RCP

RCP, Inc

801 Louisiana, Ste.200
Houston, Texas 77002

Redacted

September 27, 2011

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

Test Contractor:	Milbar hydro-test inc. – FY12-112
Asset Owner:	Pacific Gas and Electric Company – 41497324-T56
Construction Contractor:	Snelson – 41474005 -T56
Test Section:	PG&E T-56 L-300A, MP 157.86 - 159.33
Test Date:	September 27, 2011
Certificate Number:	RCP 61362 - T-56, L-300A, MP 157.86 -159.33

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 inc. met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 2).

The test segment was subjected to a spike pressure test of 937 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 8.83 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.83 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 873 psig and the established MAOP is 698 psig.

Pressure decreased 64 psi during the test. 16,531.20 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 810.09 ounces, loss, which is equivalent to a 0.11 °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.

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Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41497324-T56
Construction Co.	Snelson	Job Number	41474005 -T56
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-56 L-300A, MP 157.86 - 159.33		
File Name	RCP 61362 - T-56, L-300A, MP 157.86 -159.33		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 27-Sep-11

Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 2)

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-56 L-300A, MP 157.86 - 159.33		
From:	77+38	To:	0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	35 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
2	19 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi
3	5,390 ft	34.000 in.	0.313 in.	API5L-X52, DSAW, Arc Weld, Steel	956 psi
4	3 ft	34.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,147 psi
5	2,269 ft	34.000 in.	0.500 in.	API5L-X46, DSAW, Arc Weld, Steel	1,353 psi
6	25 ft	34.000 in.	0.505 in.	API5L-X60, DSAW, Arc Weld, Steel	1,782 psi
7	38 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi

Initial Test Conditions

Pressure at Test Point:	937 psig	Date/Time:	9/27/11 10:25 AM	Pipe Temperature Unrestrained:	77.0 °F
Ambient Temperature:	78.0 °F			Restrained:	84.0 °F
		Elevation @ Test Point:	2,218.0 ft	Location:	77+38
Pressure @ High Point (Cal/Measure):	937 psig	Elevation @ High Point:	2,218.0 ft	Location:	77+38
Pressure @ Low Point (Cal/Measure):	947 psig	Elevation @ Low Point:	2,196.0 ft	Location:	0+00

Final Test Conditions

Pressure at Test Point:	873 psig	Date/Time:	9/27/11 7:15 PM	Pipe Temperature Unrestrained:	79.0 °F
Ambient Temperature:	87.0 °F			Restrained:	84.0 °F
		Elevation @ Test Point:	2,218.0 ft	Location:	77+38
Pressure @ High Point (Cal/Measure):	873 psig	Elevation @ High Point:	2,218.0 ft	Location:	77+38
Pressure @ Low Point (Cal/Measure):	883 psig	Elevation @ Low Point:	2,196.0 ft	Location:	0+00
Total Fluid Injected:				Volume loss	
Total Fluid Withdrawn:		16531.20 fluid ounces			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):		(810.09) oz	loss	(0.0018)%	(0.113) °F equivalent

Test Duration: 8.83 hours

Minimum Test Pressure:	Test Point	870 psig	Max Elevation	870 psig	Min Elevation	880 psig
Maximum Test Pressure:		937 psig		937 psig		947 psig
% SMYS :		49.5%		69.3%		99.0%
Test Segment Observed % SMYS :			Minimum	49.5%	Maximum	99.0%
Minimum Test Pressure (Calculated/Measured):						873 psig
Maximum Allowable Operating Pressure:				DOT Part 192	Test Factor= 1.25	698 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 937 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 8.83 hour test duration period. No leaks were observed during the test period. The test section included 7,692 feet of buried and 117 feet of exposed pipe. Pressure lost 64 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 2°F. 16,531.20 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 810.09 ounces, loss, which is equivalent to a 0.11 °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.
Remarks	possible leak thru station valves during ramp up,stopped pumping at 8:45A, greased valves, continued at 10:15A. Test continued.	

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497324-T56
Construction Co.	Snelson	Job Number	41474005 -T56
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-56 L-300A, MP 157.86 - 159.33		
File Name	RCP 61362 - T-56, L-300A, MP 157.86 -159.33		

Date 27-Sep-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	9/27/11	8:15 AM	645 psig	71 °F	72 °F	84 °F	Start Spike		
2	9/27/11	8:16 AM	655 psig	71 °F	72 °F	84 °F	Inject		2,235 oz.
3	9/27/11	8:17 AM	665 psig	71 °F	72 °F	84 °F	Inject		2,529 oz.
4	9/27/11	8:18 AM	675 psig	71 °F	72 °F	84 °F	Inject		2,411 oz.
5	9/27/11	8:19 AM	685 psig	71 °F	72 °F	84 °F	Inject		2,352 oz.
6	9/27/11	8:20 AM	695 psig	71 °F	72 °F	84 °F	Inject		2,352 oz.
7	9/27/11	8:21 AM	705 psig	71 °F	72 °F	84 °F	Inject		2,470 oz.
8	9/27/11	8:22 AM	715 psig	71 °F	72 °F	84 °F	Inject		2,352 oz.
9	9/27/11	8:23 AM	725 psig	71 °F	72 °F	84 °F	Inject		2,470 oz.
10	9/27/11	8:24 AM	735 psig	71 °F	72 °F	84 °F	Inject		2,411 oz.
11	9/27/11	8:25 AM	745 psig	71 °F	72 °F	84 °F	Inject		2,352 oz.
12	9/27/11	8:26 AM	755 psig	71 °F	72 °F	84 °F	Inject		2,470 oz.
13	9/27/11	8:27 AM	765 psig	71 °F	72 °F	84 °F	Inject		2,470 oz.
14	9/27/11	8:28 AM	775 psig	71 °F	72 °F	84 °F	Inject		2,411 oz.
15	9/27/11	8:29 AM	785 psig	71 °F	72 °F	84 °F	Inject		2,411 oz.
16	9/27/11	8:30 AM	795 psig	71 °F	72 °F	84 °F	Inject		2,470 oz.
17	9/27/11	8:31 AM	805 psig	71 °F	72 °F	84 °F	Inject		2,411 oz.
18	9/27/11	8:32 AM	815 psig	71 °F	72 °F	84 °F	Inject		2,646 oz.
19	9/27/11	8:33 AM	825 psig	71 °F	72 °F	84 °F	Inject		3,058 oz.
20	9/27/11	8:34 AM	835 psig	71 °F	72 °F	84 °F	Inject		3,234 oz.
21	9/27/11	8:35 AM	845 psig	71 °F	72 °F	84 °F	Inject		2,881 oz.
22	9/27/11	8:36 AM	855 psig	71 °F	73 °F	84 °F	Inject		3,058 oz.
23	9/27/11	10:09 AM	865 psig	78 °F	77 °F	84 °F	Inject		2,881 oz.
24	9/27/11	10:11 AM	875 psig	78 °F	77 °F	84 °F	Inject		2,411 oz.
25	9/27/11	10:13 AM	885 psig	78 °F	77 °F	84 °F	Inject		2,411 oz.
26	9/27/11	10:15 AM	895 psig	78 °F	78 °F	84 °F	Inject		2,352 oz.
27	9/27/11	10:16 AM	905 psig	78 °F	78 °F	84 °F	Inject		3,469 oz.
28	9/27/11	10:18 AM	915 psig	78 °F	78 °F	84 °F	Inject		3,058 oz.
29	9/27/11	10:19 AM	925 psig	78 °F	78 °F	84 °F	Inject		2,940 oz.
30	9/27/11	10:21 AM	935 psig	78 °F	78 °F	84 °F	Inject		3,058 oz.
31	9/27/11	10:23 AM	937 psig	78 °F	77 °F	84 °F	Inject		588 oz.
32	9/27/11	10:25 AM	937 psig	78 °F	77 °F	84 °F	On Test		
33	9/27/11	10:35 AM	934 psig	79 °F	77 °F	84 °F			
34	9/27/11	10:45 AM	933 psig	80 °F	79 °F	84 °F			
35	9/27/11	10:55 AM	933 psig	81 °F	80 °F	84 °F			
36	9/27/11	11:00 AM	933 psig	82 °F	80 °F	84 °F	End Spike		
37	9/27/11	11:33 AM	870 psig	86 °F	81 °F	84 °F		16,531 oz.	
38	9/27/11	11:45 AM	870 psig	88 °F	82 °F	84 °F			
39	9/27/11	12:00 PM	870 psig	90 °F	82 °F	84 °F			
40	9/27/11	12:15 PM	871 psig	93 °F	83 °F	84 °F			
41	9/27/11	12:30 PM	871 psig	94 °F	83 °F	84 °F			
42	9/27/11	12:45 PM	871 psig	95 °F	84 °F	84 °F			
43	9/27/11	1:00 PM	871 psig	98 °F	85 °F	84 °F			

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497324-T56
Construction Co.	Snelson	Job Number	41474005 -T56
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-56 L-300A, MP 157.86 - 159.33		
File Name	RCP 61362 - T-56, L-300A, MP 157.86 -159.33		

Date 27-Sep-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
44	9/27/11	1:15 PM	871 psig	99 °F	85 °F	84 °F			
45	9/27/11	1:30 PM	872 psig	100 °F	85 °F	84 °F	Hot		
46	9/27/11	1:45 PM	872 psig	100 °F	86 °F	84 °F			
47	9/27/11	2:00 PM	872 psig	98 °F	86 °F	84 °F	Clear		
48	9/27/11	2:15 PM	872 psig	98 °F	86 °F	84 °F			
49	9/27/11	2:30 PM	872 psig	98 °F	86 °F	84 °F			
50	9/27/11	2:45 PM	873 psig	98 °F	86 °F	84 °F			
51	9/27/11	3:00 PM	873 psig	99 °F	86 °F	84 °F	Hot		
52	9/27/11	3:15 PM	873 psig	99 °F	86 °F	84 °F			
53	9/27/11	3:30 PM	873 psig	100 °F	86 °F	84 °F			
54	9/27/11	3:45 PM	873 psig	100 °F	86 °F	84 °F	Hot		
55	9/27/11	4:00 PM	873 psig	101 °F	85 °F	84 °F			
56	9/27/11	4:15 PM	873 psig	100 °F	84 °F	84 °F			
57	9/27/11	4:30 PM	874 psig	100 °F	83 °F	84 °F	Clear		
58	9/27/11	4:45 PM	874 psig	98 °F	83 °F	84 °F			
59	9/27/11	5:00 PM	874 psig	98 °F	83 °F	84 °F			
60	9/27/11	5:15 PM	874 psig	98 °F	83 °F	84 °F			
61	9/27/11	5:30 PM	874 psig	97 °F	82 °F	84 °F			
62	9/27/11	5:45 PM	874 psig	95 °F	81 °F	84 °F			
63	9/27/11	6:00 PM	874 psig	93 °F	81 °F	84 °F			
64	9/27/11	6:15 PM	874 psig	91 °F	81 °F	84 °F			
65	9/27/11	6:30 PM	874 psig	90 °F	80 °F	84 °F			
66	9/27/11	6:45 PM	874 psig	88 °F	80 °F	84 °F			
67	9/27/11	7:00 PM	873 psig	87 °F	80 °F	84 °F			
68	9/27/11	7:15 PM	873 psig	87 °F	79 °F	84 °F	End of Test		
							Spike Test		76,620.8 oz.
							Hydrostatic Test	16,531.2 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	937 psig
		Low Test Pressure:	870 psig

Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497324-T56
Construction Co.	Snelson	Job Number	41474005 -T56
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-56 L-300A, MP 157.86 - 159.33		WATER
File Name	RCP 61362 - T-56, L-300A, MP 157.86 -159.33		

General Pipe Data

Description	Segment										
	1	2	3	4	5	6	7				
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained				
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.				
Wall Thickness	0.500 in.	0.375 in.	0.313 in.	0.375 in.	0.500 in.	0.505 in.	0.500 in.				
Inside Diameter	33.000 in.	33.250 in.	33.375 in.	33.250 in.	33.000 in.	32.990 in.	33.000 in.				
Spec./Grade	API5L-X65	API5L-X65	API5L-X52	API5L-X52	API5L-X46	API5L-X60	API5L-X65				
Length Unrestrained	35 ft	19 ft				25 ft	38 ft				
Length Restrained			5,390 ft	3 ft	2,299 ft						
Temperature – On Test	77 °F	77 °F	84.0 °F	84.0 °F	84.0 °F	77.0 °F	77.0 °F				
Temperature – End of Test	79 °F	79 °F	84.0 °F	84.0 °F	84.0 °F	79.0 °F	79.0 °F				
Pressure – On Test	937 psig	937 psig	937 psig	937 psig	937 psig	937 psig	937 psig				
Pressure – End of Test	873 psig	873 psig	873 psig	873 psig	873 psig	873 psig	873 psig				

Unrestrained Pipe

Sum:	Vo	5,210.60 gal 666,957 oz.		Vtp1	5,231.10 gal 669,580 oz.		Vtp2		5,227.78 gal 669,156 oz.		
Vo Unrestrained	1,555 gal	857 gal				1,110 gal	1,688 gal				
Fwp 1	1.002871	1.002871				1.002871	1.002871				
Fpp 1	1.002577	1.003462				1.002550	1.002577				
Fpt 1	1.000309	1.000309				1.000309	1.000309				
Fwt 1	1.001966	1.001966				1.001966	1.001966				
Fpwt 1 = Fpt/Fwt	0.998347	0.998347				0.998347	0.998347				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,560.99 gal	881.04 gal				1,114.29 gal	1,694.79 gal				
Fwp 2	1.002674	1.002674				1.002674	1.002674				
Fpp 2	1.002401	1.003225				1.002376	1.002401				
Fpt 2	1.000346	1.000346				1.000346	1.000346				
Fwt 2	1.002255	1.002255				1.002255	1.002255				
Fpwt = Fpt/Fwt	0.998095	0.998095				0.998095	0.998095				
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,560.01 gal	880.45 gal				1,113.59 gal	1,693.73 gal				

Restrained Pipe

Sum:	Vo	347,239.75 gal 44,446,688 oz.		Vtp1	348,246.41 gal 44,575,540 oz.		Vtp2		348,114.24 gal 44,558,623 oz.		
Vo Unrestrained			244,957 gal	135 gal	102,147 gal						
Fwp 1			1.002871	1.002871	1.002871						
Fpp 1			1.003122	1.002607	1.001962						
Fpt 1			1.000290	1.000290	1.000290						
Fwt 1			1.003044	1.003044	1.003044						
Fpwt 1 = Fpt/Fwt			0.997255	0.997255	0.997255						
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			245,751 gal	136 gal	102,360 gal						
Fwp 2			1.002674	1.002674	1.002674						
Fpp 2			1.002915	1.002434	1.001834						
Fpt 2			1.000290	1.000290	1.000290						
Fwt 2			1.003044	1.003044	1.003044						
Fpwt = Fpt/Fwt			0.997255	0.997255	0.997255						
Vtp = Vo(Fwp)(Fpp)(Fpwt)			245,652 gal	136 gal	102,326 gal						

Combined Pipe

Sum:	Vo	352,450.36 gal 45,113,646 oz.	Vtp1	353,477.51 gal 45,245,121 oz.	Vtp2	353,342.03 gal 45,227,779 oz.

Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41497324-T56
Construction Co.	Snelson	Job Number	41474005 -T56
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-56 L-300A, MP 157.86 - 159.33		WATER
File Name	RCP 61362 - T-56, L-300A, MP 157.86 -159.33		

General Pipe Data

Description	Segment 1	2	3	4	5	6	7
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.500 in.	0.375 in.	0.313 in.	0.375 in.	0.500 in.	0.505 in.	0.500 in.
Inside Diameter	33.000 in.	33.250 in.	33.375 in.	33.250 in.	33.000 in.	32.990 in.	33.000 in.
Spec./Grade	API5L-X65	API5L-X65	API5L-X52	API5L-X52	API5L-X46	API5L-X60	API5L-X65
Length Unstrained	35.00 ft	19.00 ft				25 ft	38 ft
Length Restrained			5,390 ft	3 ft	2,299 ft		
Temperature – On Test	77 °F	77 °F	83 °F	83 °F	83 °F	77 °F	77 °F
Temperature – End of Test	78 °F	78 °F	84 °F	84 °F	84 °F	78 °F	78 °F
Pressure – On Test	905 psig	905 psig	905 psig	905 psig	905 psig	905 psig	905 psig
Pressure – End of Test	905 psig	905 psig	905 psig	905 psig	905 psig	905 psig	905 psig

Unrestrained Pipe

Sum:	Vo	5,210.60 gal / 666,957 oz.	Vtp1	5,230.10 gal / 669,453 oz.	Vtp2	5,229.38 gal / 669,361 oz.
Vo Unrestrained	1,555 gal	857 gal		1,110 gal	1,688 gal	
Fwp 1	1.002772	1.002772		1.002772	1.002772	
Fpp 1	1.002489	1.003343		1.002463	1.002489	
Fpt 1	1.000309	1.000309		1.000309	1.000309	
Fwt 1	1.001966	1.001956		1.001966	1.001966	
Fpwt 1 = Fpt/Fwt	0.998347	0.998347		0.998347	0.998347	
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,560.70 gal	860.85 gal		1,114.08 gal	1,694.47 gal	
Fwp 2	1.002772	1.002772		1.002772	1.002772	
Fpp 2	1.002489	1.003343		1.002463	1.002489	
Fpt 2	1.000328	1.000328		1.000328	1.000328	
Fwt 2	1.002122	1.002122		1.002122	1.002122	
Fpwt = Fpt/Fwt	0.998209	0.998209		0.998209	0.998209	
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,560.48 gal	860.74 gal		1,113.93 gal	1,694.24 gal	

Restrained Pipe

Sum:	Vo	347,239.75 gal / 44,446,688 oz.	Vtp1	348,235.65 gal / 44,574,163 oz.	Vtp2	348,180.32 gal / 44,567,081 oz.
Vo Restrained		244,957 gal	135 gal	102,147 gal		
Fwp 1		1.002772	1.002772	1.002772		
Fpp 1		1.003015	1.002517	1.001895		
Fpt 1		1.000278	1.000278	1.000278		
Fwt 1		1.002868	1.002868	1.002868		
Fpwt 1 = Fpt/Fwt		0.997417	0.997417	0.997417		
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		245,741 gal	136 gal	102,359 gal		
Fwp 2		1.002772	1.002772	1.002772		
Fpp 2		1.003018	1.002520	1.001898		
Fpt 2		1.000290	1.000290	1.000290		
Fwt 2		1.003044	1.003044	1.003044		
Fpwt = Fpt/Fwt		0.997255	0.997255	0.997255		
Vtp = Vo(Fwp)(Fpp)(Fpwt)		246,702 gal	136 gal	102,343 gal		

Combined Pipe

Sum:	Vo	352,450.36 gal / 45,113,646 oz.	Vtp1	353,465.75 gal / 45,243,616 oz.	Vtp2	353,409.70 gal / 45,236,441 oz.
1 °F Change	56.05 gal	7,174.51 oz.				

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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	35 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
2	19 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW
3	5,390 ft	Restrained	34.000 in.	0.3125 in.	API5L-X52	956 psig	Steel	Arc Weld	DSAW
4	3 ft	Restrained	34.000 in.	0.3750 in.	API5L-X52	1,147 psig	Steel	Arc Weld	DSAW
5	2,299 ft	Restrained	34.000 in.	0.5000 in.	API5L-X46	1,353 psig	Steel	Arc Weld	DSAW
6	25 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
7	38 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 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 Attention: Redacted	41497324-T56
Construction Company	Snelson	Job Number
Address	601 West State Street Sedro-Wooley, WA 98284 Attention: Redacted	41474005 -T56
Hydrostatic Test Co.	Milbar hydro-test inc.	Project No.
Address	P O Box 7701 Shreveport, La. 71137-7701	FY12-112
Test Section	PG&E T-56 L-300A, MP 157.86 - 159.33 From: 77+38 To: 0+00	
File Name	RCP 61362 - T-56, L-300A, MP 157.86 -159.33	

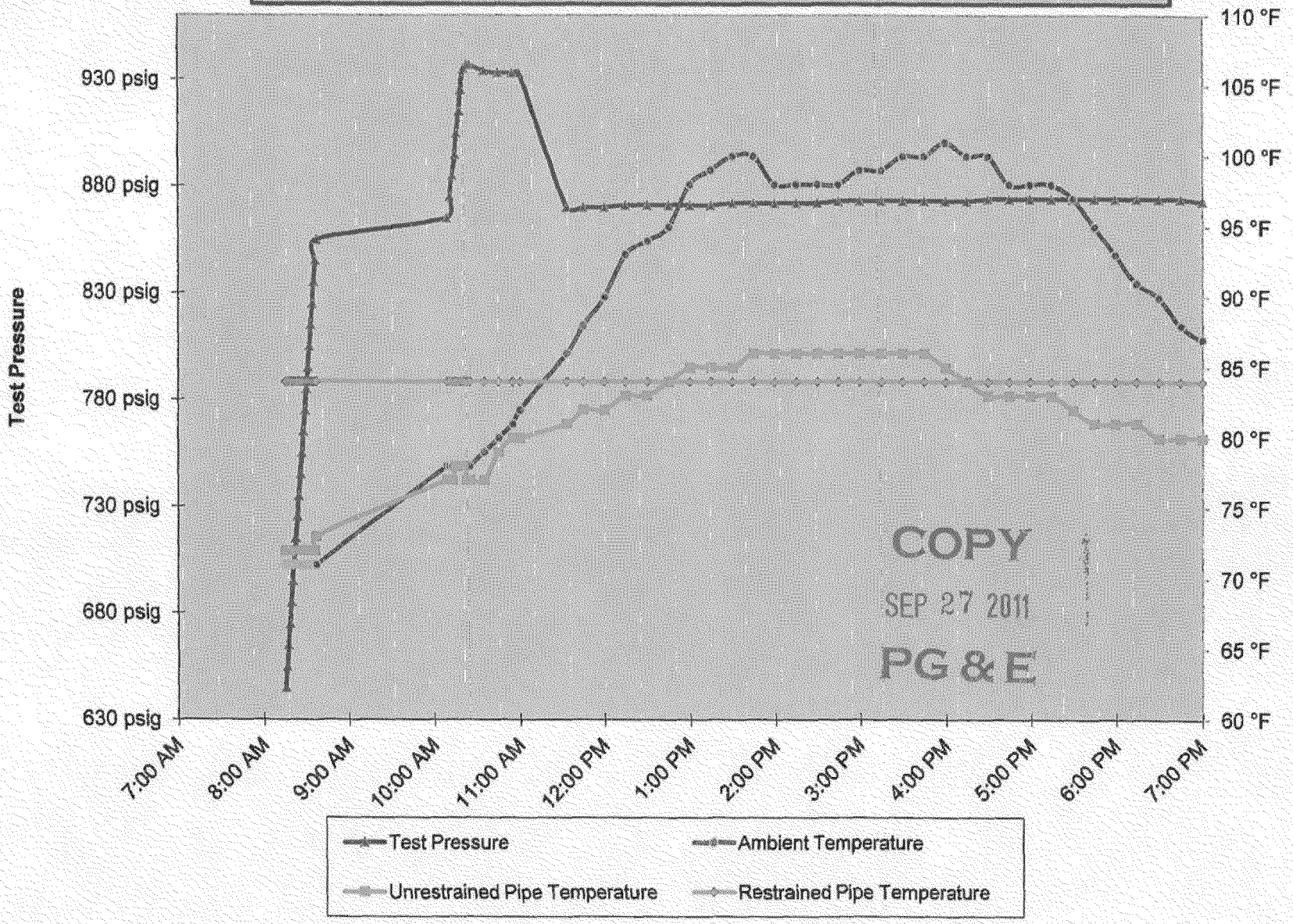
Part II – Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

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

Time and Date Test Pressure Reached	9/27/11 10:25 AM	Elevation at Test Point	2,218 ft	Min. Required Test Press At Test Point (1)	860.00 psig	Max. Allowable Test Press at Test Point (4)	937.47 psig
Time and Date Test Ended	9/27/11 7:15 PM	Max. Elevation in Test Section	2,218 ft	Min. Indicated Test Pressure (2)	870.00 psig	Max. Indicated Test Pressure (5)	937.00 psig
Actual Duration of Test	8 hours 50 minutes	Min. Elevation in Test Section	2,196 ft	Min. Test Pressure at Max. Elevation (3)	870.00 psig	Max. Test Pressure at Min. Elevation (6)	946.53 psig

RCP

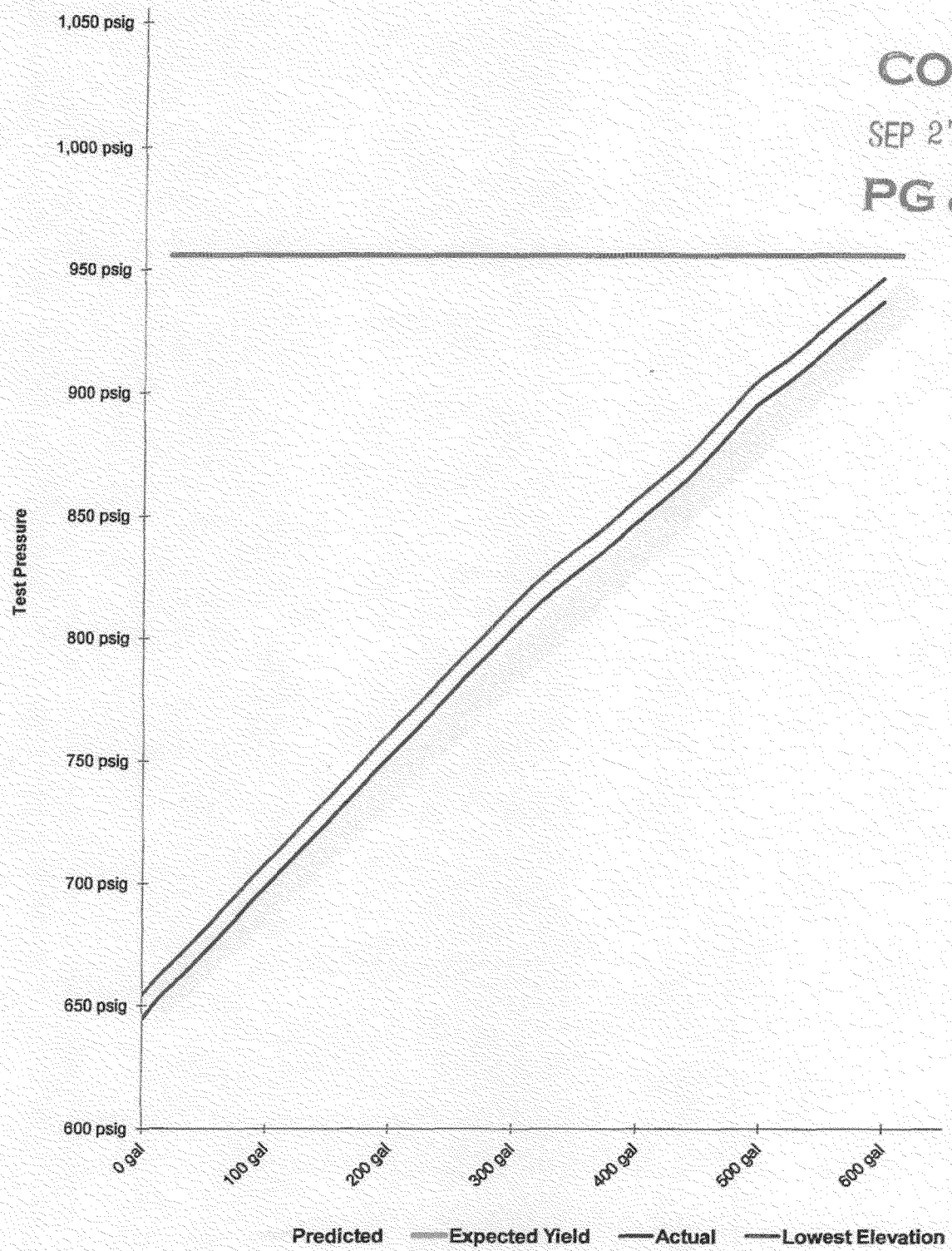
PG&E T-56 L-300A, MP 157.86 - 159.33



C:\Users [Redacted] Documents\PG&E test 56\
test 56_Test_Plan_(Large_Elevation)_8.30.2011
PlotT

RCP

Spike Pressure Test
Stress Strain Curve -- PG&E T-56 L-300A, MP 157.86 - 159.33



RCP

Spike Pressure Test
Stress Strain Curve -- PG&E T-56 L-300A, MP 157.86 - 159.33

Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
645 psig	0	0.00 gal		0	0.000
655 psig	38	17.46 gal	20.98 gal	1.746	2.098
665 psig	81	37.21 gal	41.97 gal	1.975	2.099
675 psig	122	56.05 gal	62.96 gal	1.884	2.099
685 psig	162	74.42 gal	83.95 gal	1.838	2.099
695 psig	202	92.80 gal	104.94 gal	1.838	2.099
705 psig	244	112.09 gal	125.93 gal	1.929	2.099
715 psig	284	130.47 gal	146.92 gal	1.838	2.099
725 psig	326	149.76 gal	167.91 gal	1.929	2.099
735 psig	367	168.60 gal	188.91 gal	1.884	2.099
745 psig	407	186.98 gal	209.90 gal	1.838	2.100
755 psig	449	206.27 gal	230.90 gal	1.929	2.100
765 psig	491	225.57 gal	251.90 gal	1.929	2.100
775 psig	532	244.40 gal	272.90 gal	1.884	2.100
785 psig	573	263.24 gal	293.90 gal	1.884	2.100
795 psig	615	282.53 gal	314.90 gal	1.929	2.100
805 psig	656	301.37 gal	335.91 gal	1.884	2.100
815 psig	701	322.04 gal	356.91 gal	2.067	2.101
825 psig	753	345.93 gal	377.92 gal	2.389	2.101
835 psig	808	371.20 gal	398.92 gal	2.527	2.101
845 psig	857	393.71 gal	419.93 gal	2.251	2.101
855 psig	909	417.60 gal	440.94 gal	2.389	2.101
865 psig	958	440.11 gal	461.95 gal	2.251	2.101
875 psig	999	458.94 gal	482.97 gal	1.884	2.101
885 psig	1040	477.78 gal	503.98 gal	1.884	2.101
895 psig	1080	496.15 gal	525.00 gal	1.838	2.102
905 psig	1139	523.26 gal	546.01 gal	2.710	2.102
915 psig	1191	547.15 gal	567.03 gal	2.389	2.102
925 psig	1241	570.12 gal	588.05 gal	2.297	2.102
935 psig	1293	594.01 gal	609.07 gal	2.389	2.102
937 psig	1303	598.60 gal	613.28 gal	2.297	2.102
937 psig		598.60 gal	613.28 gal	0.000	0.000
937 psig		598.60 gal	613.28 gal	0.000	0.000
937 psig		598.60 gal	613.28 gal	0.000	0.000
937 psig		598.60 gal	613.28 gal	0.000	0.000
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937 psig		598.60 gal	613.28 gal	0.000	0.000
937 psig		598.60 gal	613.28 gal	0.000	0.000
937 psig		598.60 gal	613.28 gal	0.000	0.000
937 psig		598.60 gal	613.28 gal	0.000	0.000
937 psig		598.60 gal	613.28 gal	0.000	0.000

Pump gal per stroke	0.551 gal/stroke
Pump Piston Diameter	3.000 in
Pump Piston Stroke	6.00 in
Pump Cylinders	3 ea
Volume check gal per stroke	0.459 gal/stroke
Volume Released (gallons)	20.50 gal
Pressure Reduced (psi)	10 psi
Maximum2	650 gal
Minimum2	0 gal
Maximum1	1,056 psig
Minimum1	600 psig
Gallons/Stroke Used	0.459 gal/stroke
Predicted Gallons/Stroke	0.471 gal/stroke
Pressure Increment	10 psi
Max Pressure	937 psig
Buried Pipe Temperature	84 °F
Exposed Pipe Temperature	71 °F

ASME B31.8 Appendix N-5

Average Actual Elastic Slope	1.894
Average Predicted Elastic Slope	2.100
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	3.599
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	937 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

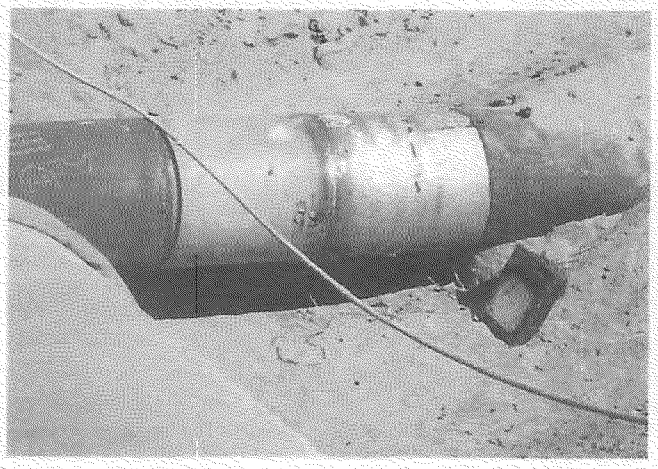
Redacted

9/27/11
Date

COPY
SEP 27 2011
PG & E

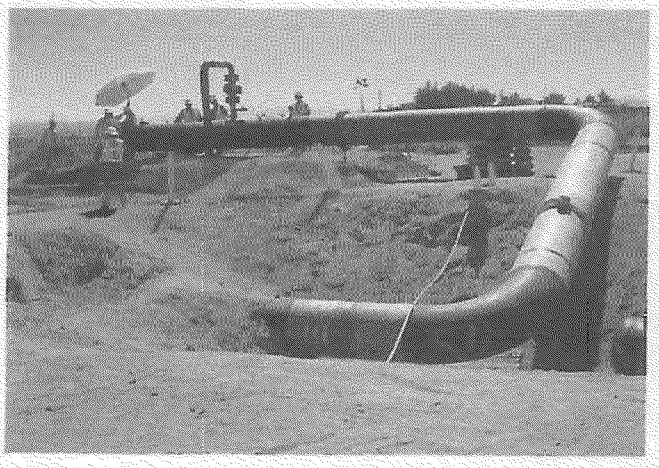
test 56 Loc.B test head in white on 34"mainline

test 56 Loc.B testhead on 34" mainline

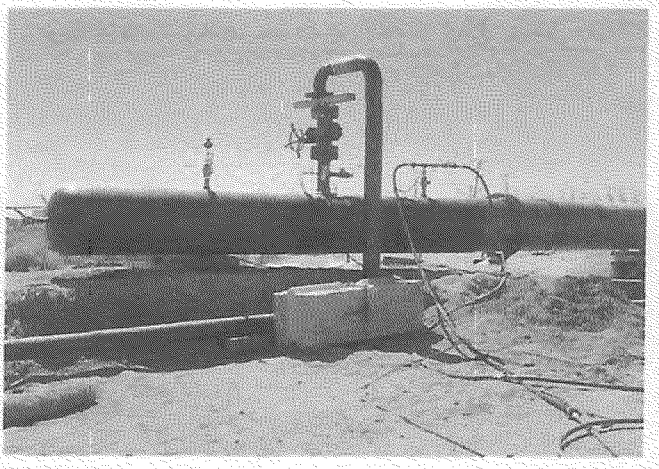


test 56 loc.A dual temp recorder
restrained and unrestrained pipe

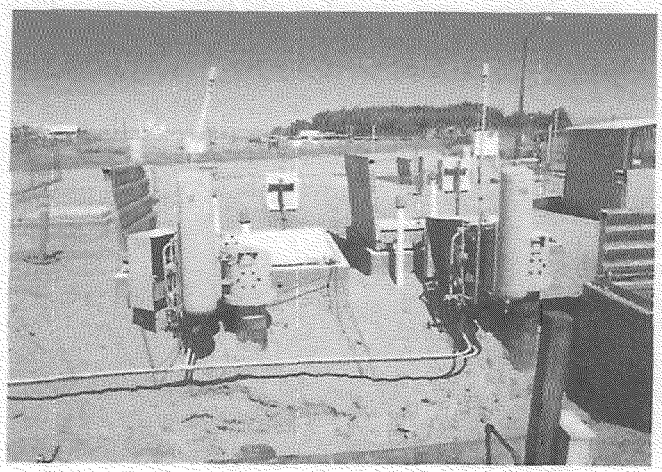
test 56 Loc.A -test trailer and pump truck



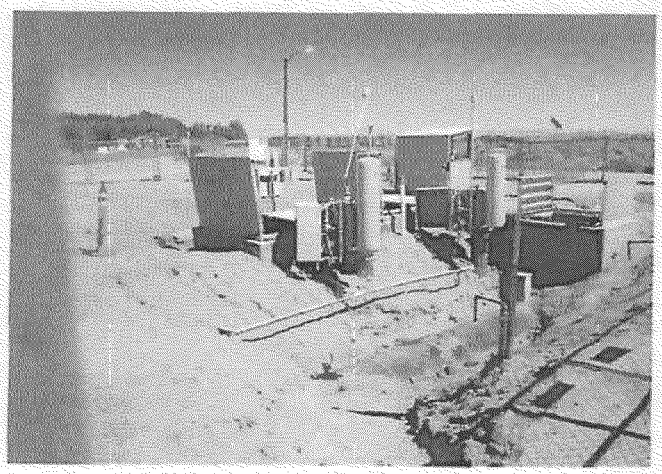
test 56, loc.A testhead on 34" pipe



Test 56 Loc.A test head with manifold attached



test 56 Loc.A valve boxes for station suction valves



test 56 Loc. A valve boxes open -valves closed testing against closed valves

Test 56 loc.A remote pipe temp. recorder