RCP

RCP, Inc

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

July 26, 2011

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

Test Contractor:	Contra Costa Inspection Co. -- T-20 7/26/2011
Asset Owner:	Pacific Gas and Electric Company -- 41502565
Construction Contractor:	ARB -- 0629-53-3500
Test Section:	PG&E T-20 Line 131, MP 42.34 - 42.42
Test Date:	July 26, 2011
Certificate Number:	RCP 61362 - T-20, L-131 MP 42.34 - 42.42

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 Contra Costa Inspection Co. 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 736 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 8.25 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.25 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 677 psig and the established MAOP is 616 psig.

Pressure decreased 44 psi during the test. 866.05 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 142.64 ounces, gain, which is equivalent to a 1.24 °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 438 feet of buried and 137 feet of exposed pipe from a single point on the line.

Sincerely,

Redacted

cc. file

Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41502565
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T-20 7/26/2011
Test Section	PG&E T-20 Line 131, MP 42.34 - 42.42		
File Name	RCP 61362 - T-20, L-131 MP 42.34 - 42.42		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 26-Jul-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-20 Line 131, MP 42.34 - 42.42		
From:	4+16	To:	0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	50 ft	24.000 in.	0.375 in.	API5L-X60, DSAW, Arc Weld, Steel	1,875 psi
2	106 ft	24.000 in.	0.281 in.	API5L-Grade B, SM, Arc Weld, Steel	820 psi
3	282 ft	24.000 in.	0.500 in.	API5L-X60, DSAW, Arc Weld, Steel	2,500 psi
4	55 ft	3.500 in.	0.216 in.	API5L-Grade B, SM, Arc Weld, Steel	4,320 psi

Initial Test Conditions

Pressure at Test Point:	736 psig	Date/Time:	7/26/11 8:00 AM	Pipe Temperature Unrestrained:	67.0 °F
Ambient Temperature:	63.0 °F			Restrained:	64.0 °F
Pressure @ High Point (Cal/Measure):	722 psig	Elevation @ Test Point:	29.0 ft	Location:	4+16
Pressure @ Low Point (Cal/Measure):	736 psig	Elevation @ High Point:	62.0 ft	Location:	0+00
		Elevation @ Low Point:	29.0 ft	Location:	4+16

Final Test Conditions

Pressure at Test Point:	692 psig	Date/Time:	7/26/11 4:15 PM	Pipe Temperature Unrestrained:	81.0 °F
Ambient Temperature:	85.0 °F			Restrained:	65.0 °F
Pressure @ High Point (Cal/Measure):	678 psig	Elevation @ Test Point:	29.0 ft	Location:	4+16
Pressure @ Low Point (Cal/Measure):	692 psig	Elevation @ High Point:	62.0 ft	Location:	0+00
		Elevation @ Low Point:	29.0 ft	Location:	4+16

Total Fluid Injected:			Volume gain	
Total Fluid Withdrawn:	866.05 fluid ounces			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	142.64 oz	gain	0.0100%	1.243 °F equivalent

Test Duration: 8.25 hours

Minimum Test Pressure:	Test Point	675 psig	Max Elevation	661 psig	Min Elevation	675 psig
Maximum Test Pressure:		737 psig		723 psig		737 psig
% SMYS :		89.9%		88.2%		89.9%

		Minimum Test Pressure (Calculated/Measured):	678 psig
Maximum Allowable Operating Pressure:	DOT Part 192	Test Factor= 1.10	616 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 736 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 8.25 hour test duration period. No leaks were observed during the test period. The test section included 438 feet of buried and 137 feet of exposed pipe. Pressure lost 44 psi during the test. The buried pipe segment gained 1°F fluid temperature and the exposed pipe segment gained 14°F. 866.05 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 142.64 ounces, gain, which is equivalent to a 1.24 °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 438 feet of buried and 137 feet of exposed pipe from a single point on the line.
Remarks		

Redacted

26-Jul-11

RCP

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41502565
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	T-20 7/26/2011
Test Section	PG&E T-20 Line 131, MP 42.34 - 42.42		
File Name	RCP 61362 - T-20, L-131 MP 42.34 - 42.42		

Date **26-Jul-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	7/26/11	7:36 AM	503 psig	63 °F	67 °F	64 °F	Start Spike		
2	7/26/11	7:37 AM	513 psig	63 °F	67 °F	64 °F	Inject		92 oz.
3	7/26/11	7:38 AM	523 psig	63 °F	67 °F	64 °F	Inject		96 oz.
4	7/26/11	7:39 AM	533 psig	63 °F	67 °F	64 °F	Inject		67 oz.
5	7/26/11	7:40 AM	543 psig	63 °F	67 °F	64 °F	Inject		63 oz.
6	7/26/11	7:41 AM	553 psig	63 °F	67 °F	64 °F	Inject		75 oz.
7	7/26/11	7:42 AM	563 psig	63 °F	67 °F	64 °F	Inject		75 oz.
8	7/26/11	7:43 AM	573 psig	63 °F	67 °F	64 °F	Inject		75 oz.
9	7/26/11	7:44 AM	583 psig	63 °F	67 °F	64 °F	Inject		63 oz.
10	7/26/11	7:45 AM	593 psig	63 °F	67 °F	64 °F	Inject		84 oz.
11	7/26/11	7:46 AM	603 psig	63 °F	67 °F	64 °F	Inject		71 oz.
12	7/26/11	7:47 AM	613 psig	63 °F	67 °F	64 °F	Inject		71 oz.
13	7/26/11	7:48 AM	623 psig	63 °F	67 °F	64 °F	Inject		71 oz.
14	7/26/11	7:49 AM	633 psig	63 °F	67 °F	64 °F	Inject		71 oz.
15	7/26/11	7:50 AM	643 psig	63 °F	67 °F	64 °F	Inject		75 oz.
16	7/26/11	7:51 AM	653 psig	63 °F	67 °F	64 °F	Inject		75 oz.
17	7/26/11	7:52 AM	663 psig	63 °F	67 °F	64 °F	Inject		67 oz.
18	7/26/11	7:53 AM	673 psig	63 °F	67 °F	64 °F	Inject		80 oz.
19	7/26/11	7:54 AM	683 psig	63 °F	67 °F	64 °F	Inject		67 oz.
20	7/26/11	7:55 AM	693 psig	63 °F	67 °F	64 °F	Inject		75 oz.
21	7/26/11	7:56 AM	703 psig	63 °F	67 °F	64 °F	Inject		67 oz.
22	7/26/11	7:57 AM	713 psig	63 °F	67 °F	64 °F	Inject		71 oz.
23	7/26/11	7:58 AM	723 psig	63 °F	67 °F	64 °F	Inject		75 oz.
24	7/26/11	7:59 AM	733 psig	63 °F	67 °F	64 °F	Inject		67 oz.
25	7/26/11	8:00 AM	736 psig	63 °F	67 °F	64 °F	Inject		34 oz.
26	7/26/11	8:00 AM	736 psig	63 °F	67 °F	64 °F	On Test		
27	7/26/11	8:10 AM	737 psig	63 °F	67 °F	64 °F			
28	7/26/11	8:20 AM	737 psig	63 °F	67 °F	64 °F			
29	7/26/11	8:30 AM	737 psig	63 °F	67 °F	64 °F	End Spike		
30	7/26/11	8:31 AM	727 psig	63 °F	67 °F	64 °F	Bleed	74 oz.	
31	7/26/11	8:32 AM	717 psig	63 °F	67 °F	64 °F		74 oz.	
32	7/26/11	8:33 AM	707 psig	63 °F	67 °F	64 °F		74 oz.	
33	7/26/11	8:34 AM	697 psig	63 °F	67 °F	64 °F		74 oz.	
34	7/26/11	8:35 AM	687 psig	63 °F	67 °F	64 °F		74 oz.	
35	7/26/11	8:36 AM	685 psig	63 °F	67 °F	64 °F		15 oz.	
36	7/26/11	8:45 AM	685 psig	67 °F	68 °F	64 °F			
37	7/26/11	9:00 AM	685 psig	67 °F	68 °F	64 °F			
38	7/26/11	9:15 AM	686 psig	68 °F	68 °F	64 °F			
39	7/26/11	9:30 AM	687 psig	69 °F	68 °F	64 °F	Sun Shine		
40	7/26/11	9:45 AM	688 psig	71 °F	68 °F	64 °F			
41	7/26/11	10:00 AM	688 psig	71 °F	68 °F	64 °F			
42	7/26/11	10:15 AM	692 psig	72 °F	68 °F	64 °F			
43	7/26/11	10:30 AM	694 psig	73 °F	68 °F	64 °F			

RCP

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company		Job Number 41502565
Construction Co.	ARB		Job Number 0629-53-3500
Testing Co.	Contra Costa Inspection Co.		Project No. T-20 7/26/2011
Test Section	PG&E T-20 Line 131, MP 42.34 - 42.42		
File Name	RCP 61362 - T-20, L-131 MP 42.34 - 42.42		

Date 26-Jul-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
44	7/26/11	10:45 AM	697 psig	73 °F	72 °F	64 °F			
45	7/26/11	10:46 AM	675 psig	73 °F	72 °F	64 °F	Bleed	160.00 oz.	
46	7/26/11	11:00 AM	676 psig	72 °F	72 °F	64 °F			
47	7/26/11	11:15 AM	678 psig	73 °F	72 °F	64 °F			
48	7/26/11	11:30 AM	681 psig	72 °F	72 °F	64 °F			
49	7/26/11	11:45 AM	684 psig	74 °F	72 °F	64 °F	Clear		
50	7/26/11	12:00 PM	687 psig	75 °F	74 °F	64 °F			
51	7/26/11	12:15 PM	690 psig	77 °F	74 °F	64 °F			
52	7/26/11	12:30 PM	693 psig	77 °F	74 °F	65 °F			
53	7/26/11	12:45 PM	696 psig	77 °F	74 °F	65 °F	Bleed	160.00 oz.	
54	7/26/11	12:49 PM	675 psig	77 °F	74 °F	65 °F			
55	7/26/11	1:00 PM	677 psig	80 °F	74 °F	65 °F			
56	7/26/11	1:15 PM	680 psig	80 °F	74 °F	65 °F			
57	7/26/11	1:30 PM	684 psig	82 °F	76 °F	65 °F	Clear		
58	7/26/11	1:45 PM	687 psig	84 °F	76 °F	65 °F			
59	7/26/11	2:00 PM	690 psig	82 °F	78 °F	65 °F			
60	7/26/11	2:15 PM	694 psig	82 °F	78 °F	65 °F			
61	7/26/11	2:30 PM	697 psig	83 °F	78 °F	65 °F	Bleed	160.00 oz.	
62	7/26/11	2:34 PM	675 psig	83 °F	78 °F	65 °F			
63	7/26/11	2:45 PM	677 psig	83 °F	78 °F	65 °F			
64	7/26/11	3:00 PM	680 psig	83 °F	80 °F	65 °F			
65	7/26/11	3:15 PM	683 psig	83 °F	80 °F	65 °F			
66	7/26/11	3:30 PM	686 psig	84 °F	80 °F	65 °F			
67	7/26/11	3:45 PM	689 psig	85 °F	80 °F	65 °F			
68	7/26/11	4:00 PM	689 psig	85 °F	81 °F	65 °F			
69	7/26/11	4:15 PM	692 psig	85 °F	81 °F	65 °F	End of Test		

RCP

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41502565
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	T-20 7/26/2011
Test Section	PG&E T-20 Line 131, MP 42.34 - 42.42		
File Name	RCP 61362 - T-20, L-131 MP 42.34 - 42.42		

Date **26-Jul-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	**Comment**	**Bleed**	**Inject**
							Spike Test		1,729.8 oz.
							Hydrostatic Test	866.0 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	737 psig
		Low Test Pressure:	675 psig

RCP

Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41502565
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T-20 7/26/2011
Test Section	PG&E T-20 Line 131, MP 42.34 - 42.42		WATER
File Name	RCP 61362 - T-20, L-131 MP 42.34 - 42.42		

General Pipe Data

Description	Segment										
	1	2	3	4	5	6	7	8			
Restrained or Unrestrained?	Restrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained	Unrestrained	Unrestrained			
Outside Diameter	24.000 in.	24.000 in.	24.000 in.	3.500 in.	2.375 in.	24.000 in.	24.000 in.	24.000 in.			
Wall Thickness	0.375 in.	0.281 in.	0.500 in.	0.216 in.	0.154 in.	0.500 in.	0.500 in.	0.375 in.			
Inside Diameter	23.250 in.	23.438 in.	23.000 in.	3.068 in.	2.067 in.	23.000 in.	23.000 in.	23.250 in.			
Spec./Grade	API5L-X60	API5L-Grade B	API5L-X60	API5L-Grade B	API5L-Grade B	API5L-X60	API5L-X60	API5L-X60			
Length Unrestrained				55 ft	12 ft	4 ft	22 ft	44 ft			
Length Restrained	50 ft	106 ft	282 ft								
Temperature – On Test	64 °F	64 °F	64.0 °F	67.0 °F	67.0 °F	67.0 °F	67.0 °F	67.0 °F			
Temperature – End of Test	65 °F	65 °F	65.0 °F	81.0 °F	81.0 °F	81.0 °F	81.0 °F	81.0 °F			
Pressure – On Test	736 psig	736 psig	736 psig	736 psig	736 psig	736 psig	736 psig	736 psig			
Pressure – End of Test	692 psig	692 psig	692 psig	692 psig	692 psig	692 psig	692 psig	692 psig			

Unrestrained Pipe

Sum:	Vo	1,554.79 gal 199,013 oz.		Vtp1	1,560.08 gal 199,691 oz.		Vtp2	1,557.19 gal 199,321 oz.			
Vo Unrestrained				21 gal	2 gal	86 gal	475 gal	970 gal			
Fwp 1				1.002254	1.002254	1.002254	1.002254	1.002254			
Fpp 1				1.000436	1.000412	1.001411	1.001411	1.001901			
Fpt 1				1.000127	1.000127	1.000127	1.000127	1.000127			
Fwt 1				1.000681	1.000681	1.000681	1.000681	1.000681			
Fpwt 1 = Fpt/Fwt				0.999447	0.999447	0.999447	0.999447	0.999447			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)				21.17 gal	2.10 gal	86.60 gal	476.31 gal	973.91 gal			
Fwp 2				1.002119	1.002119	1.002119	1.002119	1.002119			
Fpp 2				1.000410	1.000387	1.001326	1.001326	1.001788			
Fpt 2				1.000382	1.000382	1.000382	1.000382	1.000382			
Fwt 2				1.002556	1.002556	1.002556	1.002556	1.002556			
Fpwt = Fpt/Fwt				0.997832	0.997832	0.997832	0.997832	0.997832			
Vtp = Vo(Fwp)(Fpp)(Fpwt)				21.13 gal	2.09 gal	86.44 gal	475.43 gal	972.10 gal			

Restrained Pipe

Sum:	Vo	9,564.97 gal 1,224,316 oz.		Vtp1	9,595.76 gal 1,228,258 oz.		Vtp2	9,593.00 gal 1,227,904 oz.			
Vo Unrestrained	1,103 gal	2,376 gal	6,086 gal								
Fwp 1	1.002254	1.002254	1.002254								
Fpp 1	1.001399	1.001877	1.001041								
Fpt 1	1.000048	1.000048	1.000048								
Fwt 1	1.000375	1.000375	1.000375								
Fpwt 1 = Fpt/Fwt	0.999674	0.999674	0.999674								
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,106 gal	2,385 gal	6,105 gal								
Fwp 2	1.002119	1.002119	1.002119								
Fpp 2	1.001319	1.001769	1.000984								
Fpt 2	1.000061	1.000061	1.000061								
Fwt 2	1.000467	1.000467	1.000467								
Fpwt = Fpt/Fwt	0.999593	0.999593	0.999593								
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,106 gal	2,384 gal	6,103 gal								

Combined Pipe

Sum:	Vo	11,119.76 gal 1,423,330 oz.	Vtp1	11,155.85 gal 1,427,949 oz.	Vtp2	11,150.20 gal 1,427,225 oz.

RCP

Pipe Segment Volume Allowance Calculations

COPY

JUL 26 2011

PG&E

Company	Pacific Gas and Electric Company	Job Number	41502565
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T-20 7/26/2011
Test Section	PG&E T-20 Line 131, MP 42.34 - 42.42		WATER
File Name	RCP 61362 - T-20, L-131 MP 42.34 - 42.42		

General Pipe Data

Description	Segment										
	1	2	3	4	5	6	7	8			
Restrained or Unrestrained?	Restrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained	Unrestrained	Unrestrained			
Outside Diameter	24.000 in.	24.000 in.	24.000 in.	3.500 in.	2.375 in.	24.000 in.	24.000 in.	24.000 in.			
Wall Thickness	0.375 in.	0.281 in.	0.500 in.	0.216 in.	0.154 in.	0.500 in.	0.500 in.	0.375 in.			
Inside Diameter	23.250 in.	23.438 in.	23.000 in.	3.068 in.	2.067 in.	23.000 in.	23.000 in.	23.250 in.			
Spec./Grade	API5L-X60	API5L-Grade B	API5L-X60	API5L-Grade B	API5L-Grade B	API5L-X60	API5L-X60	API5L-X60			
Length Unstrained				55 ft	12 ft	4 ft	22 ft	44 ft			
Length Restrained	50 ft	106 ft	282 ft								
Temperature -- On Test	64 °F	64 °F	64 °F	73 °F	73 °F	73 °F	73 °F	73 °F			
Temperature -- End of Test	65 °F	65 °F	65 °F	74 °F	74 °F	74 °F	74 °F	74 °F			
Pressure -- On Test	714 psig	714 psig	714 psig	714 psig	714 psig	714 psig	714 psig	714 psig			
Pressure -- End of Test	714 psig	714 psig	714 psig	714 psig	714 psig	714 psig	714 psig	714 psig			

Unrestrained Pipe

Sum:	Vo	1,554.79 gal / 199,013 oz.		Vtp1	1,558.91 gal / 199,541 oz.		Vtp2	1,558.76 gal / 199,521 oz.			
Vo Unrestrained				21 gal	2 gal	86 gal	475 gal	970 gal			
Fwp 1				1.002186	1.002186	1.002186	1.002186	1.002186			
Fpp 1				1.000423	1.000399	1.001369	1.001369	1.001845			
Fpt 1				1.000237	1.000237	1.000237	1.000237	1.000237			
Fwt 1				1.001423	1.001423	1.001423	1.001423	1.001423			
Fpwt 1 = Fpt/Fwt				0.998815	0.998815	0.998815	0.998815	0.998815			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)				21.15 gal	2.09 gal	86.54 gal	475.95 gal	973 gal			
Fwp 2				1.002186	1.002186	1.002186	1.002186	1.002186			
Fpp 2				1.000423	1.000399	1.001369	1.001369	1.001845			
Fpt 2				1.000255	1.000255	1.000255	1.000255	1.000255			
Fwt 2				1.001542	1.001542	1.001542	1.001542	1.001542			
Fpwt = Fpt/Fwt				0.998715	0.998715	0.998715	0.998715	0.998715			
Vtp = Vo(Fwp)(Fpp)(Fpwt)				21.15 gal	2.09 gal	86.53 gal	475.91 gal	973 gal			

Restrained Pipe

Sum:	Vo	9,564.97 gal / 1,224,316 oz.		Vtp1	9,594.75 gal / 1,228,128 oz.		Vtp2	9,594.01 gal / 1,228,034 oz.			
Vo Restrained	1,103 gal	2,376 gal	6,086 gal								
Fwp 1	1.002186	1.002186	1.002186								
Fpp 1	1.001357	1.001821	1.001011								
Fpt 1	1.000048	1.000048	1.000048								
Fwt 1	1.000375	1.000375	1.000375								
Fpwt 1 = Fpt/Fwt	0.999674	0.999674	0.999674								
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,106 gal	2,385 gal	6,104 gal								
Fwp 2	1.002186	1.002186	1.002186								
Fpp 2	1.001361	1.001824	1.001014								
Fpt 2	1.000061	1.000061	1.000061								
Fwt 2	1.000467	1.000467	1.000467								
Fpwt = Fpt/Fwt	0.999593	0.999593	0.999593								
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,106 gal	2,384 gal	6,103 gal								

Combined Pipe

Sum:	Vo	11,119.76 gal / 1,423,330 oz.	Vtp1	11,153.67 gal / 1,427,669 oz.	Vtp2	11,152.77 gal / 1,427,555 oz.
1 °F Change	0.90 gal	114.74 oz.				

RCP

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	50 ft	Restrained	24.000 in.	0.3750 in.	API5L-X60	1,875 psig	Steel	Arc Weld	DSAW
2	106 ft	Restrained	24.000 in.	0.2810 in.	API5L-Grade B	820 psig	Steel	Arc Weld	SM
3	282 ft	Restrained	24.000 in.	0.5000 in.	API5L-X60	2,500 psig	Steel	Arc Weld	DSAW
4	55 ft	Unrestrained	3.500 in.	0.2160 in.	API5L-Grade B	4,320 psig	Steel	Arc Weld	SM
5	12 ft	Unrestrained	2.375 in.	0.1540 in.	API5L-Grade B	4,539 psig	Steel	Arc Weld	SM
6	4 ft	Unrestrained	24.000 in.	0.5000 in.	API5L-X60	2,500 psig	Steel	Arc Weld	DSAW
7	22 ft	Unrestrained	24.000 in.	0.5000 in.	API5L-X60	2,500 psig	Steel	Arc Weld	SM
8	44 ft	Unrestrained	24.000 in.	0.3750 in.	API5L-X60	1,875 psig	Steel	Arc Weld	DSAW

Hydrostatic Test Project Owner & Participants

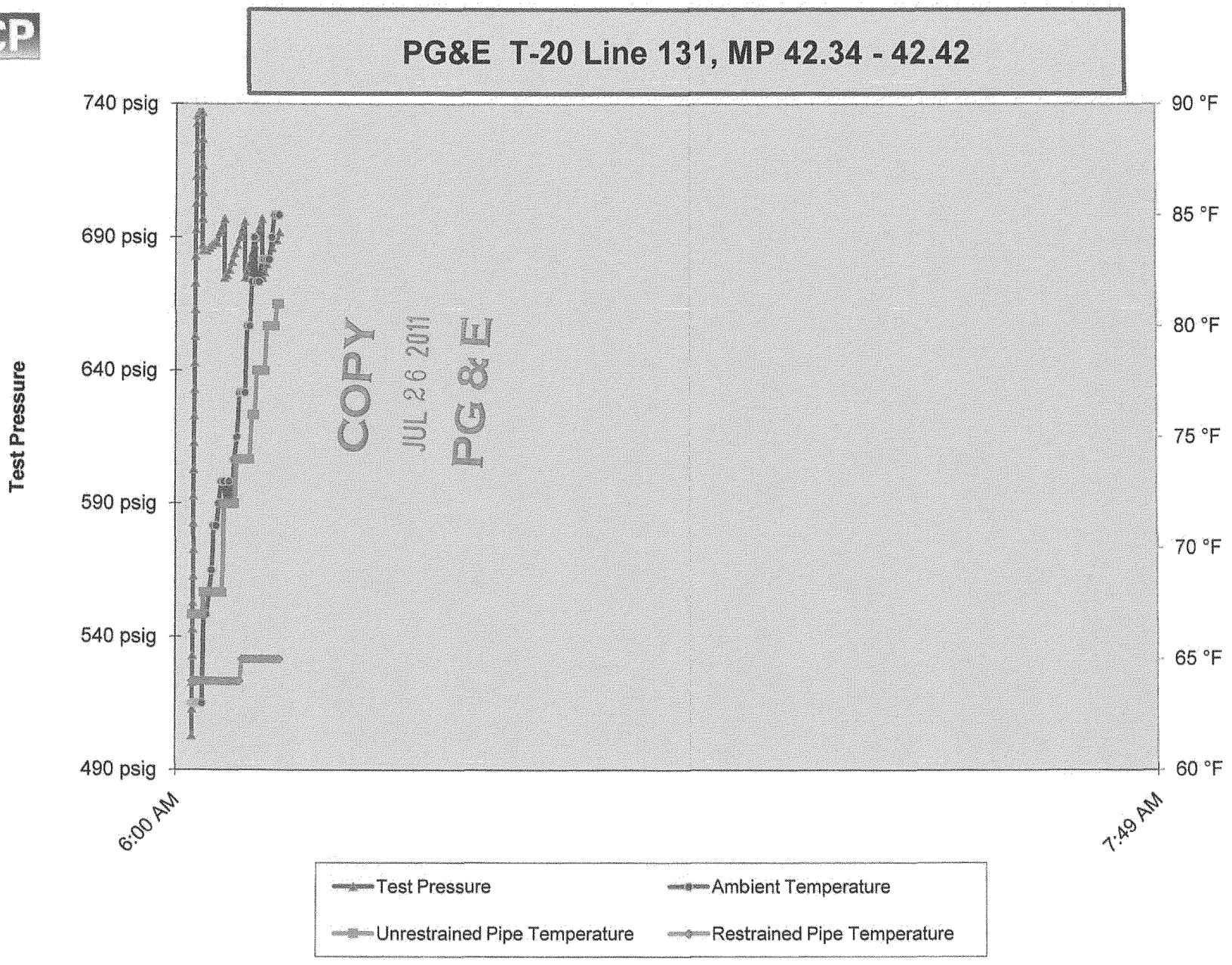
Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget Walnut Creek, CA 94598 Attention: Redacted	41502565
Construction Company	ARB	Job Number
Address	1875 Loveridge Road Pittsburg, CA 94565 Attention: Redacted	0629-53-3500
Hydrostatic Test Co.	Contra Costa Inspection Co.	Project No.
Address	2820 LaJolla Drive Antioch, Ca. 94531 Attention: Redacted	T-20 7/26/2011
Test Section	PG&E T-20 Line 131, MP 42.34 - 42.42 From: 4+16 To: 0+00	
File Name	RCP 61362 - T-20, L-131 MP 42.34 - 42.42	

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

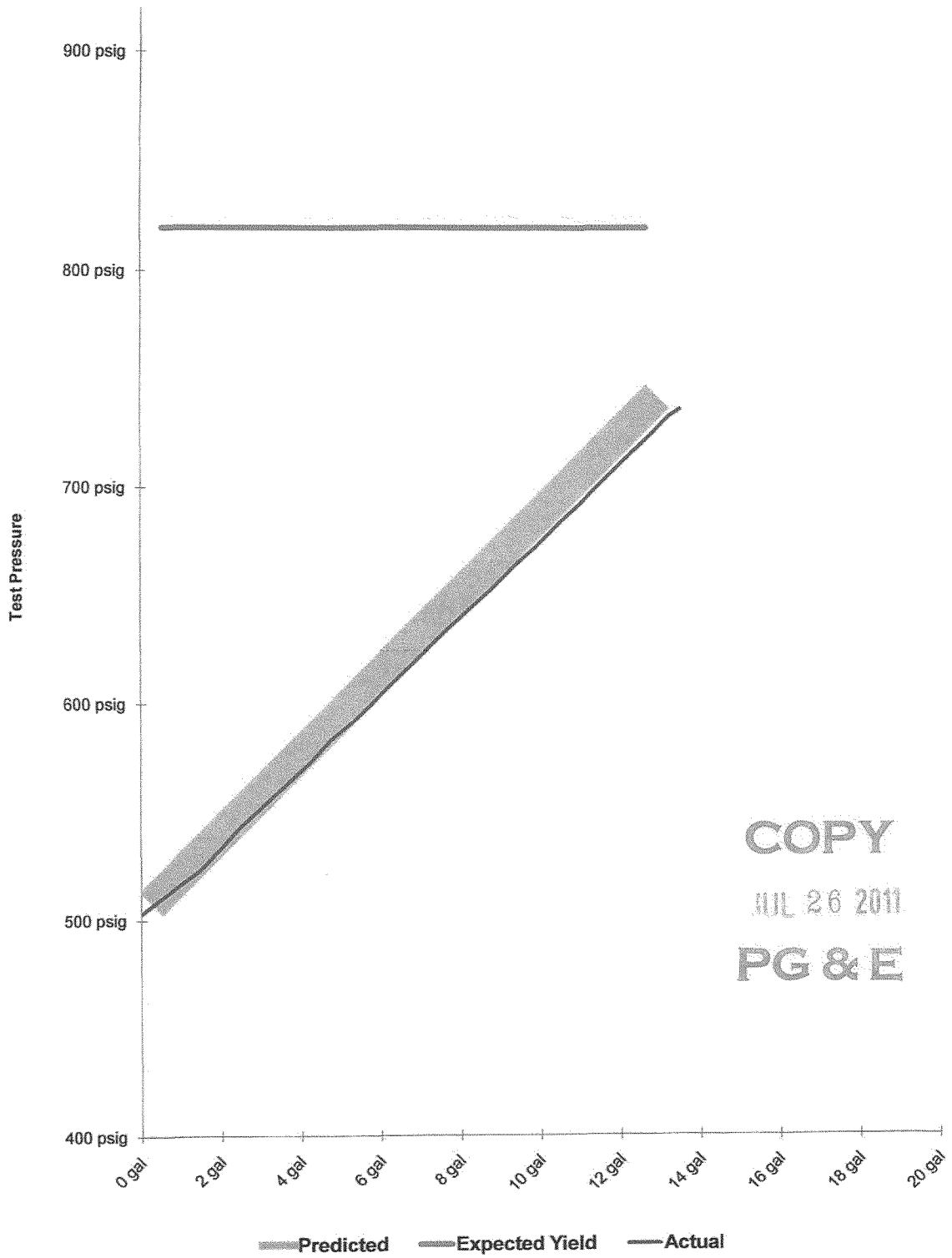
Note: Minimum test pressure and duration are not to be charged without written approval.

Time and Date Test Pressure Reached	7/26/11 8:00 AM	Elevation at Test Point	29 ft	Min. Required Test Press At Test Point (1)	672 psig	Max. Allowable Test Press at Test Point (4)	750 psig
Time and Date Test Ended	7/26/11 4:15 PM	Max. Elevation in Test Section	62 ft	Min. Indicated Test Pressure (2)	675 psig	Max. Indicated Test Pressure (5)	737 psig
Actual Duration of Test	8.25 hrs 25 min.	Min. Elevation in Test Section	29 ft	Min. Test Pressure at Max. Elevation (3)	661 psig	Max. Test Pressure at Min. Elevation (6)	737 psig

SS



Spike Pressure Test
Stress Strain Curve -- PG&E T-20 Line 131, MP 42.34 - 42.42



RCP

Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
503 psig	0	0.00 gal		0	0.00 gal
513 psig	22	0.72 gal	0.54 gal	0.072	0.054
523 psig	45	1.47 gal	1.09 gal	0.075	0.054
533 psig	61	2.00 gal	1.63 gal	0.052	0.054
543 psig	76	2.49 gal	2.17 gal	0.049	0.054
553 psig	94	3.08 gal	2.72 gal	0.059	0.054
563 psig	112	3.66 gal	3.26 gal	0.059	0.054
573 psig	130	4.25 gal	3.80 gal	0.059	0.054
583 psig	145	4.74 gal	4.35 gal	0.049	0.054
593 psig	165	5.40 gal	4.89 gal	0.065	0.054
603 psig	182	5.96 gal	5.43 gal	0.056	0.054
613 psig	199	6.51 gal	5.98 gal	0.056	0.054
623 psig	216	7.07 gal	6.52 gal	0.056	0.054
633 psig	233	7.62 gal	7.06 gal	0.056	0.054
643 psig	251	8.21 gal	7.61 gal	0.059	0.054
653 psig	269	8.80 gal	8.15 gal	0.059	0.054
663 psig	285	9.33 gal	8.69 gal	0.052	0.054
673 psig	304	9.95 gal	9.24 gal	0.062	0.054
683 psig	320	10.47 gal	9.78 gal	0.052	0.054
693 psig	338	11.06 gal	10.32 gal	0.059	0.054
703 psig	354	11.58 gal	10.87 gal	0.052	0.054
713 psig	371	12.14 gal	11.41 gal	0.056	0.054
723 psig	389	12.73 gal	11.96 gal	0.059	0.054
733 psig	405	13.25 gal	12.50 gal	0.052	0.054
736 psig	413	13.51 gal	12.66 gal	0.087	0.054
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000
736 psig		13.51 gal	12.66 gal	0.000	0.000

Spike Pressure Test Stress Strain Curve -- PG&E T-20 Line 131, MP 42.34 - 42.42	
Pump gal per stroke	0.056 gal/stroke
Pump Piston Diameter	1.250 in
Pump Piston Stroke	3.50 in
Pump Cylinders	3 ea
Volume check gal per stroke	0.033 gal/stroke
Volume Released (gallons)	0.58 gal
Pressure Reduced (psi)	10 psi
Maximum2	20 gal
Minimum2	0 gal
Maximum1	920 psig
Minimum1	400 psig
Gallons/Stroke Used	0.033 gal/stroke
Predicted Gallons/Stroke	0.031 gal/stroke
1160	10 psi
Max Pressure	736 psig
Buried Pipe Temperature	64 °F
Exposed Pipe Temperature	67 °F
ASME B31.8 Appendix N-5	
Average Actual Elastic Slope	0.058
Average Predicted Elastic Slope	0.054
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	0.110
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	736 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

COPY

JUL 26 2011

PG&E

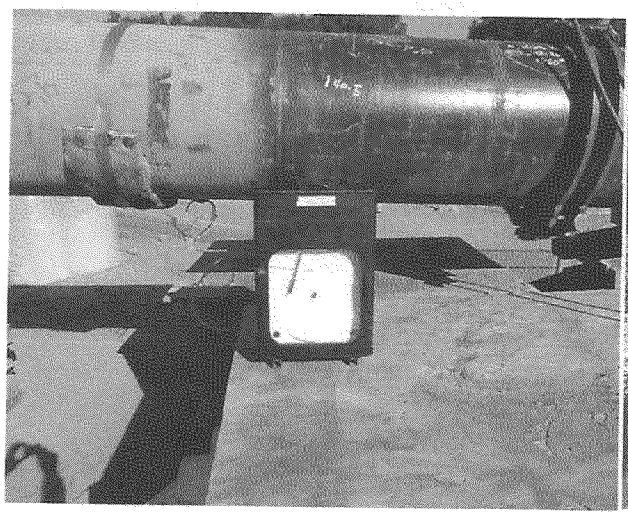
Redacted

7-26-11

Date

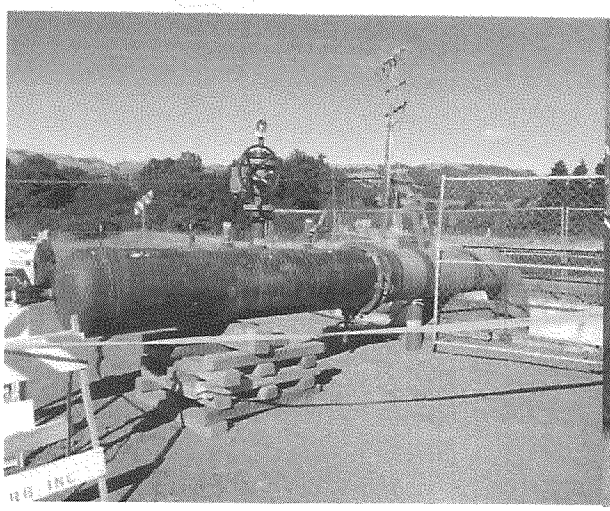
7/26/2011

SB_GT&S_0046942

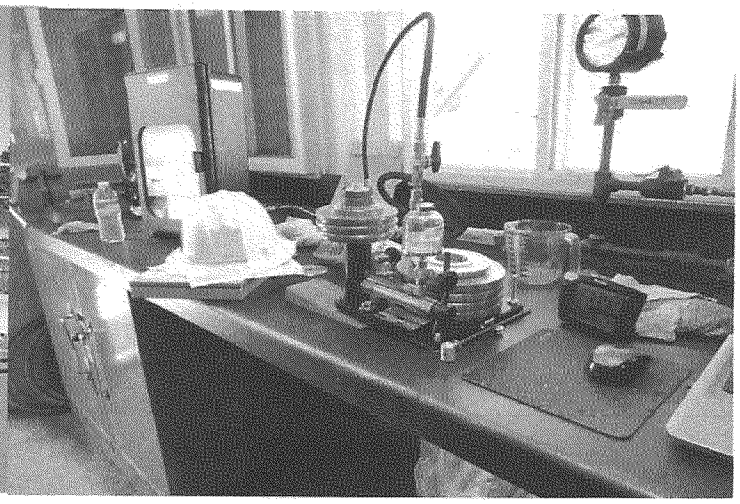


Unrestrained Temp. Rec.

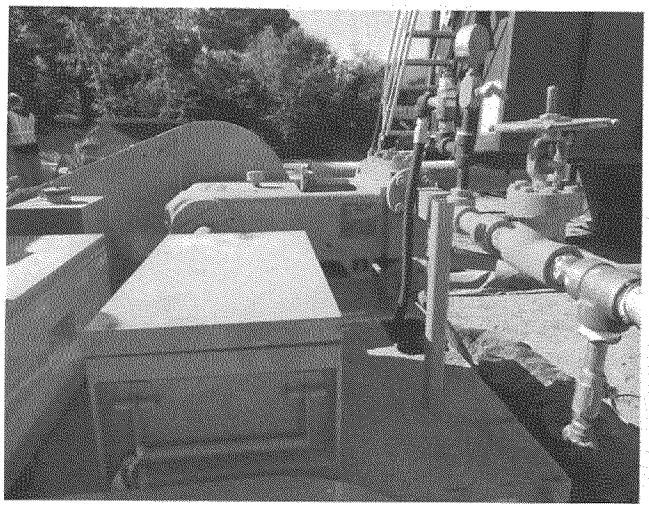
Primary Restrained Temp. Rec.



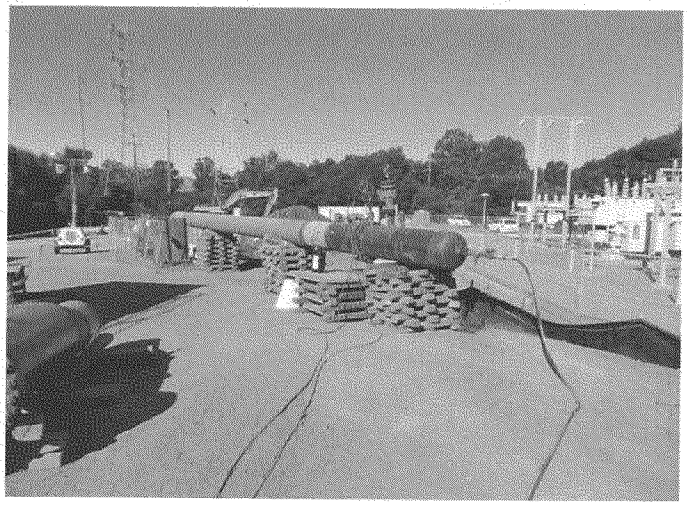
Test End



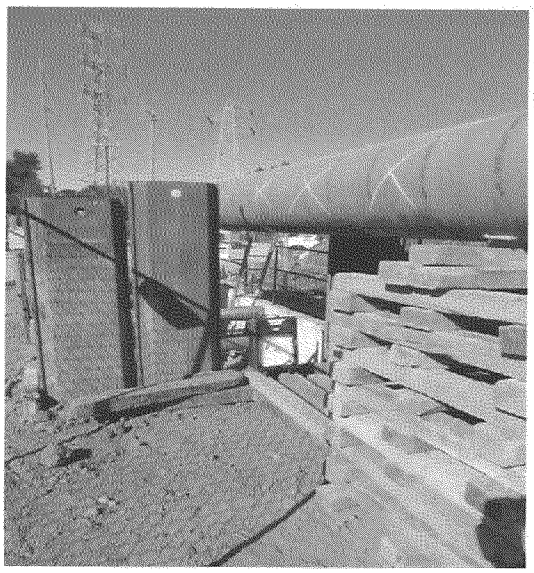
Dead Weight Tester



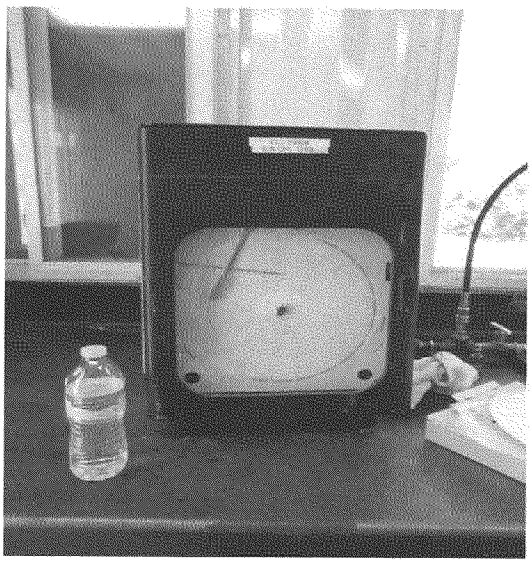
Injection Pump



Test Head



Alt Restrained Temp. Rec.



Pressure Recorder

Hydrostatic Test Log Sheet

RCP

Owner Company	PGE	Job Number	415025655
Construction Co.	ARB	Job Number	0629-053C
Testing Co.	CCI	Job Number	

Test Section

	Name	Redacted CCI	
		Station (0+00)	Elevation (Feet)
	Test Location	4+16	29'
	Begin	~~0+00~~ 4+16	29'
	End	~~4+16~~ 0+00	62'
	High Elevation	0+00	62'
	Low Elevation	4+16	29'

Pipe Data

Section	Length (ft.)	O. D. (in.)	W.T. (in.)	Restrained (ft.)	Unrestrained (ft.)	Grade	Seam/Joint Type
1	146	24 in	0.3750		146	X60	
2	106	24 in	0.2810	106		GR. B	
3	286	24 in	0.5000	286		X60	
4	55	3.500	0.2160		55	GR. B	
5	12	2.375	0.1540		12	GR. B	
6	4	24 in	0.5000		4	X60	
7	22	24 in	0.5000		22	X60	
8							
9							
10							
11							

Test Period		Date	Time	Test Medium	
	Begin	7|26|2011	8:00 Am		Water ☑
	End	7|26|2011	4:15 Pm		Nitrogen ☐
					Other ☐

Test Instrumentation

	Description	Calibration Checked	Serial Number	Date Calibrated/Certified	Installation Correct
	Dead Weight Pressure Tester		Ametek 6301	6|7|2011	☑ Yes
	Pressure Recorder	☑ Yes	CIP 1703	5|2|2011	☑ Yes
	Ambient Temperature Recorder	☑ Yes	Fluke 54	Daily	☑ Yes
	Restrained Pipe Temperature Recorder	☑ Yes	Metsero 782406	3|2|2011	☑ Yes
	Unrestrained Pipe Temperature Recorder	☑ Yes	CIP 1701	5|2|2011	☑ Yes

Hydrostatic Test Log

Log No.	Time	Test Pressure (psig)	Temperature (°F) Ambient	Pipe Restrained	Pipe Unrestrained	Volume ☑ Ounces ☐ Gallons Bleed	Volume Inject	Comments	Model Check: Is test good?
1	8:00 Am	736	63	64	67			ON test 8:00 Am	
2	8:10	737	63	64	67				☑ Yes ☐ No
3	8:20	737	63.5	64	67				☑ Yes ☐ No
4	8:30	737	64	64	68				☑ Yes ☐ No
5	8:45	685	66	64	68				☑ Yes ☐ No
6	9:00	685	67	64	68				☑ Yes ☐ No
7	9:15	686	68	64	69				☑ Yes ☐ No
8	9:30	687	69	64	69				☑ Yes ☐ No
9	9:45	688	71	64	70				☑ Yes ☐ No
10	10:00	690	72	64	70				☑ Yes ☐ No
11	10:15	692	72	64	70				☑ Yes ☐ No

RCP

Hydrostatic Test Log

Log No.	Time	Test Pressure (psig)	Temperature (°F)			Volume ☑ Ounces ☐ Gallons		Comments	Model Check: Is test good?
			Ambient	Pipe					
				Restrained	Unrestrained	Bleed	Inject		
12	10:30	694	73	64	71				☑ Yes ☐ No
13	10:45	697	72	64	72	-160			☑ Yes ☐ No
14	11:00	676	72	64	72				☑ Yes ☐ No
15	11:15	678	73	64	72				☑ Yes ☐ No
16	11:30	681	72	64	72				☑ Yes ☐ No
17	11:45	684	74	64	73				☑ Yes ☐ No
18	12:00	687	75	64	74				☑ Yes ☐ No
19	12:15	690	77	65	74				☑ Yes ☐ No
20	12:30	693	77	65	74				☑ Yes ☐ No
21	12:45	696	77	65	74	-160			☑ Yes ☐ No
22	1:00	677	80	65	74				☑ Yes ☐ No
23	1:15	680	80	65	74				☑ Yes ☐ No
24	1:30	684	82	65	76				☑ Yes ☐ No
25	1:45	687	84	65	77				☑ Yes ☐ No
26	2:00	690	82	65	78				☑ Yes ☐ No
27	2:15	694	82	65	78				☑ Yes ☐ No
28	2:30	697	83	65	78	-160			☑ Yes ☐ No
29	2:45	677	83	65	79				☑ Yes ☐ No
30	3:00	680	83	65	80				☑ Yes ☐ No
31	3:15	683	83	65	80				☑ Yes ☐ No
32	3:30	686	84	65	80				☑ Yes ☐ No
33	3:45	689	85	65	80				☑ Yes ☐ No
34	4:00	692	85	65	81				☑ Yes ☐ No
35	4:15	695	85	65	81			END TEST	☑ Yes ☐ No
36									☐ Yes ☐ No
37									☐ Yes ☐ No
38									☐ Yes ☐ No
39									☐ Yes ☐ No
40									☐ Yes ☐ No
41									☐ Yes ☐ No
42									☐ Yes ☐ No
43									☐ Yes ☐ No
44									☐ Yes ☐ No
45									☐ Yes ☐ No
46									☐ Yes ☐ No
47									☐ Yes ☐ No
48									☐ Yes ☐ No

Was a leak observed during test Period? ☐ Yes ☑ No

If "Yes", Explain:

High Test Pressure: 737

Low Test Pressure: 675

Certification:

Test Supervisor: Redacted
Signature

Company Representative:
Signature

Date: 7-26-11