



023027.00

April 27, 2023

Mr. Kai Ferrara  
3594 Buttermilk Lane  
Arcata, CA 95521

**SUBJECT: WATER-SUSTAINABILITY EVALUATION FOR WELL ON  
PARCEL NO. 524-014-011, HUMBOLDT COUNTY, CALIFORNIA**

### INTRODUCTION

This letter presents our evaluation of the sustainability of the water supply (groundwater well) for Parcel No. 524-014-011, Humboldt County, California. We understand that Humboldt County is requiring evaluation of whether the well is sustainable for its proposed use in a cannabis-growing operation.

Work consisted of review of previous site-specific studies conducted by Lawrence & Associates (L&A) for a previous owner of the parcel and report preparation (the site was known as the PG&E 36 Property). You provided information on the water usage and irrigation timing. Per your email of March 16, 2023, Humboldt County is requiring the following in relation to the well/water supply:

- a) Pumping schedule and monthly and annual usages.
- b) Site description including topography, existing and planned uses, existing and planned water supply sources.
- c) Description of the well, strata in which it is screened, depth of sanitary seal, if well seal is only the required 20 feet, describe the effects of shallow gravel/sand pack on ability of well to capture shallow water. If multiple intervals are screened, describe the anticipated impacts.
- d) Identification of any wells within 1,000 feet of the subject well, and if so, how will the use of the subject well affect the adjacent wells.
- e) Identification of any seeps, springs, or wetlands within 1,000 feet of the subject well.
- f) Effects on nearby water features from use of the well.
- g) A map showing the location of any existing wells within 1,000 feet of the project.
- h) A local geological map with a legend. A hydrogeological cross section map would also be helpful.
- i) Identification of groundwater recharge areas for both alluvial and confined aquifers, and a discussion of the sustainability of the well's productivity.
- j) Description of the lateral extent of identified aquitards/aquicludes.
- k) Evaluation of the extent of identified/interpreted aquitards or aquicludes using relationships presented in the hydrogeological cross section and supported by either mapped or boring log evidence.
- l) References and data sources.

**LAND AND WATER USE**

The Site use is for a total 28,800 square foot, greenhouse Cannabis project. The plants are planted in native soil with added amendments, inside the greenhouses (K. Ferrara, email to B. Lampley, April 2023). The water is delivered by drip tape to the rows of plants, such that each plant has its own drip. The drip tape is installed beneath the mulch to reduce evaporative losses.

The water supply for the Project is an existing groundwater well previously identified as TW-3 for a previous investigation (L&A, March 2005, *Evaluation of Feasibility for Domestic Septic-Waste Disposal, Sierra Pacific Holding Company PG&E 36 Property*; L&A, March 2005, well drilling and testing program at PG&E 36 property, unpublished in-house data).

**Table 1. Proposed Irrigation Schedule & Water Use**

Unit Use: 300 gallons/hour per 1,000 sq. ft.					
Month	Area	Timing	Daily Volume	Monthly Volume	Average Daily Pumping Rate
	sq.ft.	hrs./day	gallons	gallons	gpm
January	800	0.17	41	1,202	0.0
February	800	0.17	41	1,202	0.0
March	4,800	0.17	240	7,214	0.2
April	14,000	0.17	701	21,042	0.5
May	28,000	0.17	1,403	42,084	1.0
June	28,000	0.25	2,100	63,000	1.5
July	28,000	0.30	2,520	75,600	1.8
August	28,000	0.30	2,520	75,600	1.8
September	28,000	0.30	2,520	75,600	1.8
October	14,000	0.17	701	21,042	0.5
November	7,000	0.17	351	10,521	0.2
December	3,500	0.17	175	5,261	0.1
ANNUAL USE:				399,369 gallons or 1.2 acre-feet	0.8 gpm

**SITE DESCRIPTION**

The site is located in the North Fork of the Trinity River drainage. The river valley is generally oriented with a northwest trend. The drainage is marked by steep slopes with occasional flatter areas caused by hanging or abandoned stream meanders and stream terrace deposits. At the Site, an old river meander creates a relatively flat (slopes less than 10%) bench onto which slightly steeper debris flows have been deposited (10% to 30%) from two secondary drainages. The areal extent of the debris flows narrows and steepens up slope to the east. Above the debris flow

deposits, the grades are steeper than 30% and side slopes range from vertical to 3-to-1 (horizontal to vertical).

## PROJECT WELL

Several wells and test borings were installed at the Site as part of the previously mentioned project (*ibid.*). **Attachment A** contains the Department of Water Resources (DWR) driller's logs for the wells and **Figure 4** shows the locations.

All wells were completed with a 20-foot surface seal. As described in the following section (Hydrogeological Setting), the productive aquifer occurs within sand and gravel deposits atop bedrock at various depths depending on surface elevation.

Well yields range from less than 1 gallon per minute (gpm) to over 10 gpm. Wells TW-3 and TW-6 showed a long-term yield of 14 and 4 gpm, respectively (**Attachment B**). This is in excess of the highest average daily Project pumping rate of approximately 2 gpm. Both of these wells have sufficient yield for Project supply.

## HYDROGEOLOGICAL SETTING

The subject parcel is located in the Klamath Mountains Geologic province of northwestern California. The basement rock at the site consists the Jurassic age (208 to 146 million years old), Galice Formation (**Figure 2**). In the vicinity of the subject property, the Galice Formation consists of metamorphosed marine sandstone, ranging from massive to highly fractured. The Galice Formation has been incised by the south Fork of the Trinity River, leaving hanging meanders approximately 100 to 220 feet above the current channel. Within the meander are point-bar river terrace deposits of sand and gravel of Quaternary Age (less than 2 million years old).

**Figure 3** shows a local geologic map based on field reconnaissance conducted in 2005 by L&A. West of South Fork Road is an exposed fin of sandstone protruding into the river deposits; the sandstone outcrop has been smoothed by river flows and subsequently weathered. Overlying the river deposits are debris flows of two different ages, both derived from the mountains to the east of the river. The older deposits have a developed soil including a 2-foot-deep soil horizon. A paleosol was observed in two test pits indicating episodic deposition between long periods of no deposition. The soil development suggests that portions of the older debris flows may have predated or been contemporaneous with the deposition of the river deposits. The younger debris-flow deposits overly both the older debris-flow deposits and stream deposits. The younger debris flow-deposits have no soil development indicating that they are of recent origin.

The debris fans consist of coarse material and are generally very permeable. The underlying fractured sandstone will vary from virtually impermeable to moderately permeable depending on the degree of fracturing.

**Attachment A** contains the Department of Water Resources (DWR) driller's logs for the wells installed at the Site for a previous project; **Figure 4** shows the locations. The hydrogeologic setting for the Site is based on the results from these six wells which were installed in 2005 to investigate groundwater occurrence and evaluate well yields.

The wells showed that groundwater, where present, occurs at the base of the debris-flow deposits, immediately above the bedrock surface. Groundwater also may occur within the bedrock fractures, but the productive aquifer zone ranges in thickness from zero to approximately 15 feet. Depth to first water ranged from 12 to 95 feet; the depth depended on the elevation of the well location (wells farther uphill had deeper depths to water). Two dry holes (TB-1 and TB-2) were observed at the Site, downhill of and between the river and the more productive wells. The aquifer from which the Site wells, including TW-3 (the Project well) is not hydraulically connected to the river.

One spring was noted at the Site in 2005, near TW-1 (**Figure 4**). The spring likely occurs where the ground surface is lower in elevation and exposes the aquifer atop the bedrock.

Recharge to the aquifer is from infiltration of precipitation and stream flow. The recharge areas likely are represented by the drainage areas upstream of well locations, to the top of Hennessy Ridge. For example, the likely recharge area for well TW-3 (Project well) covers 385 acres (**Figure 1**). **Table 1** shows the calculation for estimating recharge to the aquifer from this area.

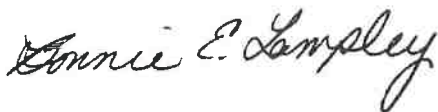
The estimated average annual recharge is 352 acre-feet/year. The estimated annual Project water use is 1.2 acre-feet/year. Thus, there is sufficient average recharge to sustain the Project use. In dry years, there may be no recharge and in wet years there may be more recharge. Because the aquifer is capable of storing water year to year, however, the Project well likely would be able to supply water even in dry years.

**Table 1. Recharge Estimation**

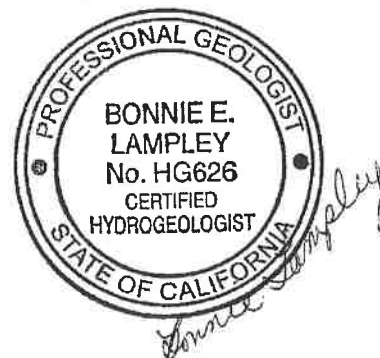
Average Annual Precipitation <sup>A</sup>	39.2	inches
Runoff, assume 50%	19.6	inches
Wet Season Evapotranspiration <sup>B</sup>	9.0	inches
Net Precipitation for Recharge	11	inches
Average Recharge (net precip. × 385 acres)	352	acre-feet/year
<b>Monthly Evapotranspiration</b>		
<b>Month</b>	<b>Daily</b>	<b>Monthly</b>
	(inches)	(inches)
Jan	0.04	1.20
Feb	0.07	1.96
Mar	0.10	3.10
Apr	0.16	4.80
May	0.21	6.51
Jun	0.26	7.80
Jul	0.29	8.99
Aug	0.25	7.75
Sep	0.19	5.70
Oct	0.12	3.72
Nov	0.06	1.80
Dec	0.03	<u>0.93</u>
		54.26 inches/year
		8.99 inches/wet season (Jan-Mar, Nov-Dec)
Notes:		
A. Data from Mud Springs station (MUD), Trinity Co., <a href="https://cdec.water.ca.gov/dynamicapp/QueryDaily?s=MUD&amp;end=2023-04-27">https://cdec.water.ca.gov/dynamicapp/QueryDaily?s=MUD&amp;end=2023-04-27</a>		
B. CA Dept. of Water Resources, 2000, <i>A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California</i> ; <a href="https://cimis.water.ca.gov/Content/PDF/wucols00.pdf">https://cimis.water.ca.gov/Content/PDF/wucols00.pdf</a>		

Please contact me at [blampley@lwrnc.com](mailto:blampley@lwrnc.com) if you have any questions regarding this report.

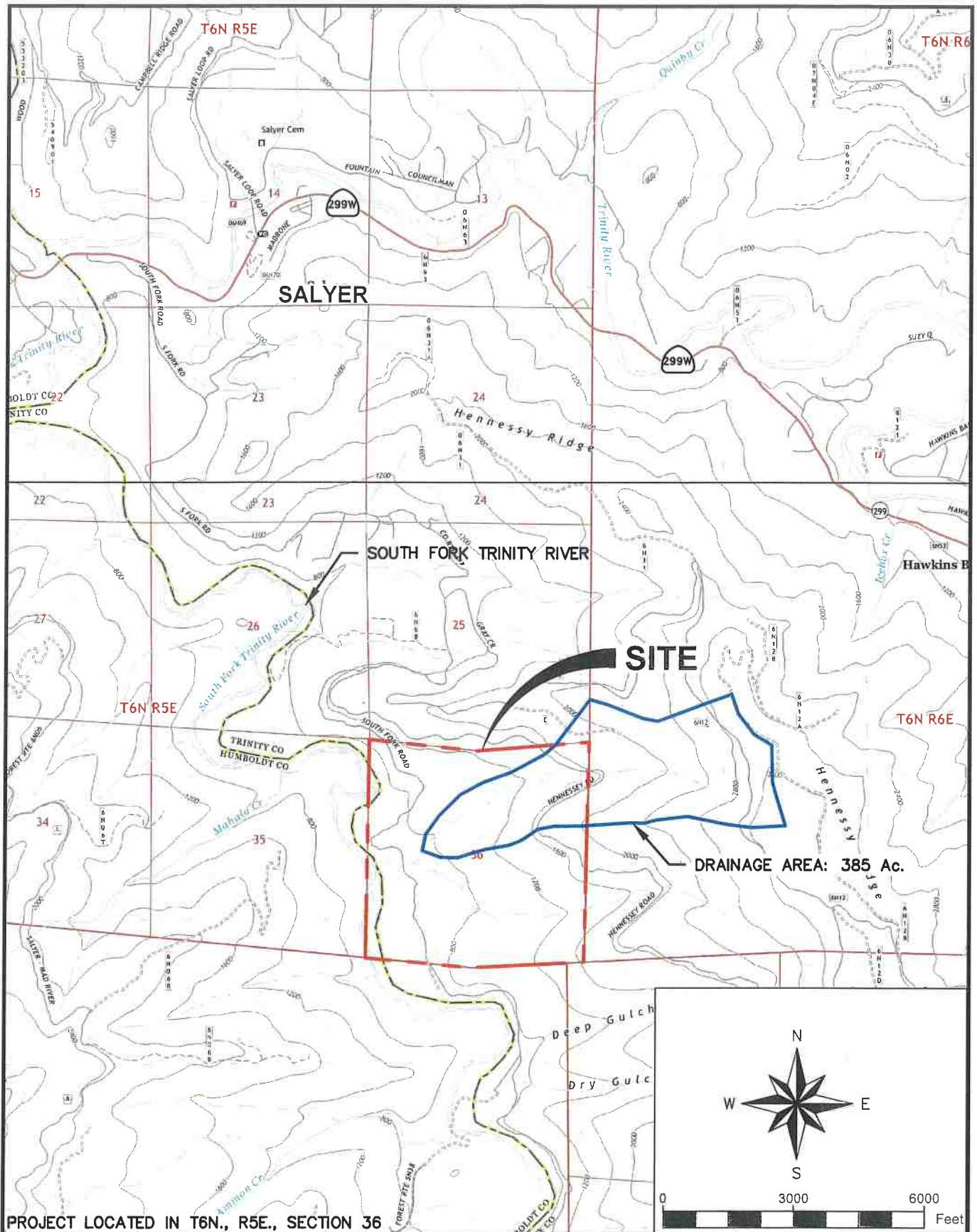
Sincerely,



Bonnie Lampley  
 Principal Hydrogeologist



enc.: Attachment A. Site Well Logs  
 Attachment B. Site Well-Yield Testing



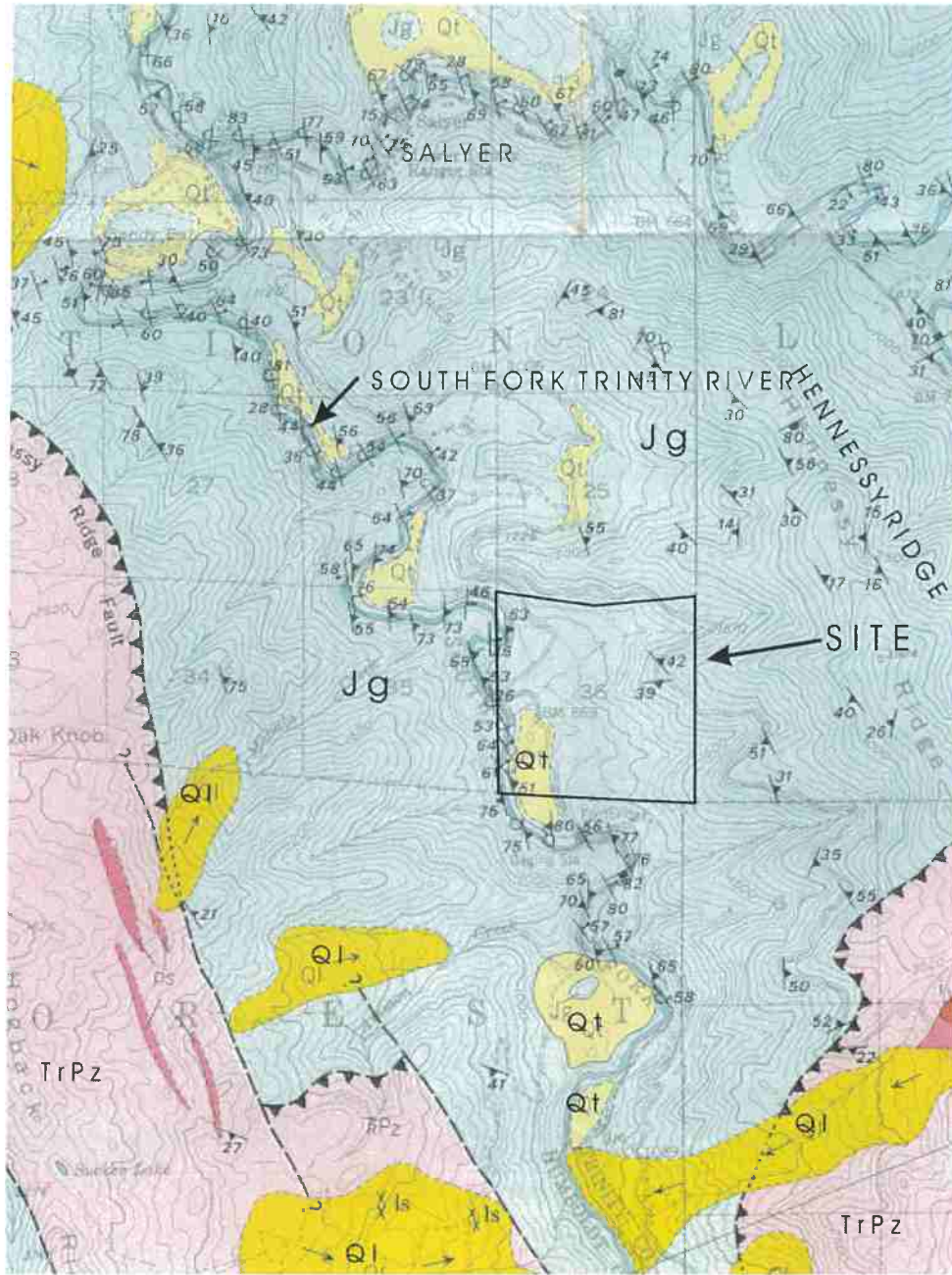
PROJECT LOCATED IN T6N., R5E., SECTION 36



**SITE LOCATION MAP**  
 MAP ADAPTED FROM U.S.G.S.  
 7.5-MINUTE TOPOGRAPHIC QUADS:  
 SALYER & HENNESSEY PEAK, CA.

PROJECT NAME: W.S. EVALUATION	PROJECT NO: 023027.00	DATE: 4/27/2023
CLIENT: KAI FERRARA	DRAWN BY: J. BEERS	<b>FIGURE 1</b>
SCALE: 1" = 3,000'	CHECKED BY: B. LAMPLEY	





**LEGEND**

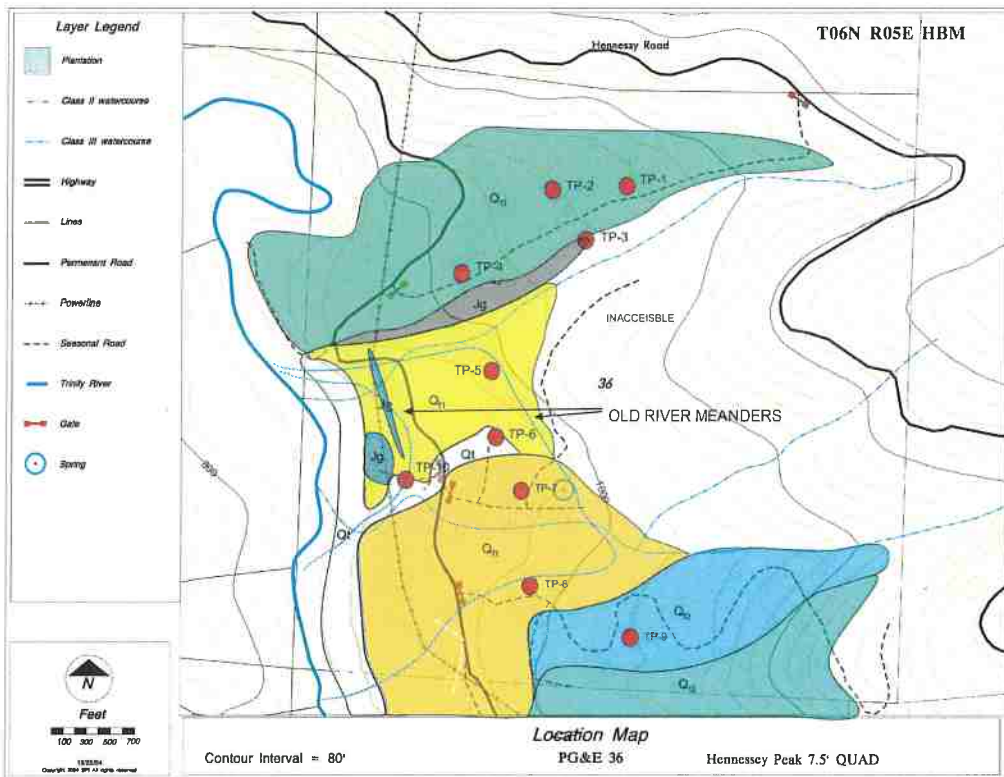
- Ql: Quaternary landslide or slump
- Qt: Quaternary terrace deposit
- Jg: Jurassic Galice Formation (Sandstone)
- TrPz: Western Paleozoic and Triassic Belt (melange)

Adapted from: Young, J.C., 1978, Geologic Map and Sections of the Willow Creek 15' Quadrangle, Humbolt and Trinity Counties, California, California Division of Mines and Geology Map Sheet 31



**REGIONAL GEOLOGIC MAP**

PROJECT NAME: W.S. EVALUATION	PROJECT NO: 023027.00	DATE: 4/27/2023
CLIENT: KAI FERRARA	DRAWN BY: J. BEERS	<b>FIGURE 2</b>
SCALE: 1" = ~1 MILE	CHECKED BY: B. LAMPLEY	



SITE GEOLOGIC MAP SHOWING  
TEST PIT LOCATIONS  
PG&E 36 SITE

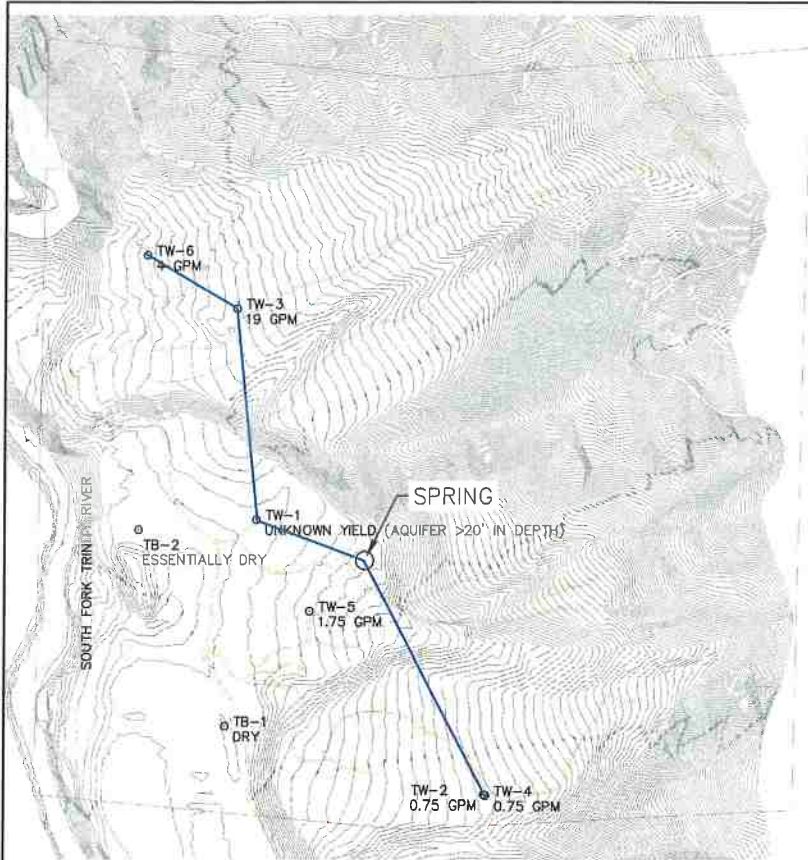
WATER SUSTAINABILITY EVALUATION

KAI FERRARA

PROJECT NO	023027.00	SCALE	AS SHOWN
DRAWN BY	J. BEERS	DATE	4/27/2023
CHECKED BY	B. LAMPLEY	<b>FIGURE 3</b>	

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**LEGEND**

- PROPERTY LINE
- == ROAD
- AREA OF USABLE AQUIFER YIELDING SUFFICIENT WATER (>4 GPM / 4 HOURS)
- TB-1 TEST BORING LOCATION
- TW-1 TEST BORING LOCATION TEST WELL SHOWING YIELD IN GALLONS PER MINUTE

BORING WELL #	TOTAL DEPTH (FT)	DEPTH TO BEDROCK (FEET B.O.S.)	DEPTH TO WATER (FEET B.O.S.)	AQUIFER THICKNESS (FEET)	WELL YIELD (GPM)
TB-1	10	0	DRY	0	0
TB-2	45	20	24.5	0	<0.3
TW-1	100	25	12.0	13	SEALED OFF
TW-2	98	23	95.0	15	1
TW-3	131	84	85.0	15	19
TW-4	119	108	85.0	15	1
TW-5	45	35	27.0	9	3
TW-6	85	76	48.0	18	4



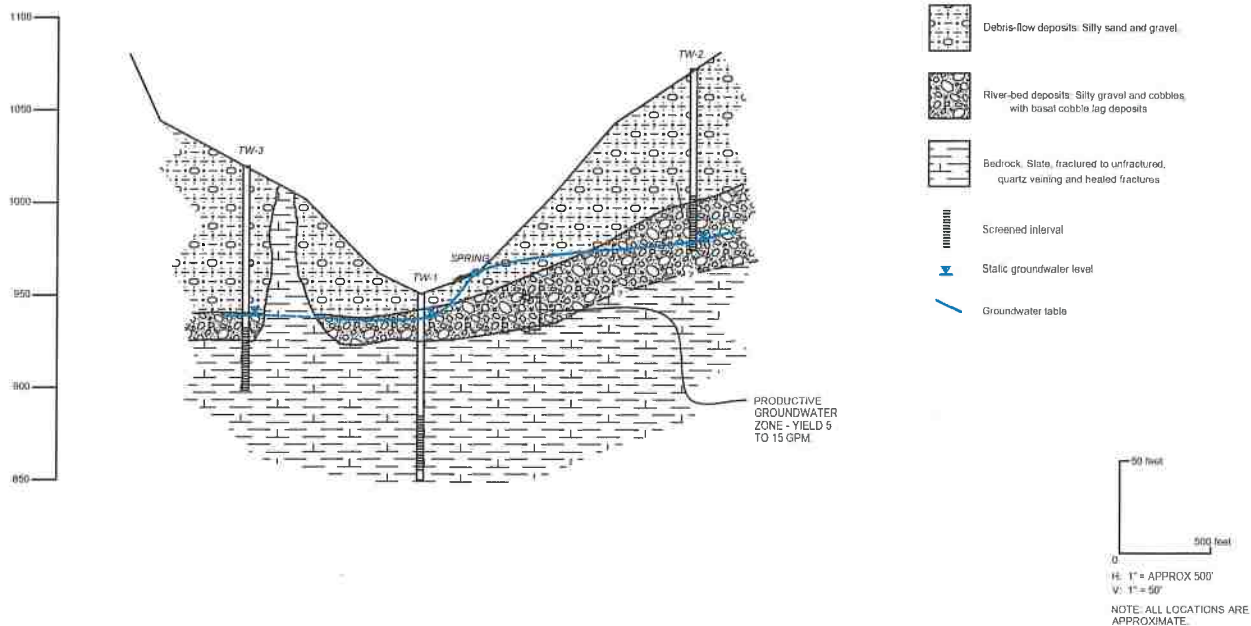
**TEST BORINGS AND WELLS  
PG&E 36 SITE  
SOUTH FORK TRINITY RIVER**

**WATER SUSTAINABILITY EVALUATION**

**KAI FERRARA**

PROJECT NO. 023027.00	SCALE AS SHOWN
DRAWN BY J. BEERS	DATE 4/27/2023
CHECKED BY B. LAMPLEY	<b>FIGURE 4</b>

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GENERALIZED CROSS-SECTION  
PG&E 36 SITE

WATER SUSTAINABILITY EVALUATION

KAI FERRARA

PROJECT NO. 023027.00	SCALE AS SHOWN
DRAWN BY J. BEERS	DATE 4/27/2023
CHECKED BY B. LAMPLEY	<b>FIGURE 5</b>

p:\023027.00\_Site\023027\fig05.dwg J.R.B. 4/27/2023

**ATTACHMENT A**  
**SITE WELL LOGS**

TRIPPLICATE  
Owner's Copy

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

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Page 1 of 1

Owner's Well No. TW-1

No. 1087277

Date Work Began 3-14-05, Ended 3-15-05

Local Permit Agency Trinity County Environmental Health

Permit No. WP2005-006 Permit Date 3-10-05

**GEOLOGIC LOG**

ORIENTATION (✓)  VERTICAL  HORIZONTAL  ANGLE  (SPECIFY)

DRILLING METHOD air rotary FLUID water

DEPTH FROM SURFACE

Ft. to Ft.

DESCRIPTION Describe material, grain size, color, etc.

0	8	Silty sand w/gravel
8	25	Sandy gravel
25	100	Bedrock

NOTE Cased from 55 feet to 100 feet

**WELL OWNER**

Name Sierra Pacific Holding Co.  
Mailing Address C/O Lawrence & Associates  
2001 Market St., Rm. 523, Redding, CA 96001  
CITY STATE ZIP

**WELL LOCATION**

Address approx. 5 miles south of Salmon  
City on South Fork Road, Salmon  
County Trinity  
APN Book 0888 Page 080 Parcel 8  
Township 56N Range 5E Section 36  
Lat. Long. DEG. MIN. SEC. N W

**LOCATION SKETCH**

See attached map

**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 12 (Ft.) BELOW SURFACE  
DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED  
ESTIMATED YIELD 650 GPM & TEST TYPE  
TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN (Ft.)  
\* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL TYPE			
		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	CE-MENT (✓)		BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)	
0 to 42 1/2	9 1/2	X						PVC				4
42 1/2 to 63	8 1/2	X	PVC	4	Sch 40		7 to 8		X		Gravel	
63 to 93	8 1/2	X	PVC	4	Sch 40	.020	8 to 44		X		40# sand	
							44 to 50		X		Gravel	
							50 to 100		X		Gravel	

**ATTACHMENTS (✓)**

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

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 Diamond Core Drilling, Inc.  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)  
ADDRESS P.O. Box 491825 Redding CA 96001  
CITY STATE ZIP  
Signed [Signature] DATE SIGNED 4-21-05 G-57 LICENSE NUMBER 41246  
G-57 LICENSED WATER WELL CONTRACTOR



TRIPPLICATE  
Owner's Copy

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

DWR USE ONLY - DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Page 1 of 1  
Owner's Well No. TW-2 No. **1087275**  
Date Work Began 3-15-05, Ended 3-16-05  
Local Permit Agency Trinity County Environmental Health  
Permit No. WP2005-095 Permit Date 3-10-05

ORIENTATION (Z)			DRILLING METHOD		DESCRIPTION
FL. to FL.			FLUID		
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE _____ (SPECIFY)			<u>air rotary</u>		<u>Silty gravels, weathered, small amounts of schist, quartz and mudstone</u>
			<u>water</u>		
0	73				
73	97				<u>Silty gravel, grades to cobble and boulder-sized</u>

**WELL OWNER**

Name Sierra Pacific Holding Co.  
Mailing Address c/o Lawrence & Associates  
2001 Market St. Rm. 523 Redding CA 96001  
CITY STATE ZIP

**WELL LOCATION**

Address approx. 3 miles south of Salyer  
City on South Fork Road, Salyer  
County Trinity  
APN Book 080 Page 080 Parcel B  
Township 5M Range 5E Section 2E  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_

**LOCATION SKETCH**

NORTH

WEST EAST

SOUTH

See attached map

**ACTIVITY (Z)**

NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify) \_\_\_\_\_

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

**USES (Z)**

WATER SUPPLY

Domestic  Public

Irrigation  Industrial

MONITORING

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY) \_\_\_\_\_

**WATER LEVEL & YIELD OF COMPLETED WELL**

DEPTH TO FIRST WATER 92.5 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL n/a (Ft.) & DATE MEASURED \_\_\_\_\_

ESTIMATED YIELD \* n/a (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)	TYPE (Z)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
		BLANK	SCREEN	CON-DUCTOR	FILL PIPE				
11	67	9 1/2	x			PVC	4	Sch40	
67	90	9 1/2	x			PVC	4	Sch40	.020
90	97	8 1/2	x			PVC	4	Sch40	.020

DEPTH FROM SURFACE	ANNULAR MATERIAL TYPE			
	CE-MENT (Z)	BEN-TONITE (Z)	FILL (Z)	FILTER PACK (TYPE/SIZE)
0	1	x		concrete
1	55 1/2	x		slit sand
55 1/2	60	x		slit sand
60	97			slit sand

**ATTACHMENTS (Z)**

Geologic Log

Well Construction Diagram

Geophysical Log(s)

Soil/Water Chemical Analyses

Other site map

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 Diamond Core Drilling, Inc.  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS P.O. Box 491925 CITY Redding STATE CA ZIP 96001

Signed [Signature] DATE SIGNED 4-20-05 C-57 LICENSE NUMBER 112495

TRIPPLICATE  
Owner's Copy

STATE OF CALIFORNIA  
**WELL COMPLETION REPORT**

Refer to Instruction Pamphlet

No. **1087276**

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Page 1 of 1

Owner's Well No. TM-2

Date Work Began 2-17-05, Ended 2-19-05

Local Permit Agency Trinity County Environmental Health

Permit No. MP2005-007 Permit Date 2-10-05

**GEOLOGIC LOG**

**WELL OWNER**

ORIENTATION (✓)  VERTICAL  HORIZONTAL  ANGLE  (SPECIFY)

Name Sierra Pacific Holding Co.

DRILLING METHOD air rotary FLUID water

Mailing Address 270 Lawrence & Associates

DEPTH FROM SURFACE  
Fl. to Ft. DESCRIPTION  
Describe material, grain size, color, etc.

2001 Market St. P.O. Box 523, Redding, CA 96001

CITY STATE ZIP

**WELL LOCATION**

Address approx. 5 miles south of Colusa

City on South Fork Road, Colusa

County Trinity

APN Book 08 Page 050 Parcel 8

Township 6N Range 5E Section 25

Lat. Long. N W

**LOCATION SKETCH**

Fl.	to	Ft.	DESCRIPTION
0	92		Tan silty clayey sand w/ some gravels (colloidal)
92	93		Very silty sandy gravel
93	120		Black shale

WEST EAST SOUTH NORTH

See attached map

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

**ACTIVITY (✓)**

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

**WATER LEVEL & YIELD OF COMPLETED WELL**

DEPTH TO FIRST WATER 31 (Feet) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 0/0 (Feet) & DATE MEASURED

ESTIMATED YIELD 0/0 (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Feet)

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

TOTAL DEPTH OF BORING 120 (Feet)

TOTAL DEPTH OF COMPLETED WELL 118 (Feet)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL TYPE			
		TYPE (✓)	MATERIAL / GRADE	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)					FILTER PACK (TYPE/SIZE)			
0	98	8 1/2	PVC	4	Sch40				0	1	x			Concrete
98	101	8 1/2	PVC	4	Sch40	020			1	18	x	x		grout
101	118	8 1/2	PVC	4	Sch40	020			18	21	x			Shims
									21	77	x			20# Gravel
									77	81	x			Shims
									81	120				2# Gravel

**ATTACHMENTS (✓)**

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

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.

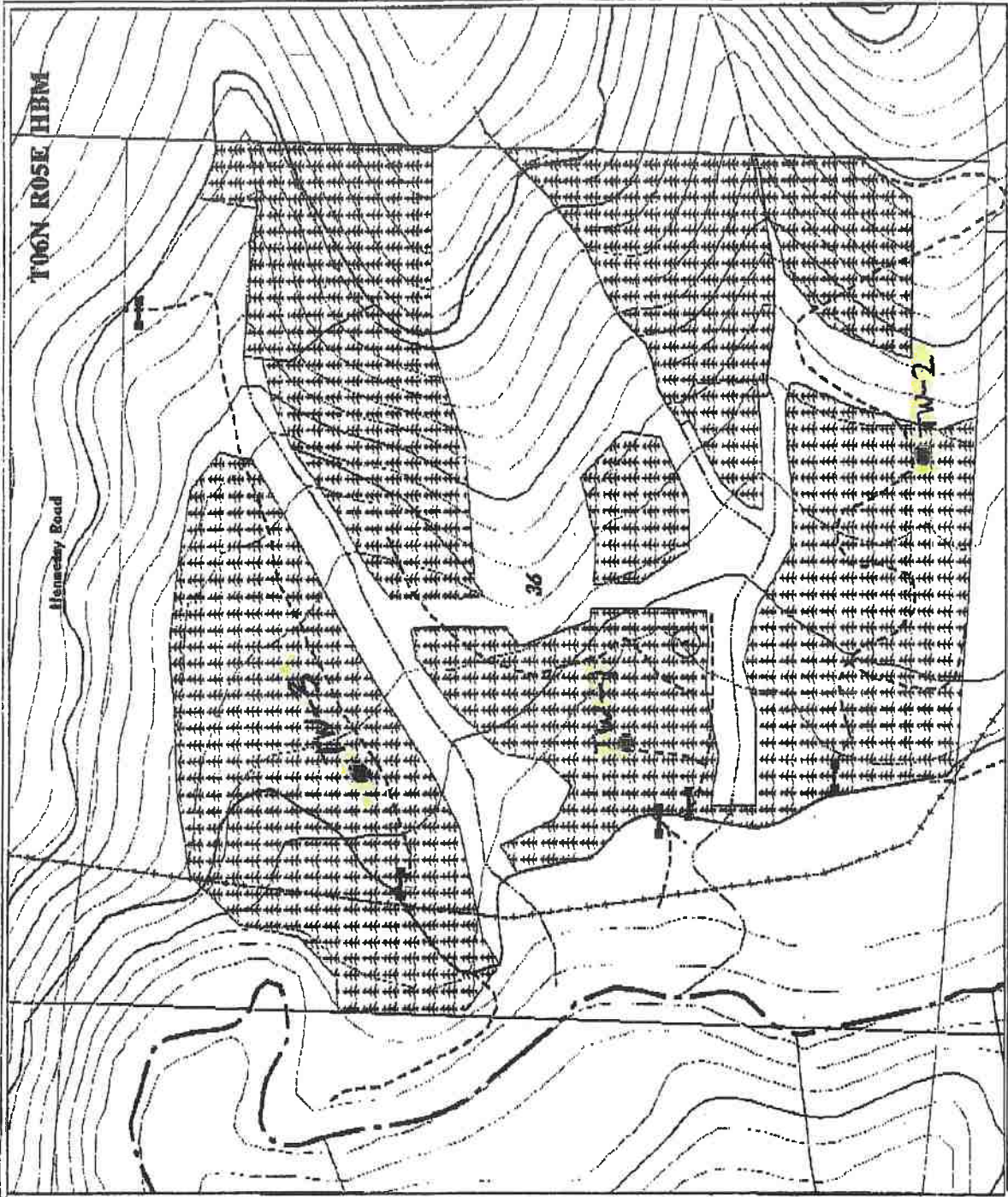
NAME Diamond Core Drilling, Inc.

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












ADDRESS P.O. Box 491925 CITY Redding STATE CA ZIP 96001



Signed [Signature] DATE SIGNED 4-21-05 C-57 LICENSE NUMBER 138008

C-57 LICENSED WATER WELL CONTRACTOR.



Layer Legend

-  Plantation
-  Class II watercourse
-  Class III watercourse
-  Highway
-  Line
-  Permanent Road
-  Powerline
-  Seasonal Road
-  Trinity River
-  Grub
-  Spring


  
 Feet
   

  
Copyright 2005 by Lawrence Associates

**Location Map**  
 Hennessy Peak 7.5' QUAD  
 FG&E 36  
 Contour Interval = 80'

TRIPPLICATE  
Owner's Copy

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

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Page 1 of 1

Owner's Well No. TM-2

No. **1092842**

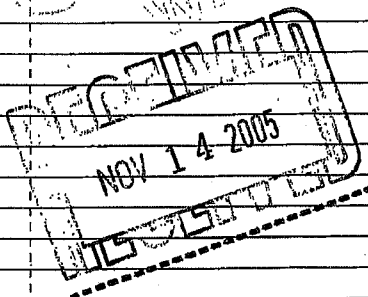
Date Work Began 10-17-05, Ended 10-18-05

Local Permit Agency Trinity County Environmental Health

Permit No. MP0005-060 Permit Date 0-18-05

**GEOLOGIC LOG**

ORIENTATION (✓)		DRILLING METHOD	FLUID	DESCRIPTION
VERTICAL HORIZONTAL ANGLE (SPECIFY)		air rotary	water	Describe material, grain size, color, etc.
DEPTH FROM SURFACE				
Fl.	to	Fl.		
0	73	Silty gravels, weathered small amounts of schist, quartz and mudstone		
73	90	Silty gravel grades to cobble and boulder-sized		
90	93	Sand, clayey, moist		
93	102	Gravel, moist w/silt		
102	110	Fractured to fresh bedrock black silty w/healed fractures		



**WELL OWNER**

Name: Sierra Pacific Holding Company  
Mailing Address: c/o Lawrence & Associates  
2001 Market Street, No. 528, Redding, CA  
CITY: Redding STATE: CA ZIP: 96004

**WELL LOCATION**

Address: Approx 5 miles south of Calaver  
City: on South Fork Road, Calaver  
County: Trinity  
APN Book: 00 Page: 000 Parcel: 0  
Township: 6N Range: 5E Section: 36  
Lat: 40 DEG. 00 MIN. 21 SEC. N Long: 122 DEG. 02 MIN. 00 SEC. W

**LOCATION SKETCH**

NORTH

WEST EAST

SOUTH

See attached map

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

**ACTIVITY (✓)**

- NEW WELL
- MODIFICATION/REPAIR
  - Deepen
  - Other (Specify)
- DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
- 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 05 (Fl.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 05 (Fl.) & DATE MEASURED 10-18-05

ESTIMATED YIELD \* 0.75 (GPM) & TEST TYPE air test

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN 1/2 (Fl.)

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

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	ANNULAR MATERIAL			
		TYPE (K)	MATERIAL / GRADE	DEPTH FROM SURFACE	TYPE							
Fl. to Fl.		BLANK	SCREEN	CON-DUCTOR	FILL PIPE			Fl. to Fl.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	21	10	x			Steel	6	100				Granular
21	100	7 1/2	x			Steel	6	100				Gravel
100	111	7 1/2	x			Steel	6	100				
111	112	7 1/2	x			Steel	6	100				
112	110	6 1/2				Open hole						

**ATTACHMENTS (✓)**

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

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: Diamond Core Drilling, Inc.  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS: P.O. Box 101925 CITY: Redding STATE: CA ZIP: 96004

Signed: [Signature] DATE SIGNED: 11-02-05 C-57 LICENSE NUMBER: 6124



TRIPLICATE

Owner's Copy

Page 1 of 1

Owner's Well No. TW-5

Date Work Began 10-18-05, Ended 10-19-05

Local Permit Agency Trinity County Environmental Health

Permit No. WP2005-059 Permit Date 9-13-05

STATE OF CALIFORNIA WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 1092843

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

GEOLOGIC LOG

ORIENTATION (Z) [X] VERTICAL [ ] HORIZONTAL [ ] ANGLE [ ] (SPECIFY)

DRILLING METHOD air rotary FLUID water

DESCRIPTION

Describe material, grain size, color, etc.

Table with columns: DEPTH FROM SURFACE (Fl. to Fl.), DESCRIPTION. Rows: 0-18 Gravelly silt, dry; 18-26 Gravelly silt w/sand, damp; 26-32 Silty gravel, moist to wet, coarse; 32-35 Silty gravel, fine gravels, moist to wet; 35-45 Bedrock, black shale, dry.

WELL OWNER

Name Sierra Pacific Holding Company

Mailing Address c/o Lawrence & Associates

2001 Market St., Rm. 523, Redding, CA

CITY Redding STATE CA ZIP 96001

WELL LOCATION

Address approx. 5 miles south of Salyer

City on South Fork Road, Salyer

County Trinity

APN Book 08 Page 080 Parcel 8

Township 06N Range 5E Section 36

Lat 40 50 07.8 N Long 122 34 19.0 W

DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

See attached map

ACTIVITY (Z)

- [X] NEW WELL
MODIFICATION/REPAIR
- Deepen
- Other (Specify)

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

USES (Z)

- WATER SUPPLY
- Domestic [ ] Public [ ]
- Irrigation [ ] Industrial [ ]

MONITORING [ ]

TEST WELL [X]

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 27 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 27 (Ft.) & DATE MEASURED 10-19-05

ESTIMATED YIELD 1.75 (GPM) & TEST TYPE air lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN n/a (Ft.)

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

TOTAL DEPTH OF BORING 45 (Feet)
TOTAL DEPTH OF COMPLETED WELL 45 (Feet)

Table with columns: DEPTH FROM SURFACE, BORE-HOLE DIA., CASING (S) TYPE, MATERIAL / GRADE, INTERNAL DIAMETER, GAUGE OR WALL THICKNESS, SLOT SIZE IF ANY, DEPTH FROM SURFACE, ANNULAR MATERIAL TYPE, FILTER PACK (TYPE/SIZE).

ATTACHMENTS (Z)

- Geologic Log
Well Construction Diagram
Geophysical Log(s)
Soil/Water Chemical Analyses
[X] Other site map

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 Diamond Core Drilling, Inc.

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

P.O. Box 491925 Redding CA 96049

ADDRESS CITY STATE ZIP

Signed [Signature] 11-02-05 51206

C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

TRIPPLICATE  
Owner's Copy

STATE OF CALIFORNIA  
**WELL COMPLETION REPORT**

Refer to Instruction Pamphlet

Page 1 of 1

Owner's Well No. TM-6

No. **1092844**

Date Work Began 10-20-05, Ended 10-21-05

Local Permit Agency Trinity County Environmental Health

Permit No. WD2005-058 Permit Date 0-12-05

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

**GEOLOGIC LOG**

**WELL OWNER**

ORIENTATION (✓)  VERTICAL  HORIZONTAL  ANGLE  (SPECIFY)

Name Sierra Pacific Holding Company

DRILLING METHOD air rotary FLUID water

Mailing Address C/O Lawrence & Associates

**DESCRIPTION**

2001 Market St., Rm. 523, Redding, CA

Describe material, grain size, color, etc.

CITY Redding STATE CA ZIP 96001

**WELL LOCATION**

Address approx 6 miles south of Salver

City on South Fork Road, Salver

County Trinity

APN Book 08 Page 030 Parcel 8

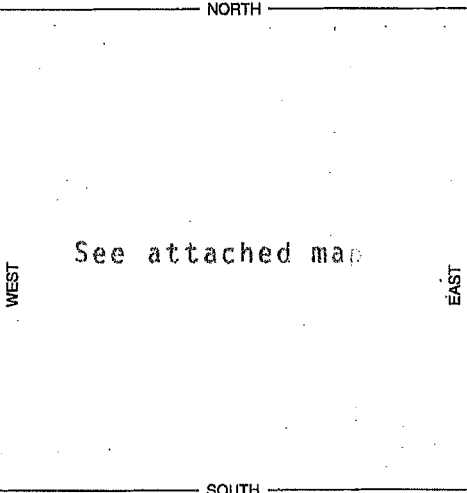
Township 6N Range 5E Section 36

Lat 40 51 202 N Long 123 30 271 W

DEG. MIN. SEC. DEG. MIN. SEC.

**LOCATION SKETCH**

**ACTIVITY (✓)**



NEW WELL

MODIFICATION/REPAIR  
 Deepen  
 Other (Specify)

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

**USES (✓)**

**WATER SUPPLY**  
 Domestic  Public  
 Irrigation  Industrial

MONITORING

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

**WATER LEVEL & YIELD OF COMPLETED WELL**

DEPTH TO FIRST WATER 40 (Ft) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 40 (Ft) & DATE MEASURED 10-21-05

ESTIMATED YIELD \* 3 (GPM) & TEST TYPE 100'

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN n/a (Ft)

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

TOTAL DEPTH OF BORING 85 (Feet)

TOTAL DEPTH OF COMPLETED WELL 85 (Feet)

DEPTH FROM SURFACE Fl. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE Fl. to Ft.	ANNULAR MATERIAL TYPE			
		TYPE (✓)	MATERIAL / GRADE	TYPE (✓)	FILL	FILTER PACK (TYPE/SIZE)								
20 to 22	8 1/2	X	Steel	6	.188				0 to 22					
22 to 25	7 1/2	X	Steel	6	.188									
25 to 77	7 1/2	X	Steel	6	.188			1/2						
77 to 85	7 1/2	X	Steel	6	.188									
0 to 12	12	X	PVC	4	CL 200									
12 to 22	8 1/2	X	PVC	4	CL 200									
22 to 65	7 1/2	X	PVC	4	CL 200									

**ATTACHMENTS (✓)**

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

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

**CERTIFICATION STATEMENT**

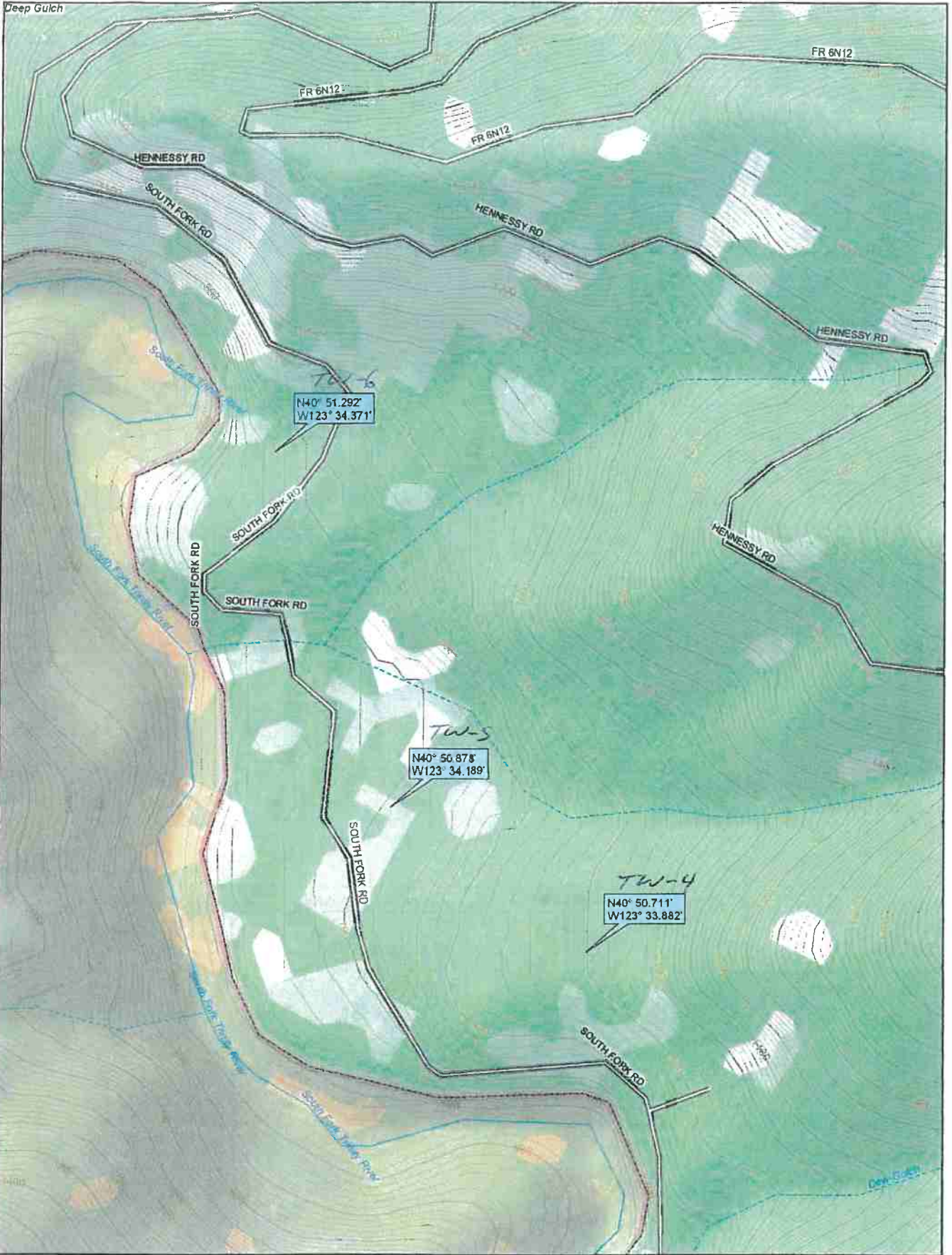
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Diamond Core Drilling, Inc.  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS P.O. Box 491923 CITY Redding STATE CA ZIP 96001

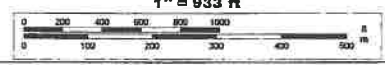
Signed [Signature] DATE SIGNED 11-02-05 C-57 LICENSE NUMBER 512406

Deep Gulch



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www.delorme.com

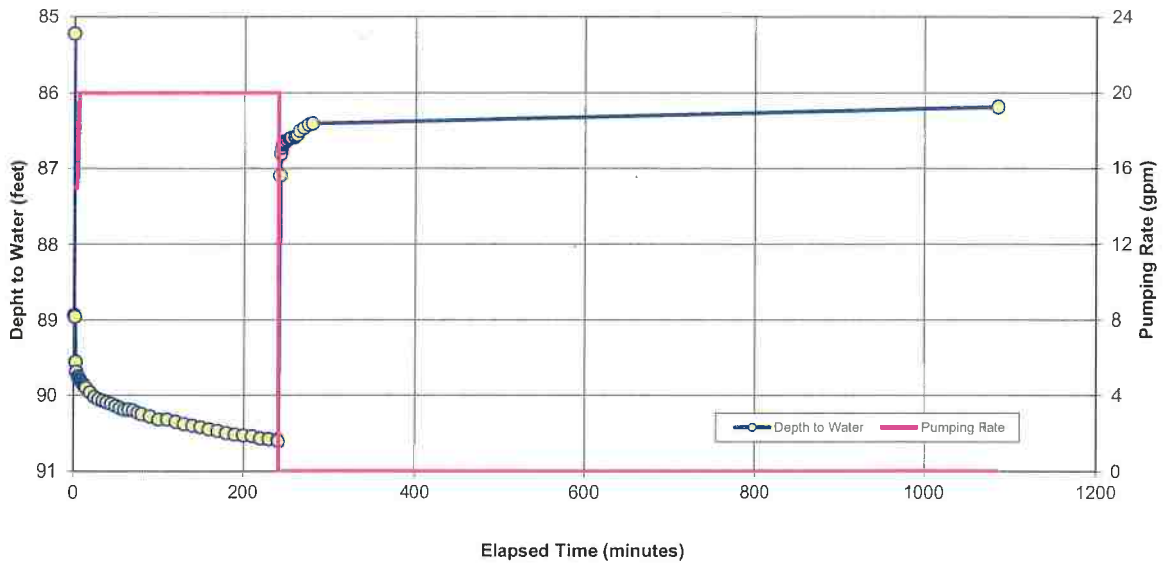
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1" = 933 ft



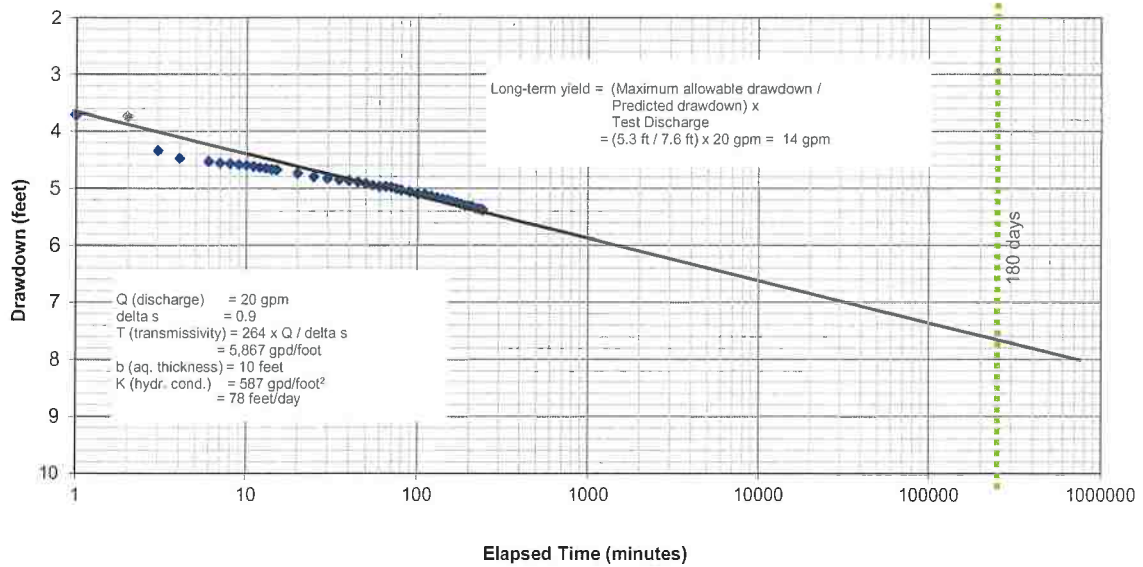
**ATTACHMENT B**  
**SITE WELL-YIELD TESTING**



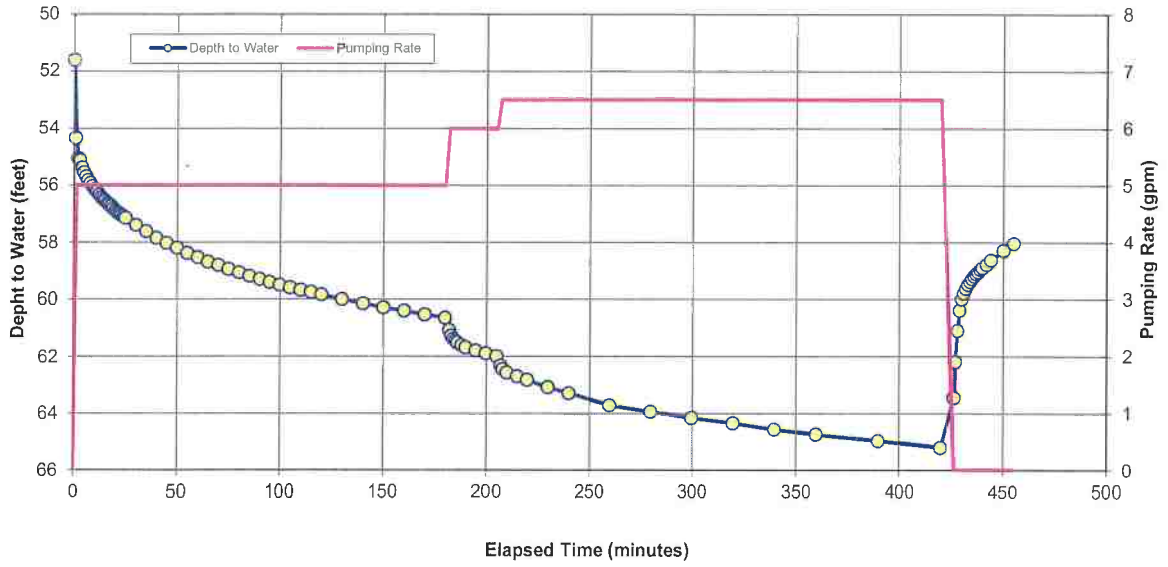
Depth to Water & Pumping Rate, Test on TW-3, 08/22/05  
PG&E 36 Site, Trinity County



Drawdown vs. Elapsed Time, Test on TW-3, August 22 - 23, 2005  
PG&E 36 Site, Trinity County



Depth to Water & Pumping Rate, Test on TW-6, 10/26/05  
 PG&E 36 Site, Trinity County



Drawdown vs. Elapsed Time, Test on TW-6, October 26, 2005  
 PG&E 36 Site, Trinity County

