



RCP, Inc

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July 11, 2011

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

Test Contractor: Milbar Hydro-test Incorporated -- FY12-112  
Asset Owner: Pacific Gas and Electric Company -- 41474005  
Construction Contractor: Snelson -- 41474005-T77  
Test Section: PG&E T-77 Line 300B, MP 126.883 - 127.4994  
Test Date: June 16, 2011  
Certificate Number: RCP 61362 - T-77, L-300B

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 Milbar Hydro-test Incorporated met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1).

Prior to initiation of the hydrostatic test period, the test segment was subjected to a spike pressure of 939 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 8.35 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 877 psig and the established MAOP is 797 psig.

Pressure decreased 61 psi during the test. 6,758.40 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 645.98 ounces, loss, which is equivalent to a 0.31 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.

Test pressure did not remain steady even though no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.

Sincerely,

Stephen E. Gilliam

cc. file



### Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41474005
Construction Co.	Snelson	Job Number	41474005-177
Hydro. Test Co.	Milnor Hydro-test Incorporated	Project No.	FY12-112
Test Section	PG&E T-77 Line 300B, MP 126.883 - 127.4894		
File Name	RCP 61362 - T 77, L 300B		

#### Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION:	Test Date:	16 Jun 11
Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1)		

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-77 Line 300B, MP 126.883 - 127.4894		
From:	0+00	To:	32+55

#### Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	40 ft	34.000 in.	0.535 in.	API5L X60, DSAW, Arc Weld, Steel	1,782 psi
2	20 ft	34.000 in.	0.375 in.	API5L X62, DSAW, Arc Weld, Steel	1,147 psi
3	3,255 ft	34.000 in.	0.312 in.	API5L X52, DSAW, Arc Weld, Steel	854 psi
4	8 ft	34.000 in.	0.375 in.	API5L X60, DSAW, Arc Weld, Steel	1,324 psi

#### Initial Test Conditions

Pressure at Test Point:	939 psig	Date/Time:	8/16/11 9:54 AM	Pipe Temperature	
Ambient Temperature:	99.0 °F	Elevation @ Test Point:	1,792.0 ft	Unrestrained:	83.0 °F
Pressure @ High Point (Calc/Measure):	939 psig	Elevation @ High Point:	1,793.0 ft	Restrained:	76.0 °F
Pressure @ Low Point (Calc/Measure):	939 psig	Elevation @ Low Point:	1,792.0 ft	Location:	0+00
				Location:	32+55
				Location:	0+00

#### Final Test Conditions

Pressure at Test Point:	878 psig	Date/Time:	8/16/11 8:15 PM	Pipe Temperature	
Ambient Temperature:	95.0 °F	Elevation @ Test Point:	1,792.0 ft	Unrestrained:	82.0 °F
Pressure @ High Point (Calc/Measure):	878 psig	Elevation @ High Point:	1,793.0 ft	Restrained:	78.0 °F
Pressure @ Low Point (Calc/Measure):	878 psig	Elevation @ Low Point:	1,792.0 ft	Location:	0+00
				Location:	32+55
				Location:	0+00

Total Fluid Injected:		Total Fluid Withdrawn:	6758.40 fluid ounces	Volume loss	
Not Change in Volume of the Test Section ± (+ Gain, - Loss):	(845.98) oz	loss	(0.0033)%	(0.305) °F equivalent	
Test Duration:	8.35 hours				

Minimum Test Pressure:	875 psig	Max Elevation:	875 psig	Min Elevation:	875 psig
Maximum Test Pressure:	939 psig		939 psig		939 psig
% SMYS:	98.4%		98.3%		98.4%

Maximum Allowable Operating Pressure:	DOT Part 192		Test Factor= 1.10	878 psig
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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 939 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 3,255 feet of buried and 68 feet of exposed pipe. Pressure lost 61 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment lost 1°F.</p> <p>6,758.40 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 645.88 ounces, loss, which is equivalent to a 0.31 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.</p> <p>Test pressure did not remain steady even though no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.</p>

Remarks	Test was extended for an additional fifteen minutes to ensure the pressure and temperature charts included a full 8 continuous hours of data.
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 Stephen F. Gilliam  
 11-Jul-11



# Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41474005
Construction Co.	Snelson	Job Number	41474005-T77
Testing Co.	Milbar Hydro-test Incorporated	Project No.	FY12-112
Test Section	PG&E T-77 Line 300B, MP 126.883 - 127.4994		
File Name	RCP 61362 - T-77, L-300B		

Date		16-Jun-11		Test Log					
Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipo		Comment	Bleed	Inject
					Unrestrained	Restrained			
1	6/16/11	9:15 AM	647 psig	94 °F	83 °F	76 °F	Start Spike		
2	6/16/11	9:16 AM	657 psig	94 °F	83 °F	76 °F	Inject		1,692 oz.
3	6/16/11	9:17 AM	667 psig	94 °F	83 °F	76 °F	Inject		1,269 oz.
4	6/16/11	9:18 AM	677 psig	94 °F	83 °F	76 °F	Inject		1,269 oz.
5	6/16/11	9:19 AM	687 psig	94 °F	83 °F	76 °F	Inject		1,199 oz.
6	6/16/11	9:20 AM	697 psig	94 °F	83 °F	76 °F	Inject		1,269 oz.
7	6/16/11	9:21 AM	707 psig	94 °F	83 °F	76 °F	Inject		1,269 oz.
8	6/16/11	9:22 AM	717 psig	94 °F	83 °F	76 °F	Inject		1,269 oz.
9	6/16/11	9:23 AM	727 psig	94 °F	83 °F	76 °F	Inject		1,199 oz.
10	6/16/11	9:24 AM	737 psig	94 °F	83 °F	76 °F	Inject		1,199 oz.
11	6/16/11	9:25 AM	747 psig	94 °F	83 °F	76 °F	Inject		1,269 oz.
12	6/16/11	9:26 AM	757 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
13	6/16/11	9:27 AM	767 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
14	6/16/11	9:28 AM	777 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
15	6/16/11	9:29 AM	787 psig	95 °F	83 °F	76 °F	Inject		1,199 oz.
16	6/16/11	9:30 AM	797 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
17	6/16/11	9:31 AM	807 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
18	6/16/11	9:32 AM	817 psig	95 °F	83 °F	76 °F	Inject		1,199 oz.
19	6/16/11	9:33 AM	827 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
20	6/16/11	9:34 AM	837 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
21	6/16/11	9:35 AM	847 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
22	6/16/11	9:36 AM	857 psig	95 °F	83 °F	76 °F	Inject		1,199 oz.
23	6/16/11	9:37 AM	867 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
24	6/16/11	9:38 AM	877 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
25	6/16/11	9:39 AM	887 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
26	6/16/11	9:40 AM	897 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
27	6/16/11	9:41 AM	907 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
28	6/16/11	9:42 AM	917 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
29	6/16/11	9:43 AM	927 psig	95 °F	83 °F	76 °F	Inject		1,269 oz.
30	6/16/11	9:44 AM	935 psig	97 °F	83 °F	76 °F	Inject		1,199 oz.
31	6/16/11	9:54 AM	939 psig	99 °F	83 °F	76 °F	On Test		
32	6/16/11	10:06 AM	939 psig	99 °F	83 °F	76 °F			
33	6/16/11	10:18 AM	939 psig	99 °F	83 °F	76 °F	End Spike		
34	6/16/11	10:20 AM	929 psig	97 °F	83 °F	76 °F	Bleed		1,056 oz.
35	6/16/11	10:23 AM	919 psig	97 °F	83 °F	76 °F	Bleed		1,056 oz.
36	6/16/11	10:27 AM	909 psig	97 °F	83 °F	76 °F	Bleed		1,056 oz.
37	6/16/11	10:30 AM	899 psig	97 °F	83 °F	76 °F	Bleed		1,056 oz.
38	6/16/11	10:32 AM	889 psig	97 °F	83 °F	76 °F	Bleed		1,056 oz.
39	6/16/11	10:34 AM	877 psig	99 °F	83 °F	76 °F	Bleed		1,267 oz.
40	6/16/11	10:39 AM	875 psig	98 °F	83 °F	76 °F	Bleed		211 oz.
41	6/16/11	10:45 AM	875 psig	100 °F	83 °F	76 °F	Hot		
42	6/16/11	11:00 AM	875 psig	100 °F	83 °F	76 °F			
43	6/16/11	11:15 AM	876 psig	99 °F	83 °F	76 °F			



## Dead Weight Log Sheet

Owner Company: Pacific Gas and Electric Company	Job Number: 41474005
Construction Co.: Snelson	Job Number: 41474005-177
Testing Co.: Milbar Hydro-test Incorporated	Project No.: FY12-112
Test Section: PG&E T-77 Line 300B, MP 126.883 - 127.4994	
File Name: RCP 61362 - T-77, L-300B	

Date: 18-Jun-11		Test Log											
Log No.	Test Period		Test Pressure	Temperature °F			Remarks						
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject				
					Unrestrained	Restrained							
44	6/16/11	11:30 AM	876 psig	100 °F	83 °F	76 °F							
45	6/16/11	11:45 AM	875 psig	101 °F	83 °F	76 °F							
46	6/16/11	12:00 PM	876 psig	100 °F	83 °F	76 °F							
47	6/16/11	12:15 PM	877 psig	100 °F	84 °F	76 °F							
48	6/16/11	12:30 PM	876 psig	101 °F	84 °F	76 °F							
49	6/16/11	12:45 PM	877 psig	100 °F	83 °F	76 °F							
50	6/16/11	1:00 PM	877 psig	101 °F	83 °F	76 °F							
51	6/16/11	1:15 PM	877 psig	100 °F	83 °F	76 °F							
52	6/16/11	1:30 PM	878 psig	101 °F	83 °F	76 °F							
53	6/16/11	1:45 PM	878 psig	102 °F	85 °F	76 °F							
54	6/16/11	2:00 PM	878 psig	102 °F	85 °F	76 °F							
55	6/16/11	2:15 PM	878 psig	102 °F	85 °F	76 °F	Hot						
56	6/16/11	2:30 PM	879 psig	102 °F	85 °F	76 °F							
57	6/16/11	2:45 PM	879 psig	101 °F	84 °F	76 °F							
58	6/16/11	3:00 PM	879 psig	101 °F	84 °F	76 °F							
59	6/16/11	3:15 PM	879 psig	101 °F	84 °F	76 °F							
60	6/16/11	3:30 PM	880 psig	102 °F	84 °F	76 °F							
61	6/16/11	3:45 PM	880 psig	101 °F	84 °F	76 °F							
62	6/16/11	4:00 PM	880 psig	101 °F	84 °F	76 °F							
63	6/16/11	4:15 PM	880 psig	101 °F	84 °F	76 °F							
64	6/16/11	4:30 PM	880 psig	100 °F	84 °F	76 °F							
65	6/16/11	4:45 PM	880 psig	100 °F	84 °F	76 °F							
66	6/16/11	5:00 PM	880 psig	100 °F	84 °F	76 °F							
67	6/16/11	5:15 PM	879 psig	99 °F	84 °F	76 °F							
68	6/16/11	5:30 PM	879 psig	98 °F	83 °F	76 °F							
69	6/16/11	5:45 PM	879 psig	97 °F	83 °F	76 °F							
70	6/16/11	6:00 PM	878 psig	96 °F	82 °F	76 °F							
71	6/16/11	6:15 PM	878 psig	95 °F	82 °F	76 °F	End of Test						
72	6/16/11	6:30 PM	878 psig	95 °F	82 °F	76 °F							
							Spike Test		36,731.7 oz.				
							Hydrostatic Test	6,758.4 oz.					
Were leaks observed during the test period?			Exposed and buried pipe, no leaks observed.			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>High Test Pressure:</td> <td style="text-align: right;">939 psig</td> </tr> <tr> <td>Low Test Pressure:</td> <td style="text-align: right;">875 psig</td> </tr> </table>		High Test Pressure:	939 psig	Low Test Pressure:	875 psig		
High Test Pressure:	939 psig												
Low Test Pressure:	875 psig												



## Pipe Segment Volume Calculations

Company:	Pacific Gas and Electric Company	Job Number:	41474035
Construction Co.:	Snelson	Job Number:	41474035-177
Hydro. Test Co.:	Milber Hydro test Incorporated	Project No.:	FY12-112
Test Section:	PG&E T-77 Line 300R, MP 126.683 - 127.4934	<b>WATER</b>	
File Name:	RCP 61552 - T-77, L-300R		

### General Pipe Data

Description	Segment			
	1	2	3	4
Restrainted or Unrestrained?	Unrestrained	Unrestrained	Restrainted	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.505 in.	0.375 in.	0.312 in.	0.375 in.
Inside Diameter	32.990 in.	33.250 in.	33.376 in.	33.250 in.
Spec./Grade	API5L-X60	API5L-X62	API5L-X52	API5L-X60
Length Unrestrained	40 ft	20 ft		8 ft
Length Restrainted			3,255 ft	
Temperature -- On Test	83 °F	83 °F	76.0 °F	83.0 °F
Temperature -- End of Test	82 °F	82 °F	76.0 °F	82.0 °F
Pressure -- On Test	939 psig	939 psig	939 psig	939 psig
Pressure -- End of Test	878 psig	878 psig	878 psig	878 psig

### Unrestrained Pipe

Sum:	Vo	3,039.16 gal		Vp1	3,049.38 gal		Vp2	3,048.81 gal	
		589,012 oz.			390,321 oz.			380,222 oz.	
Vo Unrestrained	1,770 gal	902 gal		361 gal					
Fwp 1	1.002877	1.002877		1.002877					
Fpp 1	1.002556	1.003469		1.003469					
Fpl 1	1.000419	1.000419		1.000419					
Fwt 1	1.002868	1.002868		1.002868					
Fpwt 1 = Fpl/Fwt	0.997557	0.997557		0.997557					
Vp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,781.47 gal	905.85 gal		362.26 gal					
Fwp 2	1.002689	1.002689		1.002689					
Fpp 2	1.002390	1.003244		1.003244					
Fpl 2	1.000400	1.000400		1.000400					
Fwt 2	1.002725	1.002725		1.002725					
Fpwt = Fpl/Fwt	0.997682	0.997682		0.997682					
Vp 2 = Vo(Fwp)(Fpp)(Fpwt)	1,781.06 gal	905.39 gal		362.16 gal					

### Restrainted Pipe

Sum:	Vo	147,938 gal		Vp1	148,583.28 gal		Vp2	148,526.20 gal	
		18,938,019 oz.			19,018,660 oz.			19,011,354 oz.	
Vo Unrestrained			147,938 gal						
Fwp 1			1.002877						
Fpp 1			1.003469						
Fpl 1			1.000419						
Fwt 1			1.001813						
Fpwt 1 = Fpl/Fwt			0.996384						
Vp 1 = Vo(Fwp)(Fpp)(Fpwt)			148,593 gal						
Fwp 2			1.002689						
Fpp 2			1.002907						
Fpl 2			1.000194						
Fwt 2			1.001613						
Fpwt = Fpl/Fwt			0.998384						
Vp 2 = Vo(Fwp)(Fpp)(Fpwt)			148,526 gal						

### Combined Pipe

Sum:	Vo	150,976.81 gal		Vp1	151,632.66 gal		Vp2	151,574.82 gal	
		19,325,011 oz.			19,408,981 oz.			19,401,576 oz.	



## Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41474005
Construction Co.	Sudison	Job Number	41474005-T77
Hydro. Test Co.	Milbar Hydro test Incorporated	Project No.	FY12-112
Test Section	PG&E T-77 Line 300B, MP 126.883 - 127.4994	<b>WATER</b>	
File Name	RCP 01362 - T-77, L-300B		

**General Pipe Data**

Description	Segment								
	1	2	3	4					
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Unrestrained					
Outside Diameter	34.000 in	34.000 in	34.000 in	34.000 in					
Wall thickness	0.565 in	0.375 in	0.312 in	0.375 in					
Inside Diameter	32.990 in	33.250 in	33.375 in	33.250 in					
Spec./Grade	API5L-X60	API5L-X52	API5L-X52	API5L-X60					
Length Unrestrained	40.00 ft	20.00 ft		ft					
Length Restrained			3,255 ft						
Temperature - On Test	82 °F	82 °F	75 °F	82 °F					
Temperature - End of Test	83 °F	83 °F	76 °F	83 °F					
Pressure - On Test	908 psig	908 psig	908 psig	908 psig					
Pressure - End of Test	908 psig	908 psig	908 psig	908 psig					

**Unrestrained Pipe**

Sum:	Vo	3,039.16 gal 389,012 oz.	Vp1	3,049.18 gal 390,255 oz.	Vp2	3,048.80 gal 390,246 oz.
Vo Unrestrained	1,776 gal	902 gal	361 gal			
Fwp 1	1.002782	1.002782	1.002782			
Fpp 1	1.002472	1.003355	1.003355			
Fpt 1	1.000400	1.000400	1.000400			
Fwt 1	1.002725	1.002725	1.002725			
Fpwt 1 = Fpt/Fwt	0.997682	0.997682	0.997682			
Vp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,781.37 gal	905.59 gal	362.23 gal			
Fwp 2	1.002782	1.002782	1.002782			
Fpp 2	1.002472	1.003355	1.003355			
Fpt 2	1.000419	1.000419	1.000419			
Fwt 2	1.002868	1.002868	1.002868			
Fpwt 2 = Fpt/Fwt	0.997557	0.997557	0.997557			
Vp 2 = Vo(Fwp)(Fpp)(Fpwt)	1,781.15 gal	905.46 gal	362.19 gal			

**Restrained Pipe**

Sum:	Vo	147,937.65 gal 18,935,019 oz.	Vp1	148,570.44 gal 19,017,018 oz.	Vp2	148,554.27 gal 19,014,047 oz.
Vo Restrained		147,938 gal				
Fwp 1		1.002782				
Fpp 1		1.003000				
Fpt 1		1.000182				
Fwt 1		1.001688				
Fpwt 1 = Fpt/Fwt		0.998400				
Vp 1 = Vo(Fwp)(Fpp)(Fpwt)		148,570 gal				
Fwp 2		1.002782				
Fpp 2		1.003004				
Fpt 2		1.000194				
Fwt 2		1.001813				
Fpwt 2 = Fpt/Fwt		0.998384				
Vp 2 = Vo(Fwp)(Fpp)(Fpwt)		148,554 gal				

**Combined Pipe**

Sum:	Vo	150,976.81 gal 19,325,031 oz.	Vp1	151,619.61 gal 19,407,310 oz.	Vp2	151,603.07 gal 19,405,193 oz.
1 °F Change	16.54 gal	2,117.52 oz.				



## Hydrostatic Test Pipe Data Table

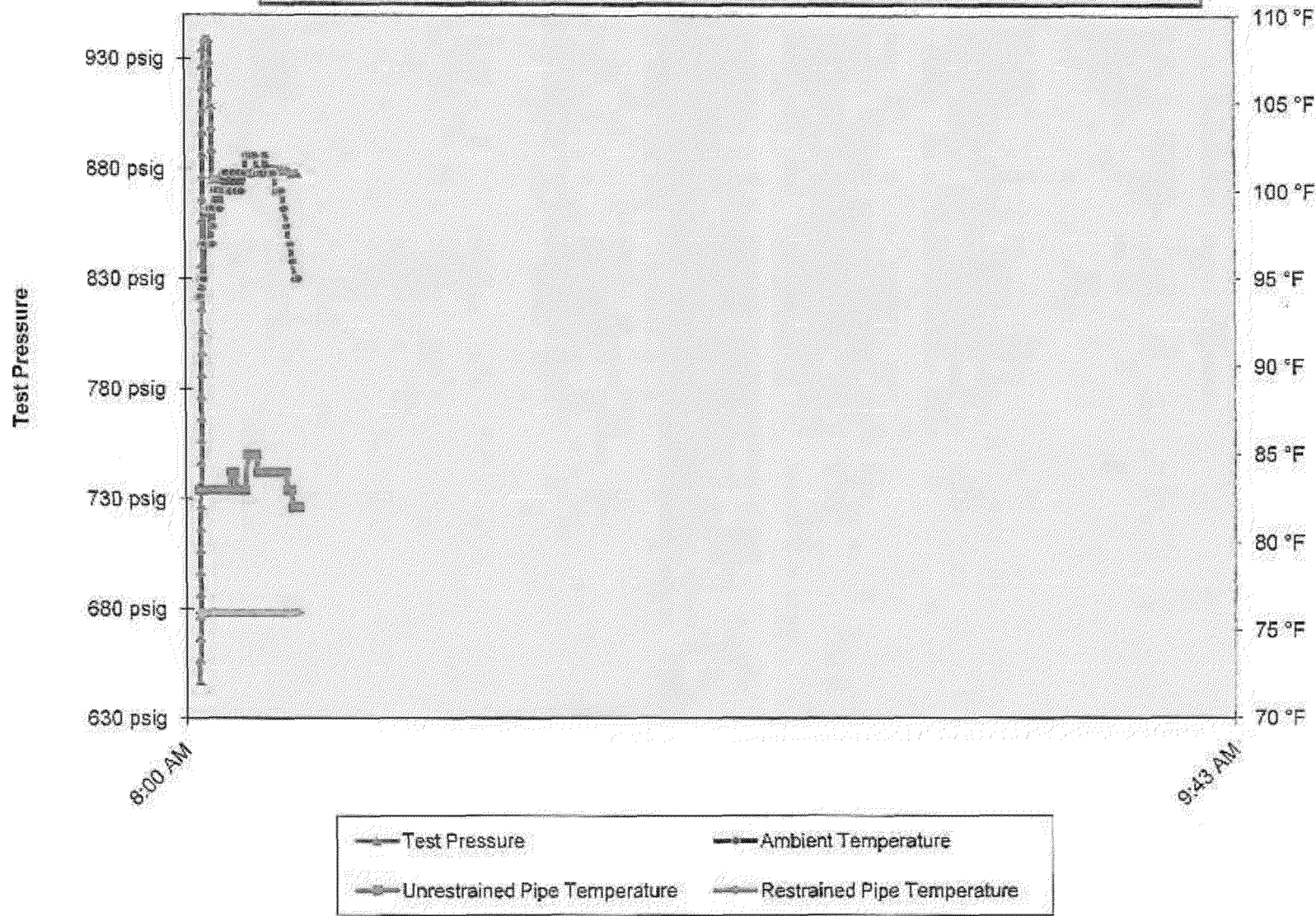
Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	40 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
2	20 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X52	1,147 psig	Steel	Arc Weld	DSAW
3	3,255 ft	Restrained	34.000 in.	0.3120 in.	API5L-X52	954 psig	Steel	Arc Weld	DSAW
4	8 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X60	1,324 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	41474005
Construction Company	Snelson	Job Number
Address	601 West State Street Sedro-Woolley, WA 98284 Attention: Jeff Elliott	41474005-T77
Hydrostatic Test Co.	Milbar Hydro-test Incorporated	Project No.
Address	P.O. Box 7701 Shreveport, Louisiana 71137-7701	FY12-112
Test Section	PG&E T-77 Line 300B, MP 126.883 - 127.4994 From: 0+00 To: 32+55	
File Name	RCP 61362 - T-77, L-300B	

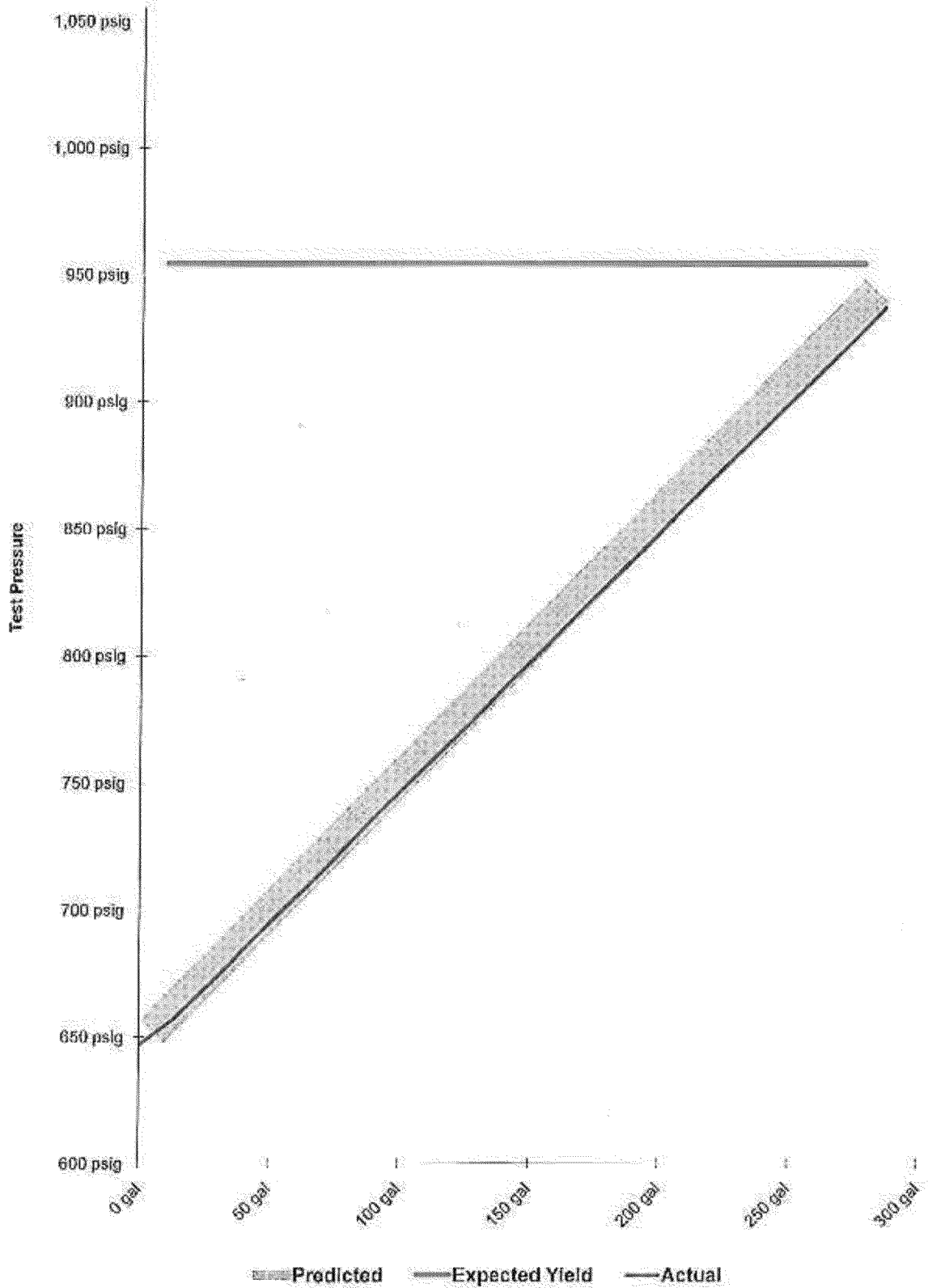


# PG&E T-77 Line 300B, MP 126.883 - 127.4994





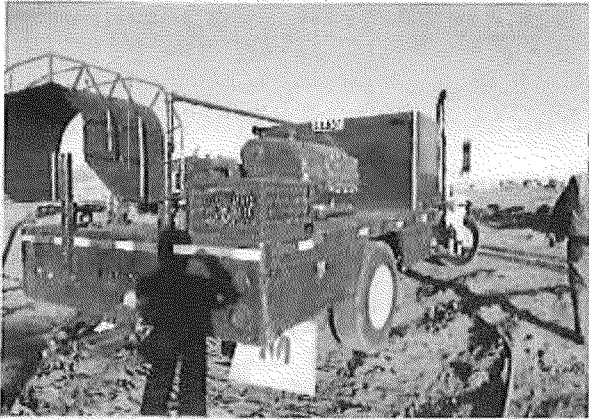
**Spike Pressure Test  
Stress Strain Curve -- PG&E T-77 Line 300B, MP 126.883 -**



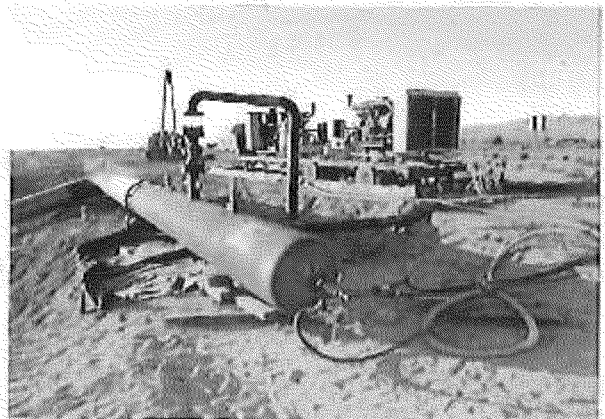


Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data		Slope		Stress Strain Curve -- PG&E T-77 Line 300B, MP 126.883 - 127.4994 Spike Pressure Test
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
647 psig	0	0.00 gal		0	0.00 gal		Pump gal per stroke 0.551 gal/stroke
657 psig	24	13.22 gal	8.55 gal	1.322	0.955		Pump Piston Diameter 3.000 in
667 psig	42	23.13 gal	19.09 gal	0.991	0.955		Pump Piston Stroke 6.00 in
677 psig	60	33.05 gal	28.04 gal	0.991	0.955		Pump Cylinders 3 ea
687 psig	77	42.41 gal	36.18 gal	0.956	0.955		Volume check gal per stroke 0.462 gal/stroke
697 psig	95	52.33 gal	47.73 gal	0.991	0.955		Volume Released (gallons) 51.15 gal
707 psig	113	62.24 gal	57.28 gal	0.991	0.955		Pressure Reduced (psi) 02 psi
717 psig	131	72.15 gal	66.83 gal	0.991	0.955		Maximum2 310 gal
727 psig	148	81.62 gal	76.38 gal	0.936	0.955		Minimum2 0 gal
737 psig	165	90.88 gal	85.93 gal	0.936	0.955		Maximum1 1,055 psig
747 psig	183	100.80 gal	95.46 gal	0.991	0.955		Minimum1 600 psig
757 psig	201	110.71 gal	105.03 gal	0.991	0.955		Gallons/Stroke Usod 0.551 gal/stroke
767 psig	219	120.62 gal	114.58 gal	0.991	0.955		Predicted Gallons/Stroke 0.535 gal/stroke
777 psig	237	130.54 gal	124.13 gal	0.991	0.955		Pressure Increment 10 psi
787 psig	254	139.90 gal	133.68 gal	0.936	0.955		Max Pressure 939 psig
797 psig	272	149.62 gal	143.24 gal	0.991	0.955		Ruled Pipe Temperature 76 °F
807 psig	290	159.73 gal	152.79 gal	0.991	0.956		Exposed Pipe Temperature 85 °F
817 psig	307	169.10 gal	162.35 gal	0.936	0.956		
827 psig	325	178.01 gal	171.80 gal	0.991	0.956		
837 psig	343	188.92 gal	181.46 gal	0.991	0.956		
847 psig	361	198.84 gal	191.01 gal	0.991	0.956		
857 psig	378	208.20 gal	200.57 gal	0.936	0.956		ASME B31.8 Appendix N.5
867 psig	396	218.12 gal	210.13 gal	0.991	0.956		Average Actual Elastic Slope 0.801
877 psig	414	228.03 gal	219.68 gal	0.991	0.956		Average Predicted Elastic Slope 0.955
887 psig	432	237.95 gal	229.24 gal	0.991	0.956		Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2) 1.864
897 psig	450	247.88 gal	238.80 gal	0.991	0.956		Established Minimum Yield Pressure B31.8 N-5 (c)(2) 937 psig
907 psig	468	257.77 gal	248.36 gal	0.991	0.956		Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2) 418 gal
917 psig	486	267.68 gal	257.92 gal	0.991	0.956		Volume (After Slope Deviation) B31.8 N-5 (c)(2) 0 gal
927 psig	504	277.60 gal	267.48 gal	0.991	0.956		
937 psig	521	286.97 gal	277.04 gal	0.936	0.956		
939 psig		286.97 gal	278.95 gal	0.000	0.956		
939 psig		286.97 gal	278.95 gal	0.000	0.000		
939 psig		286.97 gal	278.95 gal	0.000	0.000		
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939 psig		286.97 gal	278.95 gal	0.000	0.000		
939 psig		286.97 gal	278.95 gal	0.000	0.000		

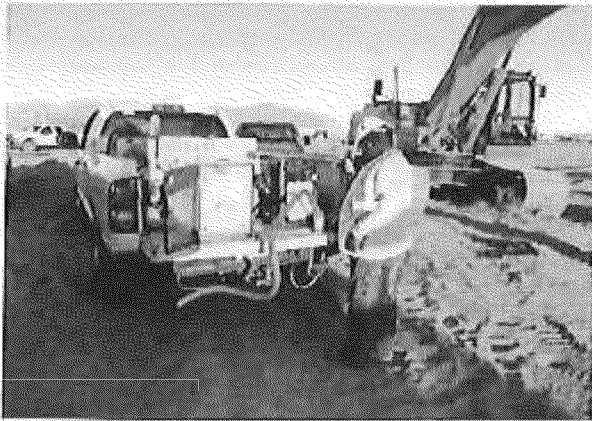
*Stephen E. Gilliam*  
Stephen E. Gilliam  
Date 7-11-11



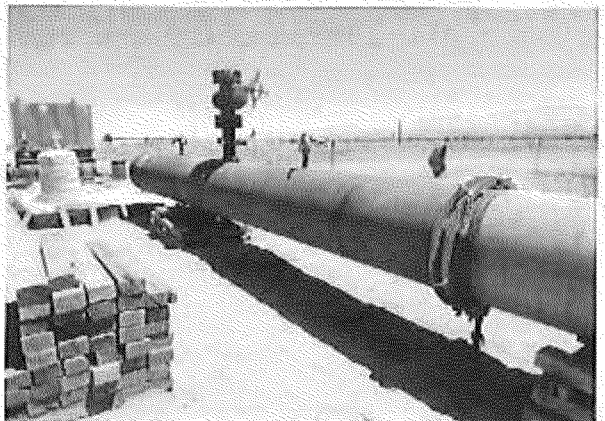
Pump Truck



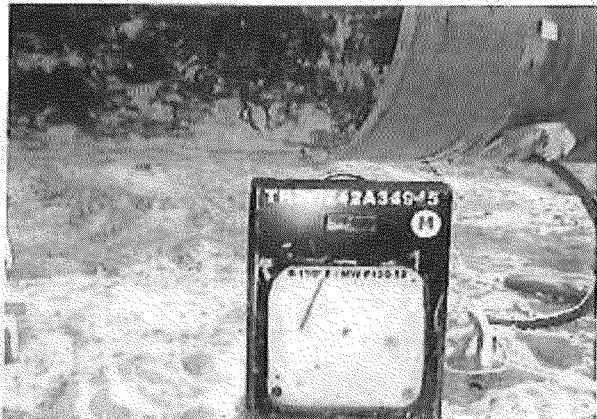
Test Head



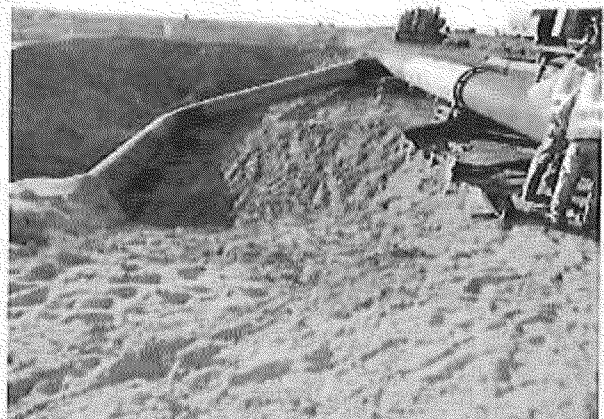
Calibration of Temp. Recorders



Test End



Unrestrained Temp. Recorder



Test Head