drought emergency; and

WHEREAS, the Board of Supervisors of the County of Lake finds that additional information is critical to ensuring that the Planning Commission approves projects based on evidence of water use and water impacts and the analysis of the impacts to the surrounding areas.

NOW THEREFORE, the Board of Supervisors of the County of Lake hereby ordains as follows:

Section One: Due to the exceptional drought that we are experiencing and the declaration of a drought emergency, any land use approvals are required to provide adequate information regarding water usage for the project being considered and its impacts to surrounding areas. All projects that require a CEQA analysis of water use must include these additional items:

A. Hydrology report prepared by a California licensed civil engineer, hydro-geologist, hydrologist, or geologist experienced in water resources
    a. Approximate amount of water available for the project's identified water source
    b. Approximate recharge rate for the project's identified water source
    c. Cumulative impact of water use to surrounding areas due to project
B. Drought Management Plan
    a. Provide a plan depicting how the applicants plan to reduce water use during a declared drought emergency, to ensure both success and decreased impacts to the surrounding areas

Section Two: This urgency ordinance, if approved, shall take effect on all future Planning Commission considerations until the declared drought emergency has expired or if the Board of Supervisors revokes the ordinance.

Section Three: It can be seen with certainty that there is no possibility that this urgency Ordinance may have a significant effect on the environment.

Section Four: All ordinances or parts of ordinances or resolutions or parts of resolutions in conflict herewith are hereby repealed to the extent of such conflict and no further.

Section Five: This ordinance shall go into effect immediately, and before the expiration of fifteen days after its passage, it shall be published at least once in a newspaper of general circulation printed and published in the County of Lake.

Section Six: This Ordinance is adopted as an urgency Ordinance pursuant to the provisions of Government Code sections 25123 and 25131 and shall be effective immediately upon adoption. Based on the declaration of purpose and facts constituting the urgency set forth above in Section One of this Ordinance, the Board of Supervisors finds and determines that the adoption of this Ordinance as an urgency Ordinance is necessary for the immediate preservation of the public peace, health and safety to address critical groundwater conditions in Lake County.

The Foregoing Ordinance was introduced before the Board of Supervisors on the 27th day of July, 2021, and passed by the following vote on the 27th day of July, 2021.

AYES: Supervisors Simon, Crandell, Scott, Pyska, and Sabatier

NOES: None

ABSENT OR NOT VOTING: None

COUNTY OF LAKE

Chair, Board of Supervisors

ATTEST: CAROL J. HUCHINGSON
Clerk of the Board of Supervisors

By: _____
Deputy

APPROVED AS TO FORM:

ANITA L. GRANT
County Counsel

By: _____

ATTACHEMENT B

ONSITE WELL COMPLETION REPORTS

ORIGINAL
File with DWR

JUL 15 2003

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 802185

Page ___ of ___
Owner's Well No. ___
Date Work Began ___ Ended ___
Local Permit Agency LAKE County Envico. Health
Permit No. WE-2191 Permit Date 11-7-02

DWR USE ONLY — DO NOT FILL IN
14N/08W-26M
STATE WELL NO./STATION NO.
LATITUDE ___ LONGITUDE ___
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ___ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

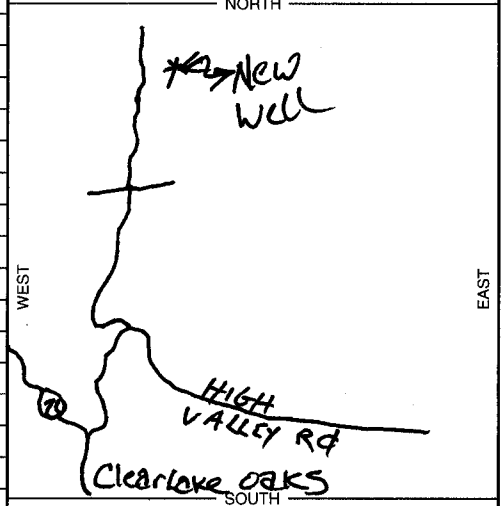
DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	16	Red Hardpan
16	35	Gray RK & Hardpan
35	68	Cmtd. grvl. & Sandstone
68	70	Black shale
70	103	Hardpan - Shale
103	105	Gray ASH
105	145	Brkn. Gray Rock - water @ 120 *
145	156	Gray ash
156	242	Frac. Black & Blue Rock
242	302	Frac Black-white Rock
302	340	Red ash - Frac Rock
340	355	Mixed red rock + Ash
355	422	Coarse grvl. + Cmtd. Sd.
422	425	Gray ash
425	442	Coarse grvl.
442	495	Frac. blue-black rock
495	525	Shale + gray ash
525	545	Blue & Black rock
545	555	Sd. stone & fine grvl.
555	560	Blue shale
560	562	Coarse grvl. & sand
562	584	Coarse grvl. - Brkn Rock
584	587	Oily shale
587	660	Coarse grvl. + Cmtd. Sd

TOTAL DEPTH OF BORING 660 (Feet)
TOTAL DEPTH OF COMPLETED WELL 680 (Feet)

WELL LOCATION

Address 11230 Cerrito Dr.
City Clearlake Oaks
County LAKE
APN Book 006 Page 007 Parcel 023
Township 14N Range 08W Section 26
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH
Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



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.***

ACTIVITY (✓)
X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)
WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial
___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 120 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 154 (Ft.) & DATE MEASURED 5/16/03
ESTIMATED YIELD * 150 (GPM) & TEST TYPE Air lift
TEST LENGTH 12 (Hrs.) TOTAL DRAWDOWN 220 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	63	16	✓				PVC	2	SCH 80	N/A
0	440	16	✓				PVC	8	Class 200	N/A
440	580	16		✓			PVC	8	Class 200	.032
580	620	16	✓				PVC	8	Class 200	N/A
620	660	16		✓			PVC	8	Class 200	.032
660	670	16	✓				PVC	8	Class 200	N/A

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	400 lb			
50	680			✓	#8 SRI. Filter Pack

JUL 18 2003

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ 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 WDC Exploration & Wells (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
PO Box 141 ADDRESS Zamora CITY Ca. STATE 95698 ZIP
Signed ___ WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED ___ 213326 C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

DEC 14 2001

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO. STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___
Owner's Well No. 006-007-30
No. 769025
Date Work Began 8-20-01, Ended 8-21-01
Local Permit Agency Lake County Public Health Dept
Permit No. WE2103 Permit Date 8-20-01

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary Air FLUID

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	3	Fill
3	130	Weathered Shale
130	290	Gray Shale
290	360	Black Volcanic with Quartz
360	363	Fractured Black Volcanic (15gpm)
363	390	Broken Black. (20gpm)
390	555	Black Shale Like (Hard)
555	565	Broken Black And White Gravely (55gpm)
365	610	Black And White (Solid)
610	640	Black (Volcanics)

Test Well #5
New 11 Acre Development

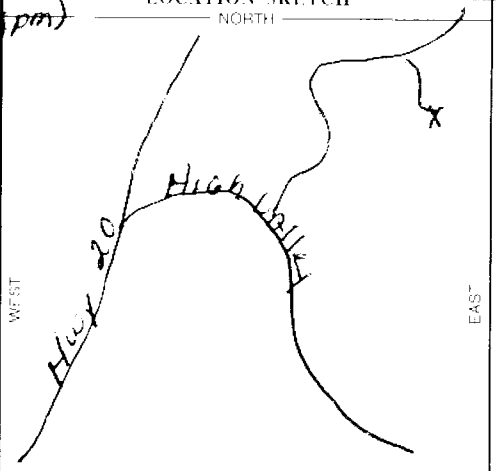
Well Abandonment
6"
23' Cement
617' 640' ft pea gravel

TOTAL DEPTH OF BORING 640 (Feet)
TOTAL DEPTH OF COMPLETED WELL 640 (Feet)

WELL LOCATION

Address Monte Lago Vineyard (Territek)
City Clear Lake Oaks
County Lake County
APN Book ___ Page ___ Parcel 006-007-30
Township 14N Range 06W Section 25
Latitude ___ DEG ___ MIN ___ SEC NORTH Longitude ___ DEG ___ MIN ___ SEC WEST

LOCATION SKETCH



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

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 ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 360 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 360 (Ft.) & DATE MEASURED 8-21-01
ESTIMATED YIELD * 90 (GPM) & TEST TYPE Air Lift
TEST LENGTH 8 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
	Well abandonment						None			

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	23	✓			
23	640			✓	Pea Gravel

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
- 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 Canepa And Sons Inc
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

13760 Mono Way, Lakeport CA 95453
ADDRESS CITY ZIP

Signed: C.

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 1089169

DWR USE ONLY — DO NOT FILL IN
14N/08W-25
STATE WELL NO./STATION NO.
LATITUDE | LONGITUDE
APN/TRS/OTHER

Page ____ of ____
Owner's Well No. ____
Date Work Began 8/25/08, Ended 8/28/08
Local Permit Agency Lake County Environmental Health
Permit No. WE 2619 Permit Date 7/7/09

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID ____

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION (Describe material, grain size, color, etc.)
0	3	Red Soil
3	10	Brn. Brittle Clay
10	30	Brn. Shale
30	190	Brn. Broken Shale
190	240	Greenstone
240	260	Red Chert
260	300	Greenstone
300	320	Red Chert
320	340	Greywacke

TOTAL DEPTH OF BORING 340 (Feet)
TOTAL DEPTH OF COMPLETED WELL 335 (Feet)

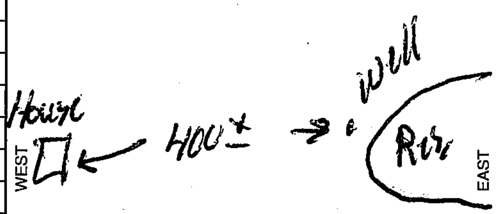
WELL LOCATION

Address 11250 Circle H.
City Clearlake Oaks
County Lake
APN Book 006 Page 007 Parcel 17
Township 14N Range 8W Section 25
Lat ___ N (DEG. MIN. SEC.) Long ___ W (DEG. MIN. SEC.)

LOCATION SKETCH

NORTH

WEST



EAST

SOUTH

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.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
X Domestic ___ Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 240 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 193 (Ft.) & DATE MEASURED 8/28/09
ESTIMATED YIELD * 80 (GPM) & TEST TYPE Air lift
TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN ____ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	200	9	X				PVC F480	4½	SDR26	
200	255	7	X				PVC F480	4½	SDR26	
255	335	7		X			PVC F480	4½	SDR26	.032

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	22		X		
22	335				Pea gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ 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 Dan McMullen Well Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

1487 Old Long Valley Rd. Clearlake Oaks CA 95423
ADDRESS CITY STATE ZIP

Signed [signature] 9/15/08 533152
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

ORIGINAL
File with DWR

#2 DEC 14

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 769026

Page ___ of ___
Owner's Well No. 006-007-30
Date Work Began 11-5-01, 11-8-01
Local LAKE County Public Health Dept
Permit No. WE 2130 Permit Date 8-20-01

THIS 05LU-25

LATITUDE | LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary Air. FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION Describe material, grain size, color, etc.
0	3	Soil Small Gravel
3	80	Decomposed Shale
80	83	Fractured Shale (12gpm)
83	210	Shale
210	303	Weathered Shale (20gpm)
303	560	Shale
560	565	Fractured Shale
565	600	Shale

Test Hole 600'
32 G.P.M

Abandoned

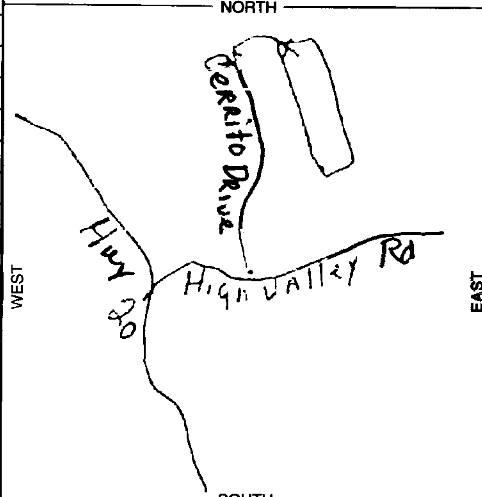
6" | 20' cement | 580' pea gravel | 600'

TOTAL DEPTH OF BORING 600' (Feet)
TOTAL DEPTH OF COMPLETED WELL 600 (Feet)

WELL LOCATION

Address Monte Lago Vineyard
City Clearlake Oaks
County Lake County
APN Book ___ Page 006-007-30
Township 14N Range ___
Latitude ___ NORTH DEG. MIN. SEC. Longitude ___ WEST DEG. MIN. SEC.

LOCATION SKETCH



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.***

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
- REMEDIATION
- OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 80 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 50' (Ft.) & DATE MEASURED 11-8-01
ESTIMATED YIELD * 32 (GPM) & TEST TYPE Air Lift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	600	6			N/A					
Well abandonment										

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
			N/A		
20	600'			✓	pea Gravel
0	20	✓			

ATTACHMENTS (✓)
- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analyses
- 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 Canepa And Sons Inc
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

13760 Mono Way Sonora, Calif 95370
ADDRESS CITY STATE ZIP

Signed C Mark Hausley 11/12/01 425749
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

DEC 14 2001 #4 Shannon Ranches

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
ALTITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___

Owner's Well No. 006-007-17-00 No. 762984

Date Work Began 7-12-01, Ended 8-20-01

Local Permit Agency Lake County Public Health Dept

Permit No. WE3055 Permit Date 7-13-01

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Rotary Air FLUID

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	3	Soil
3	30	Weathered Shale
30	119	Red Volcanics
119	165	Red Volcanics
165	200	Shale
200	211	Fractured Shale with Gray Clay
211	380	Broken Black Lava with Quartz (60gpm)
380	396	Fractured Shale
396	475	Fractured Volcanics (40gpm)
475	560	Broken Volcanics
560	590	Gravely Volcanics
590	612	Large Broken Black & White (55gpm)
612	630	Gray Shale
630	640	Black Volcanic
		Total Depth 640'
640	700	(Testhole) Black Volcanics

TOTAL DEPTH OF BORING 700 (Feet)

TOTAL DEPTH OF COMPLETED WELL 640 (Feet)

WELL LOCATION

Address 11250 Cerrito Drive

City Clear Lake, Calif 95423

County Lake County

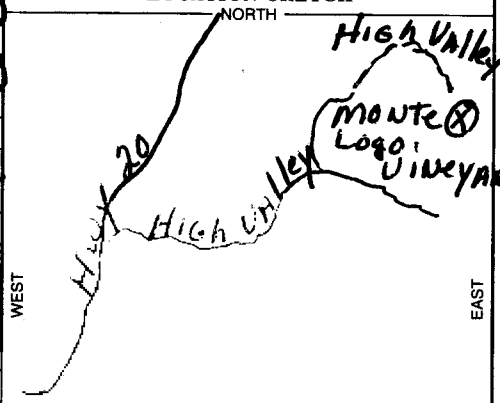
APN Book ___ Page ___ Parcel 006-007-17-00

Township 14N Range 8W Section 25

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH

Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



*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.***

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 ___

REMEDIATION ___

OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 260' (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 245 (Ft.) & DATE MEASURED 8-20-01

ESTIMATED YIELD 155 (GPM) & TEST TYPE Air Lift

TEST LENGTH 10 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

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

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BOREHOLE DIA. (inches)	TYPE (✓) BLANK	SCREEN	CONCRETE GROUT	FILL PIPE	MATERIAL GRADE	INTERNAL DIAMETER (inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (inches)
0	23	14¾	✓				Steel	10"	.250	
0	265	13¾	✓				Steel	8"	.250	
265	480	13¾		✓			Steel	5"	.250	1X1X¼
480	505	13¾	✓				Steel	5"	.250	
480	500	8"	✓				Steel	6⅝	.185	
500	640	8"		✓			Steel	6⅝	.185	20 m.p.

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	23	✓			

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ 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 Cahill and Sons Inc (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 13760 Mona Way CITY Sonora, STATE Calif ZIP 95370

Signed C. Mike Hawley 8/20/01 425749

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ATTACHEMENT C

PUMP TEST REPORTS

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24725

CONFIDENTIAL/PROPRIETARY INFORMATION

Jonathan Dharmapalan

Friday, Feb 12, 2021

Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

SUBJECT: PUMPING COST ANALYSIS
HP: 15.00 Plant: Monte Cristo Vineyard Well 1
PUMP TEST REFERENCE NUMBER: PT-24725
PUMP TEST RUN: Run 1

The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the pump test performed Feb 10 2021 and information provided by you during the pump test.

It is recommended and assumed that:

- **Overall plant efficiency can be improved to: 60%**
- **Water requirements will be the same as for the past year**
- **All operating conditions (annual hours of operation, discharge head, and water pumping level) will remain the same as they were at the time of the pump test**

	EXISTING PLANT EFFICIENCY	IMPROVED PLANT EFFICIENCY	SAVINGS
kWh/AF	1919	0	1,919.00
Estimated Total kWh	9,540	0	9,540
Average Cost per kWh	$0.23	$0.23	
Average Cost per hour	$2.2	$0	$2.20
Cost Per Acre Ft.	$442.7	$0	$442.70
Estimated Acre Ft. Per Year	4.97	4.97	
Run Hours	1,000.00	1,000.00	
Overall Plant Efficiency	0%	60%	
Estimated Total Annual Cost	$2,200.94	$0.00	$2,200.94

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions, please contact Bill Power at (209) 527-2908.

Regards,

William Thomas Power, III

Enclosures

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24725

Agricultural and Domestic Pump Test Report
Monte Cristo Vineyard - Monte Cristo Vineyard Well 1 - Run 1

Latitude: 39.02982 | Longitude: -122.70011 | Elevation: 2200
Test Date: Feb 10 2021 | Tester: Bill Power | Nameplate HP: 15.00

Customer Information

Monte Cristo Vineyard

11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Contact: Jonathan Dharmapalan
Cell: 415-994-6947

Power Company Data

PG&E

Meter #: **1010099261**
Rate Schedule: **AG5A**
Average Cost: **$0.23**

Equipment Data

Motor Make: **No Name Plate**
Volts/Amps: **460V/20.80A**
Serial #:
Pump Make: **No Name Plate**
Pump Type: **Submersible**
Drive Type: **Electric Motor**
Gearhead Make:

Hydraulic Data

Discharge Pressure: 28.00 lb/sqft
Discharge Level: 64.68 ft
Water Source: Well

Flow Data

Run Number: 1 of 1
Measured Flow: 27 gpm
Customer Flow: 0 gpm
Flow Velocity: 1.96 ft/sec
Acre Feet per 24 Hr: 0.12
Cubic Feet Per Second (CFS): 0.06 ft

Power Data

Horsepower Input to Motor: 12.79 hp
Brake Horsepower: 10.36 hp
Kilowatt Input to Motor: 9.54 kW
Energy Cost: $2.2/hr
Nameplate RPM: 3450 rpm
VFD: 0 hz

Percent of Rated Motor Load: 69%
Kilowatt Hours per Acre Foot: 1918.95
Cost to Pump an Acre Foot: $442.7
Overall Plant Efficiency: 0%
Water Horsepower: 0 hp
Run Hours: 1000

Remarks

All results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

This pump has an adequate test section.

This pump did not have a flow meter.

Overall efficiency unknown due to inability to measure Pumping Water Level.

Based on information obtained at the time the test was performed, this test represents the pumps standard operating conditions.

HPI measured with direct read KWI.

Obstruction in well. Unable to measure water levels.

Run 1 observations: Appears to have an obstruction at approximately 100 ft.

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24725

Jonathan Dharmapalan
Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Pump Name: Monte Cristo Vineyard Well 1

HYDRAULIC TEST RESULTS PT-24725 **Test Date:** Feb 10 2021

Tester: Bill Power
Meter #: 1010099261
Annual Run Hrs: 1000
Utility: PG&E
Rate Sched: AG5A
Avg Cost kWh: $0.23
Meter kH: 21.60
Meter Const: 1

Motor Make: No Name Plate
Volts: 460
Gearhead Make:
Pump Make: No Name Plate
Water Source: Well
Motor Serial:
Amps: 20.80
NameplateRPM: 3450
Pump Type: Submersible
Horsepower: 15.00
Drive Type: Electric Motor
Pipe Diameter: 2.37

Results	**Test 1**
Discharge Pressure, PSI	28.00
Standing Water Level, Feet	0.00
Recovered Water Level	0.00
Drawdown, Feet	0
Discharge Head, Feet	64.68
Pumping Water Level, Feet	
Total Measured Head, Feet	64.68
Measured GPM	27.00
Customer Meter, GPM	
Well Yield, GPM/ft Drawdown	
Acre Feet Pumped in 24 Hours	0.12
kW Input to Motor	9.54
HP Input to Motor	12.79
Motor Load %	69.1
Measured Speed of Pump, RPM	
VFD, Hz:	
kWh per Acre Foot	**1918.95**
Overall Plant Efficiency (%)	**0**
Energy Cost per Hour	2.2
Water Horsepower, hp	0
Flow Velocity, ft/sec	1.96

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24748

Tuesday, Feb 23, 2021

Jonathan Dharmapalan
Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Dear Jonathan Dharmapalan:

Enclosed are the results of your pump test. The results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

Some of the factors, which influence pump performance, are:

- Changes in discharge pressures
- Changes in water table level and well yield
- Pump wear
- Proper pump design for application

We offer the following services to help our customers save time and money. Pump testing, irrigation system analysis, irrigation water management, and electric rate management. Visit our website at www.powerhydrodynamics.com for more information or to use our water cost calculator.

Please feel free to call 209-527-2908 if you have questions about this test or on the other services that Power Services has to offer.

Regards,

William Thomas Power, III

Enclosures

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24748

Agricultural and Domestic Pump Test Report
Monte Cristo Vineyard - Monte Cristo Vineyard Well 7 - Run 1

Latitude: 39.03248 | Longitude: -122.71786 | Elevation: 2181
Test Date: Feb 20 2021 | Tester: Bill Power | Nameplate HP:

Customer Information

Monte Cristo Vineyard

11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Contact: Jonathan Dharmapalan
Cell: 415-994-6947

Equipment Data

Motor Make: **No Name Plate**
Volts/Amps: **460V/A**
Serial #:
Pump Make: **No Name Plate**
Pump Type: **Submersible**
Drive Type: **Generator**
Gearhead Make:

Hydraulic Data

Standing Water Level (SWL):	0.00 ft
Recovered Water Level (RWL):	0.00 ft
Pumping Water Level (PWL):	ft
Drawdown:	0 ft
Discharge Pressure:	44.00 lb/sqft
Discharge Level:	101.64 ft
Total Lift:	0 ft
Water Source:	Well

Flow Data

Run Number:	1 of 1
Measured Flow:	41 gpm
Customer Flow:	0 gpm
Flow Velocity:	2.98 ft/sec
Acre Feet per 24 Hr:	0.18
Cubic Feet Per Second (CFS):	0.09 ft
Well Yield:	0 gpm/ft

Power Data

Water Horsepower:	0 hp	Name Plate RPM:	3450 rpm
Assumed Brake HP Input:	0 hp	RPM at Tachometer:	0
Pump Efficiency:	0	RPM at Gearhead:	0

Remarks

All results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

This pump has an adequate test section.

This pump did not have a flow meter.

No entrance in well. Unable to measure water levels.

Overall efficiency unknown due to inability to measure Pumping Water Level.

HPI measured with direct read KWI.

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24728

CONFIDENTIAL/PROPRIETARY INFORMATION

Jonathan Dharmapalan

Tuesday, Feb 23, 2021

Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

SUBJECT: PUMPING COST ANALYSIS
HP: 10.00 Plant: Monte Cristo Vineyard Well 6
PUMP TEST REFERENCE NUMBER: PT-24728
PUMP TEST RUN: Run 1

The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the pump test performed Feb 10 2021 and information provided by you during the pump test.

It is recommended and assumed that:

- **Overall plant efficiency can be improved to: 58%**
- **Water requirements will be the same as for the past year**
- **All operating conditions (annual hours of operation, discharge head, and water pumping level) will remain the same as they were at the time of the pump test**

	EXISTING PLANT EFFICIENCY	IMPROVED PLANT EFFICIENCY	SAVINGS
kWh/AF	919.9	571.6	348.20
Estimated Total kWh	8,130	5,052	3,078
Average Cost per kWh	$0.23	$0.23	
Average Cost per hour	$1.88	$2.56	*
Cost Per Acre Ft.	$212.22	$131.88	$80.34
Estimated Acre Ft. Per Year	8.84	8.84	
Run Hours	1,000.00	1,000.00	
Overall Plant Efficiency	36%	58%	
Estimated Total Annual Cost	$1,875.64	$1,165.58	$710.06

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions, please contact Bill Power at (209) 527-2908.

Regards,

William Thomas Power, III

Enclosures

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24728

Agricultural and Domestic Pump Test Report
Monte Cristo Vineyard - Monte Cristo Vineyard Well 6 - Run 1

Latitude: 39.03262 | Longitude: -122.71541 | Elevation: 2218
Test Date: Feb 10 2021 | Tester: Bill Power | Nameplate HP: 10.00

Customer Information

Monte Cristo Vineyard

11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Contact: Jonathan Dharmapalan
Cell: 415-994-6947

Power Company Data

PG&E

Meter #:
Rate Schedule: **AG5A**
Average Cost: **$0.23**

Equipment Data

Motor Make: **No Name Plate**
Volts/Amps: **460V/14.20A**
Serial #:
Pump Make: **No Name Plate**
Pump Type: **Submersible**
Drive Type: **Electric Motor**
Gearhead Make:

Hydraulic Data

Standing Water Level (SWL):	237.00 ft
Recovered Water Level (RWL):	240.00 ft
Pumping Water Level (PWL):	264.00 ft
Drawdown:	27 ft
Yield:	1.78 gpm/ft
Discharge Pressure:	26.00 lb/sqft
Discharge Level:	60.06 ft
Total Lift:	324.06 ft
Water Source:	Well

Flow Data

Run Number:	1 of 1
Measured Flow:	48 gpm
Customer Flow:	0 gpm
Flow Velocity:	3.49 ft/sec
Acre Feet per 24 Hr:	0.21
Cubic Feet Per Second (CFS):	0.11 ft

Power Data

Horsepower Input to Motor:	10.9 hp	Percent of Rated Motor Load:	81%
Brake Horsepower:	8.06 hp	Kilowatt Hours per Acre Foot:	919.88
Kilowatt Input to Motor:	8.13 kW	Cost to Pump an Acre Foot:	$212.22
Energy Cost:	$1.88/hr	**Overall Plant Efficiency:**	**36.04%**
Nameplate RPM:	3450 rpm	Water Horsepower:	3.93 hp
VFD:	0 hz	Run Hours:	1000

Remarks

All results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

This pump has an adequate test section.

This pump did not have a flow meter.

Recovered water level based on 5 minutes recovery, well could still be recovering.

Pump started for test, pumping water level could still be drawing down.

Based on information obtained at the time the test was performed, this test represents the pumps standard operating conditions.

HPI measured with direct read KWI.

Overall efficiency of this plant is considered to be low assuming this run represents plant's normal operating condition.

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24728

Jonathan Dharmapalan
Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Pump Name: Monte Cristo Vineyard Well 6

HYDRAULIC TEST RESULTS PT-24728 **Test Date:** Feb 10 2021

Tester: Bill Power
Meter #:
Annual Run Hrs: 1000
Utility: PG&E
Rate Sched: AG5A
Avg Cost kWh: $0.23
Meter kH: 21.60
Meter Const: 1

Motor Make: No Name Plate
Volts: 460
Gearhead Make:
Pump Make: No Name Plate
Water Source: Well
Motor Serial:
Amps: 14.20
NameplateRPM: 3450
Pump Type: Submersible
Horsepower: 10.00
Drive Type: Electric Motor
Pipe Diameter: 2.37

Results	**Test 1**
Discharge Pressure, PSI	26.00
Standing Water Level, Feet	237.00
Recovered Water Level	240.00
Drawdown, Feet	27
Discharge Head, Feet	60.06
Pumping Water Level, Feet	264.00
Total Measured Head, Feet	324.06
Measured GPM	48.00
Customer Meter, GPM	
Well Yield, GPM/ft Drawdown	1.78
Acre Feet Pumped in 24 Hours	0.21
kW Input to Motor	8.13
HP Input to Motor	10.9
Motor Load %	80.6
Measured Speed of Pump, RPM	
VFD, Hz:	
kWh per Acre Foot	**919.88**
Overall Plant Efficiency (%)	**36**
Energy Cost per Hour	1.88
Water Horsepower, hp	3.93
Flow Velocity, ft/sec	3.49

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24727

CONFIDENTIAL/PROPRIETARY INFORMATION

Jonathan Dharmapalan

Tuesday, Feb 23, 2021

Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

SUBJECT: PUMPING COST ANALYSIS
HP: 10.00 Plant: Monte Cristo Vineyard Well 5
PUMP TEST REFERENCE NUMBER: PT-24727
PUMP TEST RUN: Run 1

The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the pump test performed Feb 10 2021 and information provided by you during the pump test.

It is recommended and assumed that:

- **Overall plant efficiency can be improved to: 58%**
- **Water requirements will be the same as for the past year**
- **All operating conditions (annual hours of operation, discharge head, and water pumping level) will remain the same as they were at the time of the pump test**

	EXISTING PLANT EFFICIENCY	IMPROVED PLANT EFFICIENCY	SAVINGS
kWh/AF	2675.7	0	2,675.70
Estimated Total kWh	7,390	0	7,390
Average Cost per kWh	$0.23	$0.23	
Average Cost per hour	$1.7	$0	$1.70
Cost Per Acre Ft.	$617.28	$0	$617.28
Estimated Acre Ft. Per Year	2.76	2.76	
Run Hours	1,000.00	1,000.00	
Overall Plant Efficiency	0%	58%	
Estimated Total Annual Cost	$1,704.92	$0.00	$1,704.92

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions, please contact Bill Power at (209) 527-2908.

Regards,

William Thomas Power, III

Enclosures

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24727

Agricultural and Domestic Pump Test Report
Monte Cristo Vineyard - Monte Cristo Vineyard Well 5 - Run 1

Latitude: 39.02950 | Longitude: -122.69291 | Elevation: 2284
Test Date: Feb 10 2021 | Tester: Bill Power | Nameplate HP: 10.00

Customer Information

Monte Cristo Vineyard

11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Contact: Jonathan Dharmapalan
Cell: 415-994-6947

Power Company Data

PG&E

Meter #: **1010092369**
Rate Schedule: **AG5A**
Average Cost: **$0.23**

Equipment Data

Motor Make: **Franklin**
Volts/Amps: **460V/14.20A**
Serial #:
Pump Make: **Grundfos**
Pump Type: **Submersible**
Drive Type: **Electric Motor**
Gearhead Make:

Hydraulic Data

Discharge Pressure: 2.00 lb/sqft
Discharge Level: 4.62 ft
Water Source: Well

Flow Data

Run Number: 1 of 1
Measured Flow: 15 gpm
Customer Flow: 0 gpm
Flow Velocity: 1.09 ft/sec
Acre Feet per 24 Hr: 0.07
Cubic Feet Per Second (CFS): 0.03 ft

Power Data

Horsepower Input to Motor: 9.91 hp
Brake Horsepower: 7.33 hp
Kilowatt Input to Motor: 7.39 kW
Energy Cost: $1.7/hr
Nameplate RPM: 3450 rpm
VFD: 0 hz

Percent of Rated Motor Load: 73%
Kilowatt Hours per Acre Foot: 2675.67
Cost to Pump an Acre Foot: $617.28
Overall Plant Efficiency: 0%
Water Horsepower: 0 hp
Run Hours: 1000

Remarks

All results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

This pump has an adequate test section.

This pump did not have a flow meter.

No entrance in well. Unable to measure water levels.

Overall efficiency unknown due to inability to measure Pumping Water Level.

Based on information obtained at the time the test was performed, this test represents the pumps standard operating conditions.

HPI measured with direct read KWI.

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24727

Jonathan Dharmapalan
Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Pump Name: Monte Cristo Vineyard Well 5

HYDRAULIC TEST RESULTS PT-24727 **Test Date:** Feb 10 2021

Tester: Bill Power
Meter #: 1010092369
Annual Run Hrs: 1000
Utility: PG&E
Rate Sched: AG5A
Avg Cost kWh: $0.23
Meter kH: 21.60
Meter Const: 1

Motor Make: Franklin
Volts: 460
Gearhead Make:
Pump Make: Grundfos
Water Source: Well
Motor Serial:
Amps: 14.20
NameplateRPM: 3450
Pump Type: Submersible
Horsepower: 10.00
Drive Type: Electric Motor
Pipe Diameter: 2.37

Results	**Test 1**
Discharge Pressure, PSI	2.00
Standing Water Level, Feet	0.00
Recovered Water Level	0.00
Drawdown, Feet	0
Discharge Head, Feet	4.62
Pumping Water Level, Feet	
Total Measured Head, Feet	4.62
Measured GPM	15.00
Customer Meter, GPM	
Well Yield, GPM/ft Drawdown	
Acre Feet Pumped in 24 Hours	0.07
kW Input to Motor	7.39
HP Input to Motor	9.91
Motor Load %	73.3
Measured Speed of Pump, RPM	
VFD, Hz:	
kWh per Acre Foot	**2675.67**
Overall Plant Efficiency (%)	**0**
Energy Cost per Hour	1.7
Water Horsepower, hp	0
Flow Velocity, ft/sec	1.09

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24749

Tuesday, Feb 23, 2021

Jonathan Dharmapalan
Monte Cristo Vineyard
11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Dear Jonathan Dharmapalan:

Enclosed are the results of your pump test. The results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

Some of the factors, which influence pump performance, are:

- Changes in discharge pressures
- Changes in water table level and well yield
- Pump wear
- Proper pump design for application

We offer the following services to help our customers save time and money. Pump testing, irrigation system analysis, irrigation water management, and electric rate management. Visit our website at www.powerhydrodynamics.com for more information or to use our water cost calculator.

Please feel free to call 209-527-2908 if you have questions about this test or on the other services that Power Services has to offer.

Regards,

William Thomas Power, III

Enclosures

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
fax
cal.powerhydrodynamics.com

Report ID: PT-24749

Agricultural and Domestic Pump Test Report
Monte Cristo Vineyard - Monte Cristo Vineyard Well 8 - Run 1

Latitude: 39.03076 | Longitude: -122 | Elevation: -122
Test Date: Feb 20 2021 | Tester: Bill Power | Nameplate HP: 5.00

Customer Information

Monte Cristo Vineyard

11250 Cerrito Dr.
Clear Lake Oaks, CA 95423

Contact: Jonathan Dharmapalan
Cell: 415-994-6947

Equipment Data

Motor Make: **Centri Pro**
Volts/Amps: **460V/8.60A**
Serial #:
Pump Make: **Gould**
Pump Type: **Submersible**
Drive Type: **Diesel Engine**
Gearhead Make:

Hydraulic Data

Standing Water Level (SWL):	0.00 ft
Recovered Water Level (RWL):	0.00 ft
Pumping Water Level (PWL):	ft
Drawdown:	0 ft
Discharge Pressure:	2.00 lb/sqft
Discharge Level:	4.62 ft
Total Lift:	0 ft
Water Source:	Well

Flow Data

Run Number:	1 of 1
Measured Flow:	24 gpm
Customer Flow:	0 gpm
Flow Velocity:	2.71 ft/sec
Acre Feet per 24 Hr:	0.11
Cubic Feet Per Second (CFS):	0.05 ft
Well Yield:	0 gpm/ft

Power Data

Water Horsepower:	0 hp	Name Plate RPM:	3450 rpm
Assumed Brake HP Input:	0 hp	RPM at Tachometer:	0
Pump Efficiency:	55 %	RPM at Gearhead:	0

Remarks

All results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

ATTACHEMENT D

WELL COMPLETION REPORTS FOR NEAREST KNOWN WELLS

Off-site MCV Well

ORIGINAL
File with DWR

Page ___ of ___

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 1089136

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. 8/15/06
Date Work Began 8/15/06 Ended 8/28/06
Local Permit Agency Lake County Environmental Health
Permit No. WE 2472 Permit Date 8/25/06

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Mud Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
1	6	Brn. Shale
6	190	Black & Gray Shale, Calcite Veining
190	205	Greenstone
205	300	Greenstone & Red Chert
300	350	Black & Gray Shale Calcite Veining

Casing Cont.

260	320	8"	Blank	PVC SDR21	5"	
320	340	8"	Screen	PVC F480	5"	SDR21 .032

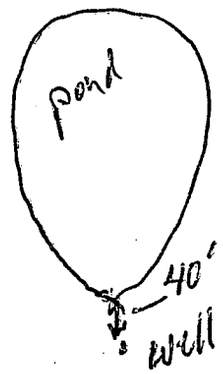
TOTAL DEPTH OF BORING 350 (Feet)
TOTAL DEPTH OF COMPLETED WELL 340 (Feet)

WELL LOCATION

Address 1406 Cerrito St.
City Clearlake Oaks
County Lake
APN Book 006 Page 007 Parcel 29
Township 14N Range 8W Section 25
Lat ___ DEG. ___ MIN. ___ SEC. N
Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH
WEST
EAST
SOUTH



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.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

USES (✓)

WATER SUPPLY
X Domestic ___ Public
X Irrigation ___ Industrial
___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 12 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 5 (Ft.) & DATE MEASURED 8/28/06
ESTIMATED YIELD * 125 (GPM) & TEST TYPE Air Lift
TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	80	9	X				PVC F480	5"	SDR21	
80	100	8		X						.032
100	180	8	X							
180	200	8		X						.032
200	240	8	X							
240	260	8		X						.032

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	21	X			
21	350				Peagravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ 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 Dan McMullen Well Drilling (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 1480 Old Long Valley Rd. CITY Clearlake Oaks STATE CA ZIP 95423
Signed Dan McMullen C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 8/28/06
C-57 LICENSE NUMBER 533152

OSP 03 78836

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

RECEIVED

Warrens Way

ORIGINAL
File with DWR

Page ____ of ____

Owner's Well No. ____ NO. DIST.

Date Work Began 7/[illegible]/09 Ended 8/1/09

Local Permit Agency Lake County Environmental Health

Permit No. WE 4092 Permit Date 7/8/09

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0962988

DWR USE ONLY — DO NOT FILL IN

14N/08W-25

STATE WELL NO./STATION NO.

LATITUDE | LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Rotary FLUID Mud

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION Describe material, grain size, color, etc.
0	5	Gravely Brown Soil
5	24	Gravely Red Clay
24	132	Brown + Gray Clay
132	134	Hard Black Vol. Rock
134	150	No return (Vol. Rocks)

TOTAL DEPTH OF BORING 150 (Feet)

TOTAL DEPTH OF COMPLETED WELL 149 (Feet)

NOT PUBLIC — CONFIDENTIAL — SEC WATER CODE

WELL LOCATION

Address 11700 Warrens Way

City Clearlake Oaks CA

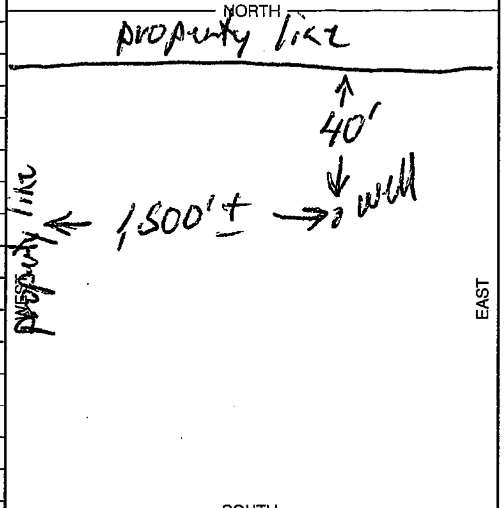
County Lake

APN Book 006 Page 007 Parcel 35

Township 14N Range 8W Section 25

Lat ___ N (DEG. MIN. SEC.) Long ___ W (DEG. MIN. SEC.)

LOCATION SKETCH



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.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY (*Describe Procedures and Materials Under "GEOLOGIC LOG"*)

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial

MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ____ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 46 (Ft.) & DATE MEASURED 8/1/09

ESTIMATED YIELD * 300 (GPM) & TEST TYPE Air Lift

TEST LENGTH 1/4 (Hrs.) TOTAL DRAWDOWN ____ (Ft.)

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

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	129	9	X				PVC F480	4½	SDR26	
129	149	9		X			PVC F480	4½	SDR26	.032

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	149				pea gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ 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 Dan McMullen Well Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

1487 Old Long Valley Rd. Clearlake Oaks CA 95423
ADDRESS CITY STATE ZIP

Signed Dan L. McMullen 8/11/09 533152
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 05-03 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM OSP 03 78836

ORIGINAL
File with DWR

Page ___ of ___

Off-site MCV Well

STATE OF CALIFORNIA
COMPLETION REPORT
Refer to Instruction Pamphlet

No. 1089152

Owner's Well No. ___

Date Work Began 9/28/07 Ended 10/4/07

Local Permit Agency Lake County Environmental Health

Permit No. WE2573 Permit Date 8/20/07

DWR USE ONLY — DO NOT FILL IN
14N/08W/25
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	30	Red Gravelly Clay
30	55	Yellow Gravelly Clay
55	380	Graywacke

TOTAL DEPTH OF BORING 380 (Feet)

TOTAL DEPTH OF COMPLETED WELL 370 (Feet)

WELL LOCATION

Address 11830 Cerrito Dr.

City Clearlake Oaks

County Lake

APN Book 006 Page 007 Parcel 27

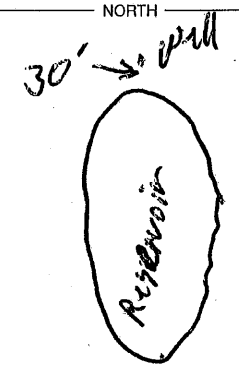
Township 14N Range 08W Section 25

Lat ___ DEG. ___ MIN. ___ SEC. N

Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH



WEST EAST

SOUTH

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.***

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
X Domestic ___ Public
X Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 55 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 42 (Ft.) & DATE MEASURED 10/4/07

ESTIMATED YIELD * 35 (GPM) & TEST TYPE Air Lift

TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

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

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	370	9	X				PVC F480	4½	SDR26	
370	370	7		X			PVC F480	4½	SDR26	.032

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	21	X			
21	370				Pea gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ 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 Dan McMullen Well Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 1487 Old Long Valley Rd. CITY Clearlake Oaks STATE CA ZIP

Signed Dan McMullen 10/10/07
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED

C-57 LICENSE NUMBER 533152

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

OSP 03 78836

ORIGINAL
File with DWR

SEP 2 7 2010

STATE OF CALIFORNIA
TION REPORT
tion Pamphlet

Warrens Way

No. 0963015

DWR USE ONLY — DO NOT FILL IN
14N/08W-25
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___
Owner's Well No. ___
Date Work Began 9/30/09 Ended 10/20/09
Local Permit Agency Lake County Environmental Health
Permit No. WE2675 Permit Date 9/22/09

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Mud FLUID Rotary

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	4	Gravely Brn. Soil
4	25	Gravely Red Clay
25	91	Brown and Gray Clay
91	140	Hard Black Vol. Rock

TOTAL DEPTH OF BORING 140 (Feet)
TOTAL DEPTH OF COMPLETED WELL 140 (Feet)

WELL LOCATION

Address 11700 Warrens Way
City Clearlake Oaks
County Lake
APN Book 006 Page 007 Parcel 35
Township 14N Range 8W Section 26
Lat ___ DEG. ___ MIN. ___ SEC. N
Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH
Property line
50'± to well
300'± to well
WEST
EAST
SOUTH

*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.***

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 46 (Ft.) & DATE MEASURED ___
ESTIMATED YIELD 400+ (GPM) & TEST TYPE Air Lift
TEST LENGTH 1/2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	94	13	X				PVC F480	8"	SDR 26	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	21	X			
21	90				pea gravel
90	94	X			

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ 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 DAN MC MULLEN WELL DRILLING
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 14871 Old Long Valley Rd. CITY Clearlake Oaks STATE CA ZIP 95423
Signed Dan L Mc C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 9/20/10
C-57 LICENSE NUMBER 533152

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

OSP 03 78836

ORIGINAL:
File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
SACRAMENTO 5, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

No Location Information

SHEET 1

CONFIDENTIAL LOG
Sec. 13752

Do Not Fill In
State Well No. 11N/2W-25N1
Other Well No.
Region 5

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

6

(1) Driller:
Name HUTTON-SUCTION DRILLING CO.
Address P.O. BOX 14, UPPER LAKE, CALIF.
License No. 121749 Classification C-57

(2) Proposed use or uses (check):
Domestic ☑ Municipal ☐
Irrigation ☐ Industrial ☐
Domestic and Irrigation ☐ Test well ☐
Other

(3) Equipment used (check):
Rotary ☐
Cable ☑
Dug well ☐
Other

(4) Type of work (check):
New well ☑ Reconditioning of well ☐
Deepening existing well ☐

(5) Well log:
Total depth of well 64 ft.

Give details of formations penetrated, such as silt, peat, muck, sand, gravel, clay, shale, sandstone, hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard, brittle).

Depth From Ground Surface				
0	ft. to	5	ft.	top soil
5	" "	19	"	shale rock
19	" "	20	"	blue clay silt & serpentine mixed (moist)
20	" "	56	"	rock & shale gravel
56	" "	63	"	red clay & rock (moist)
63	" "	64	"	blue clay & rock mixed (WATER-BEARING) (Blows Artesian)

CONFIDENTIAL
Section 7076.1, Water Code

If additional space is required, continue on DWR Form No. 246—Supplement, and attach to respective report copies.

(6) Casing left in well:

LENGTH FT.	DIAMETER INCHES	SINGLE, DOUBLE, WELDED, OTHER	LBS. PER FOOT OR GAGE OF CASING	SEATING BELOW GROUND SURFACE, FT.
64	8	single, welded	12ga.	63
	4½	11		

Type and size of shoe or well ring Welded joints ☑ Yes ☐ No

ORIGINAL
File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
SACRAMENTO 5, CALIFORNIA

SHEET 2

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

6

Do Not Fill In
State Well No. 14N/8W-25N1
Other Well No.
Region 5

(7) Perforations:
Type of perforator used Single blade (mills type)
Perforated 60 ft. to 63 ft. Hole size 3/8" x 3 1/2" No. of holes 14

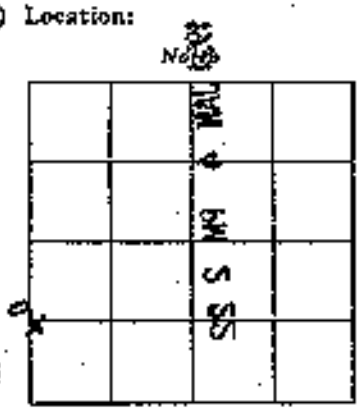
(8) Water levels:
Depth at which water first encountered 61 ft.
Depth to water before perforating 0 ft.
Depth to water after perforating 0 ft.
Note any change in water level while drilling
Flowing artesian

(9) Well pumping test:
Date of test By whom
Depth to water when test started ft.
G.P.M. at beginning of test
Drawdown from standing level ft.
G.P.M. at completion of test
Drawdown at completion of test ft.
Length of time tested
Temperature of water
Was gas present in water? ☐ Yes ☐ No

(10) General:
Was well gravel packed? No Size of rock — Thickness of pack
Was a surface sanitary seal provided? Yes
Were any strata sealed against pollution? ☐ Yes ☑ No If yes, attach detailed description
Strata sealed —
Was analysis made of water? ☐ Yes ☑ No If yes, attach copy.
Was electric log made of well? ☐ Yes ☑ No If yes, attach copy.
If well abandoned, was it plugged and sealed?
Method of plugging and sealing

CONFIDENTIAL
Section 7076.1, Water Code

(11) Location:



Section No. 25
Township 14N
Range 8W
Base & Meridian MD
Show location of well in Section, thus (X)
Distances to section lines from well, N or S 2640 ft. and E or W 20 ft.
Show location of nearest known well, thus (O)
Distance to nearest known well 100 ft.

(12) Time of work:
Work started date 8/18/50 Completed date 8/22/50
Date of this report 11/25/50

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[SIGNED] J. W. Hutton
Well Driller

By
License No. 21749 Classification C-57
Dated 11/25/50, 19

RECEIVED

REGIONAL WATER POLLUTION CONTROL BOARD COPY

ORIGINAL
File with DWR

Page ___ of ___

Warrens Way

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 705626

DWR USE ONLY — DO NOT FILL IN
14N/08W-25M
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. 7-8-99
Date Work Began 7-8-99, Ended 9-8-99
Local Permit Agency Lake County Environmental Health
Permit No. WE 1706 Permit Date 6-22-99

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Mud

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	6	Brn. Soil
6	28	Yellow Brittle Clay
28	95	Brn. Shale
95	100	Red Chert
100	103	Purple Clay
103	148	Brn. Shale
148	155	Red Chert
155	190	Green Stone
190	200	Greenstone, Red Chert, Purple Clay
200	215	Red Chert
215	295	Red + Purple greenstone w/ Red Clay
295	340	Green Stone
340	575	Brn Walkie

TOTAL DEPTH OF BORING 575 (Feet)
TOTAL DEPTH OF COMPLETED WELL 520 (Feet)

WELL LOCATION

Address Curtis St., SPLIT INTO LOTS 35 & 36 NOW
City Clearlake Oaks
County Lake
APN Book 06 Page 007 Parcel 07
Township 14N Range 08W Section 25
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH

NORTH
WEST 30' well 1000' → EAST
Access Road
gate
SOUTH

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.***

ACTIVITY (✓)
X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)
WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial
___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 360 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 299 (Ft.) & DATE MEASURED 9/8/99
ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	380	12¼	X				Steel	8	.188	
380	440	12½		X			Steel	8	.188	3X⅛
440	460	12¼	X				Steel	8	.188	
460	520	12¼		X			Steel	8	.188	3X⅛

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	21	X			
21	520				Pea Gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ 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 Dan McMullen Well Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 14871 Old Long Valley Rd. CITY Clearlake Oaks STATE CA ZIP 95423
Signed Dan L Mullen
WELL DRILLER/AUTHORIZED REPRESENTATIVE
DATE SIGNED 9-10-99
C-57 LICENSE NUMBER 533152

ORIGINAL
File with DWR

Page ____ of ____

Owner's Well No. ____

Date Work Began 2-17-93 Ended 3-4-93

Local Permit Agency Lake County Environmental Health

Permit No. WE 858 Permit Date 2-17-93

RECEIVED MAR 1 2 1993

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 414689

Nearest Neighbor

DWR USE ONLY — DO NOT FILL IN

14N/08W-25M

STATE WELL NO./STATION NO.

LATITUDE | LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 410 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	1	Red Clay
1	260	Red + White Chert
260	305	Grey Graywacke
305	360	Red Chert
360	405	Greenstone
405	445	Graywacke

TOTAL DEPTH OF BORING 445 (Feet)

TOTAL DEPTH OF COMPLETED WELL 332 (Feet)

WELL OWNER

WELL LOCATION

Address 11651 Cerrito Dr.

City Clearlake Oaks

County Lake

APN Book 6 Page 007 Parcel 31

Township 14N Range 08W Section 25

Latitude ___ DEG. MIN. SEC. NORTH Longitude ___ DEG. MIN. SEC. WEST

LOCATION SKETCH

NORTH

WEST / EAST

SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING

WATER SUPPLY

X Domestic

___ Public

___ Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD Air Rotary FLUID Air

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 263 (Ft.) & DATE MEASURED 2-28-93

ESTIMATED YIELD* 8 (GPM) & TEST TYPE Air Lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN — (Ft.)

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

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	292	9	X				PVC	4½	SDR26	
292	332	9		X			PVC	4½	SDR26	[illegible]X2

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	X			
50	332			X	Pea Gravel

MAR 1 3 1993

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ 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 Dan McMullen Well Drilling 1603
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

1437 Old Long Valley Rd. Clearlake Oaks CA 95423
ADDRESS CITY STATE ZIP

Signed Dan McMullen 3-4-93 533152
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
SACRAMENTO 5, CALIFORNIA

No Location Information

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
OF WATER RESOURCES

216

SHEET 1

CONFIDENTIAL LOG
Do Not Fill In
State Well No. 14N/8W-25R2
Other Well No.
Region 5

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

7

(1) Driller:
Name: Hutton - Aucken Co.
Address: Po Box 14, Upper Lake California
License No. 121749 Classification C-57

(2) Proposed use or uses (check):
Domestic ☑ Municipal ☐
Irrigation ☐ Industrial ☐
Domestic and Irrigation ☐ Test well ☐
Other

(3) Equipment used (check):
Rotary ☐
Cable ☑
Dug well ☐
Other

(4) Type of work (check):
New well ☑ Reconditioning of well ☐
Deepening existing well ☐

(5) Well log:
Total depth of well 64 ft.

Give details of formations penetrated, such as silt, peat, muck, sand, gravel, clay, shale, sandstone, hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard, brittle).

Depth From Ground Surface		Formation
0 ft.	to 5 ft.	top soil
5	12	rocky subsoil
12	20	stiff red clay & rock mix
20	60	alternate layers of clay & rock
60	62	coarse sand & 3" diam gravel (H2O-bear)
62	64	clay, gravel mix.

CONFIDENTIAL
Section 7076.1, Water Code

If additional space is required, continue on DWR Form No. 246—Supplement, and attach to respective report copies.

(6) Casing left in well:

LENGTH FT.	DIAMETER INCHES	SINGLE, DOUBLE, WELDED, OTHER	LBS. PER FOOT OR GAGE OF CASING	SEATING BELOW GROUND SURFACE, FT.
64	8	single, welded	12 ga	63

Type and size of shoe or well ring 1/2"x4" Welded joints ☑ Yes ☐ No

ORIGINAL
File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
SACRAMENTO 5, CALIFORNIA

SHEET 2

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

7

Do Not Fill In
State Well No. 14N/8W-25 N 2
Other Well No.
Region 5

(7) Perforations:
Type of perforator used Single blade 3/8" x 3½"
Perforated 60 ft. to 63 ft. Hole size No. of holes 25

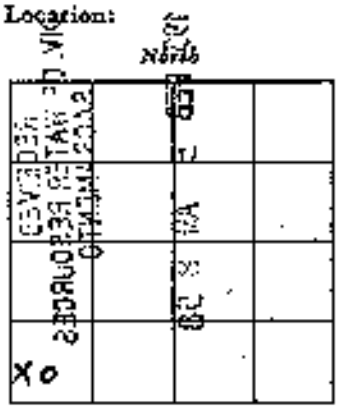
(8) Water levels:
Depth at which water first encountered 60 ft.
Depth to water before perforating 30 ft.
Depth to water after perforating 0 ft.
Note any change in water level while drilling Flowing artesian

(9) Well pumping test:
Date of test By whom
Depth to water when test started ft.
G.P.M. at beginning of test
Drawdown from standing level ft.
G.P.M. at completion of test
Drawdown at completion of test ft.
Length of time tested
Temperature of water
Was gas present in water? ☐ Yes ☐ No

(10) General:
Was well gravel packed? no Size of rock Thickness of pack
Was a surface sanitary seal provided? yes
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, attach detailed description.
Strata sealed
Was analysis made of water? ☐ Yes ☐ No If yes, attach copy.
Was electric log made of well? ☐ Yes ☑ No If yes, attach copy.
If well abandoned, was it plugged and sealed?
Method of plugging and sealing

CONFIDENTIAL
Section 7076.1, Water Code

(11) Location:



1 MILE

Section No. 25
Township 14N
Range 8W
Base & Meridian M. D.
Show location of well in Section, thus (X)
Distances to section lines from well, N or S 510 ft. and E or W 550 ft.
Show location of nearest known well, thus (O)
Distance to nearest known well 50 ft.

(12) Time of work:
Work started date 1/25/51 Completed date 1/25/51
Date of this report 1/30/51

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[Signed] Hutton Bucher Co
Well Driller
By J. W. Hutton
License No. 21749 Classification C-57
Dated 1/30, 1951

RECEIVED
JAN 31 1951
DIVISION OF WATER RESOURCES

D.W.R. FORM NO. 240 REGIONAL WATER POLLUTION CONTROL BOARD COPY

14N/08W-26M

ORIGINAL
File with DWR

Wrong Section

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 091754

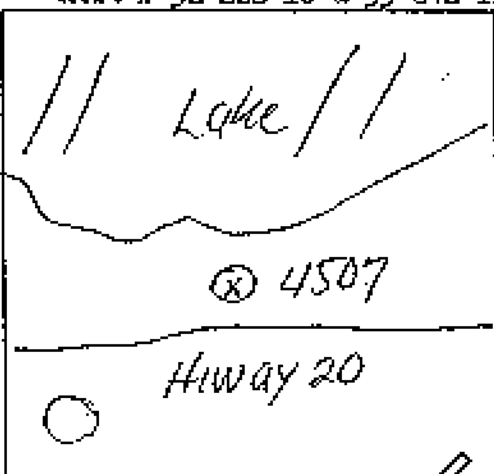
Notice of Intent No. ____
Local Permit No. or Date ____

State Well No. ____
Other Well No. ____

CONFIDENTIAL
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

(1) OWNER:
Address ____
City ____

(2) LOCATION OF WELL (See instructions):
County Lake Owner's Well Number ____
Well address if different from above ____
Township 14N Range 8W Section 26
Distance from cities, roads, railroads, fences, etc.
4507 Hiway 20
Nice
A.P. # 32-222-10 & 33-642-11



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☒

(6) GRAVEL PACK:
Yes ☒ No ☐ Size 3/8" pea
Diameter of bore 30"
Packed from 10 to 43 ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

(8) PERFORATIONS:
Type of perforation or size of screen saw cut

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	44	8"	Cl200	13	43	6 3/16

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 10 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ____ ft.
Method of sealing concrete on gravel pack

(10) WATER LEVELS:
Depth of first water, if known ____ ft.
Standing level after well completion 10 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? Weeks
Type of test Pump ☐ Bailer ☒ Air lift ☐
Depth to water at start of test 10 ft. At end of test bottom ft.
Discharge 12 gal/min after 3/4 hours Water temperature cool
Chemical analysis made? Yes ☐ No ☒ If yes, by whom? ____
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG:
Total depth 43 ft. Depth of completed well 43 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	13	Brown clay with embedded gravels
13	15	Water bearing gravels
15	21	Clay with embedded blue gravels
21	25	Blue sandy clay with embedded gravel and water bearing sands
25	43	Brown and gray rock

Work started 9/21 19 84 Completed 9/24 19 84

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Gerald Thompson By: Roy Curl
(Well Driller)
NAME WEEKS DRILLING AND PUMP COMPANY 00048
(Person, firm, or corporation) (Typed or printed)
Address P.O. Box 176 - 6100 Sebastopol Road
City Sebastopol, California Zip 95472
License No. 057-177681 Date of this report September 25, 1984

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ATTACHEMENT E

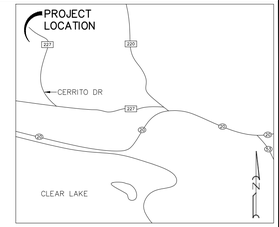
EXISTING AND PROPOSED CONDITIONS SITE PLANS

EXISTING CONDITIONS SITE PLAN

GRAPHIC SCALE

250 0 125 250

(IN FEET)
1 inch = 250 ft.



VICINITY MAP
NO SCALE

--

11250 CERRITO DRIVE
CLEARLAKE OAKS, CA 94610
APNs: 006-007-17, 23 & 30

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
	CREEK / SWALE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:
1. CONTOUR INTERVAL IS 20'

(A) (E) GROUNDWATER WELL
LAT: 39.0315°
LONG: -122.71285°
BENEFICIAL USES:

(B) (E) GROUNDWATER WELL
LAT: 39.03155°
LONG: -122.71005°
BENEFICIAL USES:

(C) (E) GROUNDWATER WELL
LAT: 39.03079°
LONG: -122.70880°
BENEFICIAL USES:

(D) (E) GROUNDWATER WELL
LAT: 39.02982°
LONG: -122.70010°
BENEFICIAL USES:

(E) (E) GROUNDWATER WELL
LAT: 39.03578°
LONG: -122.71002°
BENEFICIAL USES:

(F) (E) RESIDENCE

(G) (E) METAL BARN

Revisions:

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE c
REDDING, CA. 96001
530-526-7493

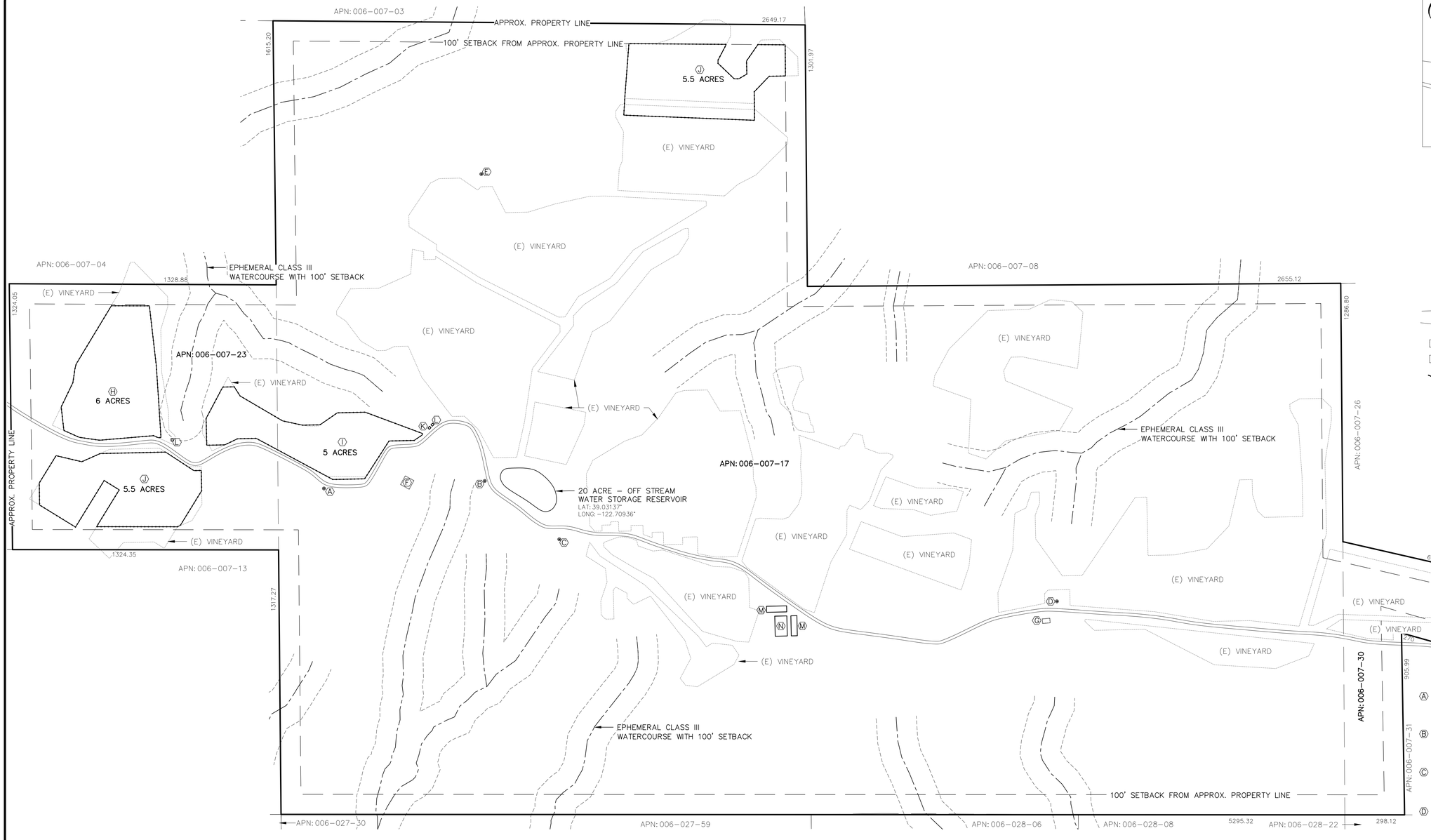
PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
exp.06/30/21
CIVIL
STATE OF CALIFORNIA

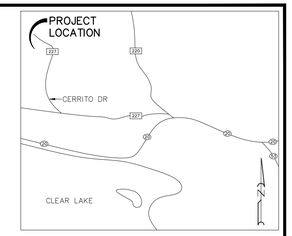
EXISTING CONDITIONS SITE PLAN

11250 CERRITO DRIVE
CLEARLAKE OAKS, CA 94610
LAKE COUNTY
APNs: 006-007-17, 23, & 30

PLOTTED BY: ---
DATE PLOTTED: 6/18/21
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1



PROJECT LOCATION



VICINITY MAP
NO SCALE

--

11250 CERRITO DRIVE
CLEARLAKE OAKS, CA 94610
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LEGEND:

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APN	ASSESSOR'S PARCEL NUMBER
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LAT: 39.03578°
LONG: -122.71002°
BENEFICIAL USES:

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Ⓖ (E) METAL BARN

Ⓗ (P) 261,360 SF (6-ACRE) OUTDOOR CULTIVATION / CANOPY AREA

Ⓘ (P) 217,800 SF (5-ACRE) OUTDOOR CULTIVATION / CANOPY AREA

Ⓙ (P) 239,580 SF (5.5-ACRE) OUTDOOR CULTIVATION / CANOPY AREA

Ⓚ (P) 10'x12' SECURITY CENTER / SHED

Ⓛ (P) 10'x12' (120) SF PESTICIDES & AGRICULTURAL CHEMICALS STORAGE AREA

Ⓜ (P) 30'x100' IMMATURE PLANT AREA / GREENHOUSE

Ⓝ (P) 60'x100' (6,000 SF) PROCESSING & HARVEST STORAGE FACILITY

PROPOSED CONDITIONS SITE PLAN

GRAPHIC SCALE
250 0 125 250
(IN FEET)
1 inch = 250 ft.

Revisions:

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1767 MARKET STREET SUITE c
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CLEARLAKE OAKS, CA 94610
LAKE COUNTY
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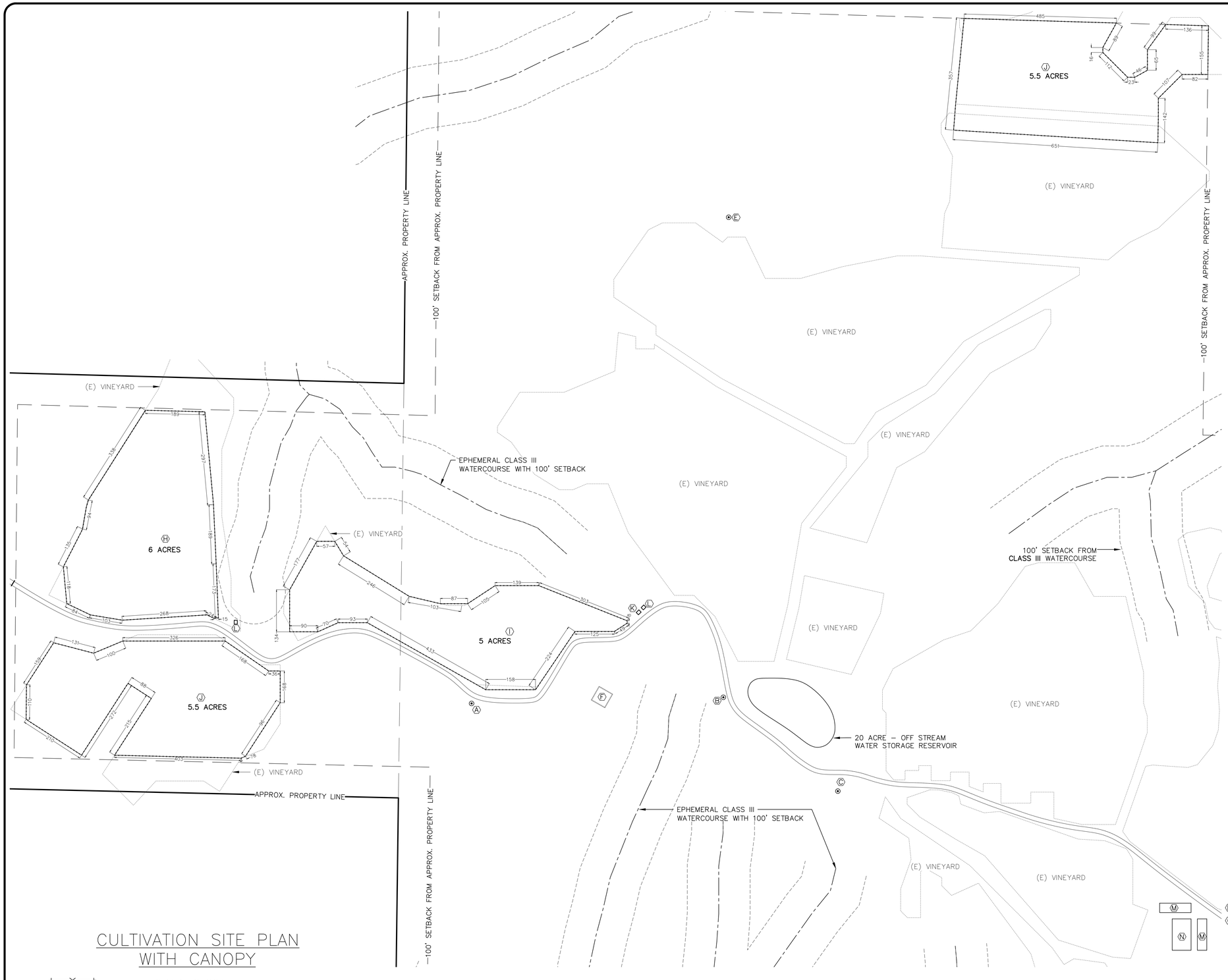
PLOTTED BY: ---
DATE PLOTTED: 6/18/21
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1

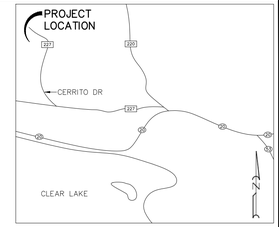


CULTIVATION SITE PLAN WITH CANOPY

GRAPHIC SCALE

150 0 75 150

(IN FEET)
1 inch = 150 ft.



VICINITY MAP
NO SCALE

--
11250 CERRITO DRIVE
CLEARLAKE OAKS, CA 94610
APNs: 006-007-17, 23 & 30

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
APN	ASSESSOR'S PARCEL NUMBER
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11250 CERRITO DRIVE
CLEARLAKE OAKS, CA 94610
LAKE COUNTY
APNs: 006-007-17, 23, & 30

PLOTTED BY:	---
DATE PLOTTED:	6/18/21
SCALE OF DRAWING:	SEE PLAN
JOB NUMBER:	
CADD FILE:	
SHEET:	1

ATTACHMENT F

RADIUS OF INFLUENCE ANALYSIS

Radius of Influence Analysis

Well Radius = 0.33 feet

Specific Capacity (using data from Well Yield Test)
20.3 gpm (yield) / 14 feet (drawdown) = 1.45 gpm/foot of drawdown
Specific Capacity (SC) = 1.45

Estimate of Δs for confined aquifer (from Driscoll 1986[7])
T = SC x 2000; T = 1.45 x 2000; T = 2,900
Δs = 528Q/T; Δs = 528 x 20.3 gpm / 2,900; Δs = 3.7