Attachment 7

VANDERWALL ENGINEERING

Hydrology Report to Determine Area of Influence for Cultivation Irrigation Wells

for

Ghost Dance LLC

Site Location:
APN: 014-140-12
21080 Loconomi Rd
Middletown, CA 95461

September 28, 2021

Prepared for:

Lake County
Community Development Department
255 North Forbes Street
Lakeport, CA 95453

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INTRODUCTION

The purpose of this study is to determine the area of influence of an existing well that will be used for irrigating a proposed commercial cannabis cultivation site. The "Project" is currently proposing about 43,560 sq.ft. (1 acre) of commercial cannabis canopy area.

The parcels on which the project is located are owned by Ghost Dance LLC and managed by Alex Paul & Michael Colbruno.

This report estimates the amount of water available and recharge rate during a drought year from the existing well. In addition, this report estimates the zone of influence to the surrounding area and estimates the cumulative impacts where interference is with existing wells.

The report comes as a result from the County of Lake urgency ordinance requiring land use applicants to provide enhanced water analysis during a declared drought emergency. Ordinance no. 3106.

STUDY LIMITATIONS

The yield of wells cannot be estimated with precision because of the uncertainty with the aquifer and the amount of rain percentage of rainfall that percolates through the ground. Therefore, conservative estimates and assumptions are used in this report.

This study is based on the following information and assumptions.

- Cooper – Jacob well equation
- Well Completion Reports obtained from Lake County EHD and CA Dept. of Water Resources Database
- Well Yield Test and Drillers Reports
- Rainfall for a drought year is 20% of annual precipitation
- Aquifer is uniform throughout the wells area of influence

Civil Engineering
Wm. VanDerWall, R.C.E. 62560
3745 E. Main Street • Kelseyville, CA 95451 • (707) 279-4887
www.vdwengr.com • contact@vdwengr.com

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WELL

Well #1 is the well that will be used for irrigating the proposed cultivation project. A radius of influence was calculated for well #1, and all other wells that were located 1000 ft outside of well #1's radius of influence. See Well Area of Influence Map in Appendix B.1. Wells included in calculations are wells #2 - #6, excluding well #3 because of no data available. Since there was no data for well #3 an assumed 300 ft area of influence was applied. See the Surrounding Area Map in Appendix B.2 for the 1000 ft radius. Locations of other wells outside the 1000 ft radius are depicted with coordinates on the Surrounding Area Map in Appendix B.2. All wells were located using information gathered from the County of Lake Environmental Health Department, CA Department of Water Resources, and a site visit by Vanderwall Engineering on 9/16/2021. See well descriptions below.

WELL #1

- Southern vicinity of APN: 014-140-12.
- There is no well drillers report available for this well. Data for this well was provided by a well performance test. See Appendix A.
- Total drill depth of 54 feet below the top of casing.
- The capacity of the well is at least 5.67 gpm.
- Use: "Project Loco" Commercial Cannabis Irrigation

WELL #2

- Eastern vicinity of APN: 014-140-12.
- This well is located on a 50' easement and provides domestic use to the dwelling unit at address 21095 Loconomi rd. See Appendix A
- Total drill depth of 50 feet below the surface.
- The capacity of the well is at least 100 gpm.
- Use: Domestic for Dwelling Unit

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WELL #3

- Eastern vicinity of APN: 014-140-12.
- There are no well drillers reports or well performance tests available by the state or county for this well. The well was located via Vanderwall Engineering site visit and JAK Drilling and Pump site visit. See Appendix A & B.
- Total drill depth is unknown.
- The capacity of the well is unknown.
- Use: Domestic for Dwelling unit.

WELL #4

- Southern vicinity of APN: 014-140-09.
- See Appendix A for well drillers report and Appendix B for well maps.
- Total drill depth of 45 feet below the surface.
- The capacity of the well is at least 30 gpm.
- Use: Domestic for Dwelling Unit

WELL #5

- Center vicinity of APN: 014-140-13.
- See Appendix A for well drillers report and Appendix B for well maps.
- Total drill depth of 105 feet below the surface.
- The capacity of the well is at least 100 gpm.
- Use: Unknown.

WELL #6

- Center vicinity of APN: 014-140-14.
- See Appendix A for well drillers report and Appendix B for well maps.
- Total drill depth of 100 feet below the surface.
- The capacity of the well is at least 75 gpm.
- Use: Unknown.

See Appendix A for Well Completion/Drillers Reports and JAK Drilling & Pump Well Production Report.

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WELL RADIUS OF INFLUENCE

The well radius of influence (cumulative impact) is estimated by the Cooper-Jacob equation:

$$R_{(well)} = \sqrt{\frac{2.24584Tt}{S}}$$

Where,

$R_{(well)}$ = Radius of Influence (m)
t = time (days)
T = transmissivity (m^2 / day)
S = water storage capacity (%) unitless

$$T = K * b$$

Where,

K = 2.0 E-4 m/s for Basalt porosity
b = (Total Drill Depth of Well) – (pump depth below clay layer in Well Driller's Report in Appendix A)
t = 1 day = 86,400 sec
S = 0.15

Therefore;

$R_{(1)}$ => 53 m = 172 feet
$R_{(2)}$ => 50 m = 165 feet
$R_{(3)}$ => Unknown (A conservative 300 ft radius is assumed based on values for the other wells)
$R_{(4)}$ => 40 m = 130 feet
$R_{(5)}$ => 79 m = 261 feet
$R_{(6)}$ => 77 m = 252 feet

Well #1's radius of influence does not intersect with the radius of influence of any other surrounding wells. See Well Area of Influence Map in Appendix B.1. An overlap of well radius of influence only occurs for wells #2, #3, and #4. Said wells do not affect the water being sourced from the proposed projects well (Well #1).

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WELLS IN SURROUNDING AREA

Data from existing wells in the area were obtained through the County of Lake Environmental Health Department, CA Department of Water Resources, and a site visit by Vanderwall Engineering on 9/16/2021. The next closest well to the subject well is located on APN: 014-140-13 approximately 330 feet from Well #1's Radius of influence.

WATER USAGE

The proposed project has a total canopy area of 1 acre (43,560 sf) with one Processing Buildings for 2 employees during grow season and 4 employees during harvest season. These values were used for calculating the total water usage in gallons per year. See calculations below.

WATER USAGE FOR WELL #1

The total water usage of the canopy area is estimated by the square footage of the canopy multiplied by the ft/year needed for a single cannabis plant. The ft/yr is estimated to be similar to a tomato plant, which is 20in/year or 1.66 ft/year.

$$W_{Irrigation} = A * (ft/yr)$$

$W_{Irrigation}$ = (1 acres) * (43,560 sf/acres) * (1.66 ft/year) * (7.48 gal/cf)
$W_{Irrigation}$ = 540,875 gal/year

$W_{Processing\ Building}$ (Harvest) = (4 employees) * (15 gals/employee/day) * (0.7 days/week used) * (91 days/year) = 3,822 gal/year

$W_{Processing\ Building}$ (Non-Harvest) = (2 employees) * (15 gals/employee/day) * (0.7 days/week used) * (274 days/year) = 5,754 gal/year

$W_{Processing\ Building}$ = 3,822 + 5,754 = 9,576 gal/year

Total Water Usage = $W_{Irrigation}$ + $W_{Processing\ Building}$
= 540,875 gal/year + 9,576 gal/year
= 550,451 gal/year

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AQUIFER RECHARGE

The proposed project has an estimated total annual water usage of 550,451 gallons per year.

The calculations of Aquifer Recharge are based on the tributary area to the radius of influence of Well #1. Per Well Recharge Area Map shown in Appendix B.3, the recharge area is 1,584,442 sf.

Given: Annual Precipitation, P = 40 inches per year, assume a drought year is 20% of the annual precipitation, yields 8" (0.66ft) of rainfall. (Note: Rainfall of 2021 was 9" per NOAA for Lake County)

Volume of water for recharge = Area x Drought Precipitation x Coefficient of Seepage.

V = (1,584,442 sf) x (0.66 ft/yr) x (7.48 gal/cf) x (0.7)

V = 5,475,451 gal/year

5,475,451 > 550,451 therefore the well is adequate to handle the 1.0 acre of cultivation in a drought year.

CONCLUSION

Per our calculations and assumptions, the project does have a more than adequate water supply for at least double the proposed irrigation use. Even in a drought year, our estimates show that the well has the capacity to handle more than double the proposed water irrigation needs of the project, without impacting the surrounding neighbor's wells.

DISCLAIMER

Our calculations are based on data that has been made available to Vanderwall Engineering through state and county records as of 9/16/2021. All supporting data has been provided in this report. There is no way to guarantee future conditions. If new supporting data is provided, calculations would need to be redone to take into account for said data.

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Appendix

A. Well Completion & Test Results

B. Maps

B1. Well Area of Influence Map
B2. Surrounding Aerial Map
B3. Well Recharge Area

Appendix

A

Attachment 7

WELL #1

JAK Drilling & Pump
Well Drilling Pumps Water Treatment
Hole to Home

WELL PERFORMANCE TEST REPORT

Client Name: Alex Paul
Property Location: 21080 Loconomi Road, Middletown, CA
Parcel Number: 014-140-12
Number of Wells Evaluated: One (Well ~~#2)~~ #1
Well Performance Test Completion Date: June 4, 2021
Water Samples Collected: No
Pump Technician: K. Feola

Location Description: 38.750500, -122.573605
Total Depth: 54-feet below top of casing*
Depth to Static Water Level: 19.5-feet below the top of casing
Diameter of well: 5.5-inches
Casing type: PVC
Test Duration: 6-hours
Test Type: Pump
Pumping Rate: 5.67-Gallons Per Minute (GPM)

Observations: The well is located near the edge of property in the field southeast of the house (see attached Parcel Boundary and Well Location Maps). There is an existing submersible well pump installed in the well of unknown specifications. It is assumed the submersible pump system is a 1-horse, 10-GPM set.

Well Performance Pump Test:
The six-hour pump test was conducted on June 4, 2021 using the existing submersible pump set in accordance with industry standards. The static water level within the well was measured prior to the start of the test. Once the performance test began, the depth-to-water or pumping level was measured manually with a Powers Water Meter in the well every five minutes during the first half hour of the test and then every 10-minutes for the next hour of the test. The measurement interval was then increased to every 30-minutes for the remainder of the six-hour test. The pumping rate was measured by timing the flow through a temporarily installed totalizing flow meter connected to the discharge pipe directed away from the well location. The pumping rate was measured at the same intervals as the pumping level. Both the depth-to-water/pumping level and pumping rate measurements are summarized in the attached table.

The static water level was measured at 19.5-feet below the top of casing at the start of the performance test. The pumping level quickly stabilized at 47-feet below the top of casing where it remained for the duration of the test. The pumping rate, measured by timing the flow through the totalizing flow meter, measured at 15.5-GPM after the first 5-minutes of the test and then decreased to 6-GPM for the next hour before decreasing again to 5.5-GPM. The pumping rate remained at 5.5-GPM for the duration of the test.

After six hours of pumping, the well produced 2,040-gallons of water which averages out to a pumping rate of 5.67-GPM. At the end of the test the well pump was shut off and the well was then allowed to rest and recharge. The depth-to-water was measured in the well after 10-minutes at 37.5-feet and then again in the well after 30-minutes at 22.00-feet below the top of casing, resulting in a recharge rate of 90% after resting 40-minutes. Assuming all other variables are constant, at 5.67-GPM the well would be capable of producing 2,978,400-gallons annually.

Water Quality: During the course of the performance test, JAK collected a water sample for the purpose of a field quality test with the following results:

Parameter	Concentration	Discussion
Hardness	19-Grains per gallon	VERY HARD, a softener is recommended when the hardness is greater than 7-gpg
Iron (ferrous)	0.2-part per million	EPA suggests a concentration of less than 0.3ppm for public drinking water system, higher concentrations can cause rust staining over time
pH	8.00	A pH of 7.0 is considered neutral
Total Dissolved Solids	177-part per trillion	Less than 500-ppm is acceptable, the higher the concentration the harder the water typically

Disclaimer:
Observations made of the well(s) are strictly limited to the date and time that the test(s) was conducted and are in no way a guarantee of future conditions, including but not limited to the quantity and/or quality of the water produced by this well. Please feel free to contact our office if there are any questions regarding the well test and/or well test report.

Sincerely,

Jessica Moreno
JAK Drilling & Pump

Attachments:
Parcel Boundary Map
Well Location Map
Table 1: Well Performance Test Data

Attachment 7

PARCEL BOUNDARY MAP
21080 Loconomi Road
Middletown, CA

Attachment 7

WELL LOCATION MAP
21080 Loconomi Road
Middletown, CA

TABLE 1
WELL PERFORMANCE TEST DATA
21080 Loconomi Road, Middletown, CA
June 4, 2021

Time	Gallons Per Minute	Depth to Water In Feet Below Top of Casing
7:15	Static	19.50
7:20	15.50	28.00
7:25	6.00	47.00
7:30	6.00	47.00
7:35	6.00	47.00
7:40	6.00	47.00
7:45	6.00	47.00
7:55	6.00	47.00
8:05	6.00	47.00
8:15	6.00	47.00
8:25	6.00	47.00
8:35	6.00	47.00
8:45	6.00	47.00
9:15	5.50	47.00
9:45	5.50	47.00
10:15	5.50	47.00
10:45	5.50	47.00
11:15	5.50	47.00
11:45	5.50	47.00
12:15	5.50	47.00
12:45	5.50	47.00
13:15	5.50	47.00
13:25	RECHARGE	37.50
14:05	RECHARGE	22.00

NOTES:
Flow rate measured by timing flow through totalizing flow meter.

Meter Start	Meter End	Total Volume Produced
252150	254190	2,040-gallons

Average Pumping Rate = 2040 gallons/360 Minutes = 5.67-GPM
Recharge Rate = (((47.0-22.0) ÷ (47.0-19.5)) x 100) = 90.91%

ORIGINAL
File with DWR

Attachment 7

APR 04 2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page ___ of ___

Owner's Well No. ___

No. 713370

Date Work Began 6-3-00 Ended 6-6-00

Local Permit Agency Health Dept.

Permit No. WE-1880 Permit Date 6-6-00

DWR USE ONLY — DO NOT FILL IN
10N/06W-06
STATE WELL NO./STATION NO.
LATITUDE ___ LONGITUDE ___
APN/TRS/OTHER

WELL #2

GEOLOGIC LOG

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

DRILLING METHOD air rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	18	Black Clay
18	40	Gravel

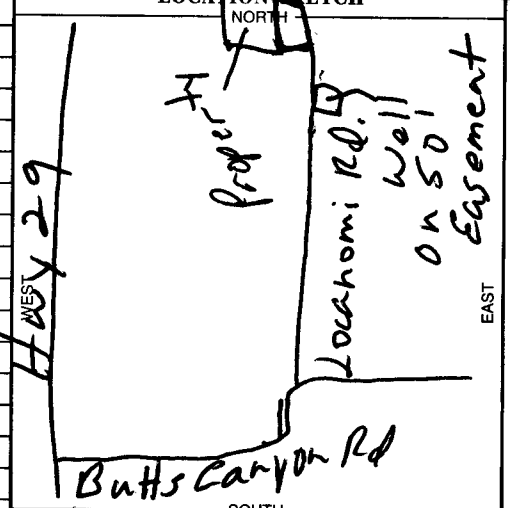
TOTAL DEPTH OF BORING 50 (Feet)

TOTAL DEPTH OF COMPLETED WELL 40 (Feet)

WELL LOCATION

Address 24095 Loconomi Rd.
City Middletown
County Lake
APN Book 014 Page 140 Parcel 12
Township 10N Range 6W Section 6
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
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 18 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 10 (Ft.) & DATE MEASURED 6-6-00

ESTIMATED YIELD * 100 (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)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	9"	X				PVC F480	4½	160	
20	24	7 7/8	X				"	"	"	
24	40	11		X			"	"	"	1/8

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	40				5/16 pea

APR 17 2002

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 Larry Herman Drilling (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 13011 Hwy 29 CITY Lower Lake STATE Ca ZIP 95457

Signed Larry Herman (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 6-7-00 C-57 LICENSE NUMBER 465071

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Attachment 7

LAKEPORT OFFICE
922 BEVINS COURT
LAKEPORT, CA 95453
(707) 263-2222

SOUTH SHORE OFFICE
(707) 994-2257

LAKE COUNTY PUBLIC HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH

WELL #2

JOB LOCATION ADDRESS: 21095 LOCONOMI RD

ASSESSOR'S PARCEL #: 014-140-12 Parcel Size: 2 18 ACRES

Property Owner: Eugene Witzel Phone No.:

Mailing Address: POBox 894 Middletown

WELL DRILLER: LARRY HERMAN DRILLING

Mailing Address: 13011 Hwy 29 LOWER LAKE, CA

Telephone #: 994-4914 CA C-57 License #: 465071

TYPE OF WORK: [X] New Well [ ] Reconstruction [ ] Destruction [ ] Test Well
[ ] Other:

PROPOSED USE: [X] Domestic [ ] Public [ ] Monitoring [ ] Agriculture
[ ] Industrial [ ] Test Well [ ] Other:

CONSTRUCTION: [ ] Cable Tool [ ] Mud Rotary [X] Air Rotary [ ] Other
Casing Type & Standard PVC F480 Wall Thickness 160 Diameter 4½
Proposed Depth of Seal 20' Bore Hole Diameter 9"
[ ] Variance
Seal Material: [ ] Concrete [ ] Sand-cement grout [ ] Bentonite Clay
[X] Neat Cement [ ] Other

Is location of proposed well subject to flooding? [X] No [ ] Yes
Describe known flooding conditions:

WELL DRILLER'S SIGNATURE: Larry Herman Date: 5-12-00

* * * * PLEASE COMPLETE THE ATTACHMENTS * * * *

THIS PERMIT IS VALID FOR ONE YEAR FROM DATE OF ISSUANCE
FIELD CONDITIONS MAY WARRANT CHANGES OF THIS PERMIT

* * * * PLEASE DO NOT WRITE BELOW THIS LINE * * * *

Date Received: 5/12/2000 Fee Paid: $160.00 Receipt No.: 737605
100 Year Flood Plain? [X] No [ ] Yes Zone: C Elevation:
Minimum Casing Height: 1' feet above ground surface
Date Issued: 6-6-2000 Issued By: JSMcL

Seal Scheduled for: at a.m./p.m. Requested by:
Seal Cancelled on: at a.m./p.m. Requested by:
Seal Scheduled for: at a.m./p.m. Requested by:
Site #1 Seal Depth: 6 -- 23 Ft. 23ft Total feet below ground surface
Site #2 Seal Depth: -- Ft. Total feet below ground surface
Annular Seal Verified by: JSMcL 6-6-2000
Destruction Verified by:
Well Log Received on: 9.24.04 M

FINAL APPROVAL BY: Julie Pimentel Date: 09/15/04

EH/WELL/8-92

WELL PERMIT NO.: WE 1880

21-25815

Attachment 7

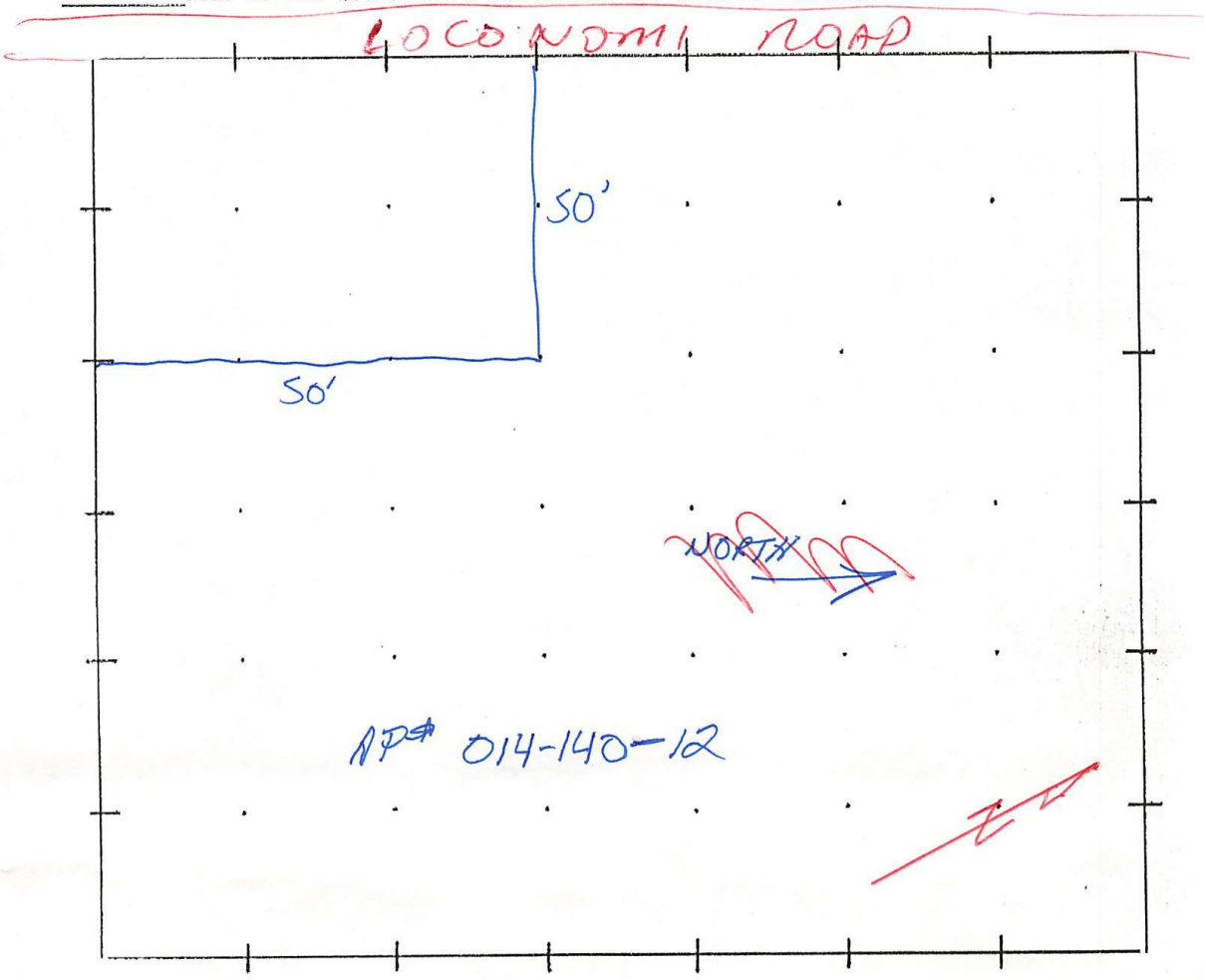
LOCATION MAP

DIRECTIONS (Include mile post markers, landmarks, nearest cross street, etc.):

DRAW TO SCALE ANY OF THE FOLLOWING WITHIN 200 FEET OF THE WELL

1. Well/wells existing and proposed
2. Property lines, if over 200 feet
3. Easements or roads
4. All existing and proposed sewage disposal systems within 100 feet, adjacent parcels included
5. Any facilities or piping designed to carry or hold sewage
6. Any storage or mixing area which involves Hazardous Materials
7. Any structures

_____ None of the items above are within 200 feet of the well



DRAWN TO THE SCALE OF 1" = 25'

Attachment 7

10N/06W-06M

ORIGINAL
File with DWR

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

Do not fill in
No. 177964

State Well No.
Other Well No.

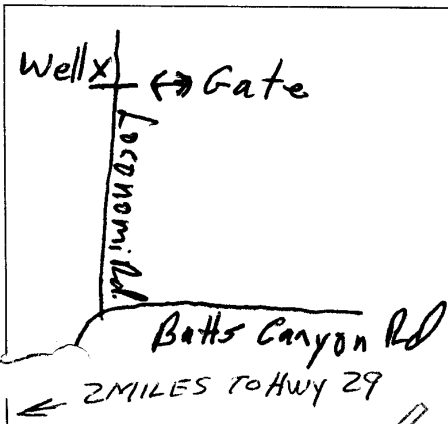
ent No.
. No. or Date

WELL #4

(12) **WELL LOG:** Total depth 45 ft. Depth of completed well 45 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	25	Clay
25	27	Sand
27	38	Gravel
38	42	Clay
42	45	Gralvel

(2) **LOCATION OF WELL** (See instructions):
County Lake Owner's Well Number
Well address if different from above AP# 014-140-09
Township Range Section
Distance from cities, roads, railroads, fences, etc. Loconomi Rd, Middletown



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 Natural
Diameter of bore 10" 7 7/8" 6 1/8"
Packed from 20 to 45 ft.

(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
0	35	6 5/8	.188	35	45	1/8
35	45	5"	160			

(9) **WELL SEAL:**
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing Neat Cement

(10) **WATER LEVELS:**
Depth of first water, if known 30 ft.
Standing level after well completion 15 ft.

(11) **WELL TESTS:**
Was well test made? Yes ☒ No ☐ If yes, by whom? Driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test ft. At end of test ft
Discharge 30 gal/min after 2 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

FEB 05 1987

Work started 19 Completed 1-14 1986

WELL DRILLER'S STATEMENT: 01562
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Larry Herman (Well Driller)
NAME Larry Herman Drilling (Person, firm, or corporation) (Typed or printed)
Address 11321 Hwy 29
City Lower Lake Zip 95457
License No. 468071 Date of this report 1-13-86

Attachment 7

RECEIVED

JUL 10 1992

WELL #5

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

D.W.R. WATER WELL DRILLERS REPORT

Do not fill in

No. 324252

IGINAL
e with DWR

ce of Intent No. _____
Local Permit No. or Date _____

AP 014-140-13

State Well No. 10N/07W-1M
Other Well No. _____

(2) LOCATION OF WELL (See instructions):
County Lake Owner's Well Number 696
Well address if different from above Same
Township 10N Range 7W Section 1M
Distance from cities, roads, railroads, fences, etc. 2 miles East of Middletown on Butts Canyon RD

Highway 29
Loconomi RD
Butts Canyon RD

WELL LOCATION SKETCH

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

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [ ]
(Describe)

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

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8
Diameter of bore 7"
Packed from 105 ft. to 20 ft.

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

From ft.	To ft.	Dia. in.	Gage or Wall
0	105	5	1/4

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

From ft.	To ft.	Slot size
100	53	1/8 x 3

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 20 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval _____ ft.
Method of sealing Concrete

(10) WATER LEVELS:
Depth of first water, if known 25' ft.
Standing level after well completion 22' ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? driller
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test 22 ft. At end of test _____ ft.
Discharge 100 gal/min after 3 hours Water temperature cool
Chemical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 105 ft. Completed depth 105 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	8	TOP Soil Black
8	25	Clay Tan
25	38	Gravel
38	65	Clay Tan
65	75	Gravel
75	105	Clay & Rock Mix

VOID
NOT FOR PUBLIC USE
WATER CODE SEC. 13752
INITIAL

AUG 14 1992

Work started 6-3 19 92 Completed 6-9 19 92

WELL DRILLER'S STATEMENT: 1637

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

Signed _____ (Well Driller)

NAME CME (Person, firm, or corporation) (Typed or printed)

Address PO Box 191

City Cobb Ca ZIP 95426

License No. 423144 Date of this report 6-9-92

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

Attachment 7

10N/06W-06M
10N/07W-01M

[ORI]GINAL
[Fil]e with DWR

WELL #6

[redacted] Intent No. ______
[redacted] Permit No. or Date ______

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

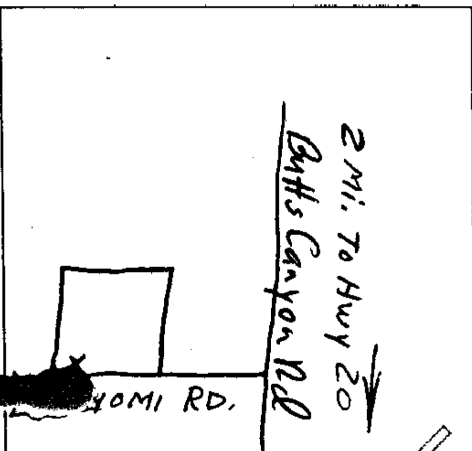
WATER WELL DRILLERS REPORT

Do not fill in
No. 236886

State Well No. ______
Other Well No. ______

(1)
Addre
City

(2) LOCATION OF WELL (See instructions):
County Lake Owner's Well Number ______
Well address if different from above AP# 014-140-14-01
Township 10N Range 6W Section 6
Distance from cities, roads, railroads, fences, etc.
21132 [illegible]



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 5/16
Diameter of bore 10"
Packed from 20 to 100

(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
0	100	6"	160	30	100	1/8

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ______ ft.
Method of sealing Cement

(10) WATER LEVELS:
Depth of first water, if known 35 ft.
Standing level after well completion 7 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? owner
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 7 ft. At end of test 85 ft
Discharge 75 gal/min after 2 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

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

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Top Soil
5	25	Sandy Clay
25	40	Gravel
40	90	Gravel Embedded in Clay
90	100	Gravel

FEB 05 1987

Work started 8-26 1983 Completed 8-28 1983

WELL DRILLER'S STATEMENT: 01562
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Larry Herman
(Well Driller)
NAME Larry Herman Drilling
(Person, firm, or corporation) (Typed or printed)
Address 11321 Hwy 29
City Lower Lake Zip 95457
License No. 304138 Date of this report 9-6-83

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

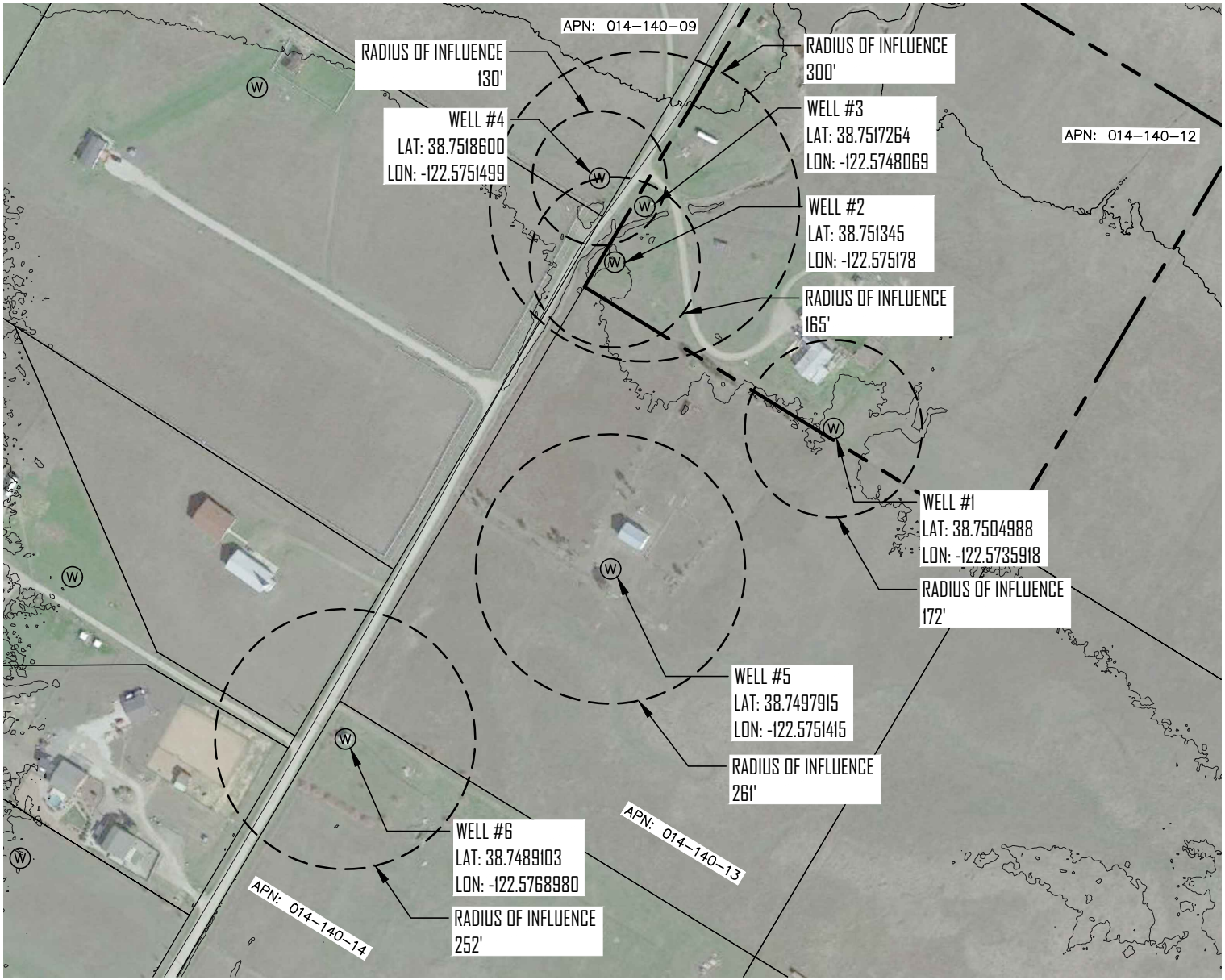
Appendix

B

Attachment 7

Well Area of Influence Map

APPENDIX B.1



5' MINOR AND 25' MAJOR CONTOUR INTERVAL

0 300 600 Feet

SUBMITTED TO:
LAKE COUNTY COMMUNITY
DEVELOPMENT DEPT.
COUNTY OF LAKE
LAKEPORT, CA

VanDerWall Engineering, Inc.
PO BOX 431
KELSEYVILLE, CA 95451
707-279-4887

WELL AREA OF INFLUENCE MAP
APN: 014-140-12
21080 LOCONOMI RD
MIDDLETOWN, CALIFORNIA

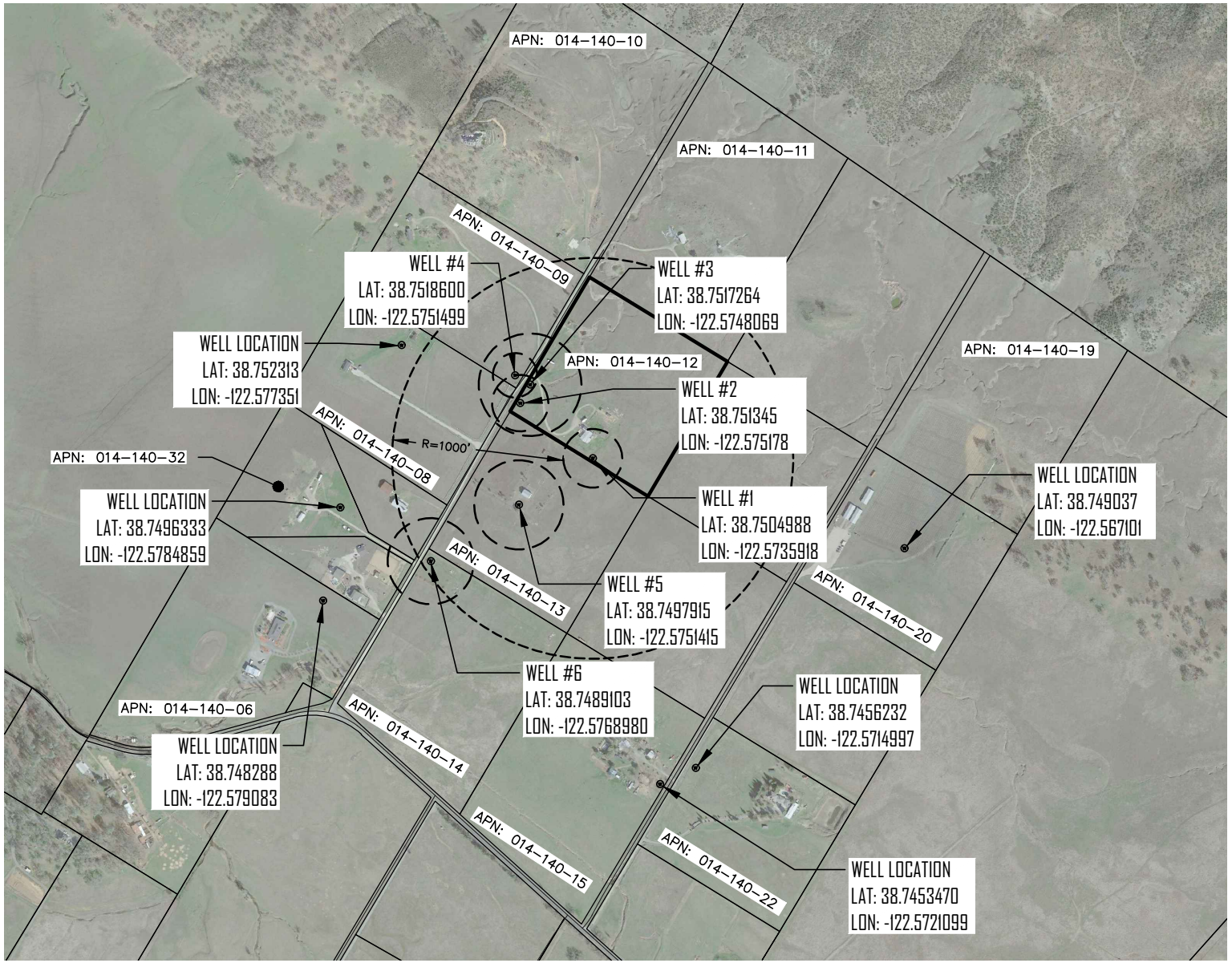
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1/2"

DATE	SEPT 2021
PROJ	21-54
DWG	
APPENDIX	B.1

Attachment 7

Surrounding Area Map

APPENDIX B.2



0 900 1800 Feet

SUBMITTED TO:
LAKE COUNTY COMMUNITY DEVELOPMENT DEPT.
COUNTY OF LAKE
LAKEPORT, CA

VanDerWall Engineering, Inc.
PO BOX 431
KELSEYVILLE, CA 95451
707-279-4887

SURROUNDING AREA MAP
APN: 014-140-12
21080 LOCONOMI RD
MIDDLETOWN, CALIFORNIA

VanDerWall Engineering, Inc.

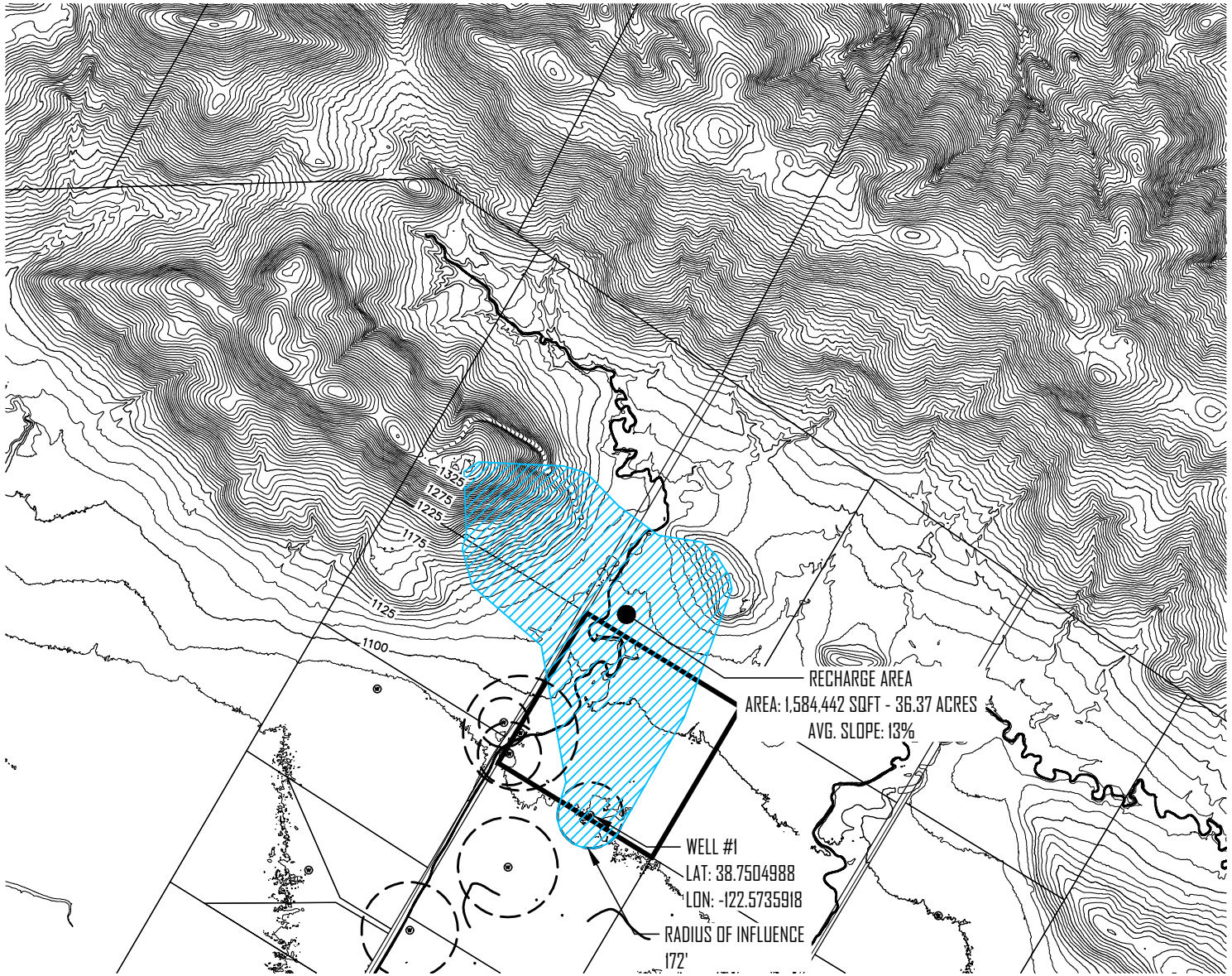
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1/2"

DATE	SEPT 2021
PROJ	21-54
DWG	
APPENDIX	B.2

Attachment 7

Well Recharge Area Map

APPENDIX B.3



5' MINOR AND 25' MAJOR CONTOUR INTERVAL

0 800 1600 Feet

SUBMITTED TO:

LAKE COUNTY COMMUNITY
DEVELOPMENT DEPT.
COUNTY OF LAKE
LAKEPORT, CA

VanDerWall Engineering, Inc.
PO BOX 431
KELSEYVILLE, CA 95451
707-279-4887

WELL RECHARGE AREA MAP

APN: 014-140-12
21080 LOCONOMI RD
MIDDLETOWN, CALIFORNIA

VanDerWall Engineering, Inc.

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1/2"

DATE	SEPT 2021
PROJ	21-54
DWG	
APPENDIX	B.3