



RCP, Inc

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Houston, Texas 77002
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Redacted

July 30, 2011

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

Test Contractor:	Contra Costa Inspection Co. -- T44 7/30/2011
Asset Owner:	Pacific Gas and Electric Company -- 41497365
Construction Contractor:	ARB -- 0629-53-3500
Test Section:	PG&E T-44 Line 153, MP 0.00 - 3.45
Test Date:	July 30, 2011
Certificate Number:	RCP 61362 - T-44, L-153 MP 0.00 to 3.45

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 3).

The test segment was subjected to a spike pressure test of 794 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 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8 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 733 psig and the established MAOP is 488 psig.

Pressure decreased 52 psi during the test. 23,871.66 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 16,286.80 ounces, gain, which is equivalent to a 1.72 °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 18,754 feet of buried and 278 feet of exposed pipe from a single point on the line.

Sincerely,

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Test_T-44_Hydrostatic_Test_Plan_7_27_2011
Letter



Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41497365
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T44 7/30/2011
Test Section	PG&E T-44 Line 153, MP 0.00 - 3.45		
File Name	RCP 61362 - T-44, L-153 MP 0.00 to 3.45		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3) Test Date: 30-Jul-11

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-44 Line 153, MP 0.00 - 3.45
 From: 00+00 To: 188+29

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	6 ft	34.000 in.	0.505 in.	API5L-X60, DSAW, Arc Weld, Steel	1,782 psi
2	75 ft	30.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,625 psi
3	992 ft	34.000 in.	0.500 in.	API5L-X42, DSAW, Arc Weld, Steel	1,235 psi
4	68 ft	30.000 in.	0.375 in.	API5L-X60, DSAW, Arc Weld, Steel	1,500 psi
5	16,456 ft	30.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,300 psi
6	496 ft	30.000 in.	0.375 in.	API5L-X42, ERW-LF, Arc Weld, Steel	1,050 psi
7	695 ft	30.000 in.	0.313 in.	API5L-X52, DSAW, Arc Weld, Steel	1,083 psi
8	22 ft	34.000 in.	0.500 in.	API5L-X52, DSAW, Arc Weld, Steel	1,529 psi
9	80 ft	6.625 in.	0.280 in.	API5L-Grade B, SM, Arc Weld, Steel	2,958 psi
10	95 ft	4.500 in.	0.237 in.	API5L-Grade B, SM, Arc Weld, Steel	3,687 psi
11	47 ft	30.000 in.	0.313 in.	API5L-X42, OTH, Arc Weld, Steel	875 psi

Initial Test Conditions

Pressure at Test Point:	794 psig	Date/Time:	7/30/11 9:10 AM	Pipe Temperature	
Ambient Temperature:	65.0 °F	Elevation @ Test Point:	26.0 ft	Unrestrained:	68.0 °F
Pressure @ High Point (Cal/Measure):	785 psig	Elevation @ High Point:	46.0 ft	Restrained:	70.0 °F
Pressure @ Low Point (Cal/Measure):	796 psig	Elevation @ Low Point:	22.0 ft	Location:	00+00
				Location:	69+60
				Location:	186+29

Final Test Conditions

Pressure at Test Point:	742 psig	Date/Time:	7/30/11 5:10 PM	Pipe Temperature	
Ambient Temperature:	81.0 °F	Elevation @ Test Point:	26.0 ft	Unrestrained:	78.0 °F
Pressure @ High Point (Cal/Measure):	733 psig	Elevation @ High Point:	46.0 ft	Restrained:	68.0 °F
Pressure @ Low Point (Cal/Measure):	744 psig	Elevation @ Low Point:	22.0 ft	Location:	00+00
				Location:	69+60
				Location:	186+29
Total Fluid Injected:	1149.78 fluid ounces		Volume gain		
Total Fluid Withdrawn:	25021.44 fluid ounces				
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	16,286.80 oz	gain	0.0190%	1.72 °F equivalent	

Test Duration: 8.00 hours

Minimum Test Pressure:	740 psig	731 psig	742 psig
Maximum Test Pressure:	794 psig	785 psig	796 psig
% SMYS :	90.7%	89.8%	90.9%

Minimum Test Pressure (Calculated/Measured): 733 psig

Maximum Allowable Operating Pressure: DOT Part 192 Test Factor= 1.50 488 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	<p>The test segment was subjected to a spike pressure test of 794 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 hour test duration period.</p> <p>No leaks were observed during the test period. The test section included 18,754 feet of buried and 278 feet of exposed pipe. Pressure lost 52 psi during the test. The buried pipe segment lost 2°F fluid temperature and the exposed pipe segment gained 10°F.</p> <p>23,871.66 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 16,286.80 ounces, gain, which is equivalent to a 1.72 °F change in pipe temperature and larger than the anticipated error attributed to the temperature measurement instrumentation utilized.</p> <p>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 18,754 feet of buried and 278 feet of exposed pipe from a single point on the line.</p>

Remarks

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497365
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	T44 7/30/2011
Test Section	PG&E T-44 Line 153, MP 0.00 - 3.45		
File Name	RCP 61362 - T-44, L-153 MP 0.00 to 3.45		

Date		Test Log							
Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
1	7/30/11	8:30 AM	542 psig	65 °F	68 °F	70 °F	Start Spike		
2	7/30/11	8:31 AM	552 psig	65 °F	68 °F	70 °F	Inject		4,646 oz.
3	7/30/11	8:32 AM	562 psig	65 °F	68 °F	70 °F	Inject		4,936 oz.
4	7/30/11	8:33 AM	572 psig	65 °F	68 °F	70 °F	Inject		4,936 oz.
5	7/30/11	8:35 AM	582 psig	65 °F	68 °F	70 °F	Inject		4,936 oz.
6	7/30/11	8:36 AM	592 psig	65 °F	68 °F	70 °F	Inject		4,936 oz.
7	7/30/11	8:38 AM	602 psig	65 °F	68 °F	70 °F	Inject		4,646 oz.
8	7/30/11	8:39 AM	612 psig	65 °F	68 °F	70 °F	Inject		5,110 oz.
9	7/30/11	8:41 AM	622 psig	65 °F	68 °F	70 °F	Inject		4,762 oz.
10	7/30/11	8:42 AM	632 psig	65 °F	68 °F	70 °F	Inject		4,500 oz.
11	7/30/11	8:44 AM	642 psig	65 °F	68 °F	70 °F	Inject		4,791 oz.
12	7/30/11	8:45 AM	652 psig	65 °F	68 °F	70 °F	Inject		4,936 oz.
13	7/30/11	8:46 AM	662 psig	65 °F	68 °F	70 °F	Inject		4,297 oz.
14	7/30/11	8:47 AM	672 psig	65 °F	68 °F	70 °F	Inject		4,704 oz.
15	7/30/11	8:48 AM	682 psig	65 °F	68 °F	70 °F	Inject		4,489 oz.
16	7/30/11	8:49 AM	692 psig	65 °F	68 °F	70 °F	Inject		4,744 oz.
17	7/30/11	8:51 AM	702 psig	65 °F	68 °F	70 °F	Inject		4,646 oz.
18	7/30/11	8:52 AM	712 psig	65 °F	68 °F	70 °F	Inject		4,297 oz.
19	7/30/11	8:54 AM	722 psig	65 °F	68 °F	70 °F	Inject		4,646 oz.
20	7/30/11	8:56 AM	732 psig	65 °F	68 °F	70 °F	Inject		4,471 oz.
21	7/30/11	8:58 AM	742 psig	65 °F	68 °F	70 °F	Inject		4,355 oz.
22	7/30/11	9:00 AM	752 psig	65 °F	68 °F	70 °F	Inject		4,588 oz.
23	7/30/11	9:02 AM	762 psig	65 °F	68 °F	70 °F	Inject		4,181 oz.
24	7/30/11	9:04 AM	772 psig	65 °F	68 °F	70 °F	Inject		4,529 oz.
25	7/30/11	9:06 AM	782 psig	65 °F	68 °F	70 °F	Inject		4,355 oz.
26	7/30/11	9:08 AM	792 psig	65 °F	68 °F	70 °F	Inject		4,181 oz.
27	7/30/11	9:10 AM	794 psig	65 °F	68 °F	70 °F	On Test		1,150 oz.
28	7/30/11	9:20 AM	794 psig	66 °F	68 °F	70 °F	Cloud Cover		
29	7/30/11	9:30 AM	794 psig	66 °F	68 °F	70 °F			
30	7/30/11	9:40 AM	794 psig	66 °F	68 °F	70 °F	End Spike		
31	7/30/11	9:43 AM	784 psig	66 °F	68 °F	70 °F	Bleed	4,634 oz.	
32	7/30/11	9:47 AM	774 psig	66 °F	68 °F	70 °F	Bleed	4,634 oz.	
33	7/30/11	9:50 AM	764 psig	66 °F	68 °F	70 °F	Bleed	4,634 oz.	
34	7/30/11	9:54 AM	754 psig	66 °F	68 °F	70 °F	Bleed	4,634 oz.	
35	7/30/11	9:57 AM	744 psig	66 °F	68 °F	70 °F	Bleed	4,634 oz.	
36	7/30/11	10:00 AM	740 psig	66 °F	70 °F	70 °F	Bleed	1,853 oz.	
37	7/30/11	10:15 AM	740 psig	66 °F	71 °F	70 °F	Cloud Cover		
38	7/30/11	10:30 AM	740 psig	70 °F	71 °F	70 °F	Sun Shine		
39	7/30/11	10:45 AM	740 psig	70 °F	71 °F	70 °F			
40	7/30/11	11:00 AM	740 psig	72 °F	71 °F	70 °F			
41	7/30/11	11:15 AM	740 psig	77 °F	71 °F	70 °F			
42	7/30/11	11:30 AM	740 psig	75 °F	72 °F	70 °F			
43	7/30/11	11:45 AM	740 psig	74 °F	72 °F	70 °F			



Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497365
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	T44 7/30/2011
Test Section	PG&E T-44 Line 153, MP 0.00 - 3.45		
File Name	RCP 61362 - T-44, L-153 MP 0.00 to 3.45		

Date	30-Jul-11	Test Log
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Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
44	7/30/11	12:00 PM	740 psig	76 °F	73 °F	70 °F			
45	7/30/11	12:15 PM	741 psig	79 °F	73 °F	70 °F			
46	7/30/11	12:30 PM	741 psig	78 °F	73 °F	70 °F			
47	7/30/11	12:45 PM	741 psig	79 °F	74 °F	70 °F			
48	7/30/11	1:00 PM	741 psig	79 °F	75 °F	70 °F			
49	7/30/11	1:15 PM	741 psig	79 °F	75 °F	70 °F			
50	7/30/11	1:30 PM	741 psig	81 °F	75 °F	70 °F			
51	7/30/11	1:45 PM	741 psig	81 °F	75 °F	70 °F			
52	7/30/11	2:00 PM	741 psig	83 °F	76 °F	70 °F			
53	7/30/11	2:15 PM	741 psig	83 °F	76 °F	70 °F			
54	7/30/11	2:30 PM	741 psig	83 °F	76 °F	70 °F			
55	7/30/11	2:45 PM	741 psig	83 °F	77 °F	70 °F			
56	7/30/11	3:00 PM	741 psig	84 °F	77 °F	69 °F			
57	7/30/11	3:15 PM	741 psig	85 °F	78 °F	69 °F			
58	7/30/11	3:30 PM	742 psig	83 °F	78 °F	68 °F			
59	7/30/11	3:45 PM	742 psig	83 °F	78 °F	68 °F			
60	7/30/11	4:00 PM	742 psig	82 °F	78 °F	68 °F			
61	7/30/11	4:15 PM	742 psig	82 °F	78 °F	68 °F			
62	7/30/11	4:30 PM	742 psig	82 °F	78 °F	68 °F			
63	7/30/11	4:45 PM	742 psig	82 °F	78 °F	68 °F			
64	7/30/11	5:00 PM	742 psig	80 °F	78 °F	68 °F			
65	7/30/11	5:10 PM	742 psig	81 °F	78 °F	68 °F	End of Test		
66	7/30/11	5:20 PM	742 psig	81 °F	78 °F	68 °F			

									116,766.7 oz.
Hydrostatic Test								25,021.4 oz.	1,149.8 oz.

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure: 794 psig	Low Test Pressure: 740 psig
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Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497365
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T44 7/30/2011
Test Section	PG&E T-44 Line 153, MP 0.00 - 3.45	WATER	
File Name	RCP 61362 - T-44, L-153 MP 0.00 to 3.45		

General Pipe Data

Description	Segment										
	1	2	3	4	5	6	7	8	9	10	11
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained	Restrained
Outside Diameter	34.000 in.	30.000 in.	34.000 in.	30.000 in.	30.000 in.	30.000 in.	30.000 in.	34.000 in.	6.625 in.	4.500 in.	30.000 in.
Wall Thickness	0.505 in.	0.375 in.	0.500 in.	0.375 in.	0.375 in.	0.375 in.	0.313 in.	0.500 in.	0.280 in.	0.237 in.	0.313 in.
Inside Diameter	32.990 in.	29.250 in.	33.000 in.	29.250 in.	29.250 in.	29.250 in.	29.375 in.	33.000 in.	6.065 in.	4.026 in.	29.375 in.
Spec./Grade	API5L-X60	API5L-X65	API5L-X42	API5L-X60	API5L-X52	API5L-X42	API5L-X52	API5L-X52	API5L-Grade B	API5L-Grade B	API5L-X42
Length Unrestrained	6 ft	75 ft						22 ft	80 ft	95 ft	
Length Restrained			992 ft	68 ft	16,456 ft	496 ft	695 ft				47 ft
Temperature -- On Test	68 °F	68 °F	70.0 °F	70.0 °F	70.0 °F	70.0 °F	70.0 °F	68.0 °F	68.0 °F	68.0 °F	70.0 °F
Temperature -- End of Test	78 °F	78 °F	68.0 °F	68.0 °F	68.0 °F	68.0 °F	68.0 °F	78.0 °F	78.0 °F	78.0 °F	68.0 °F
Pressure -- On Test	794 psig	794 psig	794 psig	794 psig	794 psig	794 psig	794 psig	794 psig	794 psig	794 psig	794 psig
Pressure -- End of Test	742 psig	742 psig	742 psig	742 psig	742 psig	742 psig	742 psig	742 psig	742 psig	742 psig	742 psig

Unrestrained Pipe

Sum:	Vo	4,044.81 gal		Vtp1	4,061.59 gal		Vtp2	4,055.71 gal	
		517,736 oz.			519,883 oz.			519,130 oz.	
Vo Unrestrained	266 gal	2,618 gal					977 gal	120 gal	63 gal
Fwp 1	1.002432	1.002432					1.002432	1.002432	1.002432
Fpp 1	1.002161	1.002581					1.002184	1.000717	1.000562
Fpt 1	1.000146	1.000146					1.000146	1.000146	1.000146
Fwt 1	1.000803	1.000803					1.000803	1.000803	1.000803
Fpwt 1 = Fpt/Fwt	0.999343	0.999343					0.999343	0.999343	0.999343
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	267.47 gal	2,629.42 gal					981.36 gal	120.36 gal	62.97 gal
Fwp 2	1.002272	1.002272					1.002272	1.002272	1.002272
Fpp 2	1.002020	1.002412					1.002041	1.000670	1.000525
Fpt 2	1.000328	1.000328					1.000328	1.000328	1.000328
Fwt 2	1.002122	1.002122					1.002122	1.002122	1.002122
Fpwt = Fpt/Fwt	0.998209	0.998209					0.998209	0.998209	0.998209
Vtp = Vo(Fwp)(Fpp)(Fpwt)	267.09 gal	2,625.58 gal					979.95 gal	120.20 gal	62.89 gal

Restrained Pipe

Sum:	Vo	664,313.29 gal		Vtp1	666,590.80 gal		Vtp2	666,537.42 gal	
		85,032,101 oz.			85,323,622 oz.			85,316,790 oz.	
Vo Unrestrained			44,076 gal	2,374 gal	574,427 gal	17,314 gal	24,468 gal		1,655 gal
Fwp 1			1.002432	1.002432	1.002432	1.002432	1.002432		1.002432
Fpp 1			1.001626	1.001915	1.001915	1.001915	1.002300		1.002300
Fpt 1			1.000121	1.000121	1.000121	1.000121	1.000121		1.000121
Fwt 1			1.001036	1.001036	1.001036	1.001036	1.001036		1.001036
Fpwt 1 = Fpt/Fwt			0.999086	0.999086	0.999086	0.999086	0.999086		0.999086
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			44,214 gal	2,382 gal	576,399 gal	17,373 gal	24,561 gal		1,661 gal
Fwp 2			1.002272	1.002272	1.002272	1.002272	1.002272		1.002272
Fpp 2			1.001514	1.001784	1.001784	1.001784	1.002144		1.002144
Fpt 2			1.000097	1.000097	1.000097	1.000097	1.000097		1.000097
Fwt 2			1.000803	1.000803	1.000803	1.000803	1.000803		1.000803
Fpwt = Fpt/Fwt			0.999294	0.999294	0.999294	0.999294	0.999294		0.999294
Vtp = Vo(Fwp)(Fpp)(Fpwt)			44,211 gal	2,382 gal	576,353 gal	17,372 gal	24,559 gal		1,661 gal

Combined Pipe

Sum:	Vo	668,358.10 gal		Vtp1	670,652.38 gal		Vtp2	670,593.13 gal	
		85,549,837 oz.			85,843,505 oz.			85,835,920 oz.	



Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41497365
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T44 7/30/2011
Test Section	PG&E T-44 Line 153, MP 0.00 - 3.45	WATER	
File Name	RCP 61362 - T-44, L-153 MP 0.00 to 3.45		

Description	General Pipe Data										
	Segment										
	1	2	3	4	5	6	7	8	9	10	11
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained	Restrained
Outside Diameter	34.000 in.	30.000 in.	34.000 in.	30.000 in.	30.000 in.	30.000 in.	30.000 in.	34.000 in.	6.625 in.	4.500 in.	30.000 in.
Wall Thickness	0.505 in.	0.375 in.	0.500 in.	0.375 in.	0.375 in.	0.375 in.	0.313 in.	0.500 in.	0.280 in.	0.237 in.	0.313 in.
Inside Diameter	32.990 in.	29.250 in.	33.000 in.	29.250 in.	29.250 in.	29.250 in.	29.375 in.	33.000 in.	6.065 in.	4.026 in.	29.375 in.
Spec./Grade	API5L-X60	API5L-X65	API5L-X42	API5L-X60	API5L-X52	API5L-X42	API5L-X52	API5L-X52	API5L-Grade B	API5L-Grade B	API5L-X42
Length Unstrained	6.00 ft	75.00 ft						22 ft	80 ft	95 ft	
Length Restrained			992 ft	68 ft	16,456 ft	496 ft	695 ft				47 ft
Temperature - On Test	72 °F	72 °F	68 °F	68 °F	68 °F	68 °F	68 °F	72 °F	72 °F	72 °F	68 °F
Temperature - End of Test	73 °F	73 °F	69 °F	69 °F	69 °F	69 °F	69 °F	73 °F	73 °F	73 °F	69 °F
Pressure - On Test	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig
Pressure - End of Test	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig	768 psig

Unrestrained Pipe											
Sum:	Vo	4,044.81 gal 517,736 oz.		Vtp1	4,059.30 gal 519,590 oz.		Vtp2	4,058.81 gal 519,527 oz.			
Vo Unrestrained	266 gal	2,618 gal					977 gal	120 gal	63 gal		
Fwp 1	1.002352	1.002352					1.002352	1.002352	1.002352		
Fpp 1	1.002090	1.002496					1.002112	1.000693	1.000544		
Fpt 1	1.000218	1.000218					1.000218	1.000218	1.000218		
Fwt 1	1.001283	1.001283					1.001283	1.001283	1.001283		
Fpwt 1 = Fpt/Fwt	0.998937	0.998937					0.998937	0.998937	0.998937		
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	267.33 gal	2,627.92 gal					981 gal	120 gal	63 gal		
Fwp 2	1.002352	1.002352					1.002352	1.002352	1.002352		
Fpp 2	1.002090	1.002496					1.002112	1.000693	1.000544		
Fpt 2	1.000237	1.000237					1.000237	1.000237	1.000237		
Fwt 2	1.001423	1.001423					1.001423	1.001423	1.001423		
Fpwt = Fpt/Fwt	0.998815	0.998815					0.998815	0.998815	0.998815		
Vtp = Vo(Fwp)(Fpp)(Fpwt)	267.29 gal	2,627.61 gal					981 gal	120 gal	63 gal		

Restrained Pipe											
Sum:	Vo	664,313.29 gal 85,032,101 oz.		Vtp1	666,631.34 gal 85,328,811 oz.		Vtp2	666,567.94 gal 85,319,417 oz.			
Vo Restrained			44,076 gal	2,374 gal	574,427 gal	17,314 gal	24,468 gal				1,655 gal
Fwp 1			1.002352	1.002352	1.002352	1.002352	1.002352				1.002352
Fpp 1			1.001566	1.001846	1.001846	1.001846	1.002219				1.002219
Fpt 1			1.000097	1.000097	1.000097	1.000097	1.000097				1.000097
Fwt 1			1.000803	1.000803	1.000803	1.000803	1.000803				1.000803
Fpwt 1 = Fpt/Fwt			0.999294	0.999294	0.999294	0.999294	0.999294				0.999294
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			44,217 gal	2,382 gal	576,434 gal	17,374 gal	24,563 gal				1,661 gal
Fwp 2			1.002352	1.002352	1.002352	1.002352	1.002352				1.002352
Fpp 2			1.001570	1.001849	1.001849	1.001849	1.002222				1.002222
Fpt 2			1.000109	1.000109	1.000109	1.000109	1.000109				1.000109
Fwt 2			1.000929	1.000929	1.000929	1.000929	1.000929				1.000929
Fpwt = Fpt/Fwt			0.999181	0.999181	0.999181	0.999181	0.999181				0.999181
Vtp = Vo(Fwp)(Fpp)(Fpwt)			44,212 gal	2,382 gal	576,371 gal	17,372 gal	24,560 gal				1,661 gal

Combined Pipe											
Sum:	Vo	668,358.10 gal 85,549,837 oz.		Vtp1	670,690.63 gal 85,848,401 oz.		Vtp2	670,616.75 gal 85,838,944 oz.			
1 °F Change	73.88 gal		9,457.12 oz.								



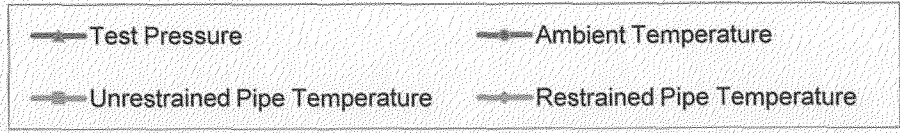
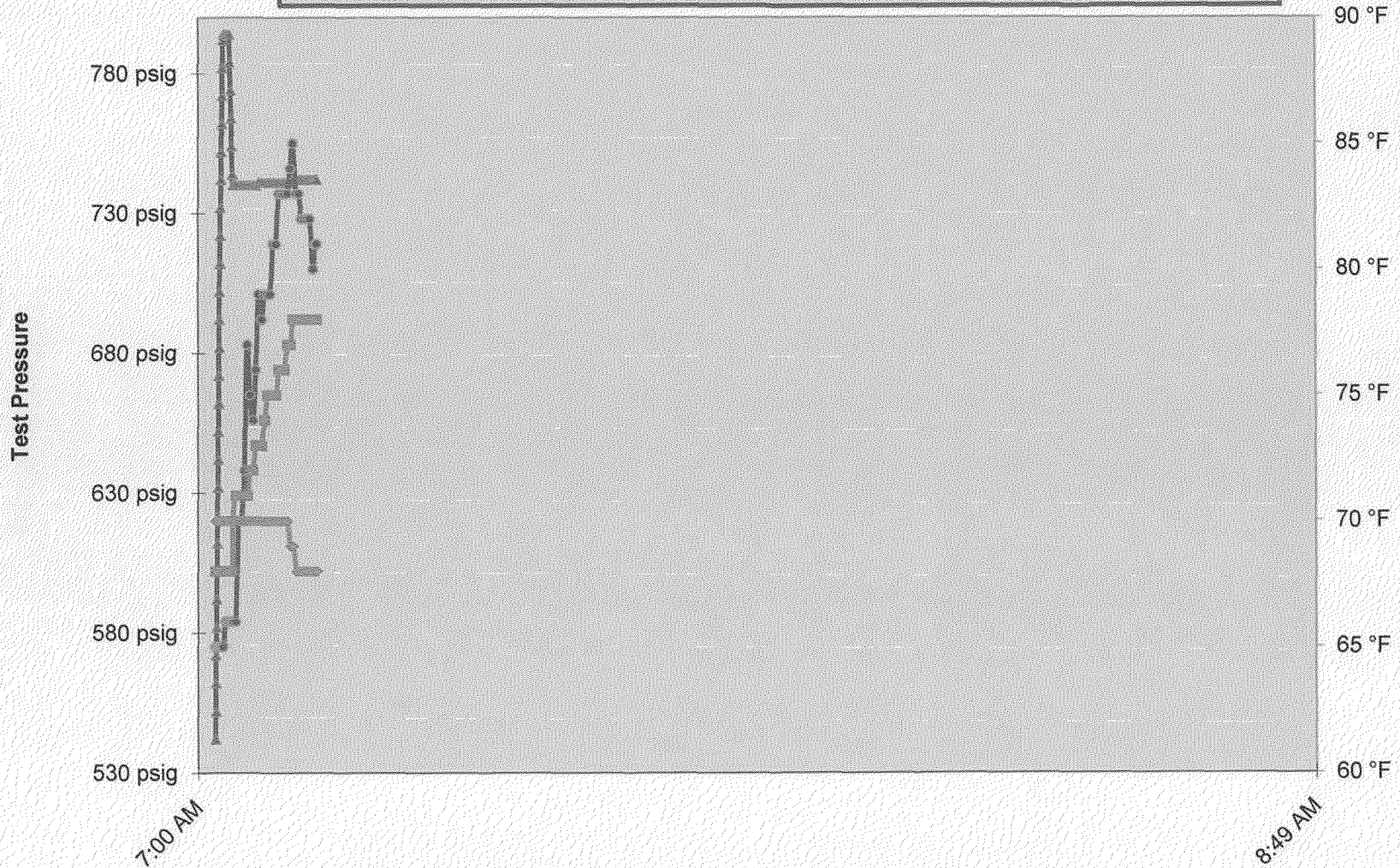
Hydrostatic Test Pipe Data Table

Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	6 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
2	75 ft	Unrestrained	30.000 in.	0.3750 in.	API5L-X65	1,625 psig	Steel	Arc Weld	DSAW
3	992 ft	Restrained	34.000 in.	0.5000 in.	API5L-X42	1,235 psig	Steel	Arc Weld	DSAW
4	68 ft	Restrained	30.000 in.	0.3750 in.	API5L-X60	1,500 psig	Steel	Arc Weld	DSAW
5	16,456 ft	Restrained	30.000 in.	0.3750 in.	API5L-X52	1,300 psig	Steel	Arc Weld	DSAW
6	496 ft	Restrained	30.000 in.	0.3750 in.	API5L-X42	1,050 psig	Steel	Arc Weld	ERW-LF
7	695 ft	Restrained	30.000 in.	0.3125 in.	API5L-X52	1,083 psig	Steel	Arc Weld	DSAW
8	22 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X52	1,529 psig	Steel	Arc Weld	DSAW
9	80 ft	Unrestrained	6.625 in.	0.2800 in.	API5L-Grade B	2,958 psig	Steel	Arc Weld	SM
10	95 ft	Unrestrained	4.500 in.	0.2370 in.	API5L-Grade B	3,687 psig	Steel	Arc Weld	SM
11	47 ft	Restrained	30.000 in.	0.3125 in.	API5L-X42	875 psig	Steel	Arc Weld	OTH

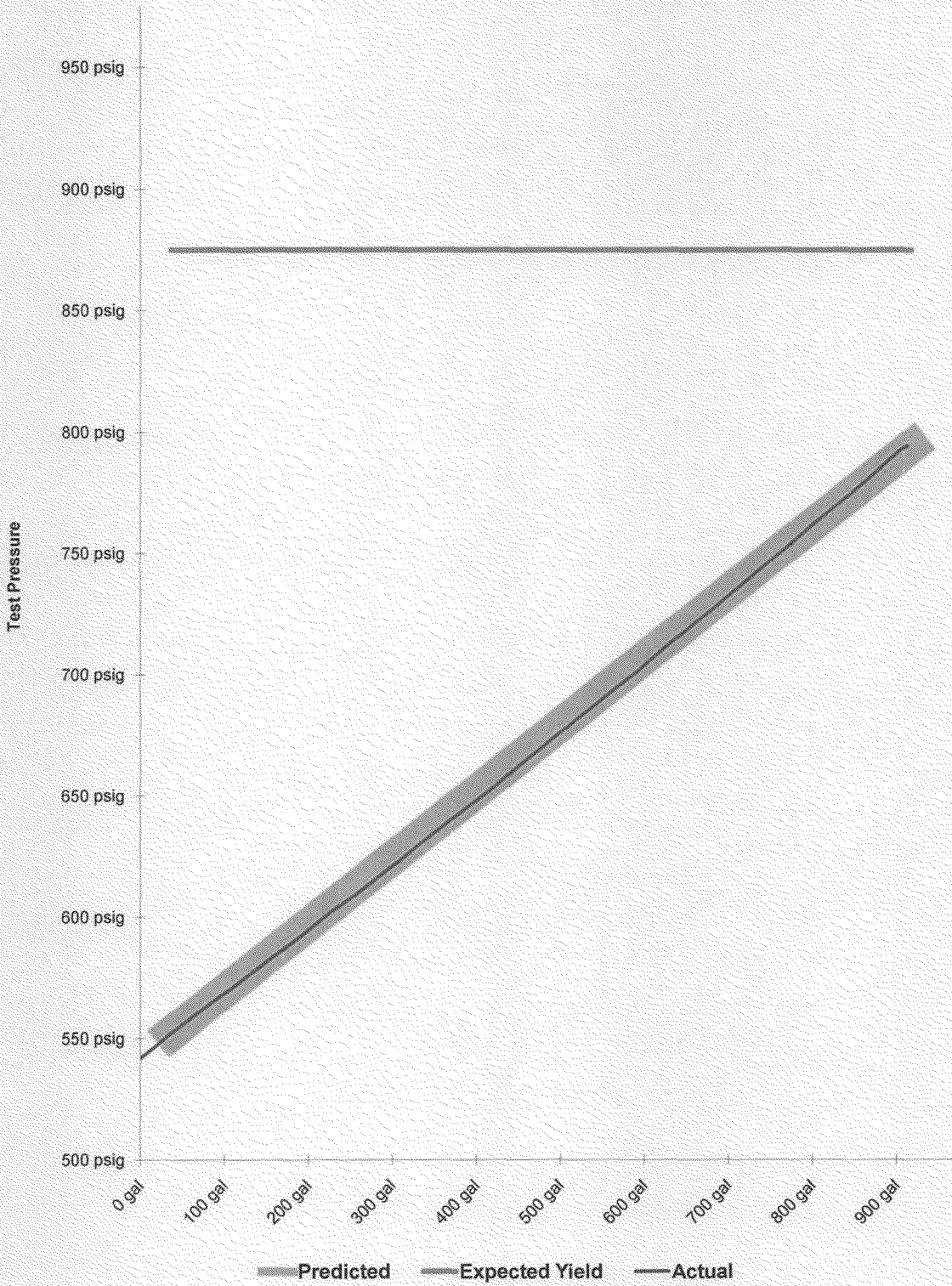
Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget Walnut Creek, CA 94598 Attention: Redacted	41497365
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	T44 7/30/2011
Test Section	PG&E T-44 Line 153, MP 0.00 - 3.45 From: 00+00 To: 188+29	
File Name	RCP 61362 - T-44, L-153 MP 0.00 to 3.45	

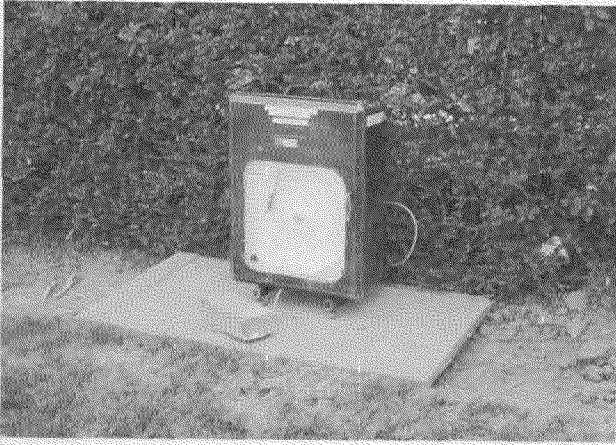
Part II - Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)				Note: Minimum test pressure and duration are not to be charged without written approval.			
Time and Date Test Pressure Reached	7/30/11 9:10 AM	Elevation at Test Point	26 ft	Min. Required Test Press At Test Point (1)	723.00 psig	Max. Allowable Test Press at Test Point (4)	798.27 psig
Time and Date Test Ended	7/30/11 5:10 PM	Max. Elevation in Test Section	46 ft	Min. Indicated Test Pressure (2)	740.00 psig	Max. Indicated Test Pressure (5)	794.00 psig
Actual Duration of Test	7 hours 60 minutes	Min. Elevation in Test Section	22 ft	Min. Test Pressure at Max. Elevation (3)	731.33 psig	Max. Test Pressure at Min. Elevation (6)	795.73 psig



**Spike Pressure Test
Stress Strain Curve -- PG&E T-44 Line 153, MP 0.00 - 3.45**



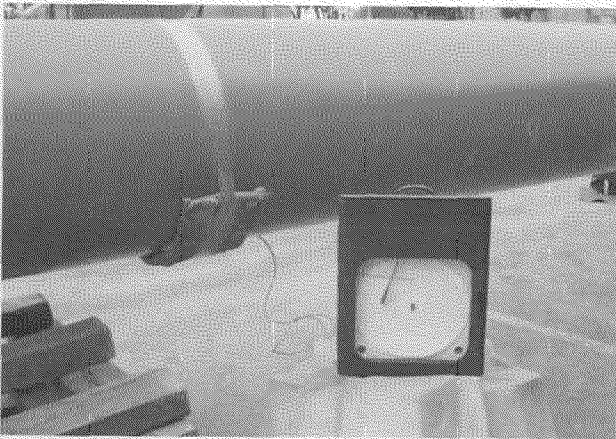
Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope		Spike Pressure Test Stress Strain Curve -- PG&E T-44 Line 153, MP 0.00 - 3.45	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
542 psig	0	0.00 gal		0	0.00 gal	Pump gal per stroke	0.056 gal/stroke
552 psig	800	36.29 gal	36.39 gal	3.629	3.639	Pump Piston Diameter	1.250 in
562 psig	1650	74.86 gal	72.78 gal	3.856	3.639	Pump Piston Stroke	3.50 in
572 psig	2500	113.42 gal	109.17 gal	3.856	3.639	Pump Cylinders	3 ea
582 psig	3350	151.98 gal	145.56 gal	3.856	3.639	Volume check gal per stroke	0.045 gal/stroke
592 psig	4200	190.54 gal	181.96 gal	3.856	3.640	Volume Released (gallons)	36.20 gal
602 psig	5000	226.84 gal	218.36 gal	3.629	3.640	Pressure Reduced (psi)	10 psi
612 psig	5880	266.76 gal	254.76 gal	3.992	3.640	Maximum2	970 gal
622 psig	6700	303.96 gal	291.16 gal	3.720	3.640	Minimum2	0 gal
632 psig	7475	339.12 gal	327.57 gal	3.516	3.641	Maximum1	975 psig
642 psig	8300	376.55 gal	363.98 gal	3.743	3.641	Minimum1	500 psig
652 psig	9150	415.11 gal	400.39 gal	3.856	3.641	Gallons/Stroke Used	0.045 gal/stroke
662 psig	9890	448.68 gal	436.80 gal	3.357	3.641	Predicted Gallons/Stroke	0.046 gal/stroke
672 psig	10700	485.43 gal	473.21 gal	3.675	3.641	1160	10 psi
682 psig	11473	520.50 gal	509.63 gal	3.507	3.642		
692 psig	12290	557.56 gal	546.05 gal	3.706	3.642	Max Pressure	794 psig
702 psig	13090	593.85 gal	582.47 gal	3.629	3.642		
712 psig	13830	627.43 gal	618.89 gal	3.357	3.642	Buried Pipe Temperature	70 °F
722 psig	14630	663.72 gal	655.32 gal	3.629	3.643		
732 psig	15400	698.65 gal	691.75 gal	3.493	3.643	Exposed Pipe Temperature	70 °F
742 psig	16150	732.68 gal	728.18 gal	3.403	3.643		
752 psig	16940	768.52 gal	764.61 gal	3.584	3.643	ASME B31.8 Appendix N-5	
762 psig	17660	801.18 gal	801.04 gal	3.266	3.643		
772 psig	18440	836.57 gal	837.48 gal	3.539	3.644	Average Actual Elastic Slope	3.603
782 psig	19190	870.59 gal	873.92 gal	3.403	3.644	Average Predicted Elastic Slope	3.642
792 psig	19910	903.26 gal	910.36 gal	3.266	3.644	Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	6.846
794 psig		912.24 gal	917.65 gal	0.000	0.000	Established Minimum Yield Pressure B31.8 N-5 (c)(2)	794 psig
794 psig		912.24 gal	917.65 gal	0.000	0.000	Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
794 psig		912.24 gal	917.65 gal	0.000	0.000	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
794 psig		912.24 gal	917.65 gal	0.000	0.000	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Redacted</div> <div style="text-align: right; margin-top: 10px;"> 7/30/11 Date </div>	
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		
794 psig		912.24 gal	917.65 gal	0.000	0.000		



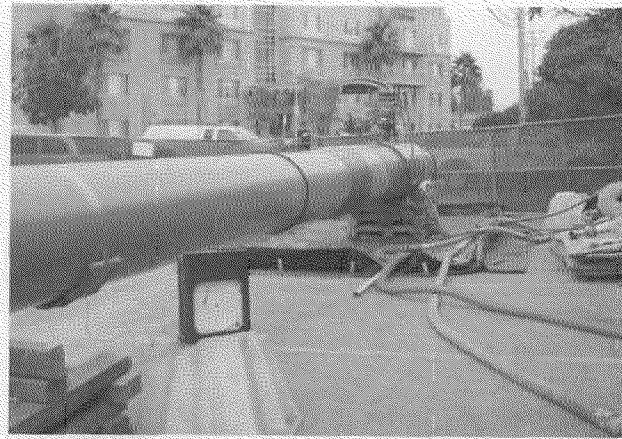
test 44 location B -remote restrained recorder



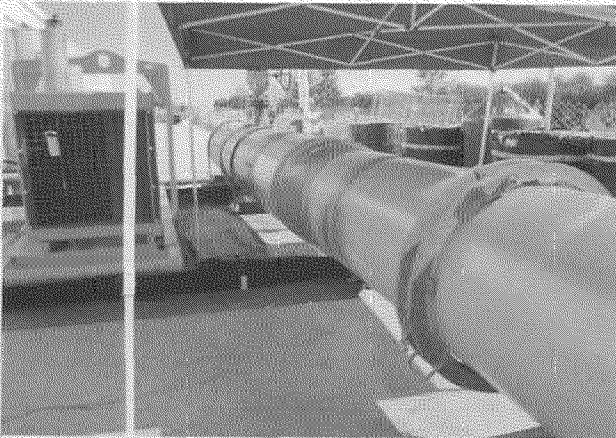
test 44 location B restrained temp. recorder



test 44 location B - unrestrained temp. recorder



test 44 loc.B test head and test hose connections



test 44 location A test head with reducer



test 44 location A test head