



RCP, Inc

801 Louisiana, Ste.200  
Houston, Texas 77002

Redacted

June 26, 2011

Pacific Gas and Electric Company  
3600 Adobe Rd  
Petaluma, Ca 94954  
Attention: Joel Mannie  
Attention:

Test Contractor:	Akri -- PG&E 6-09-11
Asset Owner:	Pacific Gas and Electric Company -- 41474079
Construction Contractor:	ARB -- 0629-53-3500
Test Section:	PG&E T-36A, Line 132
Test Date:	June 9, 2011
Certificate Number:	RCP 61362 - T-36A, L-132

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 Akri met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3).

Prior to initiation of the hydrostatic test period, the test segment was subjected to a spike pressure of 727 psig for 30 minutes, without observed leakage or yielding of the pipe segment.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8 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 532 psig and the established MAOP is 354 psig.

Pressure increased 1 psi during the test. No fluid was intentionally injected or released from the test section. Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 14,263.04 ounces, gain, which is equivalent to a 2.9 °F change in pipe temperature and larger than the anticipated error attributed to the temperature measurement instrumentation utilized.

Test pressure remained steady and no leaks were observed. The volumetric gain is attributed to the inherent error associated with physically attempting to measure the average temperature of 12,546 feet of buried and 118 feet of exposed pipe from a single point on the line. It is improbable that pipe temperature would track exactly with a physical leak, resulting in a steady pressure profile; therefore, the observed steady pressure suggests that pipe temperature remained steady as well.

Sincerely,

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cc. file

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Test 36A.xlsm  
Letter



### Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Akri	Project No.	PG&E 6-09-11
Test Section	PG&E T-36A, Line 132		
File Name	RCP 61362 - T-36A, L-132		

#### Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3) Test Date: 9-Jun-11

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-36A, Line 132  
 From: 125+50 To: 00+00

#### Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	33.00 ft	36.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,806 psi
2	75.00 ft	30.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,625 psi
3	8.00 ft	30.000 in.	0.375 in.	API5L-X42, DSAW, Arc Weld, Steel	1,050 psi
4	2,575 ft	36.000 in.	0.360 in.	API5L-X60, DSAW, Arc Weld, Steel	1,200 psi
5	857 ft	36.000 in.	0.360 in.	API5L-X52, DSAW, Arc Weld, Steel	1,040 psi
6	8,317 ft	30.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,300 psi
7	641 ft	30.000 in.	0.313 in.	API5L-X52, DSAW, Arc Weld, Steel	1,083 psi
8	10 ft	4.500 in.	0.237 in.	API5L-Grade B, SM, Arc Weld, Steel	3,687 psi
9	148 ft	36.000 in.	0.406 in.	API5L-X52, DSAW, Arc Weld, Steel	1,173 psi

#### Initial Test Conditions

Pressure at Test Point:	672 psig	Date/Time:	6/9/11 3:45 PM	Pipe Temperature	
Ambient Temperature:	65.0 °F	Elevation @ Test Point:	44.0 ft	Unrestrained:	68.0 °F
Pressure @ High Point (Cal/Measure):	532 psig	Elevation @ High Point:	366.0 ft	Restrained:	61.0 °F
Pressure @ Low Point (Cal/Measure):	673 psig	Elevation @ Low Point:	41.0 ft	Location:	125+00
				Location:	25+75
				Location:	111+50

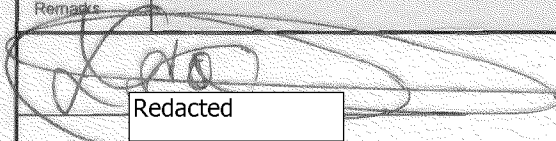
#### Final Test Conditions

Pressure at Test Point:	673 psig	Date/Time:	6/10/11 12:00 AM	Pipe Temperature	
Ambient Temperature:	56.0 °F	Elevation @ Test Point:	44.0 ft	Unrestrained:	62.0 °F
Pressure @ High Point (Cal/Measure):	533 psig	Elevation @ High Point:	366.0 ft	Restrained:	58.0 °F
Pressure @ Low Point (Cal/Measure):	674 psig	Elevation @ Low Point:	41.0 ft	Location:	125+00
				Location:	25+75
				Location:	111+50

Total Fluid Injected:		Volume gain	
Total Fluid Withdrawn:			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	14,263.04 oz	gain	0.0222% 2.903 °F equivalent

Test Duration:	8 hours
Maximum Test Pressure:	727 psig
% SMYS @:	64.6% Test Point 51.2% High Point 64.7% Low Point
Minimum Test Pressure (Calculated/Measured):	532 psig
Maximum Allowable Operating Pressure:	DOT Part 192 Test Factor= 1.50 354 psig

Were leaks observed?	<b>No</b>	Explain:
Acceptable Hydrostatic Test?	<b>Yes</b>	<p>Prior to initiation of the hydrostatic test period, the test segment was subjected to a spike pressure of 727 psig for 30 minutes, without observed leakage or yielding of the pipe segment.</p> <p>No leaks were observed during the test period. The test section included 12,546 feet of buried and 118 feet of exposed pipe. Pressure gained 1 psi during the test. The buried pipe segment lost 3°F fluid temperature and the exposed pipe segment lost 6°F.</p> <p>No fluid was intentionally injected or released from the test section. Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 14,263.04 ounces, gain, which is equivalent to a 2.9 °F change in pipe temperature and larger than the anticipated error attributed to the temperature measurement instrumentation utilized.</p> <p>Test pressure remained steady and no leaks were observed. The volumetric gain is attributed to the inherent error associated with physically attempting to measure the average temperature of 12,546 feet of buried and 118 feet of exposed pipe from a single point on the line. It is improbable that pipe temperature would track exactly with a physical leak, resulting in a steady pressure profile; therefore, the observed steady pressure suggests that pipe temperature remained steady as well.</p>

Remarks:   
 26-Jun-11



# Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Akri	Project No.	PG&E 6-09-11
Test Section	PG&E T-36A, Line 132		
File Name	RCP 61362 - T-36A, L-132		

Log No.	Test Period		Test Pressure	Ambient	Temperature °F		Comment	Remarks	Bleed	Inject
	Date	Time			Unrestrained	Restrained				
1	6/9/11	9:05 AM	488 psig	59 °F	60 °F	60 °F	Start Spike			5,161 oz
2	6/9/11	9:06 AM	498 psig	59 °F	60 °F	60 °F				3,432 oz
3	6/9/11	9:11 AM	508 psig	59 °F	60 °F	60 °F				2,864 oz
4	6/9/11	9:14 AM	518 psig	59 °F	60 °F	60 °F				5,522 oz
5	6/9/11	9:17 AM	528 psig	59 °F	60 °F	60 °F				3,045 oz
6	6/9/11	9:18 AM	538 psig	59 °F	60 °F	60 °F				5,780 oz
7	6/9/11	9:19 AM	548 psig	59 °F	60 °F	60 °F				3,871 oz
8	6/9/11	9:21 AM	558 psig	59 °F	60 °F	60 °F				4,387 oz
9	6/9/11	9:23 AM	568 psig	59 °F	60 °F	60 °F				4,129 oz
10	6/9/11	9:25 AM	578 psig	59 °F	60 °F	60 °F				4,542 oz
11	6/9/11	9:27 AM	588 psig	59 °F	60 °F	60 °F				3,819 oz
12	6/9/11	9:29 AM	598 psig	59 °F	60 °F	60 °F				3,871 oz
13	6/9/11	9:31 AM	608 psig	59 °F	60 °F	60 °F				3,252 oz
14	6/9/11	9:33 AM	618 psig	59 °F	60 °F	60 °F				4,284 oz
15	6/9/11	9:35 AM	628 psig	59 °F	60 °F	60 °F				3,458 oz
16	6/9/11	9:37 AM	638 psig	59 °F	60 °F	60 °F				3,922 oz
17	6/9/11	9:39 AM	648 psig	59 °F	60 °F	60 °F				3,613 oz
18	6/9/11	9:41 AM	658 psig	59 °F	60 °F	60 °F				3,664 oz
19	6/9/11	9:43 AM	668 psig	59 °F	60 °F	60 °F				3,922 oz
20	6/9/11	9:45 AM	678 psig	59 °F	60 °F	60 °F				2,942 oz
21	6/9/11	9:48 AM	688 psig	59 °F	60 °F	60 °F				3,200 oz
22	6/9/11	9:51 AM	698 psig	59 °F	60 °F	60 °F				3,510 oz
23	6/9/11	9:55 AM	708 psig	59 °F	60 °F	60 °F				3,252 oz
24	6/9/11	9:59 AM	718 psig	59 °F	60 °F	60 °F				3,252 oz
25	6/9/11	10:00 AM	727 psig	67 °F	60 °F	61 °F				
26	6/9/11	10:10 AM	727 psig	68 °F	60 °F	61 °F				
27	6/9/11	10:20 AM	726 psig	74 °F	62 °F	60 °F				
28	6/9/11	10:30 AM	726 psig	75 °F	62 °F	60 °F				
29	6/9/11	10:40 AM	726 psig	76 °F	62 °F	60 °F	End Spike			
30	6/9/11	10:50 AM	726 psig	76 °F	62 °F	60 °F				
31	6/9/11	11:00 AM	726 psig	76 °F	62 °F	60 °F				
32	6/9/11	11:14 AM	726 psig	76 °F	62 °F	60 °F	Bleed			3,878 oz
33	6/9/11	11:25 AM	716 psig	76 °F	63 °F	60 °F				3,878 oz
34	6/9/11	11:35 AM	706 psig	76 °F	63 °F	60 °F				13,962 oz
35	6/9/11	11:47 AM	670 psig	76 °F	63 °F	60 °F				
36	6/9/11	3:45 PM	672 psig	65 °F	68 °F	61 °F	Partly Cloud	On Test		
37	6/9/11	4:00 PM	671 psig	66 °F	68 °F	61 °F				
38	6/9/11	4:15 PM	672 psig	65 °F	68 °F	61 °F				
39	6/9/11	4:30 PM	671 psig	64 °F	68 °F	61 °F				
40	6/9/11	4:45 PM	671 psig	62 °F	68 °F	61 °F				
41	6/9/11	5:00 PM	671 psig	60 °F	67 °F	61 °F	Partly Cloudy			
42	6/9/11	5:15 PM	671 psig	61 °F	67 °F	61 °F				
43	6/9/11	5:30 PM	671 psig	59 °F	66 °F	60 °F				





# Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Akri	Project No.	PG&E 6-09-11
Test Section	PG&E T-36A, Line 132		
File Name	RCP 61362 - T-36A, L-132		

Date **9-Jun-11**

## Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
44	6/9/11	5:45 PM	671 psig	60 °F	66 °F	60 °F			
45	6/9/11	6:00 PM	671 psig	59 °F	66 °F	60 °F			
46	6/9/11	6:15 PM	671 psig	59 °F	65 °F	60 °F			
47	6/9/11	6:30 PM	671 psig	63 °F	65 °F	60 °F			
48	6/9/11	6:45 PM	671 psig	58 °F	65 °F	60 °F			
49	6/9/11	7:00 PM	671 psig	58 °F	65 °F	60 °F			
50	6/9/11	7:15 PM	671 psig	57 °F	64 °F	60 °F			
51	6/9/11	7:30 PM	671 psig	57 °F	64 °F	60 °F			
52	6/9/11	7:45 PM	671 psig	57 °F	64 °F	60 °F			
53	6/9/11	8:00 PM	671 psig	57 °F	63 °F	59 °F			
54	6/9/11	8:15 PM	671 psig	56 °F	63 °F	59 °F			
55	6/9/11	8:30 PM	671 psig	56 °F	63 °F	59 °F			
56	6/9/11	8:45 PM	671 psig	56 °F	63 °F	59 °F	Cloud Cover		
57	6/9/11	9:00 PM	671 psig	56 °F	63 °F	59 °F			
58	6/9/11	9:15 PM	672 psig	56 °F	62 °F	59 °F			
59	6/9/11	9:30 PM	672 psig	56 °F	62 °F	59 °F			
60	6/9/11	9:45 PM	672 psig	56 °F	62 °F	59 °F			
61	6/9/11	10:00 PM	672 psig	56 °F	62 °F	59 °F			
62	6/9/11	10:15 PM	673 psig	56 °F	62 °F	59 °F			
63	6/9/11	10:30 PM	673 psig	56 °F	62 °F	59 °F			
64	6/9/11	10:45 PM	673 psig	56 °F	62 °F	59 °F			
65	6/9/11	11:00 PM	673 psig	56 °F	62 °F	59 °F			
66	6/9/11	11:15 PM	673 psig	56 °F	62 °F	59 °F			
67	6/9/11	11:30 PM	673 psig	56 °F	62 °F	58 °F			
68	6/9/11	11:45 PM	673 psig	56 °F	62 °F	58 °F			
69	6/10/11	12:00 AM	673 psig	56 °F	62 °F	58 °F	Cloud Cover End of Test		

<b>Spike Test</b>	21,719.0 oz.	92,693.8 oz.
<b>Hydrostatic Test</b>		

Were leaks observed during the test period?

Exposed and buried pipe,  
no leaks observed.

High Test Pressure:	673 psig
Low Test Pressure:	671 psig



## Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Akri	Project No.	PG&E 6-09-11
Test Section	PG&E T-36A, Line 132	<b>WATER</b>	
File Name	RCP 61362 - T-36A, L-132		

### General Pipe Data

Description	Segment								
	1	2	3	4	5	6	7	8	9
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained	Restrained
Outside Diameter	36.000 in.	30.000 in.	30.000 in.	36.000 in.	36.000 in.	30.000 in.	30.000 in.	4.500 in.	36.000 in.
Wall Thickness	0.500 in.	0.375 in.	0.375 in.	0.360 in.	0.360 in.	0.375 in.	0.313 in.	0.237 in.	0.406 in.
Inside Diameter	35.000 in.	29.250 in.	29.250 in.	35.280 in.	35.280 in.	29.250 in.	29.375 in.	4.026 in.	35.188 in.
Spec./Grade	API5L-X65	API5L-X65	API5L-X42	API5L-X60	API5L-X52	API5L-X52	API5L-X52	API5L-Grade B	API5L-X52
Length Unrestrained	33 ft	75 ft						10 ft	
Length Restrained			8 ft	2,575 ft	857 ft	8,317 ft	641 ft		148 ft
Temperature -- On Test	68 °F	68 °F	61.0 °F	61.0 °F	61.0 °F	61.0 °F	61.0 °F	68.0 °F	61.0 °F
Temperature -- End of Test	62 °F	62 °F	58.0 °F	58.0 °F	58.0 °F	58.0 °F	58.0 °F	62.0 °F	58.0 °F
Pressure -- On Test	672 psig	672 psig	672 psig	672 psig	672 psig	672 psig	672 psig	672 psig	672 psig
Pressure -- End of Test	673 psig	673 psig	673 psig	673 psig	673 psig	673 psig	673 psig	673 psig	673 psig

### Unrestrained Pipe

Sum:	Vo	4,273.96 gal 547,067 oz.	Vtp1	4,288.91 gal 548,980 oz.	Vtp2	4,291.14 gal 549,266 oz.
Vo Unrestrained	1,649 gal	2,618 gal				7 gal
Fwp 1	1.002057	1.002057				1.002057
Fpp 1	1.001960	1.002184				1.000476
Fpt 1	1.000146	1.000146				1.000146
Fwt 1	1.000803	1.000803				1.000803
Fpwt 1 = Fpt/Fwt	0.999343	0.999343				0.999343
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,654.88 gal	2,627.40 gal				6.63 gal
Fwp 2	1.002060	1.002060				1.002060
Fpp 2	1.001963	1.002187				1.000476
Fpt 2	1.000036	1.000036				1.000036
Fwt 2	1.000181	1.000181				1.000181
Fpwt = Fpt/Fwt	0.999856	0.999856				0.999856
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,655.74 gal	2,628.77 gal				6.63 gal

### Restrained Pipe

Sum:	Vo	494,929.77 gal 63,351,010 oz.	Vtp1	496,784.26 gal 63,588,385 oz.	Vtp2	496,893.46 gal 63,602,363 oz.
Vo Unrestrained			279 gal	130,766 gal	43,521 gal	290,320 gal
Fwp 1			1.002057	1.002057	1.002057	1.002057
Fpp 1			1.001594	1.002001	1.002001	1.001594
Fpt 1			1.000012	1.000012	1.000012	1.000012
Fwt 1			1.000080	1.000080	1.000080	1.000080
Fpwt 1 = Fpt/Fwt			0.999932	0.999932	0.999932	0.999932
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			280 gal	131,288 gal	43,695 gal	291,361 gal
Fwp 2			1.002060	1.002060	1.002060	1.002060
Fpp 2			1.001585	1.001993	1.001993	1.001585
Fpt 2			0.999976	0.999976	0.999976	0.999976
Fwt 2			0.999819	0.999819	0.999819	0.999819
Fpwt = Fpt/Fwt			1.000157	1.000157	1.000157	1.000157
Vtp = Vo(Fwp)(Fpp)(Fpwt)			280 gal	131,317 gal	43,704 gal	291,425 gal

### Combined Pipe

Sum:	Vo	499,203.73 gal 63,898,077 oz.	Vtp1	501,073.17 gal 64,137,366 oz.	Vtp2	501,184.60 gal 64,151,629 oz.
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# Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Akri	Project No.	PG&E 6-09-11
Test Section	PG&E T-36A, Line 132		<b>WATER</b>
File Name	RCP 61362 - T-36A, L-132		

### General Pipe Data

Description	Segment								
	1	2	3	4	5	6	7	8	9
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained	Restrained
Outside Diameter	36.000 in.	30.000 in.	30.000 in.	36.000 in.	36.000 in.	30.000 in.	30.000 in.	4.500 in.	36.000 in.
Wall Thickness	0.500 in.	0.375 in.	0.375 in.	0.360 in.	0.360 in.	0.375 in.	0.313 in.	0.237 in.	0.406 in.
Inside Diameter	35.000 in.	29.250 in.	29.250 in.	35.280 in.	35.280 in.	29.250 in.	29.375 in.	4.026 in.	35.188 in.
Spec./Grade	API5L-X65	API5L-X65	API5L-X42	API5L-X60	API5L-X52	API5L-X52	API5L-X52	API5L-Grade B	API5L-X52
Length Unstrained	33.00 ft	75.00 ft						10 ft	
Length Restrained			8 ft	2,575 ft	857 ft	8,317 ft	641 ft		148 ft
Temperature -- On Test	64 °F	64 °F	59 °F	59 °F	59 °F	59 °F	59 °F	64 °F	59 °F
Temperature -- End of Test	65 °F	65 °F	60 °F	60 °F	60 °F	60 °F	60 °F	65 °F	60 °F
Pressure -- On Test									
Pressure -- End of Test									

### Unrestrained Pipe

Sum:	Vo	4,273.96 gal 547,067 oz.		Vtp1	4,272.67 gal 546,902 oz.		Vtp2	4,272.36 gal 546,862 oz.	
Vo Unrestrained	1,649 gal	2,618 gal						7 gal	
Fwp 1	1.000000	1.000000						1.000000	
Fpp 1	1.000000	1.000000						1.000000	
Fpt 1	1.000073	1.000073						1.000073	
Fwt 1	1.000375	1.000375						1.000375	
Fpwt 1 = Fpt/Fwt	0.999698	0.999698						0.999698	
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,648.84 gal	2,617.23 gal						7 gal	
Fwp 2	1.000000	1.000000						1.000000	
Fpp 2	1.000000	1.000000						1.000000	
Fpt 2	1.000091	1.000091						1.000091	
Fwt 2	1.000467	1.000467						1.000467	
Fpwt = Fpt/Fwt	0.999624	0.999624						0.999624	
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,648.72 gal	2,617.03 gal						7 gal	

### Restrained Pipe

Sum:	Vo	494,929.77 gal 63,351,010 oz.		Vtp1	494,967.83 gal 63,355,882 oz.		Vtp2	494,929.77 gal 63,351,010 oz.	
Vo Restrained			279 gal	130,766 gal	43,521 gal	290,320 gal	22,567 gal		7,477 gal
Fwp 1			1.000000	1.000000	1.000000	1.000000	1.000000		1.000000
Fpp 1			0.999996	0.999996	0.999996	0.999996	0.999996		0.999996
Fpt 1			0.999988	0.999988	0.999988	0.999988	0.999988		0.999988
Fwt 1			0.999907	0.999907	0.999907	0.999907	0.999907		0.999907
Fpwt 1 = Fpt/Fwt			1.000081	1.000081	1.000081	1.000081	1.000081		1.000081
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			279 gal	130,776 gal	43,524 gal	290,343 gal	22,569 gal		7,477 gal
Fwp 2			1.000000	1.000000	1.000000	1.000000	1.000000		1.000000
Fpp 2			1.000000	1.000000	1.000000	1.000000	1.000000		1.000000
Fpt 2			1.000000	1.000000	1.000000	1.000000	1.000000		1.000000
Fwt 2			1.000000	1.000000	1.000000	1.000000	1.000000		1.000000
Fpwt = Fpt/Fwt			1.000000	1.000000	1.000000	1.000000	1.000000		1.000000
Vtp = Vo(Fwp)(Fpp)(Fpwt)			279 gal	130,766 gal	43,521 gal	290,320 gal	22,567 gal		7,477 gal

### Combined Pipe

Sum:	Vo	499,203.73 gal 63,898,077 oz.		Vtp1	499,240.50 gal 63,902,785 oz.		Vtp2	499,202.12 gal 63,897,872 oz.	
1 °F Change	38.38 gal		4,912.92 oz.						



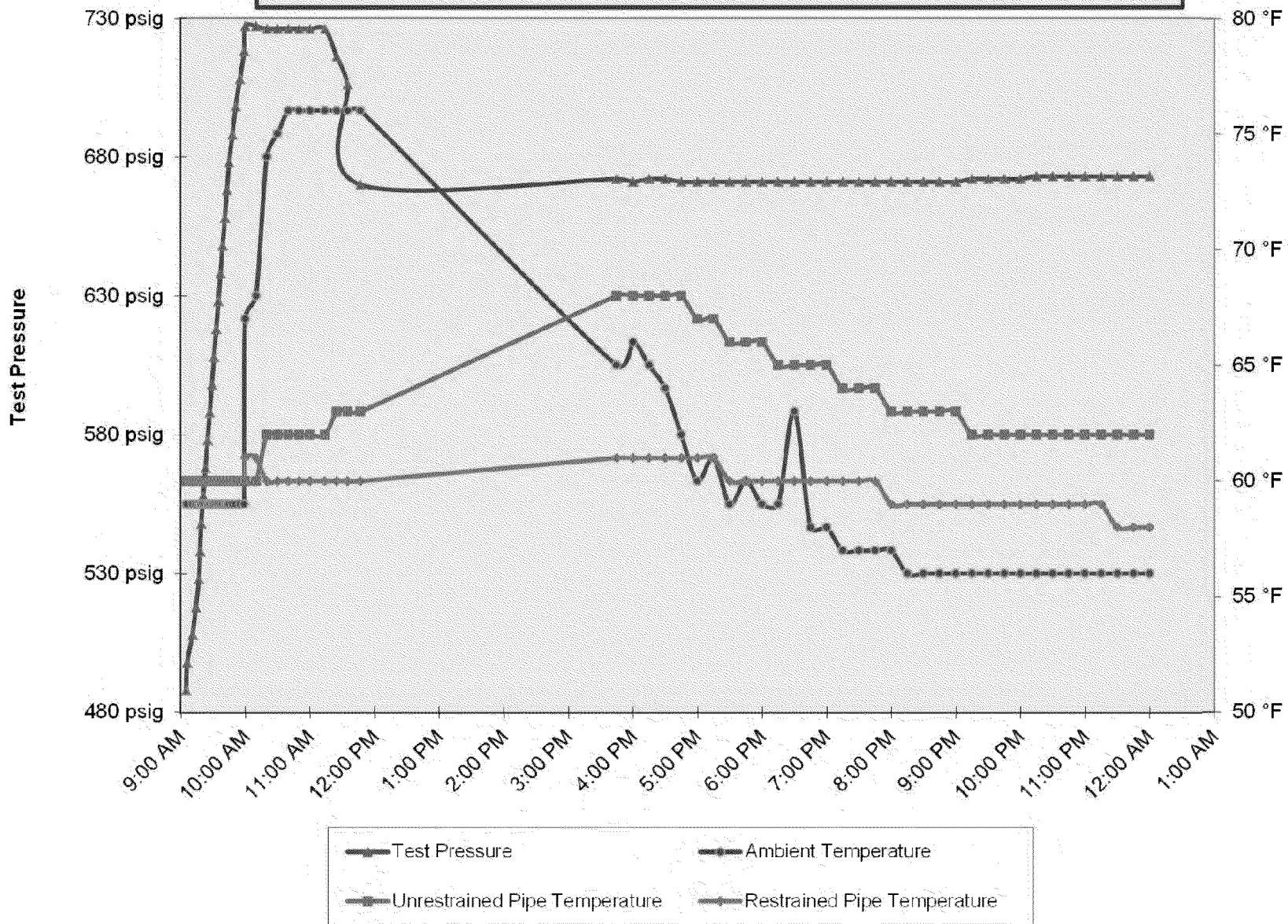
### Hydrostatic Test Pipe Data Table

Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	33 ft	Unrestrained	36.000 in.	0.5000 in.	API5L-X65	1,806 psig	Steel	Arc Weld	DSAW
2	75 ft	Unrestrained	30.000 in.	0.3750 in.	API5L-X65	1,625 psig	Steel	Arc Weld	DSAW
3	8 ft	Restrained	30.000 in.	0.3750 in.	API5L-X42	1,050 psig	Steel	Arc Weld	DSAW
4	2,575 ft	Restrained	36.000 in.	0.3600 in.	API5L-X60	1,200 psig	Steel	Arc Weld	DSAW
5	857 ft	Restrained	36.000 in.	0.3600 in.	API5L-X52	1,040 psig	Steel	Arc Weld	DSAW
6	8,317 ft	Restrained	30.000 in.	0.3750 in.	API5L-X52	1,300 psig	Steel	Arc Weld	DSAW
7	641 ft	Restrained	30.000 in.	0.3125 in.	API5L-X52	1,083 psig	Steel	Arc Weld	DSAW
8	10 ft	Unrestrained	4.500 in.	0.2370 in.	API5L-Grade B	3,687 psig	Steel	Arc Weld	SM
9	148 ft	Restrained	36.000 in.	0.4060 in.	API5L-X52	1,173 psig	Steel	Arc Weld	DSAW

### Hydrostatic Test Project Owner & Participants

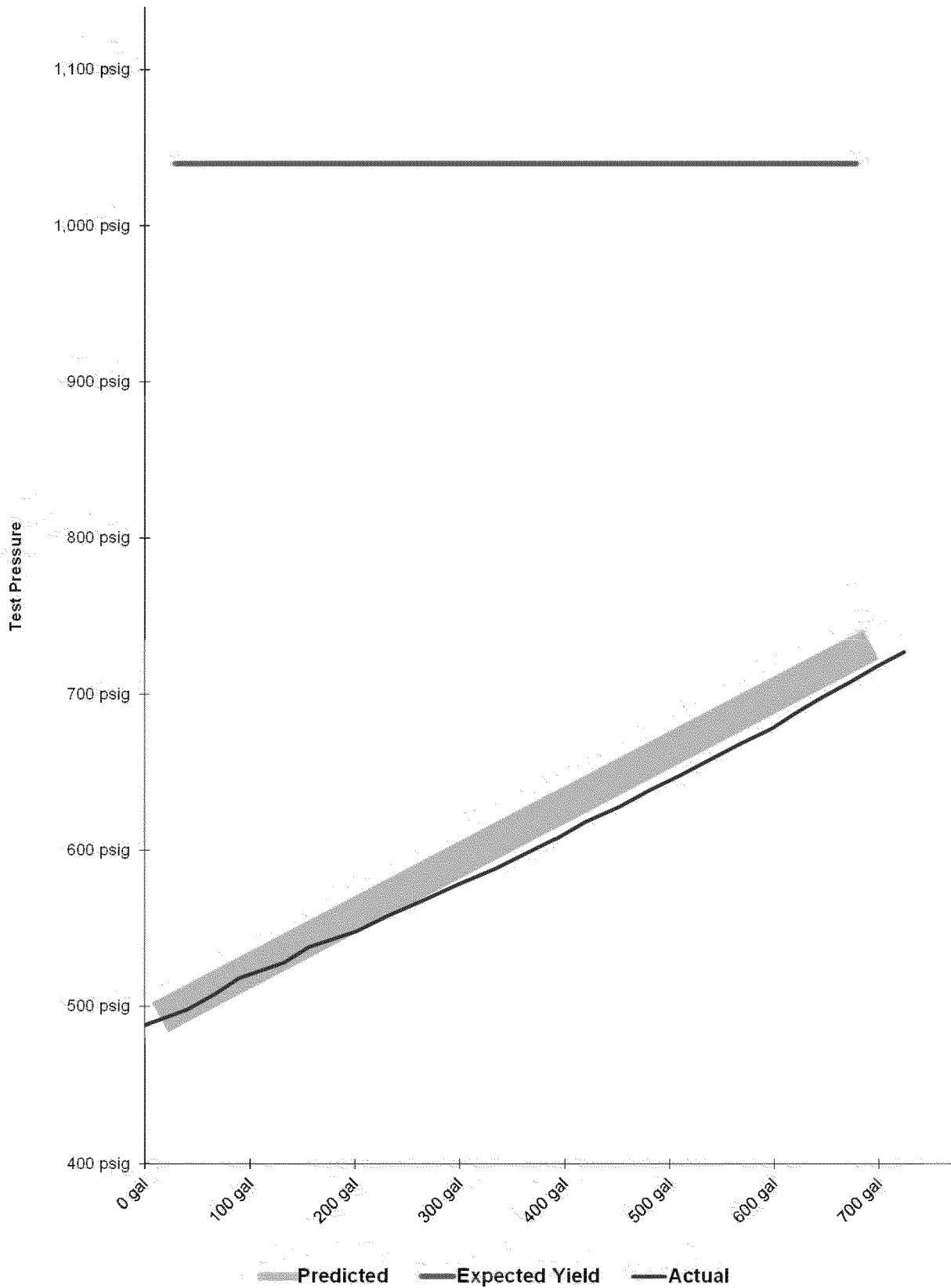
Owner Company	Pacific Gas and Electric Company	Job Number
Address	3600 Adobe Rd Petaluma, Ca 94954 Attention: Joel Mannie	41474079
Construction Company	Redacted	Job Number
Address		0629-53-3500
Hydrostatic Test Co.	Redacted	Project No.
Address		PG&E 6-09-11
Test Section	PG&E T-36A, Line 132 From: 125+50 To: 00+00	
File Name	RCP 61362 - T-36A, L-132	

PG&E T-36A, Line 132

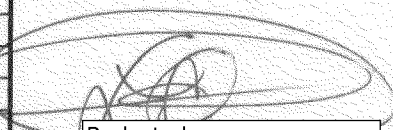


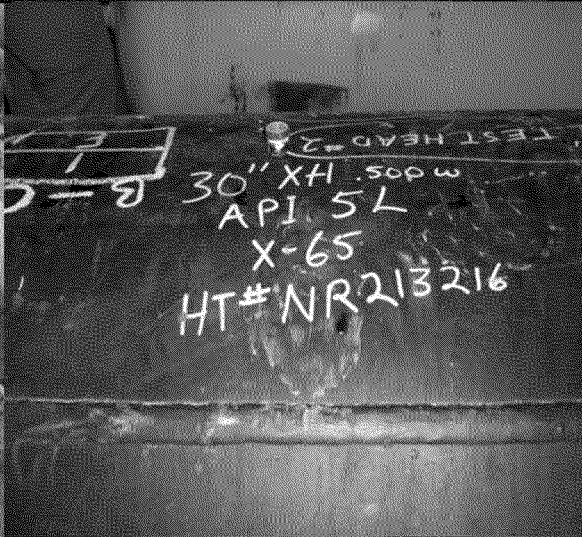
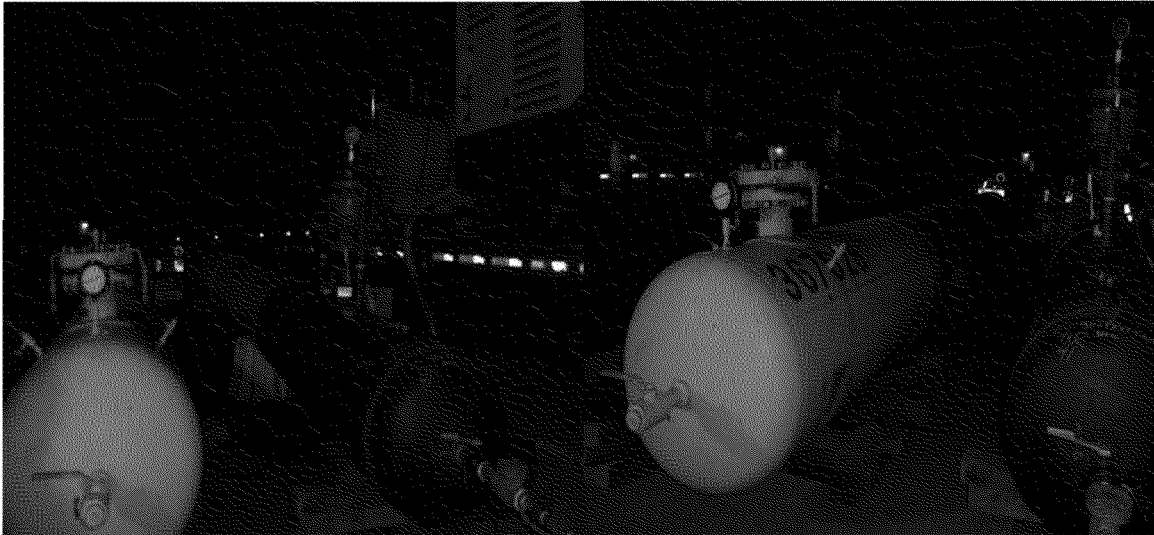


**Spike Pressure Test  
Stress Strain Curve -- PG&E T-36A, Line 132**

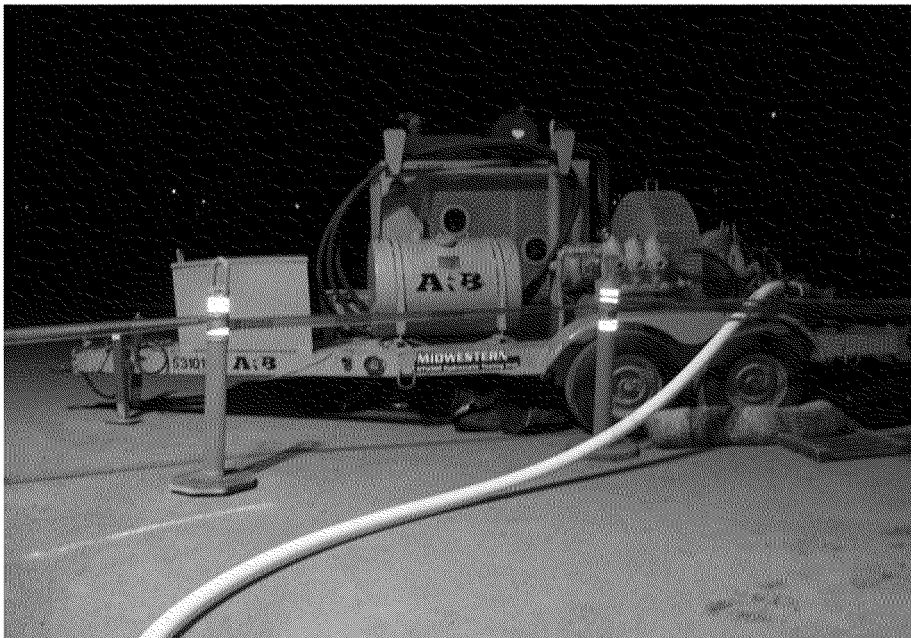




Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope		Spike Pressure Test Stress Strain Curve – PG&E T-36A, Line 132	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
488 psig	0	0.00 gal		0	0.00 gal	Pump gal per stroke	0.056 gal/stroke
498 psig	1000	40.32 gal	28.36 gal	4.032	2.836	Pump Piston Diameter	1.250 in
508 psig	1665	67.13 gal	56.73 gal	2.681	2.837	Pump Piston Stroke	3.50 in
518 psig	2220	89.51 gal	85.10 gal	2.238	2.837	Pump Cylinders	3 ea
528 psig	3290	132.66 gal	113.47 gal	4.314	2.837	Volume check gal per stroke	0.040 gal/stroke
538 psig	3880	156.45 gal	141.84 gal	2.379	2.837	Volume Released (gallons)	30.30 gal
548 psig	5000	201.61 gal	170.21 gal	4.516	2.837	Pressure Reduced (psi)	10 psi
558 psig	5750	231.85 gal	198.58 gal	3.024	2.837	Maximum2	770 gal
568 psig	6600	266.12 gal	226.96 gal	3.427	2.838	Minimum2	0 gal
578 psig	7400	298.38 gal	255.34 gal	3.226	2.838	Maximum1	1,140 psig
588 psig	8280	333.86 gal	283.72 gal	3.548	2.838	Minimum1	400 psig
598 psig	9020	363.70 gal	312.10 gal	2.984	2.838	Gallons/Stroke Used	0.040 gal/stroke
608 psig	9770	393.94 gal	340.48 gal	3.024	2.838	Predicted Gallons/Stroke	0.038 gal/stroke
618 psig	10400	419.34 gal	368.87 gal	2.540	2.838	Pressure Increment	10 psi
628 psig	11230	452.81 gal	397.25 gal	3.347	2.839	Max Pressure	727 psig
638 psig	11900	479.82 gal	425.64 gal	2.702	2.839	Ground Temperature	60 °F
648 psig	12660	510.47 gal	454.03 gal	3.064	2.839	Ambient Temperature	59 °F
658 psig	13360	538.69 gal	482.42 gal	2.822	2.839	<b>ASME B31.8 Appendix N-5</b>	
668 psig	14070	567.32 gal	510.82 gal	2.863	2.839	Average Actual Elastic Slope	2.833
678 psig	14830	597.96 gal	539.21 gal	3.064	2.840	Average Predicted Elastic Slope	2.838
688 psig	15400	620.95 gal	567.61 gal	2.298	2.840	Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	5.382
698 psig	16020	645.95 gal	596.01 gal	2.500	2.840	Established Minimum Yield Pressure B31.8 N-5 (c)(2)	727 psig
708 psig	16700	673.37 gal	624.41 gal	2.742	2.840	Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
718 psig	17330	698.77 gal	652.81 gal	2.540	2.840	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
727 psig	17960	724.17 gal	678.37 gal	2.822	2.840	<div style="text-align: center;">             Redacted <span style="float: right;">6/26/2011</span>            Date         </div>	
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		
727 psig		724.17 gal	678.37 gal	0.000	0.000		



Test Headers and Exposed Pipe



Test Pressure Pump



Dead Weight  
Tester  
&  
Pressure Recorder



Buried  
Pipe  
Temperature  
Recorder



Exposed  
Pipe  
Temperature  
Recorder