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801 Louisiana, Ste.200
Houston, Texas 77002
(713)655-9000

Redacted

October 27, 2011

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

Test Contractor:	Milbar hydro-test inc. – FY12-112
Asset Owner:	Pacific Gas and Electric Company – 41545511
Construction Contractor:	Snelson – 41474005 -T117
Test Section:	PG&E T-117 , L-300B , MP-283.85 - 284.62
Test Date:	October 27, 2011
Certificate Number:	RCP 61362 - T-117, L-300B, MP- 283.85 - 284.62

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 1).

The test segment was subjected to a spike pressure test of 1042 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 8.17 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.17 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 979 psig and the MAOP per 49 CFR Part 192, Subpart J can be as high as 890 psig. The MAOP established by this test is sufficient to qualify for Pacific Gas and Electric Company's desired MAOP of 757 psig.

Pressure decreased 63 psi during the test. 10,598.40 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 1,424.00 ounces, loss, which is equivalent to a 0.48 °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,

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cc. file

Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41545511
Construction Co.	Snelson	Job Number	41474005 -T117
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-117 , L-300B , MP-283.85 - 284.62		
File Name	RCP 61362 - T-117, L-300B, MP- 283.85 - 284.62		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 27-Oct-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-117 , L-300B , MP-283.85 - 284.62		
From:	0+00	To:	42+55

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	39 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
2	298 ft	34.000 in.	0.438 in.	API5L-X48, DSAW, Arc Weld, Steel	1,235 psi
3	3,627 ft	34.000 in.	0.344 in.	API5L-X52, DSAW, Arc Weld, Steel	1,052 psi
4	40 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
5	24 ft	34.000 in.	0.505 in.	API5L-X60, DSAW, Arc Weld, Steel	1,782 psi
6	110 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi

Initial Test Conditions

Pressure at Test Point:	1,042 psig	Date/Time:	10/27/11 10:20 AM	Pipe Temperature Unrestrained:	68.0 °F
Ambient Temperature:	64.0 °F			Restrained:	72.0 °F
		Elevation @ Test Point:	343.0 ft	Location:	0+00
Pressure @ High Point (Cal/Measure):	1,042 psig	Elevation @ High Point:	344.0 ft	Location:	22+91
Pressure @ Low Point (Cal/Measure):	1,044 psig	Elevation @ Low Point:	339.0 ft	Location:	42+55

Final Test Conditions

Pressure at Test Point:	979 psig	Date/Time:	10/27/11 6:30 PM	Pipe Temperature Unrestrained:	70.0 °F
Ambient Temperature:	70.0 °F			Restrained:	73.0 °F
		Elevation @ Test Point:	343.0 ft	Location:	0+00
Pressure @ High Point (Cal/Measure):	979 psig	Elevation @ High Point:	344.0 ft	Location:	22+91
Pressure @ Low Point (Cal/Measure):	981 psig	Elevation @ Low Point:	339.0 ft	Location:	42+55

Total Fluid Injected:		Volume loss	
Total Fluid Withdrawn:	10598.40 fluid ounces		
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	(1,424.00) oz loss	(0.0059)%	(0.479) °F equivalent

Test Duration: 8.17 hours

Minimum Test Pressure:	Test Point: 970 psig	Max Elevation	970 psig	Min Elevation	972 psig
Maximum Test Pressure:	1,042 psig		1,042 psig		1,044 psig
% SMYS :			99.0%		84.5%

Test Segment Observed % SMYS :		Minimum	54.5%	Maximum	99.1%
				Minimum Test Pressure (Calculated/Measured):	979 psig
		Maximum Allowable Operating Pressure:	DOT Part 192	Test Factor= 1.10	890 psig

The MAOP established by this test is sufficient to qualify for Pacific Gas and Electric Company's desired MAOP of 757 psig.

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 1042 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 8.17 hour test duration period. No leaks were observed during the test period. The test section included 4,035 feet of buried and 103 feet of exposed pipe. Pressure lost 63 psi during the test. The buried pipe segment gained 1°F fluid temperature and the exposed pipe segment gained 2°F. 10,598.40 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 1,424.00 ounces, loss, which is equivalent to a 0.48 °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		

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41545511
Construction Co.	Snelson	Job Number	41474005 -T117
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-117 , L-300B , MP-283.85 - 284.62		
File Name	RCP 61362 - T-117, L-300B, MP- 283.85 - 284.62		

Date 27-Oct-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	10/27/11	9:35 AM	710 psig	64 °F	65 °F	71 °F	Start Spike		
2	10/27/11	9:36 AM	720 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
3	10/27/11	9:37 AM	730 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
4	10/27/11	9:38 AM	740 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
5	10/27/11	9:39 AM	750 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
6	10/27/11	9:40 AM	760 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
7	10/27/11	9:41 AM	770 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
8	10/27/11	9:42 AM	780 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
9	10/27/11	9:43 AM	790 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
10	10/27/11	9:44 AM	800 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
11	10/27/11	9:45 AM	810 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
12	10/27/11	9:46 AM	820 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
13	10/27/11	9:47 AM	830 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
14	10/27/11	9:48 AM	840 psig	64 °F	65 °F	71 °F	Inject		1,311 oz.
15	10/27/11	9:49 AM	850 psig	64 °F	65 °F	71 °F	Inject		1,550 oz.
16	10/27/11	9:50 AM	860 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
17	10/27/11	9:51 AM	870 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
18	10/27/11	9:52 AM	880 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
19	10/27/11	9:53 AM	890 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
Redacte	10/27/11	9:54 AM	900 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
#VALUE!	10/27/11	9:55 AM	910 psig	64 °F	65 °F	71 °F	Inject		1,550 oz.
#VALUE!	10/27/11	9:56 AM	920 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
#VALUE!	10/27/11	9:57 AM	930 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	9:58 AM	940 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
#VALUE!	10/27/11	9:59 AM	950 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	10:00 AM	960 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
#VALUE!	10/27/11	10:01 AM	970 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	10:02 AM	980 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	10:03 AM	990 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
#VALUE!	10/27/11	10:04 AM	1,000 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	10:05 AM	1,010 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	10:06 AM	1,020 psig	64 °F	65 °F	71 °F	Inject		1,430 oz.
#VALUE!	10/27/11	10:07 AM	1,030 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	10:08 AM	1,040 psig	64 °F	65 °F	71 °F	Inject		1,490 oz.
#VALUE!	10/27/11	10:10 AM	1,042 psig	64 °F	65 °F	71 °F	Inject		298 oz.
#VALUE!	10/27/11	10:20 AM	1,042 psig	64 °F	68 °F	72 °F	On Test		
#VALUE!	10/27/11	10:30 AM	1,042 psig	66 °F	69 °F	72 °F			
#VALUE!	10/27/11	10:40 AM	1,042 psig	68 °F	69 °F	72 °F			
#VALUE!	10/27/11	10:50 AM	1,042 psig	69 °F	69 °F	72 °F	End Spike		
#VALUE!	10/27/11	10:51 AM	1,032 psig	69 °F	69 °F	72 °F	Bleed	1,472 oz.	
#VALUE!	10/27/11	10:52 AM	1,022 psig	69 °F	69 °F	72 °F	Bleed	1,472 oz.	
#VALUE!	10/27/11	10:53 AM	1,012 psig	69 °F	69 °F	72 °F	Bleed	1,472 oz.	
#VALUE!	10/27/11	10:54 AM	1,002 psig	69 °F	69 °F	72 °F	Bleed	1,472 oz.	
#VALUE!	10/27/11	10:55 AM	992 psig	69 °F	69 °F	72 °F	Bleed	1,472 oz.	
#VALUE!	10/27/11	10:56 AM	982 psig	69 °F	69 °F	72 °F	Bleed	1,472 oz.	
#VALUE!	10/27/11	10:57 AM	972 psig	69 °F	70 °F	72 °F	Bleed	1,472 oz.	
#VALUE!	10/27/11	10:58 AM	970 psig	69 °F	70 °F	72 °F	Bleed	294 oz.	

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41545511
Construction Co.	Snelson	Job Number	41474005 -T117
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-117 , L-300B , MP-283.85 - 284.62		
File Name	RCP 61362 - T-117, L-300B, MP- 283.85 - 284.62		

Date 27-Oct-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
#VALUE!	10/27/11	11:08 AM	970 psig	70 °F	71 °F	72 °F			
#VALUE!	10/27/11	11:15 AM	970 psig	72 °F	71 °F	72 °F			
#VALUE!	10/27/11	11:30 AM	971 psig	73 °F	72 °F	72 °F			
#VALUE!	10/27/11	11:45 AM	971 psig	74 °F	72 °F	72 °F			
#VALUE!	10/27/11	12:00 PM	972 psig	76 °F	73 °F	72 °F			
#VALUE!	10/27/11	12:15 PM	972 psig	77 °F	74 °F	73 °F			
#VALUE!	10/27/11	12:30 PM	973 psig	77 °F	75 °F	73 °F			
#VALUE!	10/27/11	12:45 PM	973 psig	78 °F	75 °F	73 °F			
#VALUE!	10/27/11	1:00 PM	974 psig	79 °F	76 °F	73 °F			
#VALUE!	10/27/11	1:15 PM	974 psig	80 °F	76 °F	73 °F			
#VALUE!	10/27/11	1:30 PM	975 psig	80 °F	76 °F	73 °F			
#VALUE!	10/27/11	1:45 PM	975 psig	80 °F	78 °F	73 °F			
#VALUE!	10/27/11	2:00 PM	976 psig	81 °F	78 °F	73 °F			
#VALUE!	10/27/11	2:15 PM	976 psig	80 °F	78 °F	73 °F			
#VALUE!	10/27/11	2:30 PM	977 psig	80 °F	78 °F	73 °F			
#VALUE!	10/27/11	2:45 PM	978 psig	80 °F	78 °F	73 °F			
#VALUE!	10/27/11	3:00 PM	978 psig	80 °F	78 °F	73 °F			
#VALUE!	10/27/11	3:15 PM	979 psig	80 °F	77 °F	73 °F			
#VALUE!	10/27/11	3:30 PM	979 psig	80 °F	76 °F	73 °F			
#VALUE!	10/27/11	3:45 PM	979 psig	80 °F	76 °F	73 °F			
#VALUE!	10/27/11	4:00 PM	980 psig	80 °F	75 °F	73 °F			
#VALUE!	10/27/11	4:15 PM	980 psig	80 °F	74 °F	73 °F			
#VALUE!	10/27/11	4:30 PM	980 psig	79 °F	73 °F	73 °F			
#VALUE!	10/27/11	4:45 PM	981 psig	78 °F	73 °F	73 °F			
#VALUE!	10/27/11	5:00 PM	981 psig	77 °F	72 °F	73 °F			
#VALUE!	10/27/11	5:15 PM	981 psig	76 °F	72 °F	73 °F			
#VALUE!	10/27/11	5:30 PM	981 psig	75 °F	71 °F	73 °F			
#VALUE!	10/27/11	5:45 PM	980 psig	75 °F	71 °F	73 °F			
#VALUE!	10/27/11	6:00 PM	980 psig	74 °F	70 °F	73 °F			
#VALUE!	10/27/11	6:15 PM	980 psig	71 °F	70 °F	73 °F			
#VALUE!	10/27/11	6:30 PM	979 psig	70 °F	70 °F	73 °F	End of Test		
							Spike Test		48,870.4 oz.
							Hydrostatic Test	10,598.4 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	1,042 psig
		Low Test Pressure:	970 psig

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Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41545511
Construction Co.	Snelson	Job Number	41474005 -T117
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-117 , L-300B , MP-283.85 - 284.62	WATER	
File Name	RCP 61362 - T-117, L-300B, MP- 283.85 - 284.62		

General Pipe Data

Description	Segment 1	2	3	4	5	6		
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Unrestrained	Unrestrained	Restrained		
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.		
Wall Thickness	0.500 in.	0.438 in.	0.344 in.	0.500 in.	0.505 in.	0.375 in.		
Inside Diameter	33.000 in.	33.125 in.	33.312 in.	33.000 in.	32.990 in.	33.250 in.		
Spec./Grade	API5L-X65	API5L-X48	API5L-X52	API5L-X65	API5L-X60	API5L-X65		
Length Unrestrained	39 ft			40 ft	24 ft			
Length Restrained		298 ft	3,627 ft			110 ft		
Temperature -- On Test	68 °F	72 °F	72.0 °F	68.0 °F	68.0 °F	72.0 °F		
Temperature -- End of Test	70 °F	73 °F	73.0 °F	70.0 °F	70.0 °F	73.0 °F		
Pressure -- On Test	1,042 psig	1,042 psig	1,042 psig	1,042 psig	1,042 psig	1,042 psig		
Pressure -- End of Test	979 psig	979 psig	979 psig	979 psig	979 psig	979 psig		

Unrestrained Pipe

Vo	4,575.76 gal / 585,697 oz.		Vtp1	4,600.47 gal / 588,860 oz.		Vtp2	4,597.88 gal / 588,529 oz.	
Vo Unrestrained	1,733 gal			1,777 gal	1,066 gal			
Fwp 1	1.003193			1.003193	1.003193			
Fpp 1	1.002866			1.002866	1.002836			
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)	1,742.18 gal			1,786.85 gal	1,071.43 gal			
Fwp 2	1.003000			1.003000	1.003000			
Stephen E. Gilliam	1.002692			1.002692	1.002665			
Fpt 2	1.000182			1.000182	1.000182			
Fwt 2	1.001036			1.001036	1.001036			
Fpwt = Fpt/Fwt	0.999146			0.999146	0.999146			
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,741.20 gal			1,785.85 gal	1,070.83 gal			

Restrained Pipe

Vo	182,515.94 gal / 23,362,040 oz.		Vtp1	183,448.17 gal / 23,481,366 oz.		Vtp2	183,356.83 gal / 23,469,675 oz.	
Vo Unrestrained		13,341 gal	164,213 gal			4,962 gal	Reda cted	
Fwp 1		1.003193	1.003193			1.003193		
Fpp 1		1.002436	1.003104			1.002846		
Fpt 1		1.000145	1.000145			1.000145		
Fwt 1		1.001283	1.001283			1.001283		
Fpwt 1 = Fpt/Fwt		0.998863	0.998863			0.998863		
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		13,401 gal	165,061 gal			4,986 gal		
Fwp 2		1.003000	1.003000			1.003000		
Fpp 2		1.002295	1.002923			1.002680		
Fpt 2		1.000157	1.000157			1.000157		
Fwt 2		1.001423	1.001423			1.001423		
Fpwt = Fpt/Fwt		0.998736	0.998736			0.998736		
Vtp = Vo(Fwp)(Fpp)(Fpwt)		13,395 gal	164,978 gal			4,984 gal		

Combined Pipe

Vo	187,091.69 gal / 23,947,737 oz.	Vtp1	188,048.64 gal / 24,070,226 oz.	Vtp2	187,954.72 gal / 24,058,204 oz.

Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41545511
Construction Co.	Snelson	Job Number	41474005 -T117
Hydro. Test Co.	Millbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-117 , L-300B , MP-283.85 - 284.62	WATER	
File Name	RCP 61362 - T-117, L-300B, MP- 283.85 - 284.62		

General Pipe Data

Description	Segment 1	2	3	4	5	6		
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Unrestrained	Unrestrained	Restrained		
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.		
Wall Thickness	0.500 in.	0.438 in.	0.344 in.	0.500 in.	0.505 in.	0.375 in.		
Inside Diameter	33.000 in.	33.125 in.	33.312 in.	33.000 in.	32.990 in.	33.250 in.		
Spec./Grade	API5L-X65	API5L-X48	API5L-X52	API5L-X65	API5L-X60	API5L-X65		
Length Unstrained	39 ft			40 ft	24 ft			
Length Restrained		298 ft	3,627 ft			110 ft		
Temperature – On Test	68 °F	72 °F	72 °F	68 °F	68 °F	72 °F		
Temperature – End of Test	69 °F	73 °F	73 °F	69 °F	69 °F	73 °F		
Pressure – On Test	1,010 psig	1,010 psig	1,010 psig	1,010 psig	1,010 psig	1,010 psig		
Pressure – End of Test	1,010 psig	1,010 psig	1,010 psig	1,010 psig	1,010 psig	1,010 psig		

Unrestrained Pipe

Vo	4,575.76 gal 585,697 oz.		Vtp1	4,599.61 gal 588,751 oz.		Vtp2	4,599.12 gal 588,687 oz.	
Vo Unrestrained	1,733 gal			1,777 gal	1,066 gal			
Fwp 1	1.003095			1.003095	1.003095			
Fpp 1	1.002778			1.002778	1.002749			
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)	1,741.86 gal			1,786.52 gal	1,071.23 gal			
Fwp 2	1.003095			1.003095	1.003095			
Stephen E. Gilliam	1.002778			1.002778	1.002749			
Fpt 2	1.000164			1.000164	1.000164			
Fwt 2	1.000929			1.000929	1.000929			
Fpwt = Fpt/Fwt	0.999236			0.999236	0.999236			
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,741.67 gal			1,786.33 gal	1,071.12 gal			

Restrained Pipe

Vo	182,515.94 gal 23,362,040 oz.		Vtp1	183,413.31 gal 23,476,903 oz.		Vtp2	183,390.60 gal 23,473,997 oz.	
Vo Restrained		13,341 gal	164,213 gal			4,962 gal		
Fwp 1		1.003095	1.003095			1.003095		
Fpp 1		1.002363	1.003010			1.002760		
Fpt 1		1.000145	1.000145			1.000145		
Fwt 1		1.001283	1.001283			1.001283		
Fpwt 1 = Fpt/Fwt		0.998863	0.998863			0.998863		
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		13,399 gal	165,030 gal			4,985 gal		
Fwp 2		1.003095	1.003095			1.003095		
Fpp 2		1.002366	1.003014			1.002763		
Fpt 2		1.000157	1.000157			1.000157		
Fwt 2		1.001423	1.001423			1.001423		
Fpwt = Fpt/Fwt		0.998736	0.998736			0.998736		
Vtp = Vo(Fwp)(Fpp)(Fpwt)		13,397 gal	165,009 gal			4,985 gal		

Combined Pipe

Vo	187,091.69 gal 23,947,737 oz.		Vtp1	186,012.92 gal 24,065,654 oz.		Vtp2	187,989.72 gal 24,062,684 oz.	
1 °F Change	23.20 gal		2,970.16 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	39 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
2	298 ft	Restrained	34.000 in.	0.4375 in.	API5L-X48	1,235 psig	Steel	Arc Weld	DSAW
3	3,627 ft	Restrained	34.000 in.	0.3440 in.	API5L-X52	1,052 psig	Steel	Arc Weld	DSAW
4	40 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
5	24 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
6	110 ft	Restrained	34.000 in.	0.3750 in.	API5L-X65	1,434 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	41545511
	Attention: Redacted	
Construction Company	Snelson	Job Number
Address	601 West State Street	
	Sedro-Wooley, WA 98284	41474005 -T117
	Attention: Redacted	
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-117 , L-300B , MP-283.85 - 284.62	
	From: 0+00	
	To: 42+55	
File Name	RCP 61362 - T-117, L-300B, MP- 283.85 - 284.62	

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

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

Time and Date Test Pressure Reached	10/27/11 10:20 AM	Elevation at Test Point	Re ft	Min. Required Test Press At Test Point (1)	947.43 psig	Max. Allowable Test Press at Test Point (4)	1,048.27 psig
Time and Date Test Ended	10/27/11 6:30 PM	Max. Elevation in Test Section	Re ft	Min. Indicated Test Pressure (2)	970.00 psig	Max. Indicated Test Pressure (5)	1,042.00 psig
Actual Duration of Test	8 hours 10 minutes	Min. Elevation in Test Section	R ft	Min. Test Pressure at Max. Elevation (3)	969.57 psig	Max. Test Pressure at Min. Elevation (6)	1,043.73 psig

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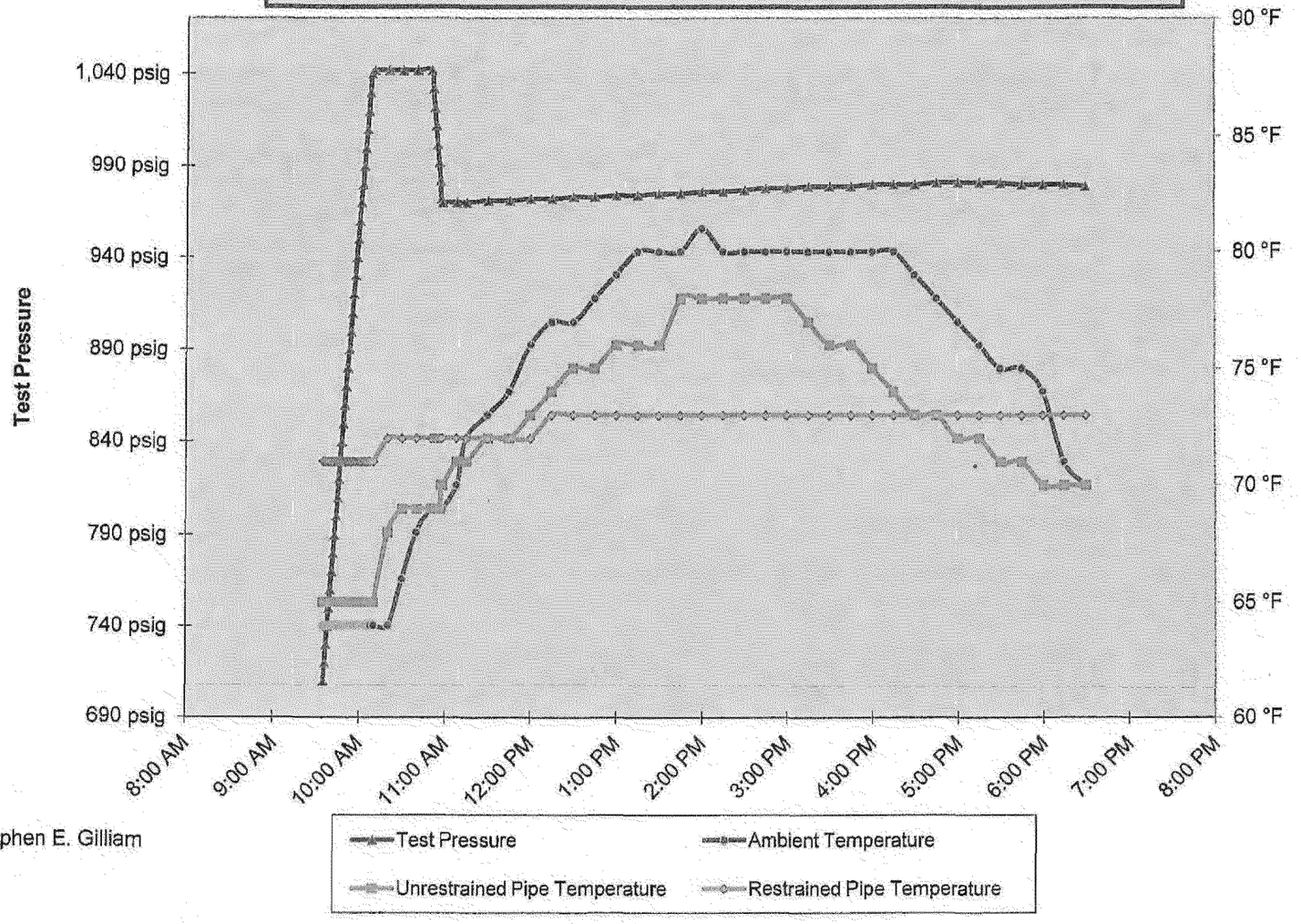
PG&E T-117 , L-300B , MP-283.85 - 284.62



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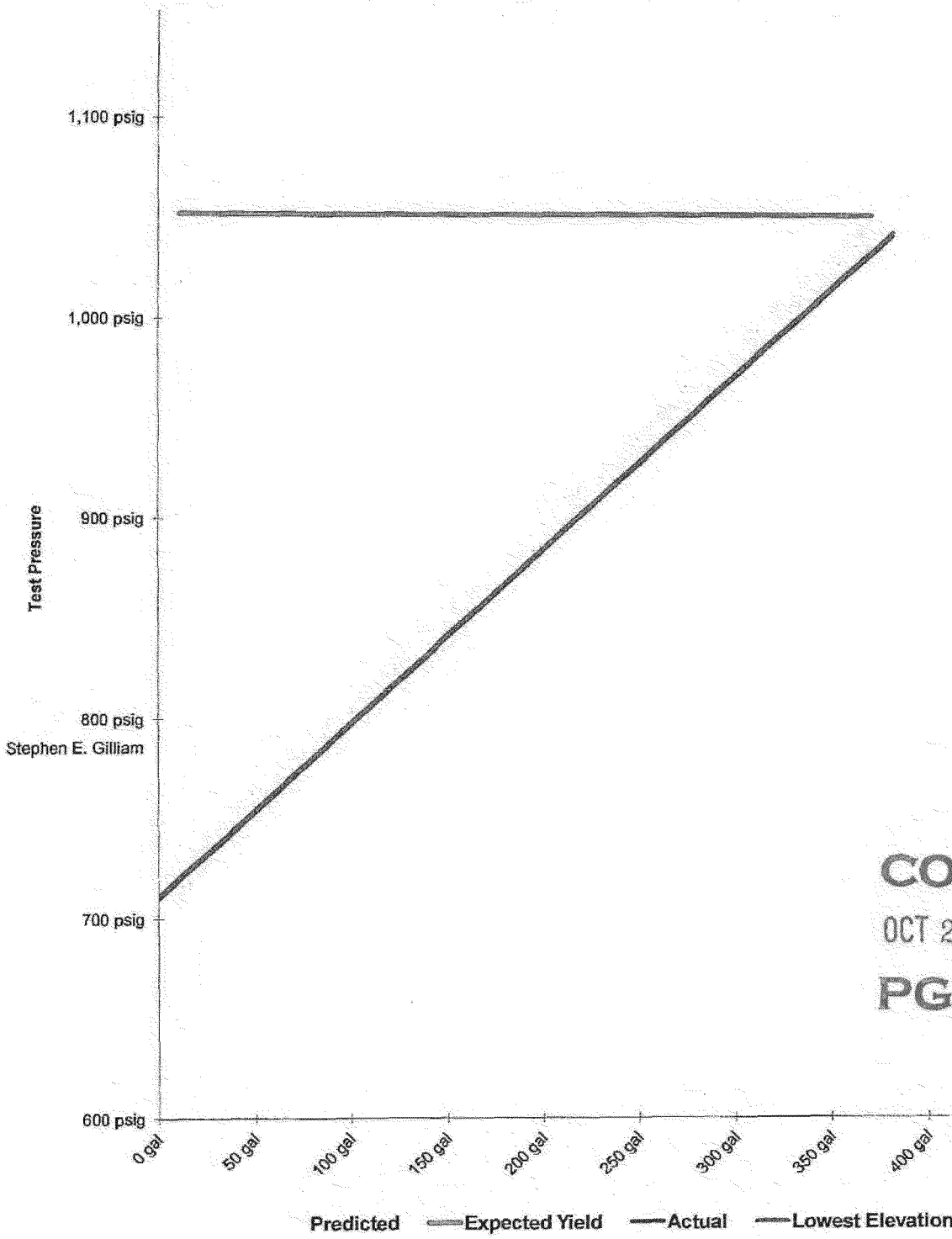
PG&E Hydrotest Project\Hydro-test T-117\

Test T-117 10 27 2011.xlsm
PlotT

10/27/2011

Spike Pressure Test
Stress Strain Curve -- PG&E T-117 , L-300B , MP-283.85 - 284.62



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Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
710 psig	0	0.00 gal		0	0.000
720 psig	25	11.64 gal	11.14 gal	1.164	1.114
730 psig	50	23.28 gal	22.28 gal	1.164	1.114
740 psig	75	34.92 gal	33.42 gal	1.164	1.114
750 psig	100	46.56 gal	44.56 gal	1.164	1.114
760 psig	124	57.74 gal	55.70 gal	1.117	1.114
770 psig	149	69.38 gal	66.84 gal	1.164	1.114
780 psig	174	81.02 gal	77.98 gal	1.164	1.114
790 psig	198	92.19 gal	89.12 gal	1.117	1.114
800 psig	223	103.83 gal	100.27 gal	1.164	1.114
810 psig	248	115.47 gal	111.41 gal	1.164	1.114
820 psig	273	127.11 gal	122.55 gal	1.164	1.114
830 psig	298	138.75 gal	133.70 gal	1.164	1.115
840 psig	320	149.00 gal	144.85 gal	1.024	1.115
850 psig	346	161.10 gal	155.99 gal	1.211	1.115
860 psig	371	172.74 gal	167.14 gal	1.164	1.115
870 psig	396	184.38 gal	178.29 gal	1.164	1.115
880 psig	420	195.56 gal	189.44 gal	1.117	1.115
890 psig	445	207.20 gal	200.59 gal	1.164	1.115
900 psig	469	218.37 gal	211.74 gal	1.117	1.115
910 psig	495	230.48 gal	222.89 gal	1.211	1.115
920 psig	519	241.65 gal	234.04 gal	1.117	1.115
930 psig	544	253.29 gal	245.19 gal	1.164	1.115
940 psig	568	264.47 gal	256.35 gal	1.117	1.115
950 psig	593	276.11 gal	267.50 gal	1.164	1.115
960 psig	617	287.28 gal	278.65 gal	1.117	1.115
970 psig	642	298.92 gal	289.81 gal	1.164	1.116
980 psig	667	310.56 gal	300.96 gal	1.164	1.116
990 psig	691	321.74 gal	312.12 gal	1.117	1.116
1,000 psig	716	333.38 gal	323.28 gal	1.164	1.116
1,010 psig	741	345.02 gal	334.44 gal	1.164	1.116
1,020 psig	765	356.19 gal	345.59 gal	1.117	1.116
1,030 psig	790	367.83 gal	356.75 gal	1.164	1.116
1,040 psig	815	379.47 gal	367.91 gal	1.164	1.116
1,042 psig	820	381.80 gal	370.14 gal	1.164	1.116
1,042 psig		381.80 gal	370.14 gal	0.000	0.000
1,042 psig		381.80 gal	370.14 gal	0.000	0.000
1,042 psig		381.80 gal	370.14 gal	0.000	0.000
1,042 psig		381.80 gal	370.14 gal	0.000	0.000
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1,042 psig		381.80 gal	370.14 gal	0.000	0.000

Spike Pressure Test
Stress Strain Curve -- PG&E T-117 , L-300B , MP-283.85 - 284.62

39250	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	0.466 gal/stroke
Volume Released (gallons)	11.50 gal
Pressure Reduced (psi)	10 psi
Maximum2	410 gal
Minimum2	0 gal
Maximum1	1,153 psig
Minimum1	600 psig
Gallons/Stroke Used	0.466 gal/stroke
Predicted Gallons/Stroke	0.451 gal/stroke
Pressure Increment	10 psi
Max Pressure	1,042 psig
Buried Pipe Temperature	74 °F
Exposed Pipe Temperature	84 °F

ASME B31.8 Appendix N-5

Average Actual Elastic Slope	1.150
Average Predicted Elastic Slope	1.115
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	2.186
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,042 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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Date

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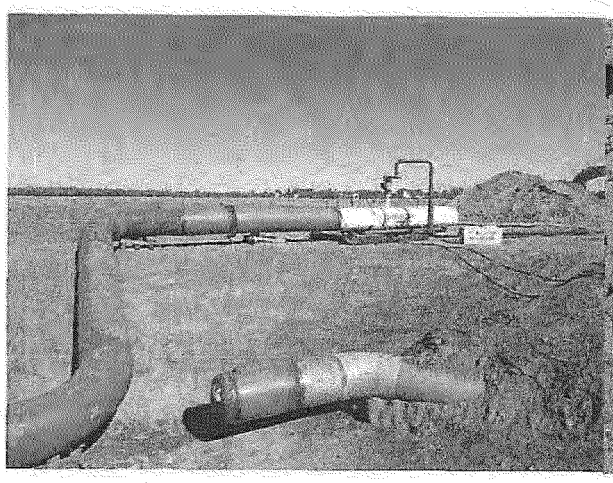
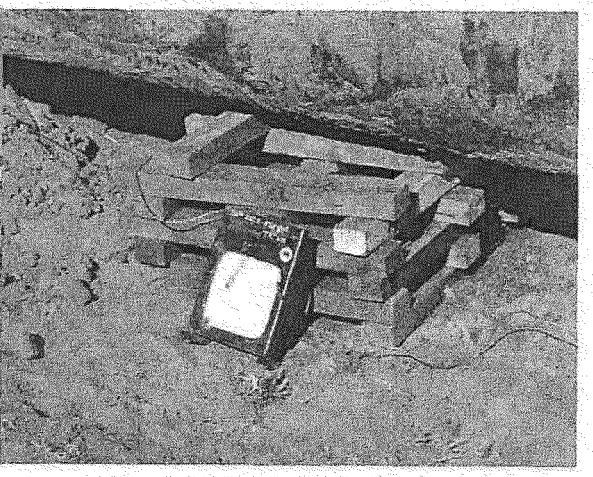
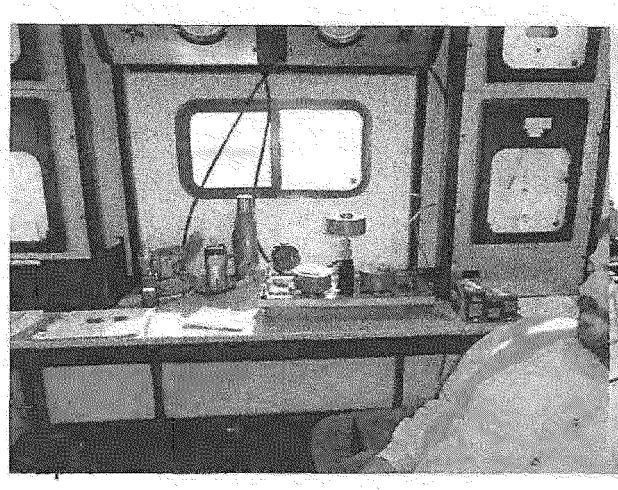


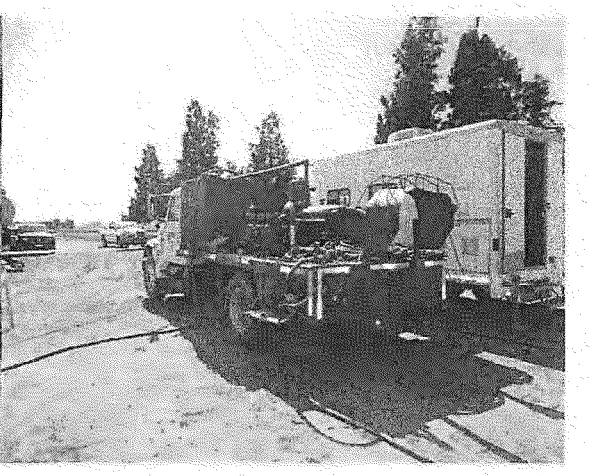
Test T-117 Test Head



Test T-117 Unrestrained &
Alternate Restrained Temp. Rec.



Test T-117 Deadweight



Test T-117 Pump Truck

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Test T-117 Test End

Test T-117 Test End

Test T-117 Restrained Temp. Rec.