RCP

RCP, Inc

801 Louisiana, Ste.200
Houston, Texas 77002
(713)655-8080
Redacted

September 21, 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 -- 41497322-T54B
Construction Contractor:	Snelson -- 41474005 -T54B
Test Section:	PG&E T-54B L-300A, MP 155.075 - 156.4
Test Date:	September 21, 2011
Certificate Number:	RCP 61362 - T-54B, L-300A, MP 155.075 - 156.4

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 3).

The test segment was subjected to a spike pressure test of 1130 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 8.55 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.55 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 1069 psig and the established MAOP is 712 psig.

Pressure decreased 59 psi during the test. 18,480.00 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 8,275.18 ounces, gain, which is equivalent to a 2.02 °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 Redac feet of buried and Red 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	41497322-T54B
Construction Co.	Snelson	Job Number	41474005 -T54B
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-54B L-300A, MP 155.075 - 156.4		
File Name	RCP 61362 - T-54B, L-300A, MP 155.075 - 156.4		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 21-Sep-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-54B L-300A, MP 155.075 - 156.4		
From:	70+47	To:	0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	69 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi
2	7,098 ft	34.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,147 psi
3	40 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
4	23 ft	34.000 in.	0.505 in.	API5L-X60, DSAW, Arc Weld, Steel	1,782 psi

Initial Test Conditions

Pressure at Test Point:	1,130 psig	Date/Time:	9/21/11 10:27 AM	Pipe Temperature Unrestrained:	72.0 °F
Ambient Temperature:	80.0 °F			Restrained:	72.0 °F
		Elevation @ Test Point:	2,191.0 ft	Location:	70+47
Pressure @ High Point (Cal/Measure):	1,128 psig	Elevation @ High Point:	2,195.0 ft	Location:	42+40
Pressure @ Low Point (Cal/Measure):	1,136 psig	Elevation @ Low Point:	2,178.0 ft	Location:	15+80

Final Test Conditions

Pressure at Test Point:	1,071 psig	Date/Time:	9/21/11 7:00 PM	Pipe Temperature Unrestrained:	72.0 °F
Ambient Temperature:	90.0 °F			Restrained:	71.0 °F
		Elevation @ Test Point:	2,191.0 ft	Location:	70+47
Pressure @ High Point (Cal/Measure):	1,069 psig	Elevation @ High Point:	2,195.0 ft	Location:	42+40
Pressure @ Low Point (Cal/Measure):	1,077 psig	Elevation @ Low Point:	2,178.0 ft	Location:	15+80
Total Fluid Injected:				Volume gain	
Total Fluid Withdrawn:		18480.00 fluid ounces			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):		8,275.18 oz	gain	0.0197%	2.018 °F equivalent

Test Duration: 8.55 hours

Minimum Test Pressure:	Test Point	1,053 psig	Max Elevation	1,051 psig	Min Elevation	1,059 psig
Maximum Test Pressure:		1,130 psig		1,128 psig		1,136 psig
% SMYS :				98.4%		99.0%
Test Segment Observed % SMYS :			Minimum	59.1%	Maximum	99.0%
					Minimum Test Pressure (Calculated/Measured):	1,069 psig
Maximum Allowable Operating Pressure:				DOT Part 192	Test Factor= 1.50	712 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 1130 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 8.55 hour test duration period. No leaks were observed during the test period. The test section included 7,121 feet of buried and 109 feet of exposed pipe. Pressure lost 59 psi during the test. The buried pipe segment lost 1°F fluid temperature and the exposed pipe segment fluid temperature remained steady. 18,480.00 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 8,275.18 ounces, gain, which is equivalent to a 2.02 °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 7,121 feet of buried and 109 feet of exposed pipe from a single point on the line.
Remarks		

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497322-T54B
Construction Co.	Snelson	Job Number	41474005 - T54B
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-54B L-300A, MP 155.075 - 156.4		
File Name	RCP 61362 - T-54B, L-300A, MP 155.075 - 156.4		

Date **21-Sep-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	9/21/11	9:53 AM	776 psig	80 °F	71 °F	71 °F	Start Spike		
2	9/21/11	9:54 AM	786 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
3	9/21/11	9:55 AM	796 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
4	9/21/11	9:56 AM	806 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
5	9/21/11	9:57 AM	816 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
6	9/21/11	9:58 AM	826 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
7	9/21/11	9:59 AM	836 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
8	9/21/11	10:00 AM	846 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
9	9/21/11	10:01 AM	856 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
10	9/21/11	10:02 AM	866 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
11	9/21/11	10:03 AM	876 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
12	9/21/11	10:04 AM	886 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
13	9/21/11	10:05 AM	896 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
14	9/21/11	10:06 AM	906 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
15	9/21/11	10:07 AM	916 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
16	9/21/11	10:08 AM	926 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
17	9/21/11	10:09 AM	936 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
18	9/21/11	10:10 AM	946 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
19	9/21/11	10:11 AM	956 psig	80 °F	71 °F	71 °F	Inject		2,516 oz.
20	9/21/11	10:12 AM	966 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
21	9/21/11	10:13 AM	976 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
22	9/21/11	10:14 AM	986 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
23	9/21/11	10:15 AM	996 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
24	9/21/11	10:16 AM	1,006 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
25	9/21/11	10:17 AM	1,016 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
26	9/21/11	10:18 AM	1,026 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
27	9/21/11	10:19 AM	1,036 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
28	9/21/11	10:20 AM	1,046 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
29	9/21/11	10:21 AM	1,056 psig	80 °F	71 °F	71 °F	Inject		2,384 oz.
30	9/21/11	10:22 AM	1,066 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
31	9/21/11	10:23 AM	1,076 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
32	9/21/11	10:24 AM	1,086 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
33	9/21/11	10:25 AM	1,096 psig	80 °F	71 °F	71 °F	Inject		2,516 oz.
34	9/21/11	10:26 AM	1,106 psig	80 °F	71 °F	71 °F	Inject		2,450 oz.
35	9/21/11	10:26 AM	1,116 psig	80 °F	71 °F	71 °F	Inject		2,318 oz.
36	9/21/11	10:26 AM	1,126 psig	80 °F	71 °F	71 °F	Inject		2,516 oz.
37	9/21/11	10:27 AM	1,130 psig	80 °F	72 °F	72 °F	Inject		861 oz.
38	9/21/11	10:27 AM	1,130 psig	80 °F	72 °F	72 °F	On Test		
39	9/21/11	10:37 AM	1,130 psig	81 °F	72 °F	72 °F			
40	9/21/11	10:47 AM	1,130 psig	82 °F	72 °F	72 °F			
41	9/21/11	10:57 AM	1,130 psig	84 °F	72 °F	72 °F	End Spike		
42	9/21/11	10:58 AM	1,120 psig	84 °F	72 °F	72 °F	Bleed	2,400 oz.	
43	9/21/11	11:00 AM	1,110 psig	84 °F	72 °F	72 °F	Bleed	2,400 oz.	

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497322-T54B
Construction Co.	Snelson	Job Number	41474005 - T54B
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-54B L-300A, MP 155.075 - 156.4		
File Name	RCP 61362 - T-54B, L-300A, MP 155.075 - 156.4		

Date 21-Sep-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
44	9/21/11	11:02 AM	1,100 psig	84 °F	72 °F	72 °F	Bleed	2,400 oz.	
45	9/21/11	11:04 AM	1,090 psig	84 °F	72 °F	72 °F	Bleed	2,400 oz.	
46	9/21/11	11:06 AM	1,080 psig	84 °F	72 °F	72 °F	Bleed	2,400 oz.	
47	9/21/11	11:08 AM	1,059 psig	84 °F	72 °F	72 °F	Bleed	5,040 oz.	
48	9/21/11	11:10 AM	1,053 psig	84 °F	72 °F	72 °F	Bleed	1,440 oz.	
49	9/21/11	11:25 AM	1,053 psig	87 °F	72 °F	72 °F			
50	9/21/11	11:30 AM	1,053 psig	87 °F	72 °F	72 °F			
51	9/21/11	11:45 AM	1,054 psig	89 °F	73 °F	72 °F			
52	9/21/11	12:00 PM	1,054 psig	91 °F	73 °F	72 °F			
53	9/21/11	12:15 PM	1,055 psig	92 °F	73 °F	73 °F			
54	9/21/11	12:30 PM	1,056 psig	94 °F	73 °F	73 °F			
55	9/21/11	12:45 PM	1,056 psig	96 °F	73 °F	73 °F			
56	9/21/11	1:00 PM	1,057 psig	98 °F	74 °F	73 °F	Hot		
57	9/21/11	1:15 PM	1,058 psig	99 °F	75 °F	73 °F			
58	9/21/11	1:30 PM	1,059 psig	100 °F	76 °F	73 °F			
59	9/21/11	1:45 PM	1,059 psig	101 °F	77 °F	73 °F			
60	9/21/11	2:00 PM	1,061 psig	102 °F	78 °F	73 °F			
61	9/21/11	2:15 PM	1,061 psig	102 °F	79 °F	73 °F			
62	9/21/11	2:30 PM	1,062 psig	104 °F	80 °F	73 °F			
63	9/21/11	2:45 PM	1,062 psig	105 °F	80 °F	73 °F			
64	9/21/11	3:00 PM	1,063 psig	105 °F	80 °F	73 °F	Hot		
65	9/21/11	3:15 PM	1,064 psig	105 °F	80 °F	73 °F			
66	9/21/11	3:30 PM	1,064 psig	104 °F	80 °F	73 °F			
67	9/21/11	3:45 PM	1,065 psig	104 °F	79 °F	73 °F			
68	9/21/11	4:00 PM	1,066 psig	104 °F	78 °F	73 °F	Hot		
69	9/21/11	4:15 PM	1,066 psig	104 °F	77 °F	73 °F			
70	9/21/11	4:30 PM	1,067 psig	103 °F	77 °F	72 °F			
71	9/21/11	4:45 PM	1,067 psig	103 °F	77 °F	72 °F	Hot		
72	9/21/11	5:00 PM	1,068 psig	102 °F	77 °F	72 °F			
73	9/21/11	5:15 PM	1,068 psig	100 °F	77 °F	72 °F			
74	9/21/11	5:30 PM	1,069 psig	98 °F	77 °F	72 °F	Hot		
75	9/21/11	5:45 PM	1,069 psig	96 °F	76 °F	72 °F			
76	9/21/11	6:00 PM	1,070 psig	96 °F	75 °F	72 °F			
77	9/21/11	6:15 PM	1,070 psig	94 °F	74 °F	72 °F			
78	9/21/11	6:30 PM	1,070 psig	93 °F	74 °F	72 °F			
79	9/21/11	6:45 PM	1,071 psig	91 °F	72 °F	71 °F			
80	9/21/11	7:00 PM	1,071 psig	90 °F	72 °F	71 °F	End of Test		
							Spike Test		84,960.0 oz.
							Hydrostatic Test	18,480.0 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	1,130 psig
		Low Test Pressure:	1,053 psig

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Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497322-T54B
Construction Co.	Snelson	Job Number	41474005 -T54B
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-54B L-300A, MP 155.075 - 156.4	WATER	
File Name	RCP 61362 - T-54B, L-300A, MP 155.075 - 156.4		

General Pipe Data

Description	Segment 1	2	3	4
Restrained or Unrestrained?	Unrestrained	Restrained	Unrestrained	Restrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.375 in.	0.375 in.	0.500 in.	0.505 in.
Inside Diameter	33.250 in.	33.250 in.	33.000 in.	32.990 in.
Spec./Grade	API5L-X65	API5L-X52	API5L-X65	API5L-X60
Length Unrestrained	69 ft		40 ft	
Length Restrained		7,098 ft		23 ft
Temperature – On Test	72 °F	72 °F	72.0 °F	72.0 °F
Temperature – End of Test	72 °F	71 °F	72.0 °F	71.0 °F
Pressure – On Test	1,130 psig	1,130 psig	1,130 psig	1,130 psig
Pressure – End of Test	1,071 psig	1,071 psig	1,071 psig	1,071 psig

Unrestrained Pipe

Sum:	Vo	4,889.62 gal / 625,871 oz.	Vtp1	4,919.90 gal / 629,747 oz.	Vtp2	4,918.04 gal / 629,509 oz.
Vo Unrestrained	3,112 gal	1,777 gal				
Fwp 1	1.003464	1.003464				
Fpp 1	1.004175	1.003108				
Fpt 1	1.000218	1.000218				
Fwt 1	1.001283	1.001283				
Fpwt 1 = Fpt/Fwt	0.998937	0.998937				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	3,132.86 gal	1,787.04 gal				
Fwp 2	1.003283	1.003283				
Fpp 2	1.003957	1.002945				
Fpt 2	1.000218	1.000218				
Fwt 2	1.001283	1.001283				
Fpwt = Fpt/Fwt	0.998937	0.998937				
Vtp = Vo(Fwp)(Fpp)(Fpwt)	3,131.61 gal	1,786.43 gal				

Restrained Pipe

Sum:	Vo	321,189.68 gal / 41,112,279 oz.	Vtp1	322,927.52 gal / 41,334,722 oz.	Vtp2	322,849.65 gal / 41,324,755 oz.
Vo Unrestrained		320,168 gal	1,021 gal			
Fwp 1		1.003464	1.003464			
Fpp 1		1.003082	1.002282			
Fpt 1		1.000145	1.000145			
Fwt 1		1.001283	1.001283			
Fpwt 1 = Fpt/Fwt		0.998863	0.998863			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		321,902 gal	1,026 gal			
Fwp 2		1.003283	1.003283			
Fpp 2		1.002920	1.002162			
Fpt 2		1.000133	1.000133			
Fwt 2		1.001170	1.001170			
Fpwt = Fpt/Fwt		0.998965	0.998965			
Vtp = Vo(Fwp)(Fpp)(Fpwt)		321,824 gal	1,026 gal			

Combined Pipe

Sum:	Vo	326,079.29 gal / 41,738,150 oz.	Vtp1	327,847.41 gal / 41,964,469 oz.	Vtp2	327,767.69 gal / 41,954,264 oz.

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Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41497322-T54B
Construction Co.	Snelson	Job Number	41474005 -T54B
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-54B L-300A, MP 155.075 - 156.4		WATER
File Name	RCP 61362 - T-54B, L-300A, MP 155.075 - 156.4		

General Pipe Data

Description	Segment 1	2	3	4
Restrained or Unrestrained?	Unrestrained	Restrained	Unrestrained	Restrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.375 in.	0.375 in.	0.500 in.	0.505 in.
Inside Diameter	33.250 in.	33.250 in.	33.000 in.	32.990 in.
Spec./Grade	API5L-X65	API5L-X52	API5L-X65	API5L-X60
Length Unstrained	69.00 ft		40.00 ft	
Length Restrained		7,098 ft		23 ft
Temperature – On Test	71 °F	71 °F	71 °F	71 °F
Temperature – End of Test	72 °F	72 °F	72 °F	72 °F
Pressure – On Test	1,100 psig	1,100 psig	1,100 psig	1,100 psig
Pressure – End of Test	1,100 psig	1,100 psig	1,100 psig	1,100 psig

Unrestrained Pipe

Sum:	Vo	4,889.62 gal / 625,871 oz.	Vtp1	4,919.42 gal / 629,686 oz.	Vtp2	4,918.95 gal / 629,626 oz.
Vo Unrestrained	3,112 gal	1,777 gal				
Fwp 1	1.003372	1.003372				
Fpp 1	1.004064	1.003025				
Fpt 1	1.000200	1.000200				
Fwt 1	1.001170	1.001170				
Fpwt 1 = Fpt/Fwt	0.999032	0.999032				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	3,132.52 gal	1,786.90 gal				
Fwp 2	1.003372	1.003372				
Fpp 2	1.004064	1.003025				
Fpt 2	1.000218	1.000218				
Fwt 2	1.001283	1.001283				
Fpwt = Fpt/Fwt	0.998937	0.998937				
Vtp = Vo(Fwp)(Fpp)(Fpwt)	3,132.22 gal	1,786.73 gal				

Restrained Pipe

Sum:	Vo	321,189.68 gal / 41,112,279 oz.	Vtp1	322,903.44 gal / 41,331,640 oz.	Vtp2	322,871.87 gal / 41,327,599 oz.
Vo Restrained		320,168 gal	1,021 gal			
Fwp 1		1.003372	1.003372			
Fpp 1		1.002998	1.002219			
Fpt 1		1.000133	1.000133			
Fwt 1		1.001170	1.001170			
Fpwt 1 = Fpt/Fwt		0.998965	0.998965			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		321,877 gal	1,026 gal			
Fwp 2		1.003372	1.003372			
Fpp 2		1.003002	1.002223			
Fpt 2		1.000145	1.000145			
Fwt 2		1.001283	1.001283			
Fpwt = Fpt/Fwt		0.998863	0.998863			
Vtp = Vo(Fwp)(Fpp)(Fpwt)		321,846 gal	1,026 gal			

Combined Pipe

Sum:	Vo	326,079.29 gal / 41,738,150 oz.	Vtp1	327,822.86 gal / 41,961,326 oz.	Vtp2	327,790.82 gal / 41,957,225 oz.
1 °F Change	32.04 gal	4,100.92 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	69 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW
2	7,098 ft	Restrained	34.000 in.	0.3750 in.	API5L-X52	1,147 psig	Steel	Arc Weld	DSAW
3	40 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
4	23 ft	Restrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW

Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget	41497322-T54B
	Walnut Creek, CA 94598	
	Attention: Redacted	
Construction Company	Snelson	Job Number
Address	601 West State Street	41474005 -T54B
	Sedro-Wooley, WA 98284	
	Attention: Redacted	
Hydrostatic Test Co.	Milbar hydro-test inc.	Project No.
Address	P O Box 7701	FY12-112
	Shreveport, La. 71137-7701	
Test Section	PG&E T-54B L-300A, MP 155.075 - 156.4	
	From: 70+47	
	To: 0+00	
File Name	RCP 61362 - T-54B, L-300A, MP 155.075 - 156.4	

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	9/21/11 10:27 AM	Elevation at Test Point	2,191 ft	Min. Required Test Press At Test Point (1)	1,033.73 psig	Max. Allowable Test Press at Test Point (4)	1,134.37 psig
Time and Date Test Ended	9/21/11 7:00 PM	Max. Elevation in Test Section	2,195 ft	Min. Indicated Test Pressure (2)	1,053.00 psig	Max. Indicated Test Pressure (5)	1,130.00 psig
Actual Duration of Test	8 hours 33 minutes	Min. Elevation in Test Section	2,178 ft	Min. Test Pressure at Max. Elevation (3)	1,051.27 psig	Max. Test Pressure at Min. Elevation (6)	1,135.63 psig

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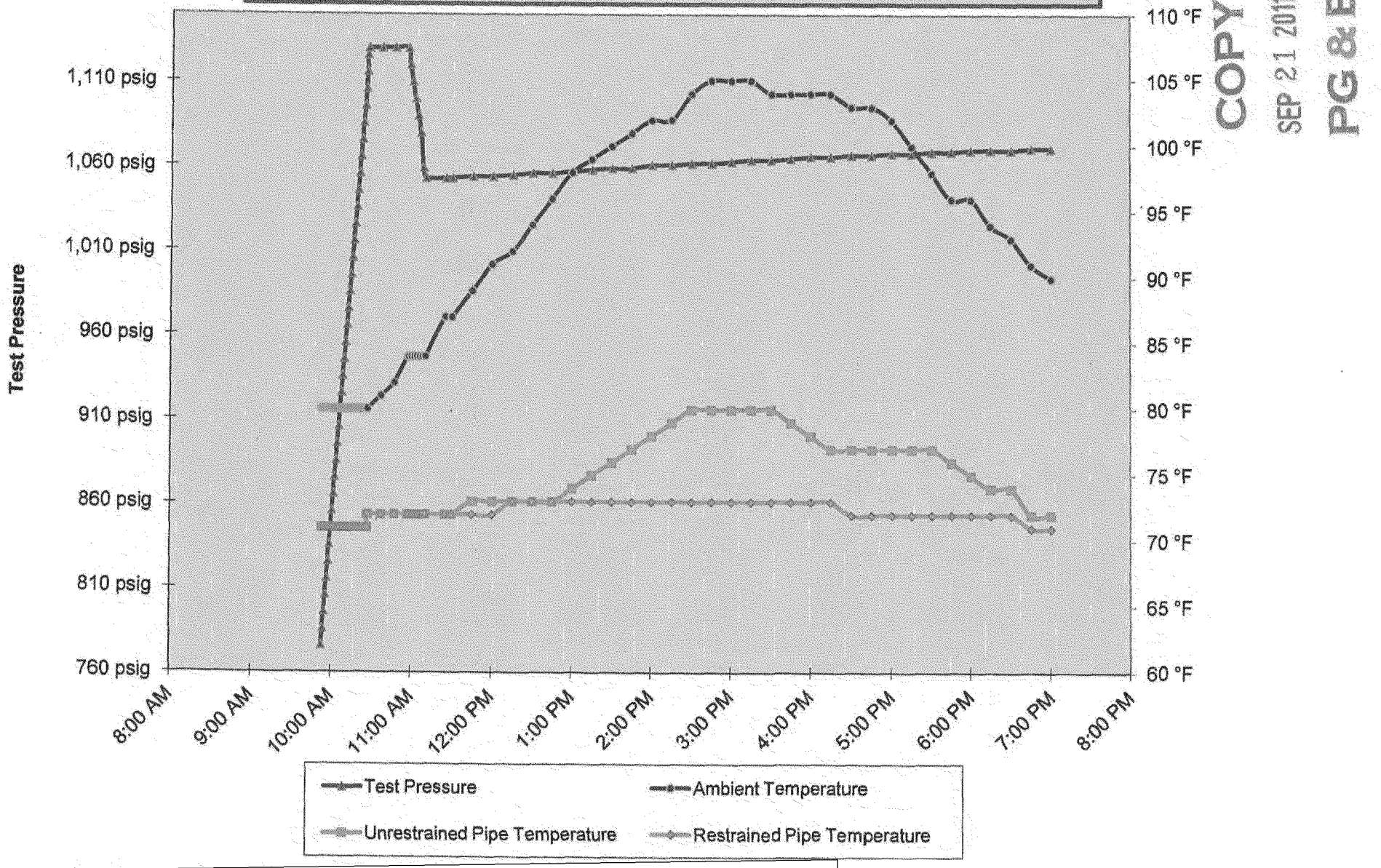
RCP

PG&E T-54B L-300A, MP 155.075 - 156.4



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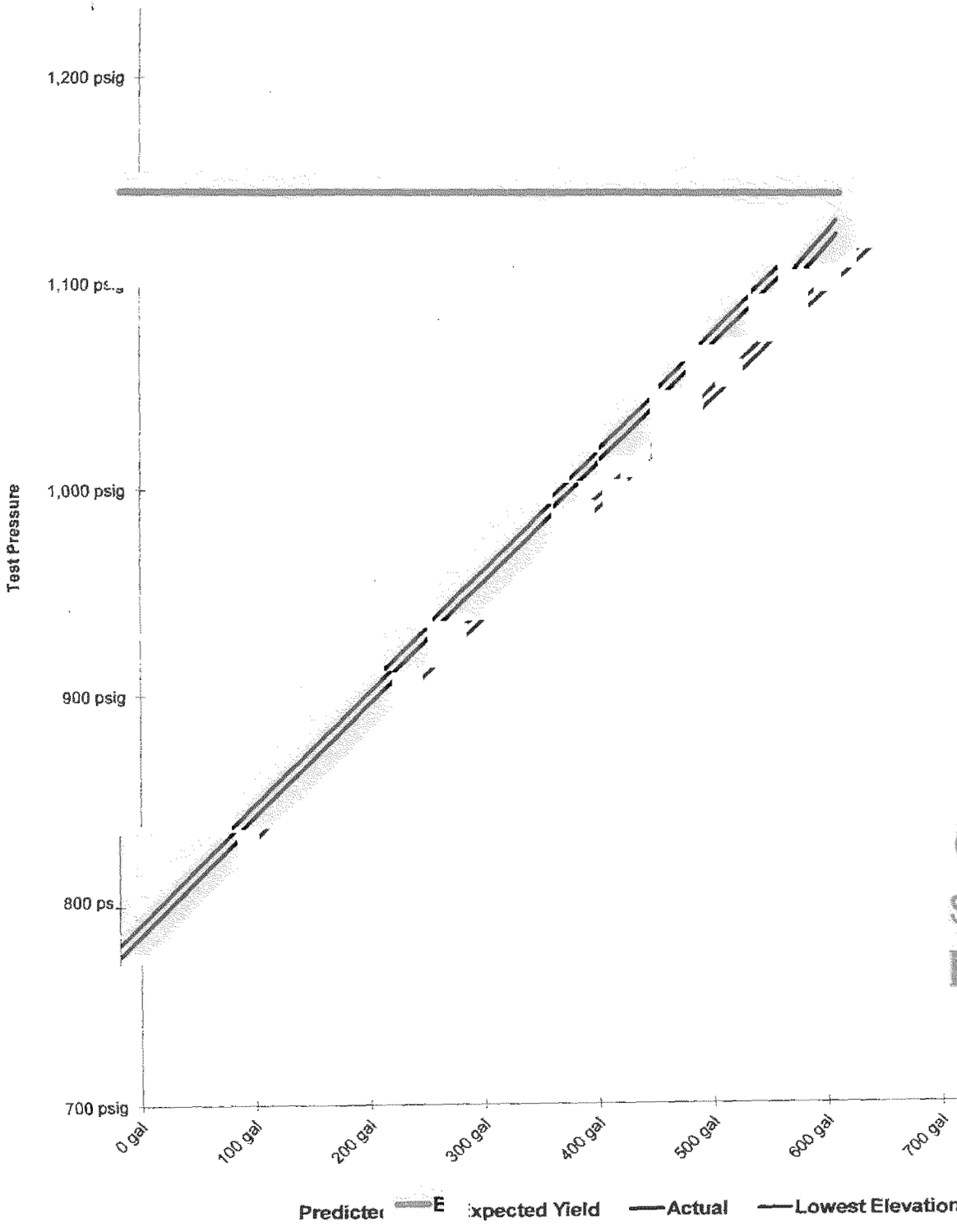
RCP

Spike Pressure Test
Stress Strain Curve -- PG&E T-54B L-300A, MP 155.075 - 156.4



RCP

Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
776 psig	0	0.00 gal		0	0.000
786 psig	37	19.14 gal	18.85 gal	1.914	1.885
796 psig	72	37.25 gal	37.69 gal	1.811	1.885
806 psig	108	55.87 gal	56.54 gal	1.862	1.885
816 psig	143	73.98 gal	75.39 gal	1.811	1.885
826 psig	179	92.60 gal	94.24 gal	1.862	1.885
836 psig	216	111.75 gal	113.09 gal	1.914	1.885
846 psig	252	130.37 gal	131.94 gal	1.862	1.885
856 psig	287	148.48 gal	150.80 gal	1.811	1.885
866 psig	324	167.62 gal	169.65 gal	1.914	1.885
876 psig	360	186.24 gal	188.51 gal	1.862	1.886
886 psig	397	205.38 gal	207.36 gal	1.914	1.886
896 psig	432	223.49 gal	226.22 gal	1.811	1.886
906 psig	468	242.12 gal	245.08 gal	1.862	1.886
916 psig	504	260.74 gal	263.94 gal	1.862	1.886
926 psig	540	279.36 gal	282.80 gal	1.862	1.886
936 psig	577	298.51 gal	301.66 gal	1.914	1.886
946 psig	612	316.61 gal	320.53 gal	1.811	1.886
956 psig	650	336.27 gal	339.39 gal	1.966	1.887
966 psig	686	354.90 gal	358.26 gal	1.862	1.887
976 psig	723	374.04 gal	377.13 gal	1.914	1.887
986 psig	758	392.15 gal	396.00 gal	1.811	1.887
996 psig	795	411.29 gal	414.87 gal	1.914	1.887
1,006 psig	832	430.43 gal	433.74 gal	1.914	1.887
1,016 psig	868	449.05 gal	452.61 gal	1.862	1.887
1,026 psig	905	468.19 gal	471.48 gal	1.914	1.887
1,036 psig	941	486.82 gal	490.36 gal	1.862	1.887
1,046 psig	977	505.44 gal	509.23 gal	1.862	1.888
1,056 psig	1013	524.07 gal	528.11 gal	1.862	1.888
1,066 psig	1050	543.21 gal	546.99 gal	1.914	1.888
1,076 psig	1085	561.32 gal	565.86 gal	1.811	1.888
1,086 psig	1122	580.46 gal	584.74 gal	1.914	1.888
1,096 psig	1160	600.12 gal	603.63 gal	1.966	1.888
1,106 psig	1197	619.26 gal	622.51 gal	1.914	1.888
1,116 psig	1232	637.37 gal	641.39 gal	1.811	1.888
1,126 psig	1270	657.02 gal	660.28 gal	1.966	1.888
1,130 psig	1283	663.75 gal	667.83 gal	1.681	1.889
1,130 psig		663.75 gal	667.83 gal	0.000	0.000
1,130 psig		663.75 gal	667.83 gal	0.000	0.000
1,130 psig		663.75 gal	667.83 gal	0.000	0.000
1,130 psig		663.75 gal	667.83 gal	0.000	0.000
1,130 psig		663.75 gal	667.83 gal	0.000	0.000
1,130 psig		663.75 gal	667.83 gal	0.000	0.000
1,130 psig		663.75 gal	667.83 gal	0.000	0.000

Spike Pressure Test
Stress Strain Curve -- PG&E T-54B L-300A, MP 155.075 - 156.4

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	0.517 gal/stroke
Volume Released (gallons)	18.75 gal
Pressure Reduced (psi)	10 psi
Maximum2	710 gal
Minimum2	0 gal
Maximum1	1,248 psig
Minimum1	700 psig
Gallons/Stroke Used	0.517 gal/stroke
Predicted Gallons/Stroke	0.521 gal/stroke
Pressure Increment	10 psi
Max Pressure	1,130 psig
Buried Pipe Temperature	70 °F
Exposed Pipe Temperature	72 °F

ASME B31.8 Appendix N-5

Average Actual Elastic Slope	1.872
Average Predicted Elastic Slope	1.887
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	3.556
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,130 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

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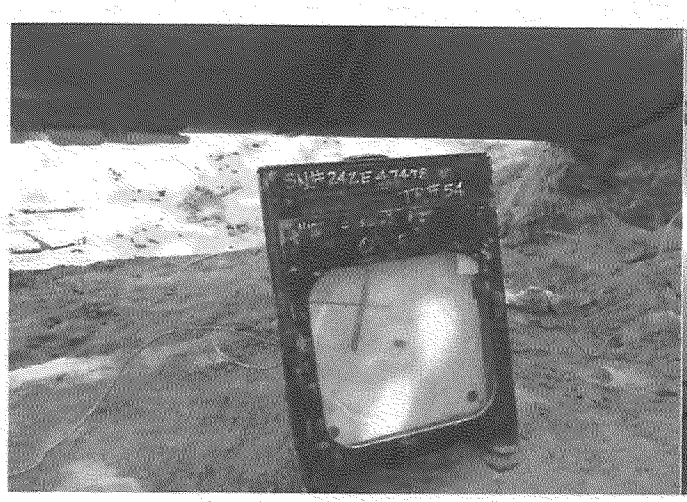
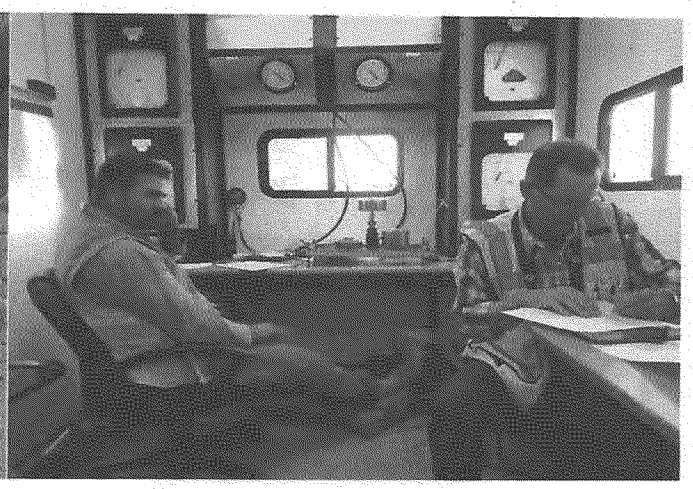
9-21-11
Date

Test T-54B Test Head

Test T-54B Test Head



Test T-54B Unrestrained/Restrained Temp. Recorder



Test T-54B Deadweight

Test T-54B Restrained Temp. Rec.

Test T-54B Test Head Loop

Test T-54B Test Head

Test T-54B Pump Truck