RCP, Inc

801 Louisiana, Ste.200
Houston, Texas 77002
Redacted

October 13, 2011

Pacific Gas and Electric Company
350 N. Wiget
Walnut Creek, CA 94598
Attention: Redacted

Test Contractor:	ARB -- T-33 10/13/2011
Asset Owner:	Pacific Gas and Electric Company -- 41497356-T33
Construction Contractor:	ARB -- 0629-53-3500
Test Section:	PG&E T-33 L-132, MP 29.05 - 31.93
Test Date:	October 13, 2011
Certificate Number:	RCP 61362 - T-33, L-132, MP 29.05 - 31.93

To whom it may concern,

This letter is to certify that the hydrostatic test performed on pipe owned by Pacific Gas and Electric Company and tested by ARB met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3).

The test segment was subjected to a spike pressure test of 708 psig for 30 minutes, without observed leakage or yielding of the pipe segment. The 30 minute spike test and subsequent pressure reduction with volume bleed was included and is part of the 9.42 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 9.42 continuous hours without evidence of a leak failure. Water was the test medium. At the highest elevation point in the test section, the calculated test pressure was 624 psig and the established MAOP is 416 psig.

Pressure decreased 66 psi during the test. 29,593.60 ounces of fluid was intentionally released from the test section Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 9,041.32 ounces, gain, which is equivalent to a 1.49 °F change in pipe temperature and larger than the anticipated error attributed to the temperature measurement instrumentation utilized.

Test pressure did not remain steady even though no leaks were observed. The volumetric gain is attributed to the inherent error associated with physically attempting to measure the average temperature of 16,207 feet of buried and 60 feet of exposed pipe from a single point on the line.

Sincerely,

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Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41497356-T33
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	ARB	Project No.	T-33 10/13/2011
Test Section	PG&E T-33 L-132, MP 29.05 - 31.93		
File Name	RCP 61362 - T-33, L-132, MP 29.05 - 31.93		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 13-Oct-11

Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3)

This is to certify that the pipeline or pipeline section(s) described below was hydrostatically pressure tested in accordance with the following procedure:

Pipeline:	PG&E T-33 L-132, MP 29.05 - 31.93		
From:	161+21	To:	0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	16 ft	30.000 in.	0.500 in.	API5L-X60, DSAW, Arc Weld, Steel	2,000 psi
2	26 ft	30.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,625 psi
3	14,598 ft	30.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,300 psi
4	1,600 ft	30.000 in.	0.313 in.	API5L-X52, DSAW, Arc Weld, Steel	1,083 psi
5	1 ft	6.625 in.	0.280 in.	API5L-Grade B, SM, Arc Weld, Steel	2,958 psi
6	1 ft	6.625 in.	0.280 in.	API5L-Grade B, SM, Arc Weld, Steel	2,958 psi
7	7 ft	2.375 in.	0.154 in.	API5L-Grade B, SM, Arc Weld, Steel	4,539 psi
8	18 ft	30.000 in.	0.750 in.	API5L-X70, DSAW, Arc Weld, Steel	3,500 psi

Initial Test Conditions

Pressure at Test Point:	708 psig	Date/Time:	10/13/11 9:10 AM	Pipe Temperature Unrestrained:	66.0 °F
Ambient Temperature:	80.0 °F			Restrained:	67.0 °F
		Elevation @ Test Point:	570.0 ft	Location:	161+21
Pressure @ High Point (Cal/Measure):	690 psig	Elevation @ High Point:	611.0 ft	Location:	157+98
Pressure @ Low Point (Cal/Measure):	888 psig	Elevation @ Low Point:	155.0 ft	Location:	115+66

Final Test Conditions

Pressure at Test Point:	642 psig	Date/Time:	10/13/11 6:35 PM	Pipe Temperature Unrestrained:	75.0 °F
Ambient Temperature:	69.0 °F			Restrained:	66.0 °F
		Elevation @ Test Point:	570.0 ft	Location:	161+21
Pressure @ High Point (Cal/Measure):	624 psig	Elevation @ High Point:	611.0 ft	Location:	157+98
Pressure @ Low Point (Cal/Measure):	822 psig	Elevation @ Low Point:	155.0 ft	Location:	115+66
Total Fluid Injected:				Volume gain	
Total Fluid Withdrawn:		29593.60 fluid ounces			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):		9,041.32 oz	gain	0.0124%	1.491 °F equivalent
Test Duration:	9.42 hours				

Minimum Test Pressure:	Test Point	640 psig	Max Elevation	622 psig	Min Elevation 820 psig
Maximum Test Pressure:		708 psig		690 psig	888 psig
% SMYS :		16.0%		53.1%	68.3%
Test Segment Observed % SMYS :			Minimum	16.0%	Maximum 72.6%
				Minimum Test Pressure (Calculated/Measured):	624 psig
Maximum Allowable Operating Pressure:				DOT Part 192	Test Factor= 1.50 416 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 708 psig for 30 minutes, without observed leakage or yielding of the pipe segment. The 30 minute spike test and subsequent pressure reduction with volume bleed was included and is part of the 9.42 hour test duration period. No leaks were observed during the test period. The test section included 16,207 feet of buried and 60 feet of exposed pipe. Pressure lost 66 psi during the test. The buried pipe segment lost 1°F fluid temperature and the exposed pipe segment gained 9°F. 29,593.60 ounces of fluid was intentionally released from the test section Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 9,041.32 ounces, gain, which is equivalent to a 1.49 °F change in pipe temperature and larger than the anticipated error attributed to the temperature measurement instrumentation utilized. Test pressure did not remain steady even though no leaks were observed. The volumetric gain is attributed to the inherent error associated with physically attempting to measure the average temperature of 16,207 feet of buried and 60 feet of exposed pipe from a single point on the line.
Remarks	during the middle of ramp up it appeared that the mechanical stroke counter did not count all strokes. See SS curve data. The counter was pacing at +/- 10 strokes a second.	

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497356-T33
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	ARB	Project No.	T-33 10/13/2011
Test Section	PG&E T-33 L-132, MP 29.05 - 31.93		
File Name	RCP 61362 - T-33, L-132, MP 29.05 - 31.93		

Date 13-Oct-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	10/13/11	8:30 AM	464 psig	79 °F	66 °F	68 °F	Start Spike		
2	10/13/11	8:31 AM	474 psig	79 °F	66 °F	68 °F	Inject		4,272 oz.
3	10/13/11	8:32 AM	484 psig	79 °F	66 °F	68 °F	Inject		4,425 oz.
4	10/13/11	8:33 AM	494 psig	79 °F	66 °F	68 °F	Inject		3,525 oz.
5	10/13/11	8:34 AM	504 psig	79 °F	66 °F	68 °F	Inject		2,381 oz.
6	10/13/11	8:35 AM	514 psig	79 °F	66 °F	68 °F	Inject		2,485 oz.
7	10/13/11	8:36 AM	524 psig	79 °F	66 °F	68 °F	Inject		2,656 oz.
8	10/13/11	8:37 AM	534 psig	79 °F	66 °F	68 °F	Inject		2,577 oz.
9	10/13/11	8:38 AM	544 psig	79 °F	66 °F	68 °F	Inject		3,195 oz.
10	10/13/11	8:39 AM	554 psig	79 °F	66 °F	68 °F	Inject		3,556 oz.
11	10/13/11	8:40 AM	564 psig	79 °F	66 °F	68 °F	Inject		4,149 oz.
12	10/13/11	8:41 AM	574 psig	79 °F	66 °F	68 °F	Inject		4,070 oz.
13	10/13/11	8:42 AM	584 psig	79 °F	66 °F	68 °F	Inject		3,433 oz.
14	10/13/11	8:43 AM	594 psig	79 °F	66 °F	68 °F	Inject		4,253 oz.
15	10/13/11	8:45 AM	604 psig	79 °F	66 °F	68 °F	Inject		4,468 oz.
16	10/13/11	8:47 AM	614 psig	79 °F	66 °F	68 °F	Inject		4,486 oz.
17	10/13/11	8:49 AM	624 psig	79 °F	66 °F	68 °F	Inject		4,492 oz.
18	10/13/11	8:51 AM	634 psig	79 °F	66 °F	68 °F	Inject		4,119 oz.
19	10/13/11	8:53 AM	644 psig	79 °F	66 °F	68 °F	Inject		4,670 oz.
20	10/13/11	8:55 AM	654 psig	79 °F	66 °F	68 °F	Inject		4,339 oz.
21	10/13/11	8:57 AM	664 psig	79 °F	66 °F	68 °F	Inject		4,437 oz.
22	10/13/11	8:59 AM	674 psig	79 °F	66 °F	68 °F	Inject		4,241 oz.
23	10/13/11	9:01 AM	684 psig	79 °F	66 °F	68 °F	Inject		4,425 oz.
24	10/13/11	9:03 AM	694 psig	79 °F	66 °F	68 °F	Inject		4,217 oz.
25	10/13/11	9:05 AM	704 psig	79 °F	66 °F	68 °F	Inject		4,021 oz.
26	10/13/11	9:07 AM	708 psig	79 °F	66 °F	68 °F	Inject		1,414 oz.
27	10/13/11	9:10 AM	708 psig	80 °F	66 °F	67 °F	On Test		
28	10/13/11	9:20 AM	708 psig	81 °F	66 °F	67 °F			
29	10/13/11	9:30 AM	708 psig	81 °F	66 °F	67 °F			
30	10/13/11	9:40 AM	708 psig	83 °F	66 °F	67 °F	End Spike		
31	10/13/11	11:00 AM	640 psig	83 °F	66 °F	66 °F	Bleed	29,594 oz.	
32	10/13/11	11:05 AM	640 psig	83 °F	67 °F	66 °F			
33	10/13/11	11:20 AM	641 psig	82 °F	67 °F	66 °F			
34	10/13/11	11:35 AM	641 psig	82 °F	68 °F	66 °F			
35	10/13/11	11:50 AM	641 psig	80 °F	68 °F	66 °F			
36	10/13/11	12:05 PM	641 psig	81 °F	68 °F	66 °F			
37	10/13/11	12:20 PM	641 psig	82 °F	69 °F	66 °F			
38	10/13/11	12:35 PM	641 psig	82 °F	70 °F	66 °F			
39	10/13/11	12:50 PM	641 psig	82 °F	70 °F	66 °F			
40	10/13/11	1:05 PM	641 psig	82 °F	70 °F	66 °F			
41	10/13/11	1:20 PM	641 psig	82 °F	71 °F	66 °F			
42	10/13/11	1:35 PM	641 psig	82 °F	71 °F	66 °F			
43	10/13/11	1:50 PM	641 psig	82 °F	72 °F	66 °F			

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497356-T33
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	ARB	Project No.	T-33 10/13/2011
Test Section	PG&E T-33 L-132, MP 29.05 - 31.93		
File Name	RCP 61362 - T-33, L-132, MP 29.05 - 31.93		

Date 13-Oct-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
44	10/13/11	2:05 PM	641 psig	83 °F	72 °F	66 °F			
45	10/13/11	2:20 PM	641 psig	83 °F	73 °F	66 °F			
46	10/13/11	2:35 PM	642 psig	84 °F	73 °F	66 °F			
47	10/13/11	2:50 PM	642 psig	84 °F	74 °F	66 °F			
48	10/13/11	3:05 PM	642 psig	84 °F	74 °F	66 °F			
49	10/13/11	3:20 PM	642 psig	84 °F	74 °F	66 °F			
50	10/13/11	3:35 PM	642 psig	83 °F	74 °F	66 °F			
51	10/13/11	3:50 PM	642 psig	83 °F	74 °F	66 °F			
52	10/13/11	4:05 PM	642 psig	82 °F	74 °F	66 °F			
53	10/13/11	4:20 PM	642 psig	82 °F	75 °F	66 °F			
54	10/13/11	4:35 PM	642 psig	81 °F	75 °F	66 °F			
55	10/13/11	4:50 PM	642 psig	81 °F	75 °F	66 °F			
56	10/13/11	5:05 PM	642 psig	79 °F	75 °F	66 °F			
57	10/13/11	5:20 PM	642 psig	79 °F	75 °F	66 °F			
58	10/13/11	5:35 PM	642 psig	77 °F	75 °F	66 °F			
59	10/13/11	5:50 PM	642 psig	76 °F	75 °F	66 °F			
60	10/13/11	6:05 PM	642 psig	76 °F	75 °F	66 °F			
61	10/13/11	6:20 PM	642 psig	71 °F	75 °F	66 °F			
62	10/13/11	6:35 PM	642 psig	69 °F	75 °F	66 °F	End of Test		
63	10/13/11	6:45 PM	642 psig	69 °F	75 °F	66 °F			
							Spike Test		94,302.9 oz.
							Hydrostatic Test	29,593.6 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	708 psig
		Low Test Pressure:	640 psig

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Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497356-T33
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	ARB	Project No.	T-33 10/13/2011
Test Section	PG&E T-33 L-132, MP 29.05 - 31.93	WATER	
File Name	RCP 61362 - T-33, L-132, MP 29.05 - 31.93		

General Pipe Data

Description	Segment										
	1	2	3	4	5	6	7	8			
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained			
Outside Diameter	30.000 in.	30.000 in.	30.000 in.	30.000 in.	6.625 in.	6.625 in.	2.375 in.	30.000 in.			
Wall Thickness	0.500 in.	0.375 in.	0.375 in.	0.313 in.	0.280 in.	0.280 in.	0.154 in.	0.750 in.			
Inside Diameter	29.000 in.	29.250 in.	29.250 in.	29.375 in.	6.065 in.	6.065 in.	2.067 in.	28.500 in.			
Spec./Grade	API5L-X60	API5L-X65	API5L-X52	API5L-X52	API5L-Grade B	API5L-Grade B	API5L-Grade B	API5L-X70			
Length Unrestrained	16 ft	26 ft						18 ft			
Length Restrained			14,598 ft	1,600 ft	1 ft	1 ft	7 ft				
Temperature -- On Test	66 °F	66 °F	67.0 °F	67.0 °F	67.0 °F	67.0 °F	67.0 °F	66.0 °F			
Temperature -- End of Test	75 °F	75 °F	66.0 °F	66.0 °F	66.0 °F	66.0 °F	66.0 °F	75.0 °F			
Pressure -- On Test	708 psig	708 psig	708 psig	708 psig	708 psig	708 psig	708 psig	708 psig			
Pressure -- End of Test	642 psig	642 psig	642 psig	642 psig	642 psig	642 psig	642 psig	642 psig			

Unrestrained Pipe

Sum:	Vo	2,053.10 gal 262,796 oz.		Vtp1	2,060.28 gal 263,715 oz.		Vtp2		2,057.58 gal 263,370 oz.		
Vo Unrestrained	549 gal	908 gal						597 gal			
Fwp 1	1.002168	1.002168						1.002168			
Fpp 1	1.001711	1.002301						1.001121			
Fpt 1	1.000109	1.000109						1.000109			
Fwt 1	1.000582	1.000582						1.000582			
Fpwt 1 = Fpt/Fwt	0.999527	0.999527						0.999527			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	550.87 gal	911.21 gal						598.20 gal			
Fwp 2	1.001965	1.001965						1.001965			
Fpp 2	1.001552	1.002087						1.001017			
Fpt 2	1.000273	1.000273						1.000273			
Fwt 2	1.001688	1.001688						1.001688			
Fpwt = Fpt/Fwt	0.998587	0.998587						0.998587			
Vtp = Vo(Fwp)(Fpp)(Fpwt)	550.16 gal	909.97 gal						597.45 gal			

Restrained Pipe

Sum:	Vo	565,904.05 gal 72,435,719 oz.		Vtp1	567,775.83 gal 72,675,306 oz.		Vtp2		567,617.96 gal 72,655,099 oz.		
Vo Unrestrained			509,570 gal	56,329 gal	2 gal	2 gal	1 gal				
Fwp 1			1.002168	1.002168	1.002168	1.002168	1.002168				
Fpp 1			1.001700	1.002044	1.000490	1.000490	1.000313				
Fpt 1			1.000085	1.000085	1.000085	1.000085	1.000085				
Fwt 1			1.000681	1.000681	1.000681	1.000681	1.000681				
Fpwt 1 = Fpt/Fwt			0.999404	0.999404	0.999404	0.999404	0.999404				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			511,238 gal	56,533 gal	2 gal	2 gal	1 gal				
Fwp 2			1.001965	1.001965	1.001965	1.001965	1.001965				
Fpp 2			1.001541	1.001852	1.000443	1.000443	1.000283				
Fpt 2			1.000073	1.000073	1.000073	1.000073	1.000073				
Fwt 2			1.000582	1.000582	1.000582	1.000582	1.000582				
Fpwt = Fpt/Fwt			0.999491	0.999491	0.999491	0.999491	0.999491				
Vtp = Vo(Fwp)(Fpp)(Fpwt)			511,098 gal	56,516 gal	2 gal	2 gal	1 gal				

Combined Pipe

Sum:	Vo	567,957.15 gal 72,698,515 oz.	Vtp1	569,836.11 gal 72,939,021 oz.	Vtp2	569,675.54 gal 72,918,469 oz.

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Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41497356-T33
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	ARB	Project No.	T-33 10/13/2011
Test Section	PG&E T-33 L-132, MP 29.05 - 31.93		WATER
File Name	RCP 61362 - T-33, L-132, MP 29.05 - 31.93		

General Pipe Data

Description	Segment 1	2	3	4	5	6	7	8
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained
Outside Diameter	30.000 in.	30.000 in.	30.000 in.	30.000 in.	6.625 in.	6.625 in.	2.375 in.	30.000 in.
Wall Thickness	0.500 in.	0.375 in.	0.375 in.	0.313 in.	0.280 in.	0.280 in.	0.154 in.	0.750 in.
Inside Diameter	29.000 in.	29.250 in.	29.250 in.	29.375 in.	6.065 in.	6.065 in.	2.067 in.	28.500 in.
Spec./Grade	API5L-X60	API5L-X65	API5L-X52	API5L-X52	API5L-Grade B	API5L-Grade B	API5L-Grade B	API5L-X70
Length Unstrained	16.00 ft	26.00 ft						18 ft
Length Restrained			14,598 ft	1,600 ft	1 ft	1 ft	7 ft	
Temperature -- On Test	70 °F	70 °F	66 °F	66 °F	66 °F	66 °F	66 °F	70 °F
Temperature -- End of Test	71 °F	71 °F	67 °F	67 °F	67 °F	67 °F	67 °F	71 °F
Pressure -- On Test	675 psig	675 psig	675 psig	675 psig	675 psig	675 psig	675 psig	675 psig
Pressure -- End of Test	675 psig	675 psig	675 psig	675 psig	675 psig	675 psig	675 psig	675 psig

Unrestrained Pipe

Sum:	Vo	2,053.10 gal / 262,796 oz.	Vtp1	2,059.11 gal / 263,566 oz.	Vtp2	2,058.88 gal / 263,536 oz.
Vo Unrestrained	549 gal	908 gal				597 gal
Fwp 1	1.002066	1.002066				1.002066
Fpp 1	1.001631	1.002194				1.001069
Fpt 1	1.000182	1.000182				1.000182
Fwt 1	1.001036	1.001036				1.001036
Fpwt 1 = Fpt/Fwt	0.999146	0.999146				0.999146
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	550.57 gal	910.67 gal				598 gal
Fwp 2	1.002066	1.002066				1.002066
Fpp 2	1.001631	1.002194				1.001069
Fpt 2	1.000200	1.000200				1.000200
Fwt 2	1.001170	1.001170				1.001170
Fpwt = Fpt/Fwt	0.999032	0.999032				0.999032
Vtp = Vo(Fwp)(Fpp)(Fpwt)	550.50 gal	910.57 gal				598 gal

Restrained Pipe

Sum:	Vo	565,904.05 gal / 72,435,719 oz.	Vtp1	567,720.46 gal / 72,668,219 oz.	Vtp2	567,673.32 gal / 72,662,185 oz.
Vo Restrained		509,570 gal	56,329 gal	2 gal	2 gal	1 gal
Fwp 1		1.002066	1.002066	1.002066	1.002066	1.002066
Fpp 1		1.001619	1.001946	1.000465	1.000465	1.000296
Fpt 1		1.000073	1.000073	1.000073	1.000073	1.000073
Fwt 1		1.000582	1.000582	1.000582	1.000582	1.000582
Fpwt 1 = Fpt/Fwt		0.999491	0.999491	0.999491	0.999491	0.999491
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		511,189 gal	56,527 gal	2 gal	2 gal	1 gal
Fwp 2		1.002066	1.002066	1.002066	1.002066	1.002066
Fpp 2		1.001622	1.001950	1.000469	1.000469	1.000300
Fpt 2		1.000085	1.000085	1.000085	1.000085	1.000085
Fwt 2		1.000681	1.000681	1.000681	1.000681	1.000681
Fpwt = Fpt/Fwt		0.999404	0.999404	0.999404	0.999404	0.999404
Vtp = Vo(Fwp)(Fpp)(Fpwt)		511,147 gal	56,522 gal	2 gal	2 gal	1 gal

Combined Pipe

Sum:	Vo	567,957.15 gal / 72,698,515 oz.	Vtp1	569,779.57 gal / 72,931,785 oz.	Vtp2	569,732.19 gal / 72,925,721 oz.
1 °F Change	47.38 gal	6,064.72 oz.				

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RCP

Hydrostatic Test Pipe Data Table

Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	16 ft	Unrestrained	30.000 in.	0.5000 in.	API5L-X60	2,000 psig	Steel	Arc Weld	DSAW
2	26 ft	Unrestrained	30.000 in.	0.3750 in.	API5L-X65	1,625 psig	Steel	Arc Weld	DSAW
3	14,598 ft	Restrained	30.000 in.	0.3750 in.	API5L-X52	1,300 psig	Steel	Arc Weld	DSAW
4	1,600 ft	Restrained	30.000 in.	0.3125 in.	API5L-X52	1,083 psig	Steel	Arc Weld	DSAW
5	1 ft	Restrained	6.625 in.	0.2800 in.	API5L-Grade B	2,958 psig	Steel	Arc Weld	SM
6	1 ft	Restrained	6.625 in.	0.2800 in.	API5L-Grade B	2,958 psig	Steel	Arc Weld	SM
7	7 ft	Restrained	2.375 in.	0.1540 in.	API5L-Grade B	4,539 psig	Steel	Arc Weld	SM
8	18 ft	Unrestrained	30.000 in.	0.7500 in.	API5L-X70	3,500 psig	Steel	Arc Weld	DSAW

Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget	
	Walnut Creek, CA 94598	41497356-T33
	Attention: Redacted	
Construction Company	ARB	Job Number
Address	1875 Loveridge Road	
	Pittsburg, CA 94565	0629-53-3500
	Attention: Redacted	
Hydrostatic Test Co.	ARB	Project No.
Address	1875 Loveridge Road	
	Pittsburg , Ca. 94565	T-33 10/13/2011
	Attention: Redacted	
Test Section	PG&E T-33 L-132, MP 29.05 - 31.93	
	From: 161+21	
	To: 0+00	
File Name	RCP 61362 - T-33, L-132, MP 29.05 - 31.93	

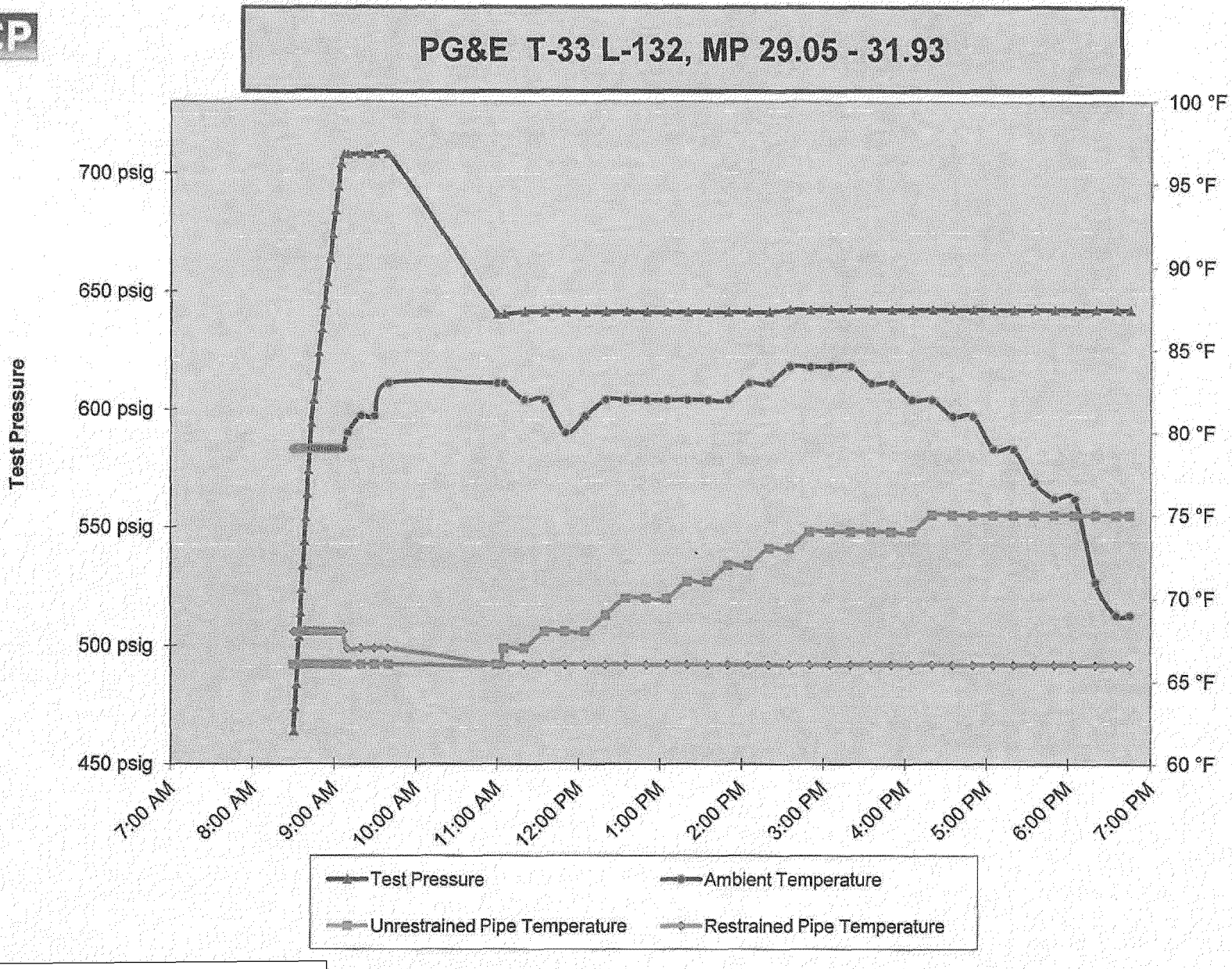
Part II – Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

Note: Minimum test pressure and duration are not to be changed without written approval.

Time and Date Test Pressure Reached	10/13/11 9:10 AM	Elevation at Test Point	570 ft	Min. Required Test Press At Test Point (1)	617.77 psig	Max. Allowable Test Press at Test Point (4)	715.17 psig
Time and Date Test Ended	10/13/11 6:35 PM	Max. Elevation in Test Section	611 ft	Min. Indicated Test Pressure (2)	640.00 psig	Max. Indicated Test Pressure (5)	708.00 psig
Actual Duration of Test	9 hours 25 minutes	Min. Elevation in Test Section	155 ft	Min. Test Pressure at Max. Elevation (3)	622.23 psig	Max. Test Pressure at Min. Elevation (6)	887.83 psig

Redacted

RCP



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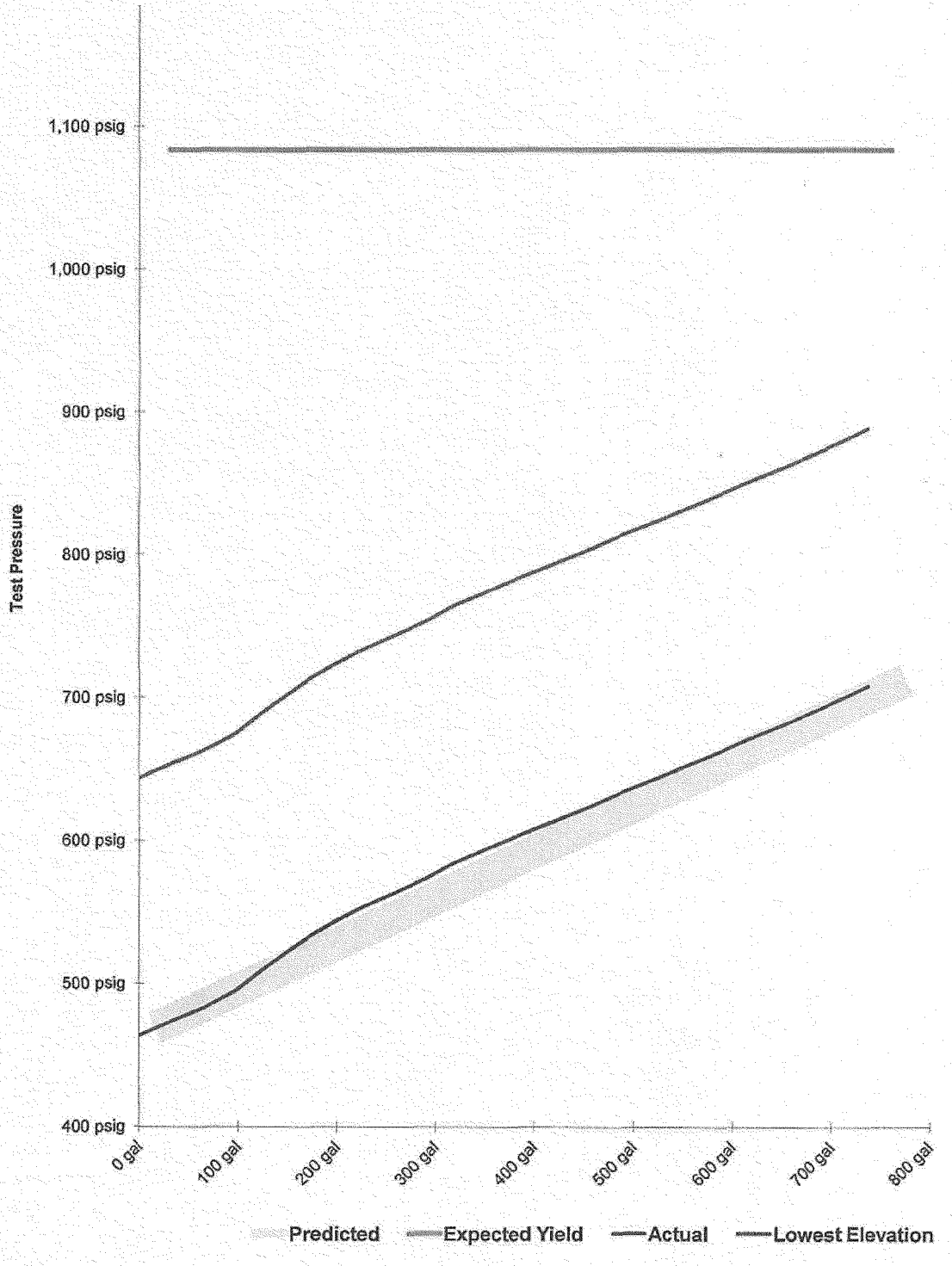
RCP

Spike Pressure Test
Stress Strain Curve -- PG&E T-33 L-132, MP 29.05 - 31.93



RCP

Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
464 psig	0	0.00 gal		0	0.000
474 psig	698	33.37 gal	31.15 gal	3.337	3.115
484 psig	1421	67.94 gal	62.31 gal	3.457	3.115
494 psig	1997	95.48 gal	93.46 gal	2.754	3.116
504 psig	2386	114.08 gal	124.62 gal	1.860	3.116
514 psig	2792	133.49 gal	155.78 gal	1.941	3.116
524 psig	3226	154.24 gal	186.95 gal	2.075	3.116
534 psig	3647	174.37 gal	218.11 gal	2.013	3.116
544 psig	4169	199.33 gal	249.28 gal	2.496	3.117
554 psig	4750	227.11 gal	280.45 gal	2.778	3.117
564 psig	5428	259.53 gal	311.62 gal	3.242	3.117
574 psig	6093	291.32 gal	342.79 gal	3.180	3.117
584 psig	6654	318.14 gal	373.96 gal	2.682	3.117
594 psig	7349	351.37 gal	405.14 gal	3.323	3.118
604 psig	8079	386.28 gal	436.32 gal	3.490	3.118
614 psig	8812	421.32 gal	467.49 gal	3.505	3.118
624 psig	9546	456.42 gal	498.68 gal	3.509	3.118
634 psig	10219	488.59 gal	529.86 gal	3.218	3.118
644 psig	10982	525.08 gal	561.05 gal	3.648	3.119
654 psig	11691	558.97 gal	592.23 gal	3.390	3.119
664 psig	12416	593.64 gal	623.42 gal	3.466	3.119
674 psig	13109	626.77 gal	654.61 gal	3.313	3.119
684 psig	13832	661.34 gal	685.81 gal	3.457	3.119
694 psig	14521	694.28 gal	717.00 gal	3.294	3.119
704 psig	15178	725.70 gal	748.20 gal	3.141	3.120
708 psig	15409	736.74 gal	760.68 gal	2.761	3.120
708 psig		736.74 gal	760.68 gal	0.000	0.000
708 psig		736.74 gal	760.68 gal	0.000	0.000
708 psig		736.74 gal	760.68 gal	0.000	0.000
708 psig		736.74 gal	760.68 gal	0.000	0.000
708 psig		736.74 gal	760.68 gal	0.000	0.000
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708 psig		736.74 gal	760.68 gal	0.000	0.000
708 psig		736.74 gal	760.68 gal	0.000	0.000

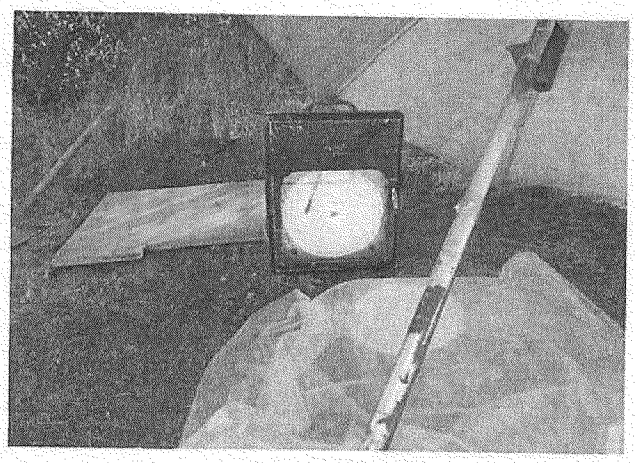
Spike Pressure Test
Stress Strain Curve -- PG&E T-33 L-132, MP 29.05 - 31.93

Pump gal per stroke	0.048 gal/stroke
Pump Piston Diameter	1.250 in
Pump Piston Stroke	3.00 in
Pump Cylinders	3 ea
Volume check gal per stroke	0.054 gal/stroke
Volume Released (gallons)	34.00 gal
Pressure Reduced (psi)	10 psi
Maximum2	800 gal
Minimum2	0 gal
Maximum1	1,184 psig
Minimum1	400 psig
Gallons/Stroke Used	0.048 gal/stroke
Predicted Gallons/Stroke	0.049 gal/stroke
Pressure Increment	10 psi
Max Pressure	708 psig
Buried Pipe Temperature	64 °F
Exposed Pipe Temperature	71 °F

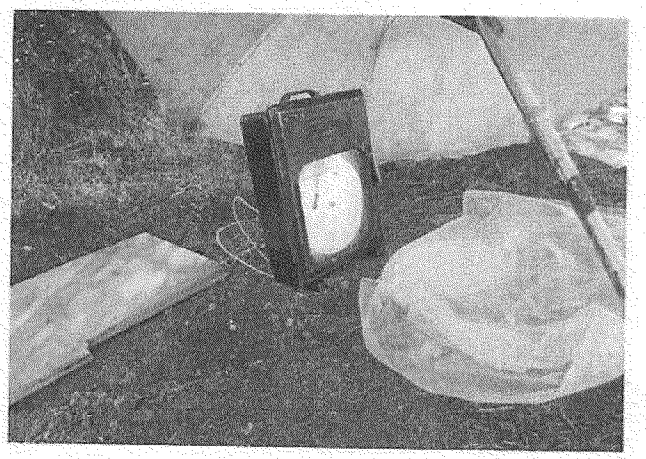
ASME B31.8 Appendix N-5	
Average Actual Elastic Slope	2.523
Average Predicted Elastic Slope	3.118
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	4.795
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	708 psig
Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal

Redacted

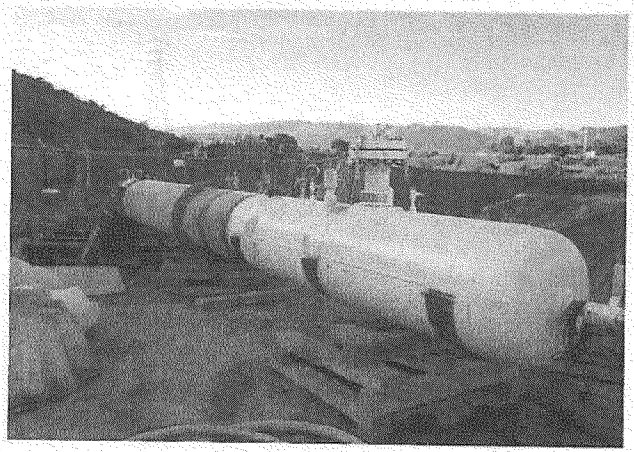
10/13/11
Date



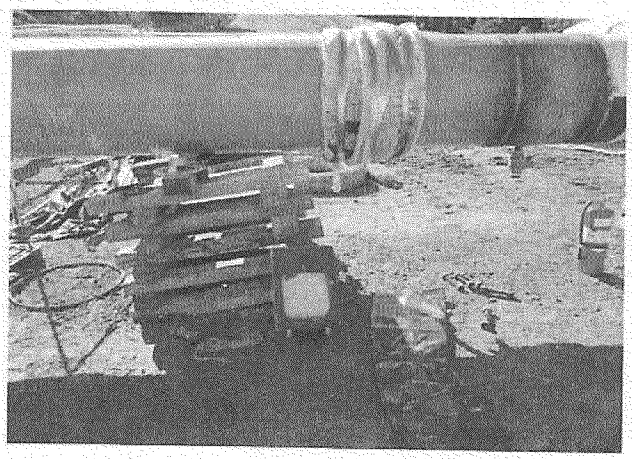
Test 33 Loc. A remote restrained temp. recorder



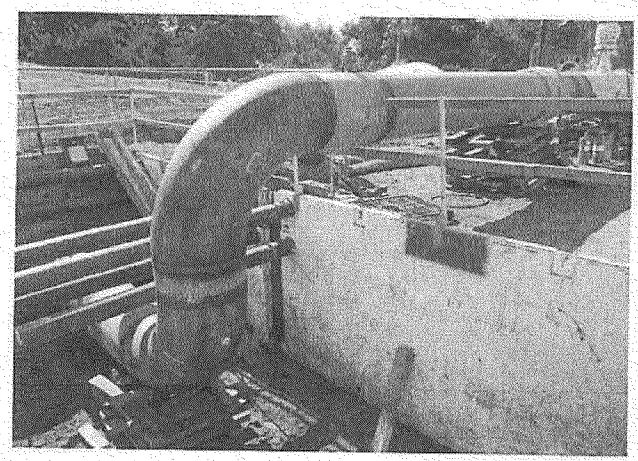
Test 33 Loc.A remote restrained recorder



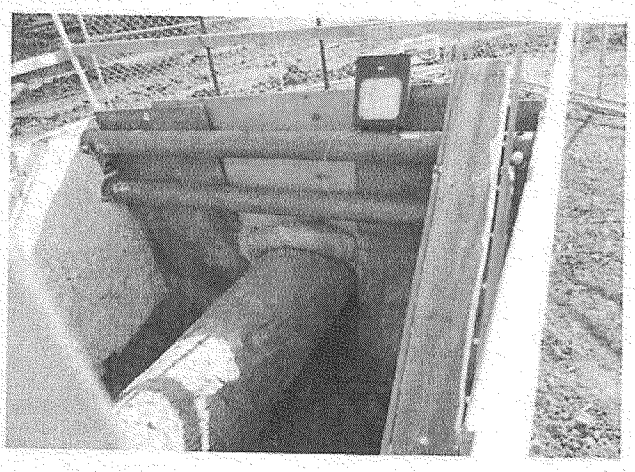
Test 33 Loc.A test head



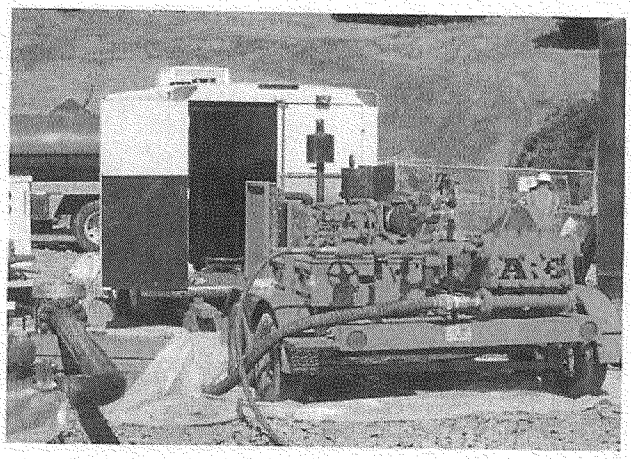
test 33 Loc.A unrestrained temp. recorder



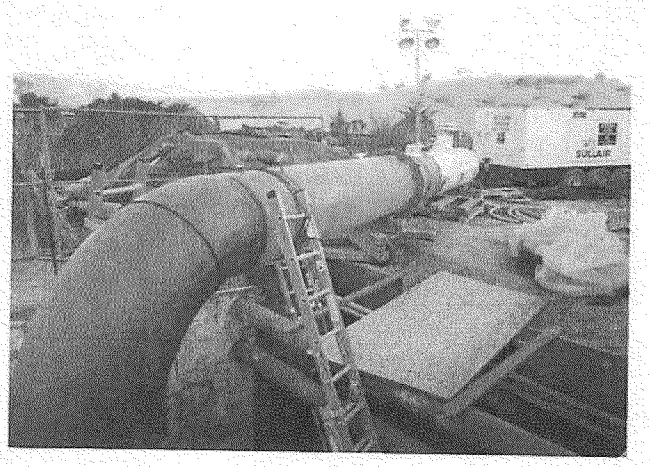
Test 33 Loc.A restrained pipe temp. recorder and riser for test head



Test 33 Loc.A restrained pipe temp. recorder



Test 33 Loc.A test trailer and test pump



Test 33 Loc.B riser and test head