DIVISION OF WATER RESOURCES

STATE OF NEVADA
DIVISION OF WATER RESOURCES

WELL DRILLERS REPORT

Please complete this form in its entirety

OFFICE USE ONLY
Log No. 96988 1/7
Permit No. 29096
Basin

1. OWNER SIERRA PACIFIC POWER CO. ADDRESS NORTH VALMY GENERATING STA. BATTLE MOUNTAIN NEVADA TEST HOLE #2

2. LOCATION NE ¼ SE ¼ Sec. 17 A.D. T. 35 N/S R. 44 E. HUMBOLT County

PERMIT NO.

3. TYPE OF WORK: New Well ☐ Recondition ☐ Deepen ☐ Other ☐

4. PROPOSED USE: Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☒ Stock ☐

5. TYPE WELL: Cable ☐ Rotary ☐ Other ☐

6. LITHOLOGIC LOG

Material	Water Strata	From	To	Thickness
TOP SOIL		0	2	2
CLAY SAND STKS. & GRAVEL		2	60	58
SANDSTONE & CLAY		60	94	34
CLAY SANDSTONE & GRAVEL		94	127	33
CLAY STA SAND		127	146	19
SAND HARD STKS.	14	146	160	14
CLAY STKS. SAND		160	245	85
SAND GRAVEL CLAY STK	45	245	290	45
CLAY SANDY CLAY		290	320	30
SAND GRAVEL & CLAY STK.	50	320	370	50
CLAY		370	380	10
SAND		380	382	2
CLAY SANDY CLAY		382	450	68
SAND GRAVEL & CLAY BRKN	90	450	480	30
CLAY HARD STKS.		480	525	45
SAND GRAVEL & CLAY BRKS		525	550	35
CLAY		550	555	5
SAND GRAVEL		555	570	15
CLAY SAND STKS		570	580	10
SAND GRAVEL		580	590	10
CLAY		590	605	15
SAND & GRAVEL	25	605	630	25
SHALE CLAY & ROCK		630	700	70
SAND GRAVEL & ROCK		700	710	10
CLAY		710	720	10
SAND GRAVEL		720	725	5
ROCK & CLAY (BLUE SHALE		725	980	255

Date started 9-13, 19 75
Date completed 9-26, 19 75

7. WELL TEST DATA

Pump RPM	G.P.M.	Draw Down	After Hours Pump

BAILER TEST

G.P.M. ..... Draw down ..... feet ..... hours
G.P.M. ..... Draw down ..... feet ..... hours
G.P.M. ..... Draw down ..... feet ..... hours

8. WELL CONSTRUCTION

Diameter hole ..... inches Total depth ..... feet
Casing record
Weight per foot ..... Thickness

Diameter	From	To
inches	feet	feet
inches	feet	feet
inches	feet	feet
inches	feet	feet
inches	feet	feet
inches	feet	feet

Surface seal: Yes ☐ No ☐ Type
Depth of seal ..... feet
Gravel packed: Yes ☐ No ☐
Gravel packed from ..... feet to ..... feet

Perforations:
Type perforation
Size perforation
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet

9. WATER LEVEL

Static water level ..... Feet below land surface
Flow ..... G.P.M.
Water temperature ..... ° F. Quality

10. DRILLERS CERTIFICATION

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

Name C. M. BRYANT JR.
Address HOUSTON TEXAS
Nevada contractor's license number 12323
Nevada driller's license number 557
Signed C. M. Bryant Jr.
Date 10-30-75

USE ADDITIONAL SHEETS IF NECESSARY

5471

PUMPING TEST SCREEN 266 ft to 286 ft 2/7

10-2-75 SIERRA PACIFIC POWER CO.

LOG ~~25155~~ 96988

BATTLE MTN. NEV- TH # 2

DATE			
TIME	P.L.	GPM	TEMP.
8:45 PM	PUMP ON		
9 PM.	101.20 FT.	21 GPM.	82°F
10 PM	128.04	21 "	83°F
11 PM	134.68	21	
12 MN.	139.61	21 GPM	83°F
1 AM	142.81	21 "	
2 AM	145.41	21 GPM	83°F
3 AM.	147.19	21 "	
4 AM	145.35	21 "	83°F
5 AM	145.40	21 "	
6 AM	146.81	21 "	
7 AM	147.94	21 "	84°F
8 AM	150.26	21 "	
8:30 AM	150.41	21 "	84°F
8:30	PUMP OFF 2HR REC-		
8:35 AM	67.14 FT.		
8:45 AM	39.95		
9 AM	31.88		
9:15 AM	28.08		
9:30 AM	25.81		
10 AM	22.71		
[illegible]:30 AM	20.69		

LOG 75188 3/7

PUMPING TEST -
SIERRA PAC - POWER CO.
30-15 TH # 2 WATER SAMPLE
TIME SCREEN 602' - 622 ft.

DATE	FT. PL	GPM	TEMP.
8:15 Pm	PUMP ON		
8:45 Pm	16.27 FT.	24 GPm	
9:45	16.62 "	24 GPm	
10:45 Pm	17.22 FT.	24 "	
11:45	17.29	24 "	
12:45 AM	17.61 FT.	24 "	
1:45 AM	18.06 FT	24 "	
2:45 AM	17.84 "	24 "	
3:45 AM	18.04	24 "	
4:45 "	18.07	24 GPm	
5:45 AM	18.09	24 "	
6:45 "	18.42	24 "	TEMP.
7:45 "	19.28	24 "	116°F
8:45	20.62	24 "	
10:15 AM	20.87	24 GPm	116°F
10:15 AM	PUMP OFF 24 R REC -		
10:20 AM	2.81 above G.L.		
10:30 AM	4.21 " "		
11:10 AM	5.22 above G.L.		
11:30	5.33 " "		
[illegible]15 Pm	5.38 ft above ground level.		

SIERRA PACIFIC POWER COMPANY
NORTH VALMY STATION
TEST HOLE 2

LOCATION: T35N R44E Sec 17ad

ESTIMATED GROUND LEVEL ELEVATION: 4,476 FEET
(From topographic map, contour interval 5 feet)

DRILLER: SINKER-DAVIS Sinker Division

DATE DRILLED: 9 and 10-..-5

LOG 4/7 96488

WATER SAMPLING DATA: WATER LEVEL AND PUMPING DATA	WATER SAMPLING DATA: WATER QUALITY DATA	GEOPHYSICAL LOG DATA: ESTIMATED WATER CONDUCTIVITY BY GEOPHYSICS (micromhos/cm)	GEOPHYSICAL LOG DATA: PERMEABLE FORMATION COUNT BY GEOPHYSICS (feet in interval shown)	DRILLERS' LOG: INTERVAL LOGGED	DRILLERS' LOG: DESCRIPTION	DRILL CUTTING SAMPLES: INTERVAL SAMPLED AND DESCRIPTION	SIEVE ANALYSES: EFFECTIVE SIZE (inches) and UNIFORMITY COEFFICIENT	DRILLING RATE (minutes/foot)
					Top soil			
					Sand, some gravel and clay			
					Clay with sand streaks			
					Sand			
			11		Clay and gravel streaks			
					Sand and clay			
					Sandstone and clay			
			36		Sand			
					Clay and sandstone streaks			
		<500						
					Clay, sandstone, gravel and sand (broken)			
					Sandstone			
					Sand and clay			
					Hard sandstone and clay			
					Clay, sandy streaks			
					Sand			
					Clay and sandy streaks			
			57		Sand and clay			
					Sand streaks, hard streaks			
					Hard lime and shale streaks			
					Sand			
					Hard lime and shale streaks			
					Clay and lime streaks			
					Clay, sandy streaks and lime streaks			
					Lime, hard, and clay			
					Clay			
					Sand, clay streaks	V silty vf-f sd; lt brn (*)	<.0029	
					Clay, sandy streaks			
		<500						
					Sand and clay	V silty vf sd; lt brn (*)	<.0029	0.35
		500				V sl sdy slt and cly; lt brn	<.0029	0.18
					Clay			0.25
		<500						
		700	51			Sdy slt; lt brn (*)	<.0029	0.2
					Sand, fine gravel and clay			
		<500				Sdy slt, s-lrg gvl; lt brn (*)	.0028 4.89	0.17
Static water level = 10.5' Airlift pumped 5hrs.@20-25gpm Hi-lift pumped 11-3/4 hrs @ 18.5-21.8 gpm One-Hr. Spec.Cap.= 0.17 gpm/ft Transmissibility = 270 gpd/ft	SiO2= 93 mg/l TDS @ 180°C=433mg/l Spec.Cond.= 600 micromhos/cm Temp. = 63°F	3500				Sdy slt and cly, s-lrg gvl; lt brn-blk (*)	<.0029	0.2
		750			Sand, gravel and clay streaks	Silty f-vc sd, sdy slt, s gvl; lt brn-brn (*)	.0026 4.79	0.2
		750				Vf-vc sd, s-lrg gvl, slt; blk-brn (*)	.0035 4.71	0.3
		900						
					Sand, gravel streaks and clay	V sdy slt, s-lrg gvl; lt brn (*)	<.0029	0.25
						Sdy slt, mnr m gvl; lt brn (*)	<.0029	0.3
					Clay - sand streaks			0.22
		1500						0.5
					Sand, gravel with few clay streaks	Silty f-m sd, mnr s-lrg gvl (*)	<.0029	0.3
		1000	54					0.27
		850			Clay, sand and gravel streaks			0.27
		1500						0.3
					Sand and gravel			0.3
					Clay, sand streaks			0.4
								0.4
					Clay			
					Clay, sand streaks			0.55
					Sand			
					Clay, few sand streaks			0.55
					Blue shale			
					Sand and gravel			0.6
			64		Clay - sand streaks			0.41
								0.4
					Clay and sandy clay			0.4
		>2000						
					Clay, sand streaks			0.5
					Sand, gravel and clay streaks	V sdy slt, mnr s gvl; lt brn-gy(*)	<.0029	0.3
					Sand, gravel and clay			
					Clay and gravel	V sdy slt, s-w gvl, m-c sd; lt brn-blk (*)	.0041 5.39	
					Clay			0.4
Static water level = 5.5' Airlift pumped 23.5 hrs.4-6gpm Transmissibility = 4 gpd/ft	SiO2 = 94.5 mg/l TDS @ 180°C = 1318 mg/l Spec.Cond. = 2240 micromhos/cm Temp. = 60°F ?				Clay and sand, broken			

DEPTH BELOW GROUND LEVEL, FEET: 0, 100, 200, 300, 400, 500

FIGURE 1

CONTINUED

LOG 75158 3/4

TEST HOLE 2 CONTINUED

WATER SAMPLING DATA		GEOPHYSICAL LOG DATA		DRILLERS' LOG		DRILL CUTTING SAMPLES	SIEVE ANALYSES	DRILLING RATE
WATER LEVEL AND PUMPING DATA	WATER QUALITY DATA	ESTIMATED WATER CONDUCTIVITY BY GEYOD (micromhos/cm)	PERMEABLE FORMATION COUNT BY GEYOD (feet in interval shown)	INTERVAL LOGGED	DESCRIPTION	INTERVAL SAMPLED AND DESCRIPTION	EFFECTIVE SIZE (inches) and UNIFORMITY COEFFICIENT	(minutes/foot)
					Sand and clay, broken			1.0
					Brown clay, hard streaks			
					Blue clay, sand and gravel breaks	V silty vf-f sd, mnr cly; lt brn (*)	.0029	
					Sand, gravel, blue clay streaks			0.5
					Blue clay, sand and gravel, broken, hard streaks			0.95
					Sand, gravel			
					Sand, gravel, clay breaks	V silty vf-m sd, mnr c gvl; lt brn (*)	<.0029	0.64
					Sand and sandy clay			
						Silty vf-vc sd and m-m gvl; lt-dk brn (*)	<.0029	0.5
					Sand gravel, clay breaks, blue			
						Silty vf-vc sd and m-m gvl; lt brn (*)	<.0029	0.6
					Sand and blue clay, broken			
			69					0.55
					Clay, blue, and sand streaks			
					Sand			1.0
					Clay and hard streaks			
					Hard streaks - rock			3.13
					Clay			0.58
					Clay, hard streaks			
					Sand, hard streaks			2.3
Static water level = 5.0' above ground level. Air lift pumped 5 hrs. @ 52.7-63 gpm. Hi-lift pumped 14 hrs. @ 23-24 gpm. One-Hr. Spec.Cap.=0.8 gpm/ft. Transmissibility=2550 gpd/ft	SiO_2 = 123 mg/l TDS @ 180°C=1416 mg/l Spec.Cond. = 2490 micromhos/cm Temp. = 115°F	2200			Hard streaks, blue gray shale, hard			2.4
					Sand and gravel			
		2000			Clay, brown, and blue shale and hard rock			4.1
		1850			Brown clay and blue shale, reddish-brown rock			
					Rock and clay streaks, shale			1.7
		1900			Rock and clay, shale			
					Rock, shale and clay streaks			1.3
					Rock, shale, clay streaks and sandy streaks			0.5
					Shale, rock and clay			0.8
			33					
					Shale, rock, clay and few sand streaks			0.8
								0.8
						Vf-vc sd, slty sd, s gvl; lt brn (*)	.0028 4.64	0.45
					Sandy streaks, clay and shale			
					Clay and shale streaks and rock, hard			1.8
					Clay, sandy streaks, gravel and rock, broken	S-lrg gvl, vf-vc sd, slty sd; lt brn-blk (*)	<.0029	0.8
						Vf-vc sd, slty vf-vc sd, m-m gvl; lt-dk brn (*)	<.0029	0.6
					Rock			
					Clay, sandy streaks, rock	S-m gvl, slty vf-vc sd; lt-dk brn (*)	<.0029	0.9
								1.2
			22					1.5
					Clay, rock and shale, hard			4.7
								2.7
					Clay, rock and shale			1.5
						Vf-vc sd, mnr slt; brn-blk	.0027 4.52	0.2
								0.5
			24		Clay, rock, shale and sandy streaks	Vf-vc sd, s-m gvl, mnr slt; drk brn-blk (*)	.0029 5.17	0.55
						Vf-vc sd, s-lrg gvl, slty sd and gvl; bru-blk	<.0029	0.45
					Clay, rock, shale, sand streaks, broken	S-lrg gvl, vc-c sd, slty sd and gvl; brn-blk	.004 5	0.5
					Rock, shale streaks, broken			1.1
								1.2
					Blue sandy clay and rock, sand streaks			
					Blue clay, rock streaks			
					Sand, sandy clay and blue clay			0.8
					Blue shale and rock streaks			
					Gray sandy clay and rock streaks			1.7
								3.0
			38		Brown clay, blue shale, rock			2.0
					Rock and brown clay			
					Soft brown clay and rock streaks			
					Clay and sandy streaks			
					Clay, rock streaks			
						Vf-m sd, slty vf-m sd, s-m gvl; b[illegible]	[illegible]	
			4		Rock, few clay streaks			
				T.D. 980'				

DEPTH BELOW GROUND LEVEL, FEET: 500, 600, 700, 800, 900, 1,000

(*) Indicates effervescence in dilute hydrochloric acid

LOG 75188 6/7

SINGER - LAYNE TEXAS COMPANY, DIV.

HOUSTON -:- DALLAS

WELL LOG

REPORT NO.
S. O. 1501-5942
PAGE 1 of 2
FILE NO. 3798
DATE 9-26-75

CUSTOMER LOCATION

FOR Sierra Pacific Power Co.

LOCATION WELL Battle Mountain

SURVEY FIELD

COUNTY Humboldt STATE Nevada

OTHER LAND MARKS North Valmy Generating Station

WELL DATA

NAME WELL WELL NO. T.H. 2

ELEVATION DATUM

RT C GR

TEST HOLE SIZE 7-7/8" TD 980'

DATE STARTED DRILLING 9-22-75

DATE FINISHED DRILLING 9-26-75

DRILLER Thompson RIG NO. 7

TYPE MUD Gel NO. SACKS

ELECTRIC LOG yes TYPE Schlumberger

SURVEY TYPE

OTHER Garcia

DEPTH STRATA	EACH STRATUM	DESCRIPTION FORMATION	SAMPLES DEPTH	SAMPLES TYPE	SAMPLES NUMBER
0		Surface			
2'	2'	Top soil			
14'	12'	Sand, gravel & clay stks.			
25'	11'	Clay & sand stks.			
29'	4'	Sand			
40'	11'	Clay & gravel stks.			
60'	20'	Sand & clay			
71'	11'	Sandstone & clay			
73'	2'	Sand			
94'	21'	Clay & sandstone sks.			
114'	20'	Clay, sandstone, gravel & sand (Brkn.)			
123'	9'	Sand & clay			
127'	4'	Hard sandstone & clay			
141'	14'	Clay & sandy stks.			
152'	11'	Clay & sand			
159'	7'	Hard lime & shale stks.			
167'	8'	Clay & lime			
181'	14'	Clay, sandy stks. & lime stks.			
186'	5'	Lime & clay			
196'	10'	Sand & clay stks.			
209'	13'	Clay & sandy stks.			
232'	23'	Sand & clay stks.			
245'	13'	Clay			
296'	51'	Sand, gravel & clay stks.			
312'	16'	Sand, gravel stks. & clay			
325'	13'	Clay & sand stks.			
341'	16'	Sand, gravel, few clay stks.			
380'	39'	Clay, sand & gravel stks.			
382'	2'	Sand & gravel			
417'	35'	Clay & sand stks.			
420'	3'	Sand			
430'	10'	Clay & few sand stks.			
434'	4'	Blue clay			
435'	1'	Sand & gravel			
476'	41'	Clay & sand stks.			
492'	16'	Sand, gravel & clay			
496'	4'	Clay, gravel & hard stks.			
500'	4'	Clay & sand (broken)			

Log 75188 7/7

SINGER - LAYNE TEXAS COMPANY DIV.

HOUSTON -:- DALLAS

WELL LOG

REPORT NO.
S. O. 1501-5942
PAGE 2 of 2
FILE NO. 3798
DATE 9-26-75

CUSTOMER LOCATION

FOR Sierra Pacific Power Co.

LOCATION WELL

SURVEY FIELD

COUNTY STATE

OTHER LAND MARKS

WELL DATA

NAME WELL WELL NO. T.H. 2

ELEVATION DATUM

RT C GR

TEST HOLE SIZE TD

DATE STARTED DRILLING

DATE FINISHED DRILLING

DRILLER RIG NO.

TYPE MUD NO. SACKS

ELECTRIC LOG TYPE

SURVEY TYPE

OTHER

DEPTH STRATA	EACH STRATUM	DESCRIPTION FORMATION	SAMPLES DEPTH	TYPE	NUMBER
504'	4'	Brown clay & hard stks.			
505'	1'	Sand			
508'	3'	Clay & hard stks.			
511'	3'	Sand & gravel			
527'	16'	Blue clay, sand & gravel (broken)			
530'	3'	Sand & gravel			
558'	28'	Sand, gravel & blue clay (broken)			
561'	3'	Sand & blue clay			
574'	13'	Blue clay & sand stks.			
575'	1'	Sand			
578'	3'	Clay & hard stks.			
581'	3'	Rock			
593'	12'	Clay & hard stks.			
596'	3'	Sand & hard stks.			
609'	13'	Blue clay, shale & hard stks.			
612'	3'	Sand & gravel			
644'	32'	Rock, shale & clay stks.			
651'	7'	Rock, shale & sandy stks.			
657'	6'	Shale, rock & clay			
684'	27'	Shale, rock, clay & few sand stks.			
696'	12'	Sandy stks., clay & shale			
702'	6'	Clay, shale & rock stks.			
721'	19'	Clay, sand, gravel & rock (broken)			
723'	2'	Rock			
730'	7'	Clay, rock & sand stks.			
785'	55'	Clay, rock & shale			
823'	38'	Clay, rock, shale & few sand stks.			
833'	10'	Clay, rock, shale & sand (broken)			
865'	32'	Blue clay & rock stks.			
871'	6'	Sand, sandy clay & blue shale			
876'	5'	Blue clay & rock			
883'	7'	Gray sandy clay & rock stks.			
905'	22'	Brown clay, blue shale & rock			
920'	15'	Rock & brown clay			
933'	13'	Soft brown clay & rock stks.			
937'	4'	Clay & sandy stks.			
980'	43'	Clay & rock			