

Well Interference Evaluation Report
for
Latrobe Road, Sloughouse, CA
APN: 073-0080-060-000

Prepared For:

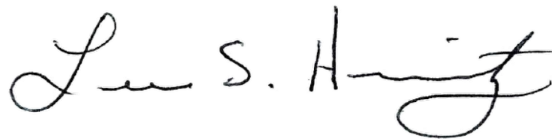
Roy Oneto
Foley Family Farms
14440 Latrobe Rd
Sloughouse, CA 95683

August 30, 2024

Prepared By:

HURVITZ ENVIRONMENTAL SERVICES INC.

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Certified Hydrogeologist



Project No. 5280.01

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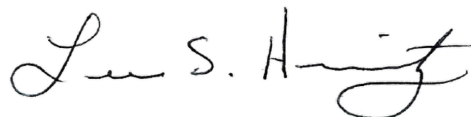
Mr. Oneto:

Hurvitz Environmental Services, Inc. (HES) is pleased to submit this Well Interference Evaluation Report for a new agricultural well at an existing vineyard property. HES prepared this Report at the request of Sacramento County as part of a well permit application under the Emergency Drought Standards for Well Construction (WLS-048). We understand that these Well Interference Evaluation Reports are now required for new or replacement private wells that will exceed a usage rate of 2 acre-feet/year. The purpose of this Report was to outline the sites proposed water usage rates, based on existing property uses, and to evaluate whether or not the proposed water supply can adequately meet the water demands without significantly impacting neighboring wells.

Based on the information and assessments contained herein, we conclude that the Sites existing water usage rate is below the average groundwater usage rate for the South American Groundwater Sub-Basin and that pumping and groundwater extraction at the proposed well location is not expected to significantly impact neighboring wells.

We appreciate the opportunity to provide you with these services. Please do not hesitate to contact us at your convenience, should you have any questions or comments regarding this report or our recommendations.

Sincerely,
HURVITZ ENVIRONMENTAL SERVICES, INC



Lee S. Hurvitz, PG #7573 CHG #1015
Certified Hydrogeologist



TABLE OF CONTENTS

1.0	INTRODUCTION AND SCOPE OF SERVICES.....	1
2.0	SITE DESCRIPTION	2
2.1	USGS 7.5 -MINUTE QUADRANGLE	2
2.2	GEOLOGICAL CONDITIONS	3
2.3	REGIONAL HYDROLOGY AND GROUNDWATER.....	4
3.0	SITE DEVELOPMENT AND WATER USE	6
3.1	RESIDENTIAL WATER USAGE.....	6
3.2	VINEYARD WATER USAGE.....	7
3.3	TOTAL SITE WATER USE.....	7
3.4	WELL INFORMATION.....	8
3.5	PROPOSED WELL YIELD AND CONSTRUCTION	10
4.0	POTENTIAL IMPACTS TO NEIGHBORING WELL.....	11
4.1	NEIGHBORING WELLS	11
5.0	LAND SUBSIDENCE	13
6.0	CONCLUSIONS.....	14
7.0	LIMITATIONS.....	15

FIGURES

PLATE 1	SITE LOCATION MAP
PLATE 2	ASSESSOR'S PARCEL MAP
PLATE 3	SITE PLAN – WELL LOCATIONS
PLATE 4	USGS TOPOGRAPHIC MAP
PLATE 5	GEOLOGIC MAP

TABLES

TABLE 1	IRRIGATED VINEYARD/ PARCEL
TABLE 2	ESTIMATED SITE WATER USAGE
TABLE 3	WELL INVENTORY

APPENDICES

APPENDIX A - WELL COMPLETION REPORTS

APPENDIX B - RADIUS OF PUMPING INFLUENCE GRAPH

1.0 INTRODUCTION AND SCOPE OF SERVICES

We understand that Foley Family Farms (the applicant) is applying to Sacramento County for approval to install a new groundwater well on the property identified as 14440 Latrobe Road, Sloughhouse, CA, 95683 (the Site). The Site is further identified as Assessor's Parcel Number (APN) 073-0080-060-000 which is deeded 160-acres. Water use from this proposed well is expected to exceed 2-acre feet/year. Therefore, based on the States WLS-048 Emergency Drought Standards, Sacramento County now requires a Hydrogeologic Assessment and Well Interference Evaluation Report for any new private groundwater well that may utilize groundwater at a rate that is greater than 2-acre-feet/year.

At this Site, the property use is not changing and annual water use rate will remain consistent with historical rates. In addition, the property owner will be abandoning the existing groundwater well under permit once the new well is installed. The existing well, along with a second well on an adjacent parcel, are currently utilized for irrigation of 274 acres of established vineyards onsite.

Therefore, on behalf of the applicant, Hurvitz Environmental Services (HES) conducted a Site Water Use Evaluation, and a Well Interference Assessment, in accordance with the Sacramento County and the State of California requirements. This Assessment Report includes the following elements:

- Estimates for the proposed water uses for the property.
- Characterization of local geologic and hydrogeologic conditions.
- Assessment of Well Completion Reports on nearby parcels.
- Estimates of proposed well construction and anticipated yields.
- Calculations for the anticipated radius of pumping influence.
- Evaluate potential for land subsidence.
- Evaluate the well use for consistency with the Sacramento Valley – American Sub-Basin Plan.

2.0 SITE DESCRIPTION

The Site is located at 14440 Latrobe Road, Sloughhouse, CA 95683, in unincorporated Sacramento County, California, approximately 20-miles east of downtown Sacramento and 11.5 miles south of Folsom, CA (**Plate 1 – Site Location Map**).

The Sacramento County Assessor’s Office identified the site as APN 073-0080-060 which is deeded 160-acres (**Plate 2 –Assessor Parcel Map**). The generally “Z” shaped parcel is approximately 4,400-feet (north-south) and is approximately 2,600-feet (east-west). The Site is developed with one primary residence, a garage, a barn, and several small agricultural related outbuildings. One (1) groundwater well is located on the property near the center of the Site and used for vineyard irrigation and the new proposed well will replace the existing Site well, (**Plate 3- Site Plan – Well Locations**).

The parcel is located in a rural agricultural/residential area and surrounded by agricultural properties to the north, east, and west, and by residential properties to the south. The Site is also bisected by the west flowing, intermittent stream identified as Crevis Creek. The Site contains two ponds. The larger of the two ponds is approximately 10-acres with most of that pond situated on the adjacent parcel to the north (073-0080-059). The second smaller pond is located entirely on the Site and consists of approximately 1.5 acres. Both ponds are fed ephemeral streams that originate on the adjacent parcels.

The Site is zoned as Agriculture (AG80) and this zoning is applied to areas of the County for viable agricultural use and very low-density residential use. The agricultural zoning districts allow for a wide range of agricultural uses on large parcels of land. These uses may include crop production, commercial riding academies and stables, animal keeping, agricultural labor housing, and compatible accessory uses.

2.1 USGS 7.5 -MINUTE QUADRANGLE

HES reviewed the United States Geological Survey (USGS) Buffalo Creek 7.5-Minute Quadrangle Map, 2015, (**Plate 4– USGS Topographic Map**). The Site is located in the Lower Deer Creek Sub-Watershed (HUC 12- 180400130503) and surface waters at the Site drain to Crevis Creek which flows westerly across the center of the Site. Crevis Creek is an intermittent stream that flows west/southwest off the Site for approximately 1-mile before coalescing with Deer Creek. Deer Creek continues to flow southwesterly before converging with the Consumnes River, south of Sacramento (**Plate 4 – USGS Topographic Map**). The larger pond located at the north end of the Site is approximately 10-acres in size and is partially fed by two small ephemeral streams originating on the south slopes of the low-lying hills on the adjacent property to the north. The pond spills on its southern side and into Crevis Creek. The smaller pond is located east of the residence on the southeastern portion of the Site. This pond is fed by a small ephemeral drainage on

its east side and spills on its northwest side into Crevis Creek.

The Site has a gradual slope from northeast to southwest with a small topographic rise on the northern and southern portions of the Site creating a small valley across the center of the Site. The maximum elevation at the Site is approximately 230 feet above mean sea level (MSL) along the southeastern property boundary and the Site's minimum elevation is approximately 126 feet above MSL, located along the western property boundary near the center of the site where Crevis Creek flows offsite.

2.2 GEOLOGICAL CONDITIONS

For information on the geologic formations present beneath the Site, HES reviewed the Geologic Map of the Sacramento Quadrangle, prepared by the California Division of Mines and Geology¹. According to the Map reviewed, the northern and southern portions of the Site are underlain by the Miocene aged Valley Formation (*Tvs*), consisting of varying amounts of rhyolite ash, vitreous tuff, quartz sand, and ashy clays. Many of the clays have a greenish color. The sediments often contain fragments of pumice, up to 0.25 inch in diameter. The Valley Formation appears to be relatively thin at the Site and interfingered with the middle Miocene to middle Pliocene aged Mehrten Formation (*Tm*), which consists of andesitic conglomerate, sandstone and breccia.

The center portion of the Site, along the margins of Crevis Creek is a Quaternary aged Alluvial Formation (*Q*). Quaternary alluvium consists of un-weathered gravel, sand and silt deposited by present-day stream and river systems of the Sierra Nevada. These deposits outlie stream channel deposits but are inside the first low terraces flanking modern stream channels. Permeabilities in these units range from high to low, and, in certain areas, the alluvium acts as a recharge area for percolating surface water to infiltrate into groundwater. Thickness of the alluvium varies from up to 30 feet deep².

The proposed Site well is mapped in an area identified as being within the Alluvial Formation, however, it is likely that the proposed well will be screened in aquifers of the Mehrten Formation or possibly the Valley Formation.

The Mehrten Formation is reportedly 20-1200 feet thick with two distinct groundwater units. The first unit of the Mehrten Formation is composed of well-sorted black sands, which are a significant water bearing unit often accessed by municipal wells. They were formed as fluvial deposits derived from eroded andesitic material originating in the Sierra Nevada. Beds of black

¹ Geologic Map of the Sacramento Quadrangle 1:250,000, California Division of Mines and Geology, 1981.

² South American Subbasin Groundwater Sustainability Plan, October 29, 2021.

sand are laminated and typically about 5 feet thick but have been observed at over 20 feet thick. These beds commonly exhibit cross bedding and forest bedding, indicative of deposition in a beach or deltaic environment. Well-rounded pebbles and cobbles of andesite are common in certain horizons. Lenticular beds of stream gravel containing andesitic cobbles and boulders or beds of blue to brown clay and silt are associated with these black sands. Near the base of the first unit, a series of hard, gray sandstone beds are present and coated in authigenic montmorillonite (DWR, 1974).

The second unit of the Mehrten Formation is tuff-breccia, which is very dense, hard and composed of angular pieces of fine-grained to porphyritic andesite. Breccia fragments range from less than an inch to several feet in diameter and are contained in a cemented ground mass composed of andesitic lapilli and ash. The tuff-breccia unit is derived from large quantities of volcanic ash that washed down existing stream channels, acquiring blocks of andesite that were then incorporated into the mass. This material spread out over the sloping plains and solidified as a hard pavement ranging in depth from a few inches to over 30 feet deep (DWR, 1974)³.

2.3 REGIONAL HYDROLOGY AND GROUNDWATER

According to www.ecoatlas.com⁴ the project site is located in the Lower Deer Creek Sub-Watershed (HUC 12- 180400130503) and is under the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). The Deer Creek is the primary drainage for this Sub Watershed. The Site is mapped by California Department of Water Resources (DWR) as being within the southeastern portion of the Sacramento Valley – South American Groundwater Sub-Basin (designated 5-021.65), a High Priority groundwater basin⁵. Average groundwater usage in the basin is listed at 0.58 acre-feet/basin acre, and includes residential, agricultural, and commercial uses from a total of 4,171 groundwater wells⁶. Groundwater accounts for 50% of all water use within the Sub-Basin and declining groundwater levels have been recorded near the center of the Sub-Basin. The primary water-bearing units (aquifers) in the site vicinity are located within the Miocene aged Mehrten Formation.

The Sacramento Valley – South American Groundwater Sub-Basin (SASb) is underlain by one principal aquifer, primarily composed of post-Eocene sedimentary deposits. The aquifer system composing the principal aquifer in the SASb is typically divided into an upper zone and a lower

³South American Subbasin Groundwater Sustainability Plan, October 29, 2021.

⁴Eco Atlas has been developed through funding from the US Environmental Protection Agency and the California State Water Resources Control Board.

⁵ California Department of Water Resources (DWR). 2020. Sustainable Groundwater Management Act 2019 Basin Prioritization, Process and Results.

⁶ <https://gis.water.ca.gov/app/bp-dashboard/final/#>

zone. The upper zone is contained in Pleistocene to Quaternary-age sediments including the Modesto, Riverbank, and Laguna Formations, South Fork Gravels and Arroyo Seco Gravels. The lower zone is contained in Miocene to Pliocene-age volcanic sediments, including the Mehrten Formation and portions of the underlying Valley Springs and Ione Formations⁷. These zones are partially separated by a discontinuous clay layer in the lower portion of the Laguna Formation that can act as a semi-confining layer for the lower zone of the aquifer.

The physical properties of the Mehrten aquifer have been characterized in the SASb Basin Plan, with hydraulic conductivity values ranging from 0.7 to 50 feet/day, and an average value of 17 feet/day. Transmissivity values ranging from 204 to 69,562 ft²/day, with an average value of 11,303 ft²/day. Specific Yield values ranging between 0.07 and 0.20, with an average value of 0.12 and Specific Storage values ranging between 0.000002 and 0.000073 1/ft, with an average value of 0.00039 1/ft.

⁷ South American Subbasin Groundwater Sustainability Plan, October 29, 2021.

3.0 SITE DEVELOPMENT AND WATER USE

It is our understanding that the applicant irrigates and operates a total of 274-acres of vineyard on six (6) adjacent parcels, totaling 480 acres. One (1) irrigation well is currently located on the Site and is scheduled for replacement after the new proposed well is installed. The second vineyard irrigation well is located on parcel APN: 073-0080-064. Additional Site wells were also identified from Department of Water Resources records on vineyard parcel APN: 073-0080-059 and APN: 073-0080-064. However, discussions with the applicant indicate that these additional vineyard wells they are not operational. Therefore, only two (2) groundwater wells provide irrigation water to the 274-acre vineyard. Groundwater from the two (2) irrigation wells is pumped to the 10-acre pond located on the northern portion of the Site, and then distributed to the vineyard from the pond. A break-down of the irrigated vineyard acres for each parcel is presented below on **Table 1 – Irrigated Vineyard/Parcel**. The Site also contains one occupied residence.

TABLE 1 – IRRIGATED VINEYARD /PARCEL

APN	Parcel Size (acres)	Irrigated Vineyard (acres)
073-0080-064	80	24
073-0080-063	80	68
073-0080-062	40	30
073-0080-061	40	15
073-0080-060	160	110
073-0080-059	80	27
Total	480	274

The total irrigated vineyard acres presented in Table 1 is not an increase from the Sites existing operations and no change in Site water use is anticipated. The proposed well will be located approximately 30 feet to the south of the existing Site well which will be abandoned once the new Site well is installed, **Plate 3 – Site Plan – Wel Locations**.

3.1 RESIDENTIAL WATER USAGE

The typical water use associated with residential occupancy is between 0.2 and 0.5 acre-feet/year depending on minor landscaping. Secondary residences (ADU) water use ranges from 0.1 to 0.25 acre-feet/year and also depends on minor or major landscaping. Additional usages such as a pool or irrigated lawns can be added to this estimate.

For the purposes of this analysis, we assumed that the Site residence is occupied and has minor to moderate landscaping. Therefore, the total residential usage is estimated as:

0.4 acre-feet/year (domestic usage w/landscaping) x 1 (primary residences) =
0.4 acre-feet/year = Annual Residential Water Use

3.2 VINEYARD WATER USAGE

The typical irrigated vineyard in the Sacramento area uses 0.6 acre-feet/acre/year⁸. Therefore, the total annual vineyard water usage on the Site parcel is estimated as:

274-acres (existing vineyard on 6 parcels) x 0.6 acre-feet/ac/year (irrigation rate) =
164.4 acre-feet/year = Annual Vineyard Water Use

It is assumed that during a normal rainfall year the vineyard would only be irrigated between April and October each year with frost protection occurring during some of the non-irrigation months. Based on this irrigation frequency, the monthly averages are estimated on **Table 2- Estimated Site Water Usage**.

3.3 TOTAL SITE WATER USE

The total water use from the Site well is calculated below and tabulated monthly on **Table 2 – Estimated Site Water Usage**.

164.4 acre-feet/year (53,569,904 gallons) Vineyard Water Usage (274-acres planted)
0.4 acre-feet/year (130,304 gallons) Residential Water (1 Residence/with landscaping) =
164.44 ac-ft (53,700,208) gallons = Total Estimated Site Water Usage

There is no planned increase in water use at this site and these estimates are based on the exiting uses.

⁸Appendix A of the Sonoma County's Water Use, Supply, and Conservation Assessment Guidelines (Policy and Procedure 8-2-1) and Napa Counties 2015 Water Availability Analysis.

TABLE 2 – ESTIMATED SITE WATER USAGE

Source	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Total
	-----Gallons-----													acre-ft
Vineyard (274 acre)	250,000	250,000	569,904	6 mil	7 mil	8 mil	8 mil	8 mil	8 mil	7 mil	250,000	250,000	53.57 mil	164.4
Residential (1 primary)	10,000	10,000	10,000	10,000	10,304	12,000	12,000	12,000	12,000	12,000	10,000	10,000	130,304	0.40
TOTAL USAGE	260,000	260,000	579,904	6 mil	7 mil	8 mil	8 mil	8 mil	8 mil	7 mil	360,000	260,000	53.7 mil	164.44

Based on these estimates for onsite water use it appears that the peak water demand will occur annually between June and September each year (122 days), with the daily peak water demand being approximately 262,295 gallons/day. To meet the entire vineyard water demand would require approximately 182 gpm of continuous pumping. Since the vineyard uses two (2) groundwater wells located on two (2) separate parcels to perform vineyard irrigation, the average water demand from each vineyard well would be approximately 91 gpm (182gpm/2 wells). The overall water usage rate for the vineyard equates to approximately 0.34 acre-feet/acre (164.44 acre-feet/year/480-acres). This groundwater usage rate appears to be below the average usage rate of 0.58 acre-feet/acre/year estimated for land use in entire the SASb⁹.

3.4 WELL INFORMATION

HES reviewed the DWR Well Completion Report database, and surveyed arial photography for the surrounding area to determine the locations of nearby groundwater wells. The DWR search identified thirteen (13) Well Completion Reports, for wells located within approximately 1-mile of the proposed well location. The Well Completion Reports reviewed for this Assessment are presented in **Appendix A – Well Completion Reports** and details from the Well Completion Reports are presented on **Table 3 – Well Inventory**.

⁹<https://gis.water.ca.gov/app/bp-dashboard/final/#>

TABLE 3 – WELL INVENTORY

APN/Well Number	Well install/ Test Year	Distance to Site Well (Feet)	Surface Elevation (Feet, MSL)	Total Well Depth (Feet)	Screen Interval/ (Feet)	Total Screen Thickness (Feet)	Well Yield (GPM)	Draw-down (Feet)	Specific Capacity (GPM/FT)	Well Map #
073-0080-060 # E0368612	2018	NA	138	380	140-170 180-250 300-340 360-370	150	400	192	2.08	Site Well
073-0080-059 #0995843	2013	2,350	153	400	200-300 340-400	160	NA	NA	NA	1*
073-0080-059 #E0083825	2008	2,350	147	465	260-435	175	NA	NA	NA	2*
073-0080-003 # 34-595	1949	2,730	143	216	NA	NA	NA	NA	NA	3
073-0121-002 #181888	1986	3,640	179	439	52-225	173	40	25	1.6	4
073-0121-003 #181791	1985	3,700	160	425	58-238	180	NA	NA	NA	5
073-0080-066 #0988930	2012	4,020	148	245	77-240	163	50	30	1.67	6
073-0080-064 # 0995842	2013	4,080	167	460	280-460	180	NA	NA	NA	7*
073-0121-004 #150680	1985	4,180	144	400	251-400	149	56	NA	NA	8
073-0122-002 #2088056	2008	4,510	165	310	160-310	150	NA	NA	NA	9
073-0080-064 # 011287	2020	4,650	189	390	280-360	80	NA	NA	NA	10
073-0121-010 #435075	1997	5,100	177	395	220-395	175	150	4	37.5	11
073-0121-009 #267928	1987	5,100	175	350	220-350	130	50	NA	NA	12
Average Well Total Depth = 375 feet				Average Screen Thickness = 155 Feet			Average SC* = 1.78 GPM/ft			
*These vineyard wells are either abandoned or no longer operational.										
**Average Specific Capacity based on three wells within 1-mile of the Site including the Site well to be abandoned.										

Based on review of the Well Completion Reports for the area, the average well depth is 375 feet, the average well screen is 155 feet, and the average pumping rate is 124 gpm. The maximum reported pumping rate is 400 gpm and the lowest is 40 gpm. Well Completion Reports show that water bearing zones in this area are mainly composed of sand, and gravels. In addition, screened zones are intermixed with clay, with some shale and sandstone, and appear to be typical of the Alluvial deposits and the Mehrten Formation. Of the twelve (12) offsite wells identified, only one (1) well was identified within 2500-feet of the site (APN: 073-0080-059) which is owned by the same owner of the Site parcel.

3.5 PROPOSED WELL YIELD AND CONSTRUCTION

The proposed well is located near the center of the Site at approximately 138-feet above MSL, as shown on **Plate 3 –Site Plan – Well Locations**. The well is proposed in a flat, unpaved area approximately 350 feet northwest of the main residence and 380 feet south of Crevis Creek. Since the Well Completion Reports in the area show relatively thick lenses of sand and sandstone aquifers, we assume that the new proposed well will likely produce water yields within the range seen on, **Table 3 – Well Inventory**.

From review of the Well Completion Reports (**Appendix A – Well Completion Reports**) the sands and gravels in the area occur as shallow as 40 feet bgs however it is likely all the shallow lenses (<180 feet) will be sealed off with solid well casing. Depending on the encountered subsurface stratigraphy, the well will likely be installed to a total depth between 400-500 feet bgs and will likely be screened across all water bearing zones below 180 feet with up to 180 feet of screen thickness. The well will be constructed with 12-inch diameter steel casing and will be equipped with machine slotted PVC well screen and a 20-foot sanitary seal.

4.0 POTENTIAL IMPACTS TO NEIGHBORING WELL

4.1 NEIGHBORING WELLS

To evaluate potential well pumping impacts to wells on other properties, the potential lateral extent of pumping from the irrigation well was estimated. Using general relationships discussed in Driscoll (1986)¹⁰, we estimated the lateral pumping influence using averages from the Well Completions Reports found in the area (**Table 3 – Well Inventory**).

Transmissivity was estimated for an unconfined and confined aquifer, using the relationship of Specific Capacity (yield/drawdown) x the coefficient of 1,500 (unconfined)¹¹ and 2,000 (confined). 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 $T = 528Q/\Delta s$ ¹². To estimate drawdown in the site well when pumping at 91 gpm (the estimated average flow rate) we used the average specific capacity (SC=1.78) for three (3) wells within 1-mile. Using this data and applying it to the Site, we calculated that a 12-inch diameter well would have a zone of pumping influence extending approximately 350 feet for an unconfined aquifer and 3,000 feet for a confined aquifer. From review of the SASb Basin Plan the aquifers in the region are generally considered to be unconfined to semi-confined and therefore the pumping radius is likely somewhere in between 350 and 3,000 feet. **Appendix B - Radius of Pumping Influence.**

The closest offsite well that is not owned by Folley Family Farms is approximately 2,730 feet from the proposed site well at APN: 073-0080-003 (**Well #3 on Plate 3**) and potentially within the radius of pumping influence. However, the expected drawdown at a well located at this location is less than 1-foot and generally considered to be insignificant. Therefore, based on the distances to the neighboring wells and the estimated radius of pumping influence, well interference from the proposed irrigation well at the Site is not considered a concern to this assessment.

To evaluate the long-term drawdown in an observation well due to pumping the proposed Site well, we used the **Theis equation**. To calculate the potential drawdown we used the average aquifer values for the Mehrten Formation as outlined in the SASb Basin Plan.

¹⁰ Groundwater and Wells, Second Edition, Fletcher G. Driscoll, 1986, published by Johnson Division, St. Paul Minnesota, 1089p.

¹¹ Groundwater and Wells, Second Edition, Fletcher G. Driscoll, 1986, published by Johnson Division, St. Paul Minnesota, (Appendix 16D)

¹²Groundwater and Wells, Second Edition, Fletcher G. Driscoll, 1986, published by Johnson Division, St. Paul Minnesota, 1089p. (Equation 9.11)

The Theis equation is given by:

$$s=4\pi TQW(u)$$

Where:

- s = drawdown in the observation well (in feet)
- Q = pumping rate (in cubic feet per day)
- T = transmissivity of the aquifer (in square feet per day)
- $W(u)$ = well function (a dimensionless function related to u)
- u = dimensionless time parameter given by:

$$u=4Tr^2S$$

- r = distance from the pumping well to the observation well (in feet)
- S = storage coefficient (dimensionless), for unconfined aquifers, $S=Sy$ (specific yield), and for confined aquifers, $S=Ssb$ (specific storage times aquifer thickness)
- t = time since pumping started (in days)

Given:

- $Q = 91 = 91 \times 1440 / 7.48 \text{ ft}^3/\text{day}$
- $T = 11,303 \text{ ft}^2/\text{day}$
- $r = 3,000 \text{ feet}$
- $t = 120 \text{ days}$
- For an unconfined aquifer, $S=0.12$ (Specific Yield)
- For a confined aquifer, $S=Ss \times b$, where $Ss=0.000039$ and $b = T/K = 11,303/17 \text{ feet}$

The expected drawdown (s) in the observation well located 2,730 feet away from the pumping well are:

- **For an unconfined aquifer: $s = 0.44 \text{ feet}$**
- **For a confined aquifer: $s = 0.63 \text{ feet}$**

These values are derived from the Theis equation and consider both unconfined and confined aquifer conditions. The calculated drawdown values demonstrate that the expected resulting from the proposed pumping at the Site is considered negligible.

5.0 LAND SUBSIDENCE

Land subsidence is the lowering of the ground surface elevation and is often caused by groundwater pumping from an aquifer with a substantial number of clay layers. Land subsidence can be elastic and inelastic. Elastic subsidence is small, reversible lowering and rising of the ground surface and can be cyclical with seasonal changes year to year. Inelastic subsidence is irreversible. Land subsidence is not known to be historically or currently significant in the South American Subbasin.

Previous studies of land subsidence in the SASb have shown small-to-zero amounts of subsidence having occurred. Such efforts have mainly been through leveling profiles studied between 1947 and 1966, the 2006 GMP, a 2008 DWR and the US Bureau of Reclamation subsidence project throughout the Sacramento Valley using GPS technology, and DWR's more recent Sacramento Valley 2017 GPS Survey program, all of which demonstrated that subsidence has been very minimal, clearly not significant or unreasonable, across the SASb during the time period 2008-2017¹³.

¹³ South American Subbasin Groundwater Sustainability Plan, October 29, 2021.

6.0 CONCLUSIONS

The project site is located in the upper reaches of the Lower Deer Creek Watershed and within the State designated High Priority South American Groundwater Sub- Basin. The proposed well will be installed within aquifers of alluvial deposits and the Mehrten Formation.

The new proposed groundwater well will be used on six adjoining parcels, by the same property owner, on 480-acres of land. The estimated annual groundwater usage for the entire Site including 274-acres of vineyard, and one primary residence with landscaping, is 164.44 acre-feet/year (53,700,208 gallons). The estimated groundwater use/site acre, is 0.34 acre-feet/acre/year and is below the South American Groundwater Sub-Basin Average of 0.58 acre-feet/acre/year. The daily peak water demand is expected to be approximately 262,295 gallons/day or 182 gpm. The Site has two existing groundwater wells, one of which will be abandoned once the new well is installed. Therefore, each of the two wells used for vineyard irrigation would need to produce approximately 91 gpm to meet the Sites Peak demand. In summary:

- **164.44 acre-feet/year – Estimated Site Groundwater Usage (6-parcels)**
- **262,295 gallons/day – Peak Daily Water Demand**
- **0.34 acre-feet/acre/year – Estimated groundwater usage rate for the two vineyard wells**
- **350-3000 feet – Estimated radius of pumping influence (unconfined & confined aquifer)**
- **2,730 feet – Closest offsite well not associated with the vineyard**
- **0.44-0.63 feet - Expected drawdown in closest offsite well after 120 days of peak pumping (unconfined aquifer and confined aquifer)**

Based on the information and assessments contained herein, we conclude that pumping and groundwater extraction at the proposed well will not significantly impact neighboring wells. Further, the groundwater use associated with the Site vineyard is below the average groundwater usage rate for the SASb and is therefore consistent with the Basin Plan.

7.0 Limitations

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

Groundwater systems of Sacramento County are typically complex, and available data rarely allows for more than general assessment of groundwater conditions and delineation of aquifers.

Hydrogeologic interpretations are based on the drillers' reports made available to us through the California Department of Water Resources, available geologic maps and hydrogeologic 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 hydro-geological 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 of a type or at a location not investigated.

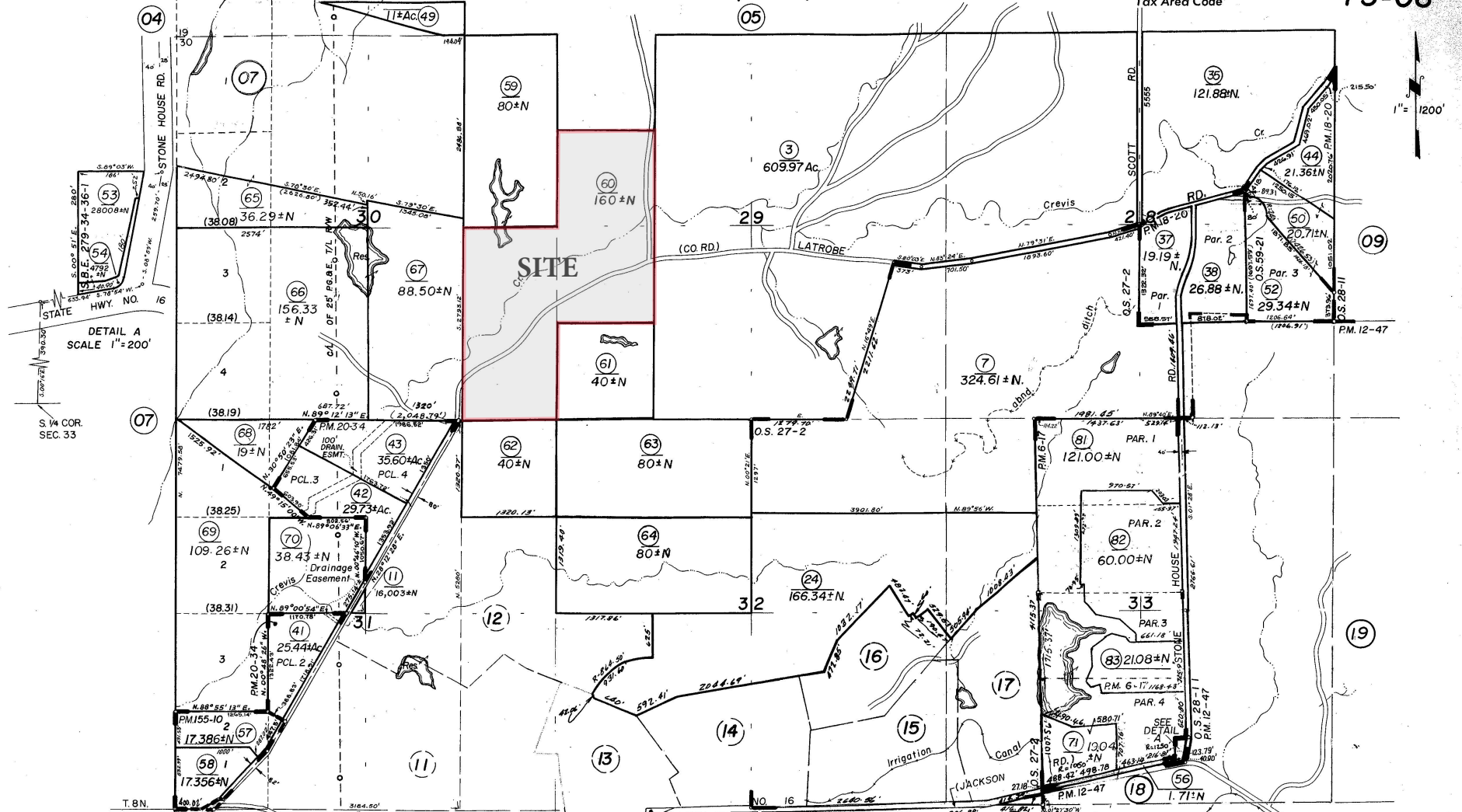
This study is not intended to assess if any soil contamination, waste emplacement, or groundwater contamination exists by subsurface sampling through the completion of soil borings and the installation of monitoring wells. The scope of work, determined by the client, did not include these activities.

This Report is for the exclusive use by Foley Family Farms their affiliates, designates, assignees and no other party shall have any right to rely on any service provided by Hurvitz Environmental Services without prior written consent.

POR. T.8N., R.8E., M.D.B. & M.

Tax Area Code

73-08



DETAIL A
SCALE 1"=200'

S. 1/4 COR.
SEC. 33

O.S. Bk. 70 Pg. 14
 Por. Record of Survey, O.S. Bk. 59, Pg. 21 (12-21-2000)
 Parcel Map, Bk. 6, Pg. 17 (7-13-72)
 O.S. Bk. 27, Pg. 02
 O.S. Bk. 28 Pg. 11 (10-14-70)

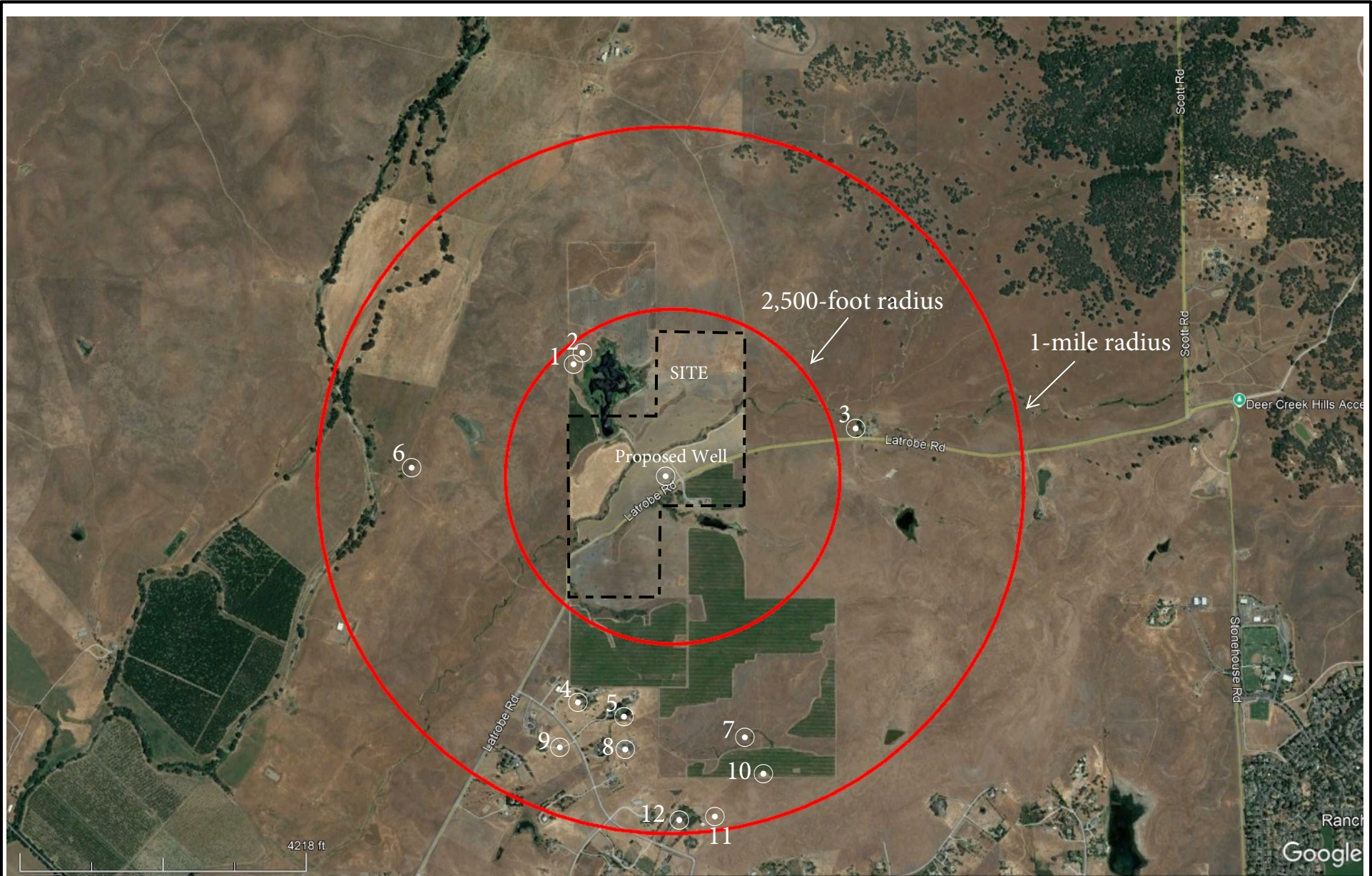
Assessor's Map Bk. 73 - Pg. 08
 County of Sacramento, Calif.

NOTE - Assessor's Block Numbers Shown in Ellipses.
 Assessor's Parcel Numbers Shown in Circles.

HURVITZ ENVIRONMENTAL
 105 MORRIS ST, STE 188
 SEBASTOPOL, CA 95472
 PH: 707.824.1690
 FX: 707.824.2675
 HURVITZ.ENVIRONMENTAL@GMAIL.COM
 CA PG# 7573

Assessors' Parcel Map
 Latrobe Road
 APN: 073-0080-060
 Sloughouse, CA 95683

JOB NUMBER: 5280.01
DATE: 08/30/24
PLATE: 2



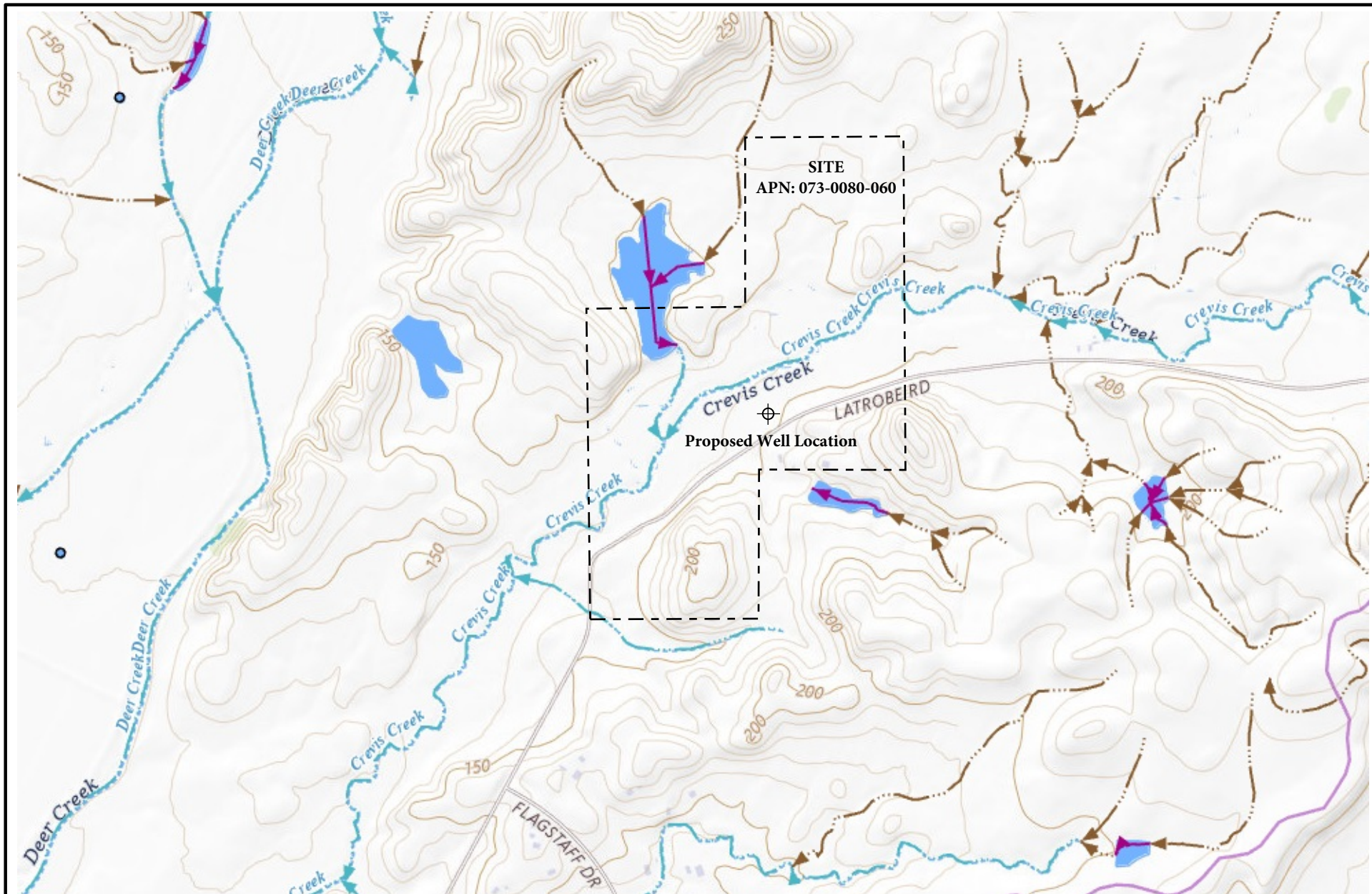
HURVITZ ENVIRONMENTAL
 105 MORRIS ST, STE 188
 SEBASTOPOL, CA 95472
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 FX: 707.824.2675
 HURVITZ.ENVIRONMENTAL@GMAIL.COM
 CA PG# 7573

Site Plan - Well Locations
 Latrobe Road
 APN: 073-0080-060
 Sloughhouse, CA 95683

JOB NUMBER:
5280.01

DATE:
08/30/24

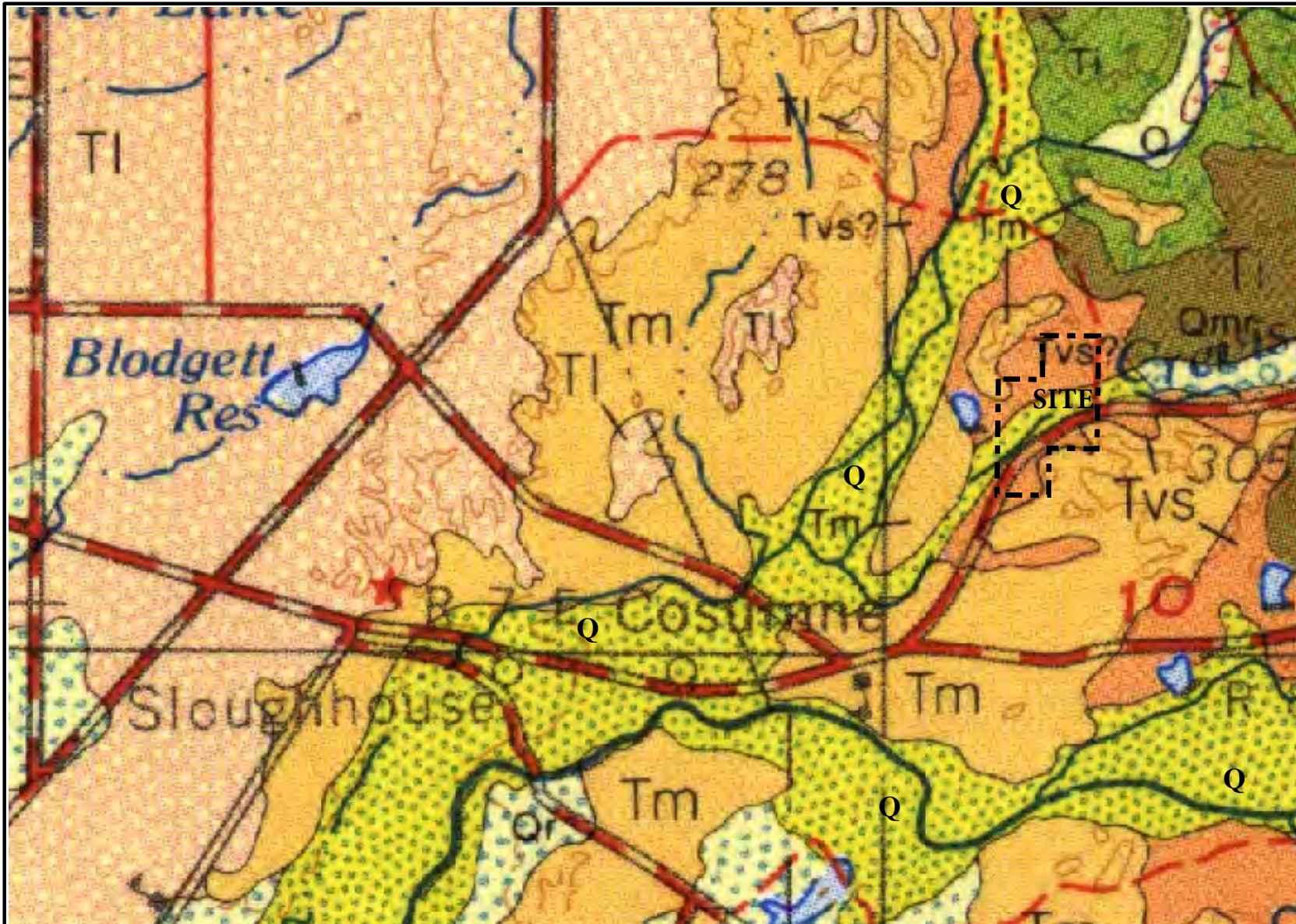
PLATE:
3



HURVITZ ENVIRONMENTAL
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 SEBASTOPOL, CA 95472
 PH: 707.824.1690
 FX: 707.824.2675
 HURVITZ.ENVIRONMENTAL@GMAIL.COM
 CA PG# 7573

Topographic Map
 Latrobe Road
 APN: 073-0080-060
 Sloughouse, CA 95683

JOB NUMBER:
5280.01
 DATE:
05/05/23
 PLATE:
4



Tvs - Valley Springs Formation:
Rhyolitic Tuff and Sedimentary Rock

Tm - Mehrten Formation:
Andesitic conglomerate, Sandstone, and Breccia

Q - Alluvium

Source: Geologic Map of the Sacramento Quadrangle 1: 250,000, California Division of Mines and Geology, 1981.

	HURVITZ ENVIRONMENTAL
	105 MORRIS ST, STE 188
	SEBASTOPOL, CA 95472
	PH: 707.824.1690
	FX: 707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM	
CA PG# 7573	

<p>Geologic Map</p> <p>Latrobe Road</p> <p>APN: 073-0080-060</p> <p>Sloughhouse, CA 95683</p>	<p>JOB NUMBER: 5280.01</p> <p>DATE: 08/30/24</p> <p>PLATE: 5</p>
--	---

APPENDIX A
WELL COMPLETION REPORTS

R: 07/17/18

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. E0368612

Owner's Well Number 9162
Date Work Began 5/14/2018 Date Work Ended 5/18/2018
Local Permit Agency Sacramento County Environmental Health Dept
Permit Number 59623 Permit Date 3/26/2018

DWR Use Only - Do Not Fill In

State Well Number/Site Number									
Latitude					Longitude				
APN/TRS/Other									

Geologic Log

Orientation Vertical Horizontal Angle Specify _____
Drilling Method Reverse Circulation Rotary Drilling Fluid Water

Depth from Surface Feet	to Feet	Description
0	10	Top Soil
10	25	Sand And Gravel
25	40	Gray Clay
40	60	Dark Brown Clay With Sand And Gravel
60	120	Light Gray Clay
120	175	Sand
175	180	Gray Clay
180	255	Sand And Gravel
255	300	Gray And Dark Brown Clay
300	342	Sand And Small Gravel
342	356	Gray Clay
356	370	Sand
370	396	Gray Clay
		Very Hard, Stopped Drilling

Total Depth of Boring 400 Feet
Total Depth of Completed Well 380 Feet

Well Owner

Well Location

Address .77 Mi NE of Int. Latrobe Rd & Flagstaff Dr, 150' NW of
City Latrobe Rd County Sacramento
Latitude _____ N Longitude _____ W
Datum _____ Decimal Lat. 38.51581 Decimal Long. -121.1311
APN Book 073 Page 0080 Parcel 060
Township 8 N Range 8 E Section 29

Location Sketch

(Sketch must be drawn by hand after form is printed.)
North
See Attached
West
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 and complete.

Activity

New Well
 Modification/Repair
 Deepen
 Other _____
 Destroy Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

Water Supply
 Domestic Public
 Irrigation Industrial
 Cathodic Protection
 Dewatering
 Heat Exchange
 Injection
 Monitoring
 Remediation
 Sparging
 Test Well
 Vapor Extraction
 Other _____

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Outside Diameter (Inches)	Wall Thickness (Inches)	Screen Type	Slot Size if Any (Inches)
0	140	28	Blank	Mild Steel	16	0.250		
140	170	28	Screen	Mild Steel	16	0.250	DBL Millslot	0.060
170	180	28	Blank	Mild Steel	16	0.250		
180	250	28	Screen	Mild Steel	16	0.250	DBL Millslot	0.060
250	300	28	Blank	Mild Steel	16	0.250		
300	340	28	Screen	Mild Steel	16	0.250	DBL Millslot	0.060
340	360	28	Blank	Mild Steel	16	0.250		
360	370	28	Screen	Mild Steel	16	0.250	DBL Millslot	0.060
370	380	28	Blank	Mild Steel	16	0.250		

Water Level and Yield of Completed Well

Depth to First Water _____ (Feet below surface)
Depth to Static _____
Water Level 102 (Ft) Date Measured 7/3/2018
Est. Yield * 400 (GPM) Test Type Constant
Test Length 6 (Hrs) Total Drawdown 192 (Ft)
*May not be representative of a well's long term yield.

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	70	Cement	Sand Slurry
70	400	Fill	#8 Graded Sand

Attachments

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analyses
- Other _____

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief
Name Eaton Drilling Co., Inc.
Person, Firm or Corporation
2 West Kentucky Ave Woodland CA 95695
Address City State Zip
Signed [Signature] 7/11/2018 C57A 133783
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

Attach additional information, if it exists.

R: 07/17/18

E0368612



3000 ft

9162 T/Ag

Proposed Site

0.77 mi

Flagstaff Dr

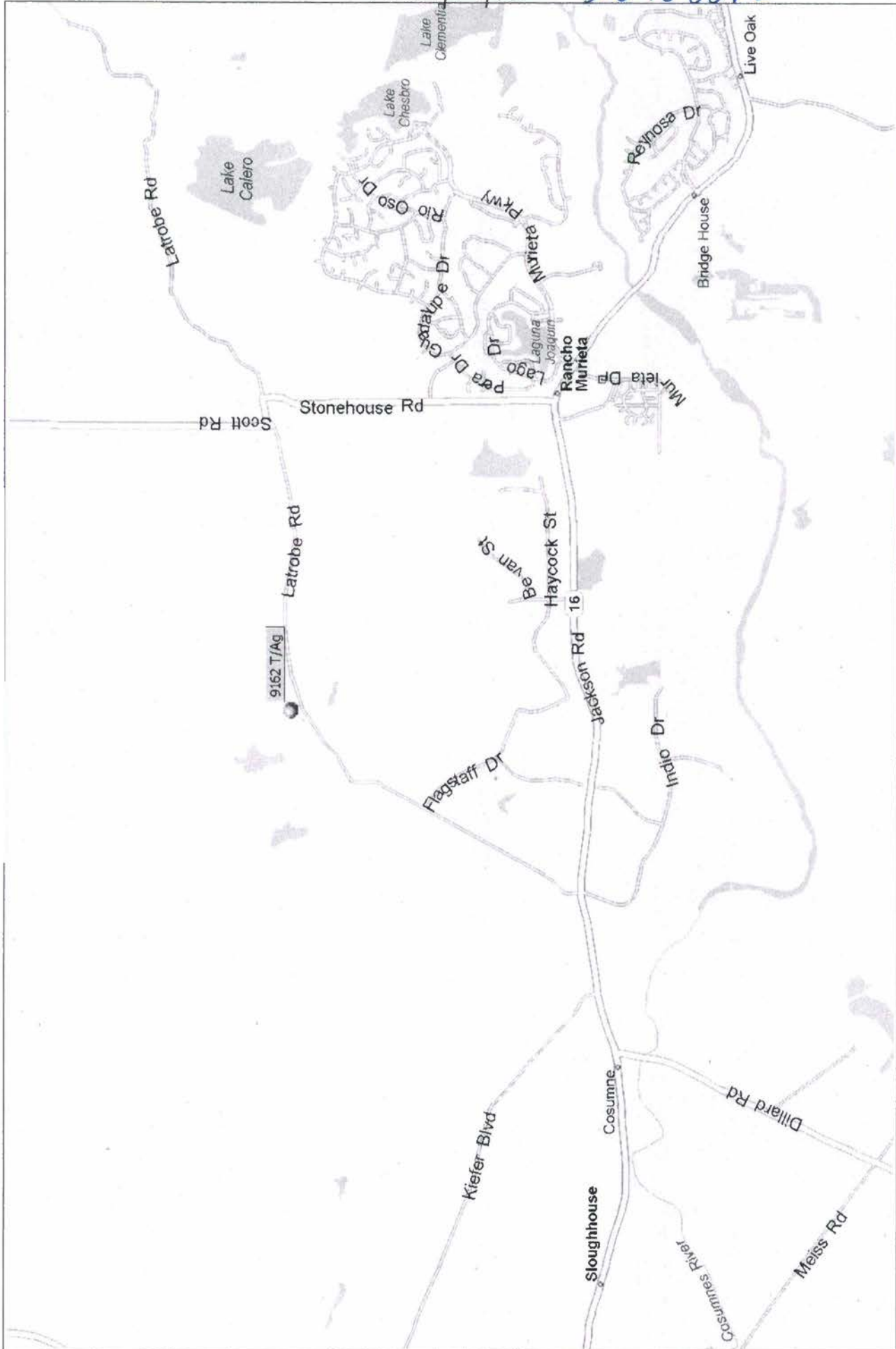
Latrobe Rd

APN: 073-0080-060
 GIS Acres: 160
 Coordinates:
 (38.51581, -121.1311)
 Site Address:
 Latrobe Rd,
 Rancho Murieta 95683
 T8N R8E S29
 Sacramento County



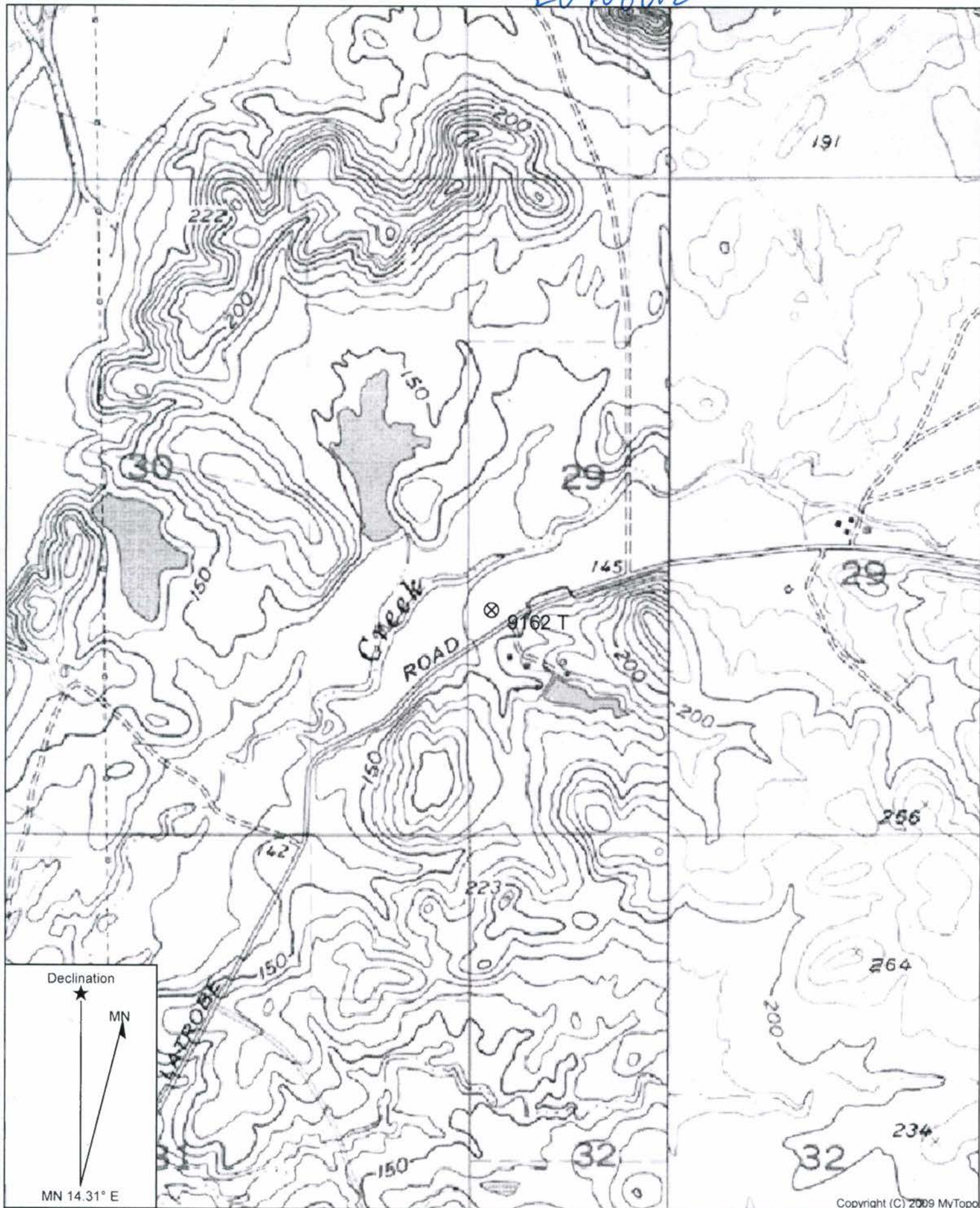
R:07/17/18

E0368612



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E0768612



Declination



MN 14 31° E

Copyright (C) 2009 MyTopo

APN: 073-0080-060
T8N R8E S29

Location: 038.5158100° N 121.1311000° W
Scale: 1 inch = 1,000 ft.

Copyright (C) 2009 MyTopo

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

DWR USE ONLY - DO NOT FILL IN

08N08 E30
STATE WELL NO./STATION NO.
3830 41 1210851
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1
Owner's Well No. 12-07 No. 0988930
Date Work Began 8-25-12, Ended 10-18-12
Local Permit Agency Sacramento County
Permit No. SWA 5175e Permit Date 8-22-12

GEOLOGIC LOG

ORIENTATION (≠) VERTICAL HORIZONTAL ANGLE (SPECIFY)

DRILLING METHOD cable tool FLUID water

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	
0	12	clay, rock 3/8" - 1/2"
12	13	hardpan
13	25	clay, rock 3/8" - 1/2"
25	32	clay, rock 1/2" to 2"
32	47	sand, clay mix
47	52	clay
52	62	rock
62	64	sand, rock 3/8"
64	72	rock
72	94	clay
94	96	brittle clay & shale
96	102	clay
102	105	sand, peagranell/water
105	128	rock, clay
128	147	clay, rock mix, brown clay
147	155	Green clay, sand
155	161	Green clay
161	170	clay, sand
170	177	Green clay
177	184	Green clay, sand
184	189	Green clay
189	218	clay, sand mix
218	222	clay
222	240	sand, little clay mix
240	250	clay, some sand

TOTAL DEPTH OF BORING 250 (Feet)
TOTAL DEPTH OF COMPLETED WELL 245 (Feet)

WELL LOCATION

Address 14221 Latrobe Rd
City Sloughhouse
County Sacramento
APN Book 073 Page 0080 Parcel 000000
Township Range Section
Lat DEG. MIN. SEC. N Long DEG. MIN. SEC. W

LOCATION SKETCH NORTH WEST EAST

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

USES (≠)
WATER SUPPLY
 Domestic Public
 Irrigation Industrial
MONITORING
TEST WELL
CATHODIC PROTECTION
HEAT EXCHANGE
DIRECT PUSH
INJECTION
VAPOR EXTRACTION
SPARGING
REMIEDIATION
OTHER (SPECIFY)

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

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 64 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 70 (Ft.) & DATE MEASURED 10-16-12
ESTIMATED YIELD 50 (GPM) & TEST TYPE Submersible
TEST LENGTH 3 (Hrs.) TOTAL DRAWDOWN 30 (Ft.)
** May not be representative of a well's long-term yield.*

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)							
		TYPE (≠)			MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	
Ft.	to Ft.	BLANK	SCREEN	CON-DUCTOR					FILL PIPE
+1	-216	14	✓	✓	✓	Steel	8 5/8	.188	
	32' 1/4"			✓					
	77'		✓						
	140'		✓						8 5/8"

DEPTH FROM SURFACE	ANNULAR MATERIAL				
	TYPE				
Ft.	to Ft.	CE-MENT (≠)	BEN-TONITE (≠)	FILL (≠)	FILTER PACK (TYPE/SIZE)
0	63	✓			
63	65		✓		4' 2" Seal
65	to bottom			✓	Pea Gravel

- ATTACHMENTS (≠)**
- Geologic Log
 - Well Construction Diagram
 - Geophysical Log(s)
 - Soil/Water Chemical Analyses
 - Other Site plan
- 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 Scotty's well Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS PO BOX 222 Wilton CA 95693 CITY STATE ZIP
Signed Scott Millard C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 10-21-12 C-57 LICENSE NUMBER 608098

ENVIRONMENTAL MANAGEMENT DEPARTMENT
ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE, SUITE A
MATHER CA 95655
(916) 875-8400

0988930

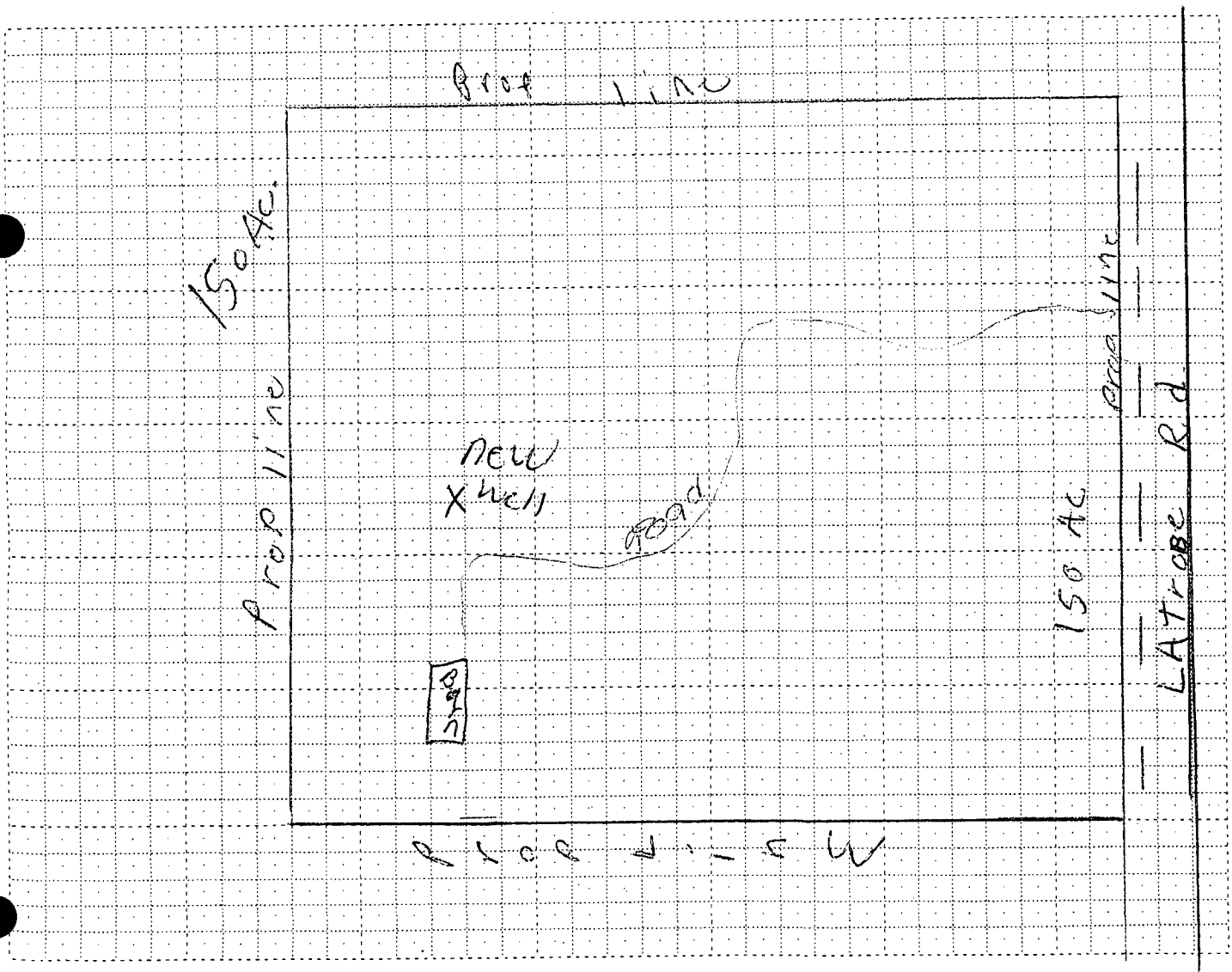
ENVIRONMENTAL COMPLIANCE SITE PLAN
FOR WELL AND SEWAGE DISPOSAL SYSTEM PERMITS

STREET ADDRESS: ~~LATROBE Rd~~ ^{RA} LATROBE Rd DATE: 8/20/12
OR PARCEL NUMBER: 073-0080-066-000 AND STREET NAME: LATROBE Rd
CENSUS TRACT: _____ CONTRACTOR: Scott's Well Drilling PERMIT #: _____

SHOW PARCEL DIMENSIONS, STREETS, STRUCTURES, CONTOURS, LOCATION OF WELLS AND SEPTIC SYSTEMS (SHOW LAYOUT OF SEPTIC SYSTEM). SHOW DISTANCE (IN FEET) FROM SEPTIC AND/OR WELL TO: WATER COURSES, SEPTIC TANKS, LEACHING AREAS, PROPERTY LINES, SEWER LINES AND WATER WELLS (ALSO WELLS AND SEPTIC SYSTEMS WITHIN SETBACK DISTANCES ON ADJACENT PROPERTY). SITE PLAN MUST BE ACCURATE TO ALLOW SYSTEM OR WELL TO BE LOCATED AT A FUTURE DATE.

WILL SYSTEM OR WELL BE INSTALLED IN 100 YEAR FLOODPLAIN? YES NO

N



S



WELL APPLICATION AND PERMIT FORM

0988930

ENVIRONMENTAL MANAGEMENT DEPARTMENT - ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE · SUITE A · MATHER, CA 95655
TELEPHONE (916) 875-8400 FAX: (916) 875-8513

WELL INSPECTION LINE: (916) 875-8524

AK 55630

IS THIS PERMIT FOR A HAZARDOUS SUBSTANCE INVESTIGATION? YES NO

FOR OFFICE USE ONLY		EXPEDITED PROCESSING? <input type="checkbox"/> YES <input type="checkbox"/> NO	
<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> APPROVED W/CONDITIONS (ATTACHED)	PERMIT NUMBER(S): <u>51756</u>		
BY: <u>TERRY KOEHLER</u>	DATE: <u>8/22/12</u>	DATE RECEIVED: <u>8/20/12</u>	TOTAL FEE: <u>852.00</u>
INITIAL GROUT BY: <u>T. KOEHLER</u>	DATE: <u>10/19/12</u>	RECEIPT NO: <u>NO 713-786</u>	DEPTH TO WATER: _____
FINAL INSPECTION BY: _____	DATE: _____	WELL DEPTH: _____	GROUT DEPTH: _____
DESTRUCTION BY: _____	DATE: _____	GPS: N: <u>38</u>	W: <u>-121</u>
COMMENTS: _____			

SITE ADDRESS: <u>14221 Latrobe Rd, Stoughouse 95683</u>	
Job Address: <u>LATROBE RD</u>	Nearest Major Cross Street: <u>JACKSON HIGHWAY</u>
Property Owner: _____	Parcel Number(s): <u>073 0080 066 0000</u>
Well Contractor: <u>Scottys Well Drilling</u>	CA License No: <u>6580 98 2403-31-13</u>
Contractor's Address: <u>PO Box 222 Wilton CA 95693</u>	
Well/Boring Identification Number(s): _____	

TYPE OF WORK: (California C-57 License required unless noted otherwise)

- Well construction
- Vault box repair (General A or B)
- Well destruction (SUPPLEMENT REQUIRED)
- Pump replacement (or C-61)
- Well repair
- Exploratory boring (C-57 if water present)
- Well inactivation (Owner only)
- Pump repair (or C-61)
- Other: _____

INTENDED USE:

- Domestic/ private
- Irrigation/agricultural
- Water/vapor monitoring/extraction
- Public water system:
- Dewatering
- Cathodic protection
- Heat exchange
- Geotechnical boring
- Environmental boring
- Other: _____

(NAME OF WATER PURVEYOR WITH CONTACT NAME AND TELEPHONE NUMBER)

DRILLING METHOD:

- Mud rotary
- Air Rotary
- Cable tool
- Auger
- Driven
- Other: _____

SETBACKS: (Wells only)

- Is the well located within 50 feet of a: sewer line, stream, ditch, drainage course, pond, or lake? No
- Is the well located within 100 feet of a: septic tank, leach line, deep trench, or animal enclosure? No

SPECIFICATIONS:

BOREHOLE: Diameter: <u>14"</u>	Depth: <u>50</u>	CASING: Diameter: <u>8 5/8</u>	Depth: <u>150</u>
	Diameter: _____	CASING: Diameter: _____	Depth: _____
CONDUCTOR: Diameter: <u>14</u>	Depth: <u>50</u>	IF STEEL: Gauge: _____ or Thickness: <u>.188</u>	
ANNULAR SEAL: Depth: <u>50</u>	Material: <u>Clay</u>	IF PLASTIC: Type: _____ (Must meet ASTM F-480)	
TRANSITION SEAL: Material: <u>Clay</u>		MULTIPLE COMPLETION? <input type="checkbox"/> Yes (DIAGRAM REQUIRED)	
COMMENTS: _____			

PUMP INSTALLATION/REPAIR:

Contractor: Scottys Well Drilling Type of Pump: Summers Horsepower: 10
License Number: 658098

I will comply with all Codes, Rules and Regulations of the State and County pertaining to or regulating wells and pumps, call (916) 875-8524 for a grout inspection at least 24 hours prior to the requested appointment time, submit a "Well Completion Report" (if required) within 60 days of the completion of my work so a final inspection can be made, and obtain WPD approval before placing a well in service.

SIGNATURE: Scott Millard Property Owner
PRINTED NAME: Scott Millard Well Contractor OK ABC
COMPANY: Scottys Well Drilling Agent (REQUIRES AUTHORIZATION FORM)
MAILING ADDRESS: PO Box 222 Wilton CA 95693
PHONE NUMBER: 916 508 5852 FIELD PHONE: 916 508 5852

A SITE PLAN MUST BE SUBMITTED WITH EACH APPLICATION.
PERMIT EXPIRES ONE (1) YEAR AFTER DATE APPROVED (UNLESS EXTENDED)

Email scottyswelldrilling@yahoo.com when approved - Thank you

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

DWR USE ONLY DO NOT FILL IN
08N08E30
STATE WELL NO./STATION NO.
383113 1210810
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1

Owner's Well No. 95230

No. **0995843**

Date Work Began 5/10/2013, Ended 6/11/2013

Local Permit Agency Environmental Management Dept.

Permit No. 52542 Permit Date 3/28/2013

GEOLOGIC LOG

ORIENTATION (✓) VERTICAL HORIZONTAL ANGLE _____ (SPECIFY)

DRILLING METHOD ROTARY FLUID Mud

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	
0	1	Top Soil
1	3	Gravel & Rocks
3	75	Green Shale
75	95	Blue Clay
95	97	Fine Blue Sand
97	105	Sandy Clay
105	213	Blue Clay
213	233	Blue Sand
233	253	Blue Clay
253	276	Blue Sand
276	380	Black Clay
380	382	Sand
382	388	Clay
388	395	Sand
395	470	Clay

Describe material, grain, size, color, etc.

TOTAL DEPTH OF BORING 470 (Feet)
TOTAL DEPTH OF COMPLETED WELL 400 (Feet)

WELL LOCATION

Address 14440 Latrobe Rd.
City Sloughhouse CA
County Sacramento
APN Book 073 Page 0080 Parcel 059
Township _____ Range _____ Section _____
Latitude _____ DEG. MIN. SEC. _____

LOCATION SKETCH

WEST _____ EAST _____
SOUTH _____

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 _____
REMEDICATION _____
OTHER (SPECIFY) _____

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

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 62 (Ft.) & DATE MEASURED 6/11/2013
ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____
TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)
May not be representative of a well's long-term yield.

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)							
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
		BLANK	SCREEN	CON-DUCTOR	FILL PIPE				
0 to 200	21	✓				PLASTIC	12	200	
200 to 300			✓						.045
300 to 340		✓							
340 to 400			✓						.045

DEPTH FROM SURFACE	ANNULAR MATERIAL			
	TYPE			
	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 to 50	✓			
50 to 400		✓		GRAVEL

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

CERTIFICATION STATEMENT

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

NAME MASELLIS DRILLING INC
(PERSON, FIRM OR CORPORATION) (TYPED OR PRINTED)
119 Albers Rd. Modesto CA 95357
ADDRESS CITY STATE ZIP
Signed [Signature] DATE SIGNED 06/11/13 688622 C-57 LICENSE NUMBER
WELL DRILLER/AUTHORIZED REPRESENTATIVE

A

0995843

ENVIRONMENTAL MANAGEMENT DEPARTMENT
 ENVIRONMENTAL COMPLIANCE DIVISION
 10590 ARMSTRONG AVENUE, SUITE A
 MATHER CA 95655
 (916) 875-8400

ENVIRONMENTAL COMPLIANCE SITE PLAN
 FOR WELL AND SEWAGE DISPOSAL SYSTEM PERMITS

STREET ADDRESS: _____ DATE: _____

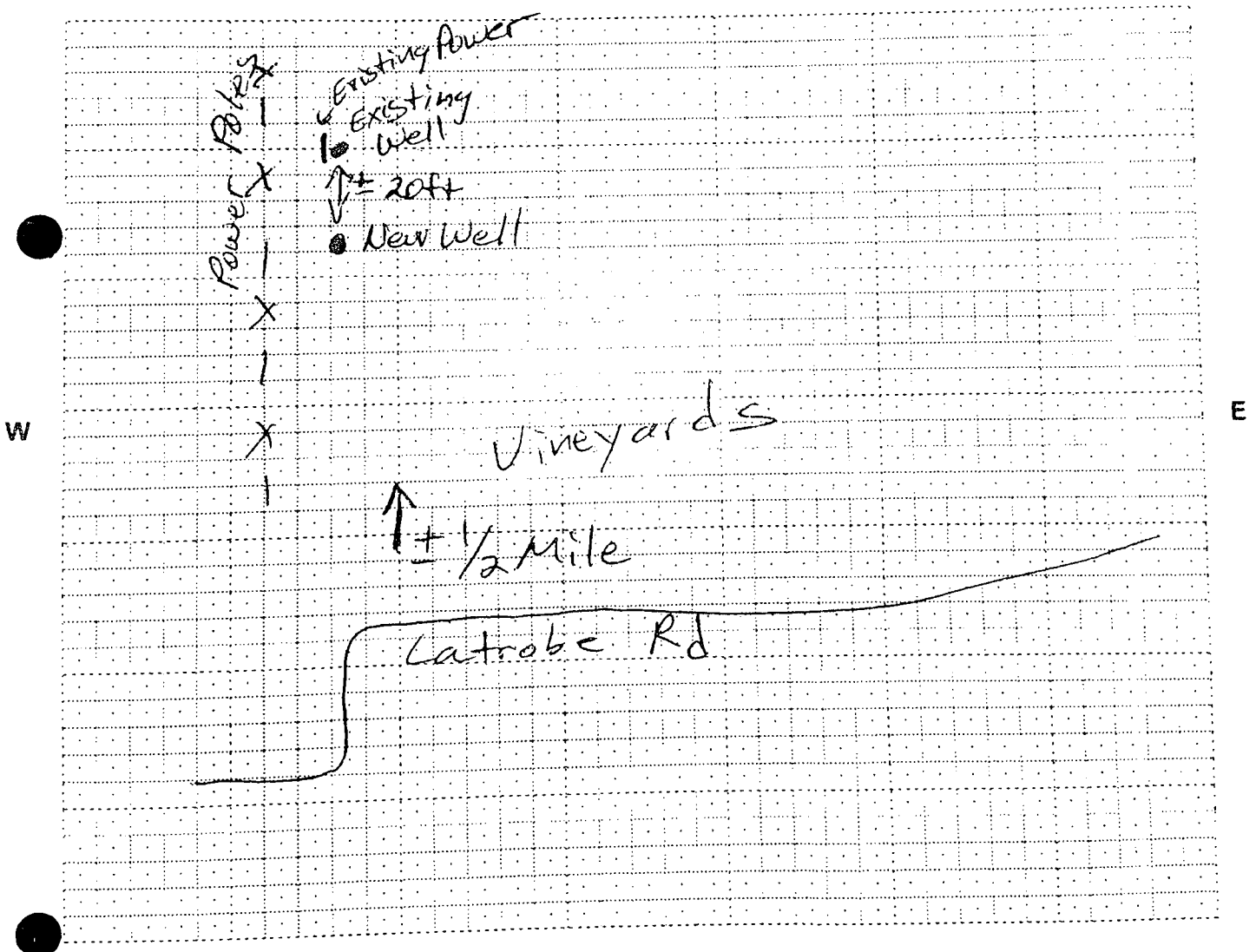
OR PARCEL NUMBER: 073-008-0059 AND STREET NAME: Latrobe Rd

CENSUS TRACT: _____ CONTRACTOR: Masellis Drilling Inc PERMIT #: 52542

SHOW PARCEL DIMENSIONS, STREETS, STRUCTURES, CONTOURS, LOCATION OF WELLS AND SEPTIC SYSTEMS (SHOW LAYOUT OF SEPTIC SYSTEM). SHOW DISTANCE (IN FEET) FROM SEPTIC AND/OR WELL TO: WATER COURSES, SEPTIC TANKS, LEACHING AREAS, PROPERTY LINES, SEWER LINES AND WATER WELLS (ALSO WELLS AND SEPTIC SYSTEMS WITHIN SETBACK DISTANCES ON ADJACENT PROPERTY). SITE PLAN MUST BE ACCURATE TO ALLOW SYSTEM OR WELL TO BE LOCATED AT A FUTURE DATE.

WILL SYSTEM OR WELL BE INSTALLED IN 100 YEAR FLOODPLAIN? YES NO

N



S

File Original with DWR

State of California Well Completion Report

Refer to Instruction Pamphlet
No. e0083825

DWR Use Only - Do Not Fill In

08N08E30

State Well Number/Site Number

Latitude Longitude

APN/TRS/Other

Page _____ of _____

Owner's Well Number _____

Work Began 09/10/2008 Date Work Ended 10/29/2008

Local Permit Agency Sacramento County

Permit Number 44986 Permit Date 8/22/08

Geologic Log		
Orientation	Specify	
<input checked="" type="radio"/> Vertical	<input type="radio"/> Horizontal	<input type="radio"/> Angle
Drilling Method <u>CABLE</u>	Drilling Fluid _____	
Depth from Surface	Description	
Feet to Feet	Describe material, grain size, color, etc.	
0	2	CLAY & ROCKS
2	45	HARD BROWN CLAY
45	225	HARD BLUE CLAY
225	230	GREEN SANDY CLAY, SOFT
230	245	HARD BLUE CLAY
245	250	SOFT SAND, GREEN CLAY
250	295	HARD BLUE CLAY
295	305	RED, YELLOW, GRAY SHALLE
305	349	GRAY CLAY, STICKY
349	351	SOFT SAND, GRAY CLAY
351	353	HARD BLACK SANDSTONE
353	355	SOFT SANDY GRAY CLAY
355	360	STICKY GRAY CLAY
360	370	STICKY RED CLAY
370	375	YELLOW CLAY
375	385	BLACK SANDSTONE
385	389	RED CLAY-TIGHT
389	394	COURSE SAND
394	395	GRAY CLAY, STICKY
395	443	GRAY CLAY
443	445	BROWN CLAY
445	447	BLACK SAND
447	448	BLUE CLAY
448	450	GREEN SANDSTONE
450	452	BLUE CLAY
452	465	GREEN SANDSTONE
465		HARD GREEN STONE
Total Depth of Boring <u>465</u> Feet		
Total Depth of Completed Well <u>465</u> Feet		

Well Owner _____

Well Location

Address 0 LATROBE ROAD

City SLOUGHHOUSE County Sacramento

Latitude _____ N Longitude _____ W

Datum _____ Decimal Lat. _____ Decimal Long. _____

APN Book _____ Page _____ Parcel 073-0080-059

Township _____ Range _____ Section _____

Location Sketch

(Sketch must be drawn by hand after form is printed.)

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 and complete.

Activity

New Well

Modification/Repair

Deepen

Other _____

Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

Water Supply

Domestic Public

Irrigation Industrial

Cathodic Protection

Dewatering

Heat Exchange

Injection

Monitoring

Remediation

Sparging

Test Well

Vapor Extraction

Other _____

Water Level and Yield of Completed Well

Depth to first water 65 (Feet below surface)

Depth to Static _____

Water Level _____ (Feet) Date Measured _____

Estimated Yield * _____ (GPM) Test Type _____

Test Length _____ (Hours) Total Drawdown _____ (Feet)

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

Casings						
Depth from Surface	Borehole Diameter	Type	Material	Wall Thickness	Outside Diameter	Screen Type
Feet to Feet	(Inches)			(Inches)	(Inches)	
0	260	BLANK	STEEL	188	10 3/4	
260	360	PERF	STEEL	188	10 3/4	
355	435	PERF	STEEL	188	8 5/8	

Annular Material		
Depth from Surface	Fill	Description
Feet to Feet		
0	50	CEMENT

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 KEN GROSS PUMP SERVICE

Person, Firm or Corporation

353 N. Lincoln Way Galt CA 95632

City State Zip

Signed [Signature] Date Signed 12/11/2008 530872

C-57 Licensed Water Well Contractor C-57 License Number

ORIGINAL

File with DWR

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

Do not fill in

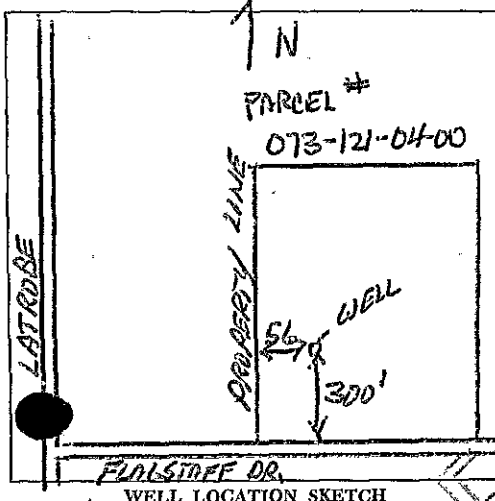
No. 150680

Name of Intent No. 180954 Permit No. or Date 7856 - 7-23-85

State Well No. 08108531 Other Well No.

(1) Adr Cit (2) LOCATION OF WELL (See instructions): County SACRAMENTO Owner's Well Number Well address if different from above 14061 Flagstaff Drive Township T8N Range R8E Section 31 Distance from cities, roads, railroads, fences, etc.

(12) WELL LOG: Total depth 436 ft. Depth of completed well 400 ft. from ft. to ft. Formation (Describe by color, character, size or material) 0 - 1 TOP SOIL & GRAVEL 1 - 72 SANDSTONE 72 - 74 BRN. CLAY (SHALE) 74 - 80 SANDSTONE & GRAVEL 80 - 84 BLUE CLAY (SHALE) 84 - 90 BLUE-GREEN CLAY (SHALE) 90 - 120 BLUE CLAY (SHALE) 120 - 150 BRN. SANDY CLAY & SHALE 150 - 158 BLUE CLAY (SHALE) 158 - 230 BLUE HARD CLAY (SHALE) 230 - 272 BLUE CLAY 272 - 303 DARK GREY SANDY CLAY 303 - 304 ROCK 304 - 334 DARK GREY SANDY CLAY 334 - 336 SANDSTONE (SAND & GRAVEL) 336 - 345 BLUE SANDY CLAY 345 - 360 DARK GREY SANDY CLAY 360 - 372 DARK GREY SANDY CLAY WITH LENSES OF SAND 372 - 375 LIGHT GREY CLAY 375 - 380 LIGHT BLUE SANDY CLAY 380 - 381 HARD SAND 381 - 389 LIGHT BLUE SANDY CLAY 389 - 390 HARD SAND 390 - 395 LIGHT BLUE SANDY CLAY 395 - 396 LIGHT BLUE CLAY 396 - 398 DARK GREY SANDY CLAY WITH LENSES OF SAND 398 - 401 BLACK HARD CLAY (SHALE) 401 - 412 BLUE HARD CLAY (SHALE) 412 - 428 DARK GREY HARD CLAY (SHALE) 428 - 436 DARK GREY SANDY CLAY



(3) TYPE OF WORK: New Well [checked] Deepening [] Reconstruction [] Reconditioning [] Horizontal Well [] Destruction [] (Describe destruction materials and procedures in Item 12) (4) PROPOSED USE: Domestic [checked] Irrigation [] Industrial [] Test Well [] Stock [] Municipal [] Other []

(5) EQUIPMENT: Rotary [] Reverse [] Cable [checked] Air [] Other [] Bucket []

(6) GRAVEL PACK: Yes [] No [checked] Size Diameter of bore Packed from to ft.

(7) CASING INSTALLED: Steel [checked] Plastic [] Concrete []

From ft.	To ft.	Dia. in.	Gage or Wall
0	251	8 3/8	.188

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

From ft.	To ft.	Slot size
401	412	
412	428	
428	436	

(9) WELL SEAL: Was surface sanitary seal provided? Yes [checked] No [] If yes, to depth 54 ft. Were strata sealed against pollution? Yes [] No [] Interval Method of sealing

(10) WATER LEVELS: Depth of first water, if known 17 ft. Standing level after well completion 60 ft.

(11) WELL TESTS: Was well test made? Yes [checked] No [] If yes, by whom? Type of test Pump [checked] Bailer [] Air lift [] Depth to water at start of test 60 ft. At end of test 60 ft. Discharge 56 gal/min after 2 hours Water temperature. Chemical analysis made? Yes [] No [checked] If yes, by whom? Was electric log made? Yes [] No [checked] If yes, attach copy to this report

Work started 7/23 1985 Completed 8/17 1985

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 [Signature] (Well Driller) NAME D'S WELL DRILLING (Person, firm, or corporation) (Typed or printed) Address 1870 LUCERNE AVE City STOCKTON CA. Zip 95203 License No. 441938 Date of this report 8/12/85

ORIGINAL

STATE OF CALIFORNIA

Do not fill in

File with DWR

THE RESOURCES AGENCY

No. 181791

DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Permit No. 180953

Permit No. or Date 7814 - 6-26-85

State Well No.

Other Well No. 08208E31

(1) OWNER: Name

Address

City

(2) LOCATION OF WELL (See instructions)

County SACRAMENTO Owner's Well Number 7814

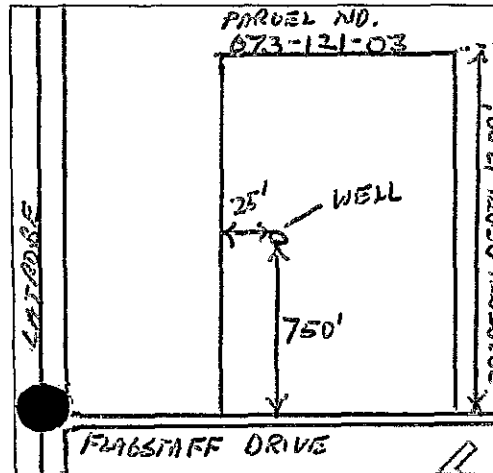
Well address if different from above 14031 Flagstaff Drive

Township T.8N. Range R.8E. Section 31

Distance from cities, roads, railroads, fences, etc. 750' NORTH

OF 14031 FLAGSTAFF DRIVE

SAC. COUNTY PARCEL # 073-121-03



(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

(12) WELL LOG: Total depth 430 ft. Depth of completed well 425 ft. from ft. to ft. Formation (Describe by color, character, size or material)

0	-	6"	LOOSE TOP SOIL
6"	-	40'	SANDSTONE (HARD)
40	-	45	LIGHT GREY CLAY
45	-	46	WATER BEARING SANDSTONE
46	-	66	LIGHT GREY CLAY
66	-	94	BLUE CLAY
94	-	98	LIGHT GREY CLAY
98	-	104	BLUE CLAY
104	-	109	BLUE HARD CLAY (SHALE)
109	-	130	BLUE CLAY
130	-	181	BLUE SANDY CLAY
181	-	187	BLUE CLAY
187	-	236	BLUE SANDY CLAY
236	-	240	BLUE CLAY
240	-	250	BLUE SANDY CLAY
250	-	254	BLUE CLAY
254	-	258	SANDSTONE
258	-	258	BLUE CLAY
258	-	290	BLUE SANDY CLAY
290	-	328	DARK GREY SANDY CLAY
328	-	338	GREY CLAY & COARSE SAND
338	-	349	DARK GREY SANDY CLAY
349	-	355	GREY CLAY
355	-	362	GREY SANDY CLAY
362	-	385	GREY CLAY WITH SAND & GRAVEL
385	-	398	GREY CLAY
398	-	423	GREY HARD CLAY WITH LENSES OF SAND THROUGH OUT
423	-	424	LIMESTONE
424	-	425	OPEN AREA
425	-	430	COARSE SAND & GRAVEL (ROUND QUARTZ GRAVEL)

(5) EQUIPMENT:

Rotary Reverse

Cable Air

Other Bucket

(6) GRAVEL PACK:

Yes No Size

Diameter of bore

Packed from to

(7) CASING INSTALLED:

Steel Plastic Concrete

(8) PERFORATIONS:

Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
TOP(0)	238	8 5/8	3/16			

(9) WELL SEAL:

Was surface sanitary seal provided? Yes No If yes, to depth 57 ft.

Were strata sealed against pollution? Yes No Interval

Method of sealing

Work started 6/24/85 Completed 7/22/85

(10) WATER LEVELS:

Depth of first water, if known 40' ft.

Standing level after well completion 75' ft.

(11) WELL TESTS:

Was well test made? Yes No If yes, by whom? D & S DRILLING

Type of test Pump Bailer Air lift

Depth to water at start of test 75 ft. At end of test 76 ft.

Discharge gal/min after hours Water temperature

Chemical analysis made? Yes No If yes, by whom?

Was electric log made? Yes No If yes, attach copy to this report

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 Stephen J. Smith (Well Driller)

NAME D & S WELL DRILLING (Person, firm, or corporation) (Typed or printed)

Address 1870 LUCERNE AVE.

City STOCKTON Zip 95203

License No. 441938 Date of this report 7/28/85

ORIGINAL

File with DWR

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

Do not fill in No. 181888

Notice of Intent No. 8126 Permit No. or Date 4-30-86

State Well No. Other Well No. 08N02531

(1) OWNER: Nan

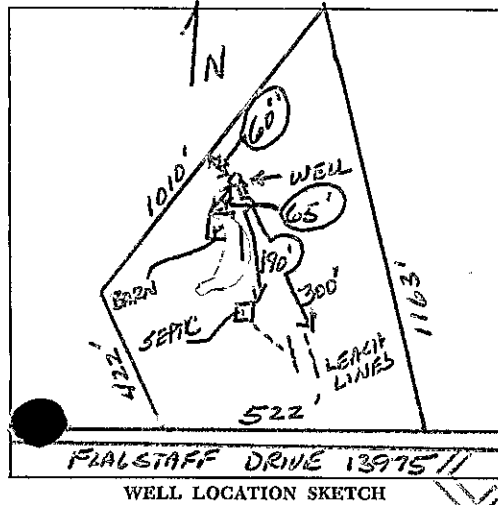
Address City

(2) LOCATION OF WELL (See instructions):

County Sacramento Owner's Well Number Well address if different from above 13975 Flagstaff Drive Township T8N Range R8E Section 31 Distance from cities, roads, railroads, fences, etc.

(12) WELL LOG: Total depth 460 ft. Depth of completed well 439 ft. from ft. to ft. Formation (Describe by color, character, size or material)

- 0 - 2' BRN. TOP SOIL & GRAVEL
2 - 36' BRN. CLAY & GRAVEL
36 - 75' BRN. CLAY
75 - 76' SANDSTONE & GRAVEL
76 - 105' BRN. SANDY CLAY
105 - 115' BLUE CLAY
115 - 120' BLUE-HARD CLAY (SHALE)
120 - 176' BRN. HARD CLAY (SHALE)
121 - 196' BLUE HARD CLAY (SHALE)
196 - 315' BLUE CLAY
315 - 370' DARK GREY CLAY
370 - 371' COARSE SAND
371 - 397' GREY SANDY CLAY
397 - 398' FINE SAND
398 - 425' LIGHT GREY SANDY CLAY WITH SAND LENSES
425 - 433' DARK GREY CLAY
433 - 439' BRN. CLAY
439 - 444' BLUE-HARD CLAY (SHALE)
444 - 446' BRN. HARD CLAY (SHALE)
446 - 460' BLUE-HARD CLAY (SHALE)



(3) TYPE OF WORK:

- New Well [checked] Deepening []
Reconstruction []
Reconditioning []
Horizontal Well []
Destruction [] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:

- Domestic [checked]
Irrigation []
Industrial []
Test Well []
Stock []
Municipal []
Other []

(5) EQUIPMENT: Rotary [] Cable [checked] Other [] Reverse [] Air [] Bucket []

(6) GRAVEL PACK: Yes [] No [checked] Size Diameter of bore Packed from to ft

(7) CASING INSTALLED: Steel [checked] Plastic [] Concrete [] Table with columns: From ft., To ft., Dia. in., Gage or Wall

(8) PERFORATIONS: Table with columns: From ft., To ft., Slot size

(9) WELL SEAL: Was surface sanitary seal provided? Yes [checked] No [] If yes, to depth 52 ft. Were strata sealed against pollution? Yes [] No [checked] Interval ft. Method of sealing CEMENT/SAND GROUT

(10) WATER LEVELS: Depth of first water, if known 75' ft. Standing level after well completion 90' ft.

(11) WELL TESTS: Was well test made? Yes [checked] No [] If yes, by whom? D's DRILLING Type of test Pump [checked] Bailer [] Air lift [] Depth to water at start of test 90 ft. Discharge 40 gal/min after 3 hours Water temperature

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 (Well Driller) NAME D'S WELL DRILLING (Person, firm, or corporation) (Typed or printed) Address 1870 LUCERNE AVE. City STOCKTON CA Zip 95203 License No. 441938 Date of this report 5/1/86

ORIGINAL

STATE OF CALIFORNIA

Do not fill in

File with DWR

THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

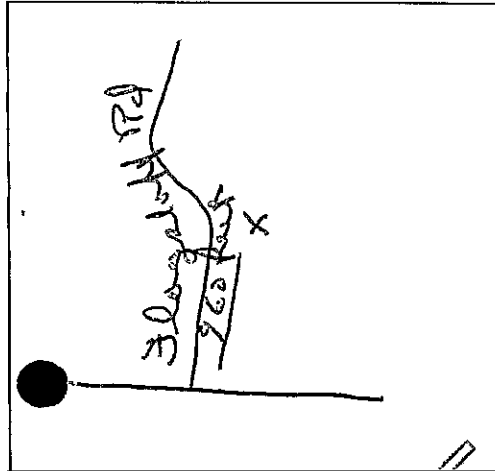
No. 208056

Local Permit No. or Date 8697 4-8-87

State Well No. Other Well No. 08N08E31

(1) Address City (2) LOCATION OF WELL (See instructions): County Owner's Well Number Well address if different from above 13976 Flagstaff Road Township Range Section Distance from cities, roads, railroads, fences, etc.

(12) WELL LOG: Total depth ft. Depth of completed well ft. from ft. to ft. Formation (Describe by color, character, size or material) 1 - 60 Basal clay 60 - 68 Sand clay + 1/2 in. gravel 68 - 120 Basal clay 120 - 122 Sand 122 - 300 1/2" gravel 300 - 310 Basal clay



(3) TYPE OF WORK: New Well [] Deepening [] Reconstruction [] Reconditioning [] Horizontal Well [] Destruction [] (Describe destruction materials and procedures in Item 12) (4) PROPOSED USE: Domestic [x] Irrigation [] Industrial [] Test Well [] Stock [] Municipal [] Other []

(5) EQUIPMENT: Rotary [] Reverse [] Cable [x] Air [] Other [] Bucket []

(6) GRAVEL PACK: Yes [] No [x] Size Diameter of bore Packed from to ft.

(7) CASING INSTALLED: Steel [] Plastic [] Concrete [] Table with columns: From ft., To ft., Dia. in., Gauge or Wall

(8) PERFORATIONS: Type of perforation or size of screen Table with columns: From ft., To ft., Slot size

(9) WELL SEAL: Was surface sanitary seal provided? Yes [x] No [] If yes, to depth 58 ft. Were strata sealed against pollution? Yes [] No [] Interval ft. Method of sealing

(10) WATER LEVELS: Depth of first water, if known 52 ft. Standing level after well completion ft.

(11) WELL TESTS: Was well test made? Yes [] No [x] If yes, by whom? Type of test Pump [] Bailer [] Air lift [] Depth to water at start of test ft. At end of test ft. Flow rate gal/min after hours Water temperature C Statistical analysis made? Yes [] No [] If yes, by whom? Was electric log made? Yes [] No [] If yes, attach copy to this report

Work started 4/8/87 19 Completed 4/16 1987 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 Octo [Signature] (Well Driller) NAME Octo [Signature] + Son (Person, firm, or corporation) (Typed or printed) Address 13880 Stockton Blvd City Stockton Zip 95210 License No. 182363 Date of this report 5/27/87

ORIGINAL
File with DWR

DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

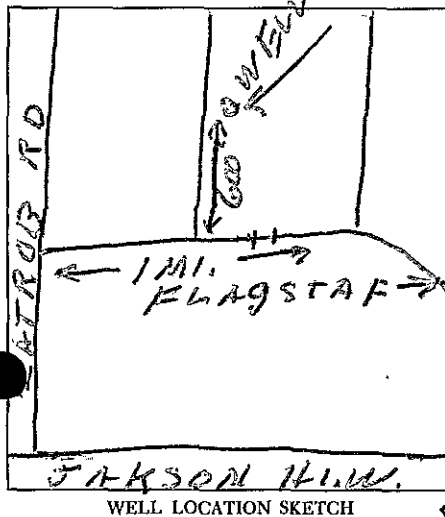
No. 267928

Notice of Intent No. _____
Local Permit No. or Date 8963 8-17-87

State Well No. _____
Other Well No. 08N08E32

(1) OWNER:
Address _____
City _____

(2) LOCATION OF WELL (See instructions):
County SAC Owner's Well Number _____
Well address if different from above 14193 Flagstaff
Township 8 N Range 8 E Section 32
Distance from cities, roads, railroads, fences, etc.
600' E FLAGSTAFF RD



(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
Municipal
Other (Describe)

(12) WELL LOG: Total depth 380 ft. Completed depth 350 ft.
from ft. to ft. Formation (Describe by color, character, size or material)
0 - 3' Tan sand w. Cobble
3' - 18' Clay soft
18 - 20' sandy soil
20' - 56' gravel & sand
56 - 75 Clay
75 - 145 blue clay
145 - 147 Rock 1/2"
147 - 186 dark blue clay
186 - 230 blue clay with hard
230 - 232 mostly gravel
232 - 250 blue clay soft
250 - 310 dark blue clay
310 - 312 soft clay w. gravel
312 - 345 blue clay
345 - 347 dark consolidated
347 - 380 light gravel matrix

(5) EQUIPMENT:
Rotary Reverse
Cable Air
Other Bucket

(6) GRAVEL PACK:
Yes No Size _____
Diameter of bore _____
Packed from _____ to _____ ft.

(7) CASING INSTALLED:
Steel Plastic Concrete

From ft.	To ft.	Dia. in.	Gage or Wall
19 1/4	220	6"	12

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

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes No If yes, to depth 60' ft.
Were strata sealed against pollution? Yes No Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known 96' ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes No If yes, by whom? Wahl
Type of test Pump Bailer Air lift
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge 50 gal/min after 1 hours Water temperature _____
Chemical analysis made? Yes No If yes, by whom? _____
Was electric log made Yes No If yes, attach copy to this report

Work started 8/27/87 Completed 8/22 19 87

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 Dean Wahl (Well Driller)
NAME Wahl & Wood
Address 25297 Eunice Ave
City ACAMPO CALIF ZIP 95220
License No. 244857 Date of this report 8/30/87

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. _____

Date Work Began 7-18-1997, Ended 8-10-1997

Local Permit Agency SACRAMENTO CO ENVIRONMENTAL MGT DEPT

Permit No. 994049 Permit Date JULY 18, 1997

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **435075**

DWR USE ONLY - DO NOT FILL IN

08108132

STATE WELL NO./STATION NO

LATITUDE _____ LONGITUDE _____

APN/TRS/OTHER _____

GEOLOGIC LOG

WELL OWNER _____

ORIENTATION () VERTICAL _____ HORIZONTAL _____ ANGLE _____ (SPECIFY)

DEPTH TO FIRST WATER 80 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	
0	1	top soil
1	32	hard brown clay
32	65	Lava cap
65	120	Gray sandstone W/B from 80'
120	220	Hard gray green clay no water
220	224	Gray sand fine W/B 1-2 GPM
224	247	Gray hard clay
247	253	Gray dirty sand stone W/B 3-4 Gpm
253	287	Gray green clay
287	293	Sand stone some small stones W/B 20-25gpm
293	340	Gray green clay
340	375	Hard Gray clay
375	392	White sand stone some flecks of ligniph. W/B 100-150 GPM
292	---	Green clay

CITY RANCHO MARIETA STATE _____ ZIP _____

WELL LOCATION

Address 14197 FLAGSTAFF

City RANCHO MARIETA CA

County SACRAMENTO

APN Book _____ Page _____ Parcel _____

Township _____ Range _____ Section _____

Latitude _____ Longitude _____

LOCATION SKETCH

ACTIVITY ()

NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify) _____

DESTROY (Describe Procedure and Materials Under "GEOLOGIC LOG")

PLANNED USE(S)

()

MONITORING

WATER SUPPLY

Domestic

Public

Irrigation

Industrial

"TEST WELL"

CATHODIC PROTECTION

OTHER (Specify) _____

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

DRILLING METHOD Air / Rotary FLUID Foam

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 90' (Ft.) & DATE MEASURED 8-3

ESTIMATED YIELD 150 (GPM) & TEST TYPE Air lift

TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN 4' (Ft.)

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

TOTAL DEPTH OF BORING 400' (Feet)

TOTAL DEPTH OF COMPLETED WELL 395 (Feet)

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING(S)							
		TYPE ()				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
		BLANK	SCREEN	CON. DOCTOR	FILL PIPE				
1	220	12	X				XXXXXX steel	6.21	.134

DEPTH FROM SURFACE	ANNULAR MATERIAL			
	TYPE			
	CE-MENT ()	BEN-TONITE ()	FILL ()	FILTER PACK (TYPE/SIZE)
0	60	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 Robert Allen Nix WellDrilling

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

ADDRESS 9601 C0gumnes Road Wil ton Ca 95693 (P.O. Box 405)

CITY _____ STATE _____ ZIP _____

Signed [Signature] DATE SIGNED 8-10-1997 376587

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

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

DWR USE ONLY DO NOT FILL IN
08N08E37
STATE WELL NO. STATION NO.
383013 **1210735**
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1

Owner's Well No. **95230**

No. **0995842**

Date Work Began **5/3/2013**, Ended **6/11/2013**

Local Permit Agency **Environmental Management Dept.**

Permit No. **52544** Permit Date **3/28/2013**

GEOLOGIC LOG

WELL OWNER

ORIENTATION (✓) VERTICAL HORIZONTAL ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **Mud**

DEPTH FROM SURFACE		DESCRIPTION <i>Describe material, grain, size, color, etc.</i>
Ft.	to Ft.	
0	2	Top Soil
2	4	Clay
4	14	Sand & Gravel
14	14	Clay
15	24	Rocks
24	42	Gravel
42	88	Clay
88	313	Blue Clay
313	358	Fine Sand
358	367	Clay
367	369	Fine Sand
369	378	Blue Shale
378	379	Fine Blue Sand
379	385	Blue Shale
385	448	Clay & Gravel Streaks
448	460	Fine Blue Sand
460	500	Blue Clay

WELL LOCATION

Address **14440 Latrobe Rd.**
City **Sloughhouse CA**
County **Sacramento**
APN Book **073** Page **0080** Parcel **0064**
Township _____ Range _____ Section _____
Latitude _____

DEG. MIN. SEC. DEG. MIN. SEC.
LOCATION SKETCH **ACTIVITY (✓)**

NORTH SOUTH EAST WEST

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 _____
REMEDICATION _____
OTHER (SPECIFY) _____

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL **120** (Ft.) & DATE MEASURED **5/28/2013**
ESTIMATED YIELD _____ (GPM) & TEST TYPE _____
TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)
May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING **500** (Feet)
TOTAL DEPTH OF COMPLETED WELL **460** (Feet)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
		TYPE (✓)	BLANK	SCREEN	CONDUCTOR				
0 to 280	21	✓				PLASTIC	12	200	.045
280 to 460			✓						

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	CE-MENT (✓)	BEN-THONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 to 50	✓			
50 to 460			✓	GRAVEL

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

CERTIFICATION STATEMENT

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

NAME **MASELLI'S DRILLING INC**
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

119 Albers Rd. Modesto CA 95357
ADDRESS CITY STATE ZIP

Signed *[Signature]* DATE SIGNED **06/11/13** 688622 C-57 LICENSE NUMBER

0995842

C

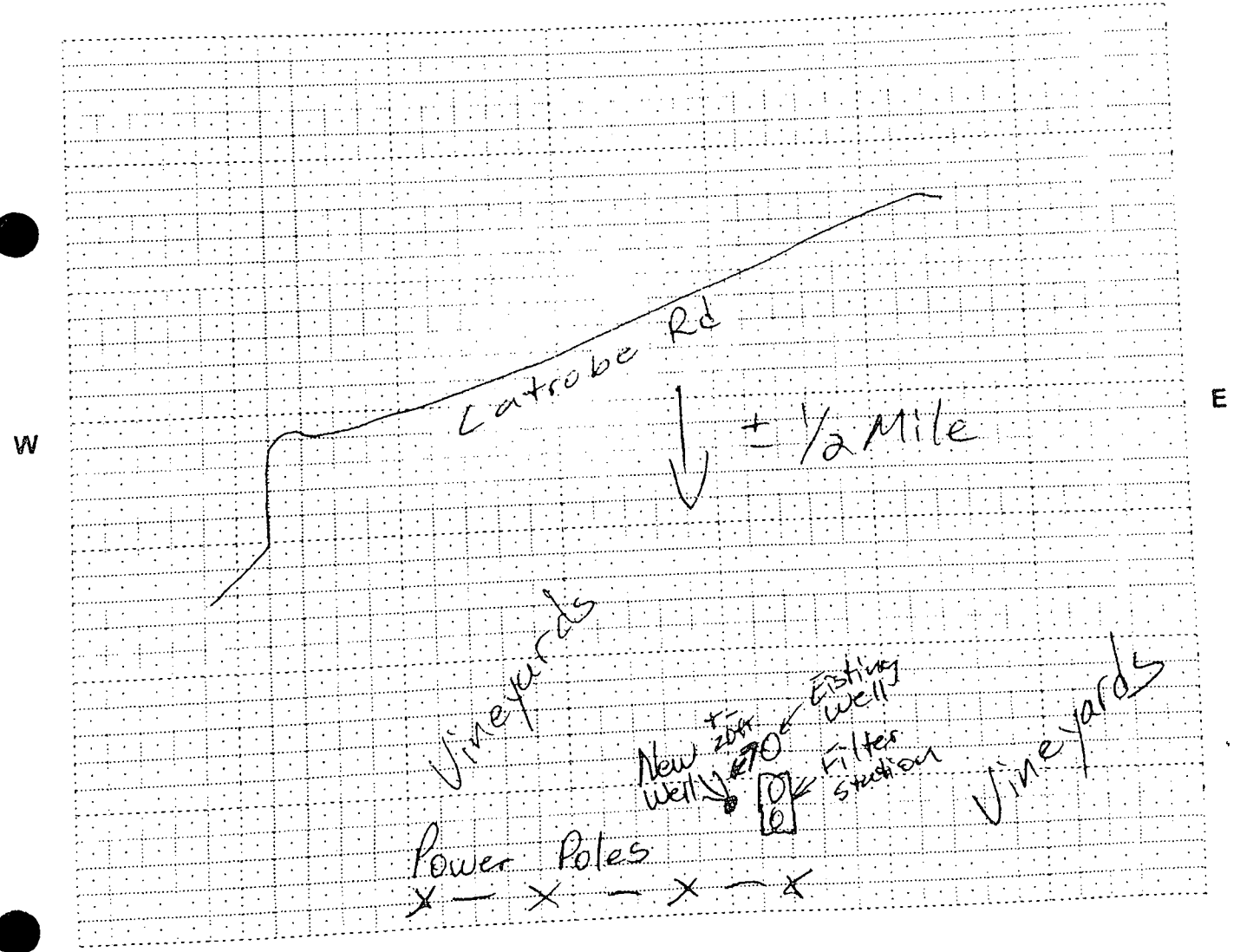
ENVIRONMENTAL MANAGEMENT DEPARTMENT
ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE, SUITE A
MATHER CA 95655
(916) 875-8400

ENVIRONMENTAL COMPLIANCE SITE PLAN
FOR WELL AND SEWAGE DISPOSAL SYSTEM PERMITS

STREET ADDRESS: _____ DATE: 3-13-2013
OR PARCEL NUMBER: 073-0066-006A AND STREET NAME: Latrobe Rd
CENSUS TRACT: _____ CONTRACTOR: Masellis Drilling Inc PERMIT #: 52544

SHOW PARCEL DIMENSIONS, STREETS, STRUCTURES, CONTOURS, LOCATION OF WELLS AND SEPTIC SYSTEMS (SHOW LAYOUT OF SEPTIC SYSTEM). SHOW DISTANCE (IN FEET) FROM SEPTIC AND/OR WELL TO: WATER COURSES, SEPTIC TANKS, LEACHING AREAS, PROPERTY LINES, SEWER LINES AND WATER WELLS (ALSO WELLS AND SEPTIC SYSTEMS WITHIN SETBACK DISTANCES ON ADJACENT PROPERTY). SITE PLAN MUST BE ACCURATE TO ALLOW SYSTEM OR WELL TO BE LOCATED AT A FUTURE DATE.
WILL SYSTEM OR WELL BE INSTALLED IN 100 YEAR FLOODPLAIN? YES NO

N



S

State of California
Well Completion Report
 Form DWR 188 Auto-Completed 10/26/2020
 WCR2020-011287

Owner's Well Number 9248 Date Work Began 02/17/2020 Date Work Ended 02/21/2020
 Local Permit Agency Sacramento County Environmental Compliance Division
 Secondary Permit Agency _____ Permit Number 61212 Permit Date 11/27/2019

Well Owner (must remain confidential pursuant to Water Code 13752)			
Name	<u>XXXXXXXXXXXXXXXXXXXX</u>		
Mailing Address	<u>XXXXXXXXXXXXXXXXXXXX</u> <u>XXXXXXXXXXXXXXXXXXXX</u>		
City	State	XX	Zip <u>XXXXX</u>

Planned Use and Activity	
Activity	<u>New Well</u>
Planned Use	<u>Water Supply Irrigation - Agriculture</u>

Well Location					
Address _____			APN <u>073-080-064</u>		
City _____	Zip _____	County <u>Sacramento</u>	Township _____		
Latitude <u>38</u> <u>30</u> <u>13.0341</u> N	Longitude <u>-121</u> <u>7</u> <u>33.9535</u> W	Range _____			
Deg. Min. Sec.	Deg. Min. Sec.	Section _____			
Dec. Lat. <u>38.5036206</u>	Dec. Long. <u>-121.1260982</u>	Baseline Meridian _____			
Vertical Datum _____	Horizontal Datum <u>WGS84</u>	Ground Surface Elevation _____			
Location Accuracy _____	Location Determination Method _____	Elevation Accuracy _____			
		Elevation Determination Method _____			

Borehole Information	
Orientation <u>Vertical</u>	Specify _____
Drilling Method <u>Reverse Circulation</u>	Drilling Fluid <u>Water</u>
Total Depth of Boring <u>410</u>	Feet
Total Depth of Completed Well <u>390</u>	Feet

Water Level and Yield of Completed Well	
Depth to first water _____	(Feet below surface)
Depth to Static _____	
Water Level _____	(Feet) Date Measured _____
Estimated Yield* _____	(GPM) Test Type _____
Test Length _____	(Hours) Total Drawdown _____ (feet)
*May not be representative of a well's long term yield.	

Geologic Log - Free Form		
Depth from Surface	Feet to Feet	Description
0	50	Sand and gravel
50	60	Brown clay
60	70	Sand
70	160	Brown clay
160	185	Sand
185	285	Brown clay
285	360	Sand
360	410	Gray clay

APPENDIX B

RADIUS OF PUMPING INFLUENCE GRAPH

Radius of Pumping Influence

Latrobe Road
APN 073-0080-060

