



RCP, Inc

801 Louisiana, Ste.200
Houston, Texas 77002

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October 11, 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 -- 41497341-T79A
Construction Contractor: Snelson -- 41474005 -T79A
Test Section: PG&E T-79A L-300B, MP 152.66 - 155.26
Test Date: October 11, 2011
Certificate Number: RCP 61362 - T-79A, L-300B, MP 152.66 - 155.26

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 1152 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 8.7 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.7 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 1067 psig and the established MAOP is 711 psig.

Pressure decreased 67 psi during the test. 32,400.00 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 12,806.49 ounces, gain, which is equivalent to a 1.49 °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 13,658 feet of buried and 148 feet of exposed pipe from a single point on the line.

Sincerely,
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Letter



Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41497341-T79A
Construction Co.	Snelson	Job Number	41474005-T79A
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-79A L-300B, MP 152.66 - 155.26		
File Name	RCP 61362 - T-79A, L-300B, MP 152.66 - 155.26		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3) Test Date: 11-Oct-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-79A L-300B, MP 152.66 - 155.26
 From: 0+00 To: 137+86

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	61 ft	34.000 in.	0.500 in.	API5L-X85, DSAW, Arc Weld, Steel	1,812 psi
2	9,840 ft	34.000 in.	0.438 in.	API5L-X48, DSAW, Arc Weld, Steel	1,235 psi
3	3,718 ft	34.000 in.	0.500 in.	API5L-X46, DSAW, Arc Weld, Steel	1,353 psi
4	40 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,812 psi
5	44 ft	34.000 in.	0.505 in.	API5L-X80, DSAW, Arc Weld, Steel	1,782 psi
6	3 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi

Initial Test Conditions

Pressure at Test Point:	1,152 psig	Date/Time:	10/11/11 9:48 AM	Pipe Temperature	
Ambient Temperature:	65.0 °F	Elevation @ Test Point:	2,097.0 ft	Unrestrained:	64.0 °F
Pressure @ High Point (Cal/Measure):	1,135 psig	Elevation @ High Point:	2,137.0 ft	Restrained:	76.0 °F
Pressure @ Low Point (Cal/Measure):	1,152 psig	Elevation @ Low Point:	2,097.0 ft	Location:	0+00
				Location:	137+86
				Location:	0+00

Final Test Conditions

Pressure at Test Point:	1,085 psig	Date/Time:	10/11/11 6:30 PM	Pipe Temperature	
Ambient Temperature:	79.0 °F	Elevation @ Test Point:	2,097.0 ft	Unrestrained:	65.0 °F
Pressure @ High Point (Cal/Measure):	1,068 psig	Elevation @ High Point:	2,137.0 ft	Restrained:	75.0 °F
Pressure @ Low Point (Cal/Measure):	1,085 psig	Elevation @ Low Point:	2,097.0 ft	Location:	0+00
				Location:	137+86
				Location:	0+00
Total Fluid Injected:				Volume gain	
Total Fluid Withdrawn:	32400.00 fluid ounces				
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	12,806.49 oz	gain		0.0161%	1,490 °F equivalent

Test Duration: 8.70 hours

Minimum Test Pressure:	1,072 psig	Max Elevation	1,055 psig	Min Elevation	1,072 psig
Maximum Test Pressure:	1,152 psig		1,136 psig		1,153 psig
% SMYS:			91.8%		85.2%
Test Segment				Maximum	92.2%

Minimum Test Pressure (Calculated/Measured): 1,068 psig

Maximum Allowable Operating Pressure: DOT Part 192 Test Factor= 1.50 711 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	<p>The test segment was subjected to a spike pressure test of 1,152 psig for 30 minutes on the test pipe segment. The 30 minute spike test and subsequent pressure reduction with volume bleed was included and is part of the 8.7 hour test duration period.</p> <p>No leaks were observed during the test period. The test section included 13,658 feet of buried and 148 feet of exposed pipe. Pressure lost 87 psi during the test. The buried pipe segment lost 1°F fluid temperature and the exposed pipe segment gained 1°F.</p> <p>32,400.00 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 12,806.49 ounces, gain, which is equivalent to a 1.49 °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 measuring an increase in temperature of 19,800 feet of buried and 148 feet of exposed pipe from a single point on the line.</p>

Remarks: Redacted

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Certification

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497341-T79A
Construction Co.	Snelson	Job Number	41474005 - T79A
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-79A L-300B, MP 152.66 - 155.26		
File Name	RCP 61362 - T-79A, L-300B, MP 152.66 - 155.26		

Date		Test Log							
Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
1	10/11/11	9:10 AM	788 psig	54 °F	62 °F	76 °F	Start Spike		
2	10/11/11	9:11 AM	798 psig	54 °F	62 °F	76 °F	Inject		3,901 oz.
3	10/11/11	9:12 AM	808 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
4	10/11/11	9:13 AM	818 psig	54 °F	62 °F	76 °F	Inject		3,901 oz.
5	10/11/11	9:14 AM	828 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
6	10/11/11	9:15 AM	838 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
7	10/11/11	9:16 AM	848 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
8	10/11/11	9:17 AM	858 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
9	10/11/11	9:18 AM	868 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
10	10/11/11	9:19 AM	878 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
11	10/11/11	9:20 AM	888 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
12	10/11/11	9:21 AM	898 psig	54 °F	62 °F	76 °F	Inject		3,901 oz.
13	10/11/11	9:22 AM	908 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
14	10/11/11	9:23 AM	918 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
15	10/11/11	9:24 AM	928 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
16	10/11/11	9:25 AM	938 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
17	10/11/11	9:26 AM	948 psig	54 °F	62 °F	76 °F	Inject		3,901 oz.
18	10/11/11	9:27 AM	958 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
19	10/11/11	9:28 AM	968 psig	54 °F	62 °F	76 °F	Inject		3,837 oz.
20	10/11/11	9:29 AM	978 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
21	10/11/11	9:30 AM	988 psig	54 °F	62 °F	76 °F	Inject		4,156 oz.
22	10/11/11	9:31 AM	998 psig	54 °F	62 °F	76 °F	Inject		3,837 oz.
23	10/11/11	9:32 AM	1,008 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
24	10/11/11	9:33 AM	1,018 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
25	10/11/11	9:34 AM	1,028 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
26	10/11/11	9:35 AM	1,038 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
27	10/11/11	9:36 AM	1,048 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
28	10/11/11	9:37 AM	1,058 psig	54 °F	62 °F	76 °F	Inject		3,965 oz.
29	10/11/11	9:38 AM	1,068 psig	54 °F	62 °F	76 °F	Inject		3,901 oz.
30	10/11/11	9:39 AM	1,078 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
31	10/11/11	9:40 AM	1,088 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
32	10/11/11	9:41 AM	1,098 psig	54 °F	62 °F	76 °F	Inject		3,901 oz.
33	10/11/11	9:42 AM	1,108 psig	54 °F	62 °F	76 °F	Inject		4,028 oz.
34	10/11/11	9:43 AM	1,118 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
35	10/11/11	9:44 AM	1,128 psig	54 °F	62 °F	76 °F	Inject		3,901 oz.
36	10/11/11	9:45 AM	1,138 psig	54 °F	62 °F	76 °F	Inject		4,092 oz.
37	10/11/11	9:46 AM	1,148 psig	54 °F	62 °F	76 °F	Inject		3,837 oz.
38	10/11/11	9:47 AM	1,152 psig	54 °F	62 °F	76 °F	Inject		1,854 oz.
39	10/11/11	9:48 AM	1,152 psig	65 °F	64 °F	76 °F	On Test		
40	10/11/11	9:58 AM	1,152 psig	66 °F	64 °F	76 °F			
41	10/11/11	10:08 AM	1,153 psig	67 °F	65 °F	76 °F			
42	10/11/11	10:18 AM	1,153 psig	68 °F	65 °F	76 °F	End Spike		
43	10/11/11	10:19 AM	1,143 psig	68 °F	65 °F	76 °F	Bleed	4,000 oz.	
44	10/11/11	10:20 AM	1,133 psig	68 °F	65 °F	76 °F	Bleed	4,000 oz.	
45	10/11/11	10:21 AM	1,123 psig	68 °F	65 °F	76 °F	Bleed	4,000 oz.	
46	10/11/11	10:22 AM	1,113 psig	68 °F	65 °F	76 °F	Bleed	4,000 oz.	

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497341-T79A
Construction Co.	Snelson	Job Number	41474005 - T79A
Testing Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-79A L-300B, MP 152.66 - 155.26		
File Name	RCP 61362 - T-79A, L-300B, MP 152.66 - 155.26		

Date	11-Oct-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			
47	10/11/11	10:23 AM	1,103 psig	68 °F	65 °F	76 °F	Bleed	4,000 oz.	
48	10/11/11	10:24 AM	1,093 psig	68 °F	65 °F	76 °F	Bleed	4,000 oz.	
49	10/11/11	10:25 AM	1,083 psig	68 °F	65 °F	76 °F	Bleed	4,000 oz.	
50	10/11/11	10:33 AM	1,072 psig	68 °F	65 °F	76 °F	Bleed	4,400 oz.	
51	10/11/11	10:48 AM	1,072 psig	72 °F	66 °F	76 °F			
52	10/11/11	11:00 AM	1,072 psig	74 °F	67 °F	76 °F			
53	10/11/11	11:15 AM	1,073 psig	76 °F	67 °F	76 °F			
54	10/11/11	11:30 AM	1,073 psig	77 °F	67 °F	76 °F			
55	10/11/11	11:45 AM	1,074 psig	79 °F	68 °F	76 °F			
56	10/11/11	12:00 PM	1,074 psig	80 °F	68 °F	76 °F			
57	10/11/11	12:15 PM	1,075 psig	81 °F	68 °F	76 °F			
58	10/11/11	12:30 PM	1,075 psig	81 °F	68 °F	76 °F			
59	10/11/11	12:45 PM	1,076 psig	81 °F	68 °F	76 °F			
60	10/11/11	1:00 PM	1,076 psig	82 °F	68 °F	76 °F			
61	10/11/11	1:15 PM	1,077 psig	82 °F	69 °F	76 °F			
62	10/11/11	1:30 PM	1,077 psig	82 °F	69 °F	76 °F			
63	10/11/11	1:45 PM	1,078 psig	83 °F	69 °F	76 °F			
64	10/11/11	2:00 PM	1,078 psig	83 °F	69 °F	76 °F			
65	10/11/11	2:15 PM	1,079 psig	83 °F	69 °F	76 °F			
66	10/11/11	2:30 PM	1,079 psig	83 °F	69 °F	76 °F			
67	10/11/11	2:45 PM	1,080 psig	83 °F	69 °F	76 °F			
68	10/11/11	3:00 PM	1,080 psig	83 °F	69 °F	76 °F			
69	10/11/11	3:15 PM	1,081 psig	83 °F	69 °F	76 °F			
70	10/11/11	3:30 PM	1,081 psig	83 °F	69 °F	76 °F			
71	10/11/11	3:45 PM	1,082 psig	83 °F	69 °F	76 °F			
72	10/11/11	4:00 PM	1,082 psig	83 °F	69 °F	76 °F			
73	10/11/11	4:15 PM	1,083 psig	83 °F	68 °F	76 °F			
74	10/11/11	4:30 PM	1,083 psig	83 °F	67 °F	76 °F			
75	10/11/11	4:45 PM	1,083 psig	83 °F	67 °F	76 °F			
76	10/11/11	5:00 PM	1,083 psig	83 °F	67 °F	76 °F			
77	10/11/11	5:15 PM	1,084 psig	83 °F	67 °F	76 °F			
78	10/11/11	5:30 PM	1,084 psig	83 °F	67 °F	75 °F			
79	10/11/11	5:45 PM	1,084 psig	83 °F	66 °F	75 °F			
80	10/11/11	6:00 PM	1,085 psig	81 °F	66 °F	75 °F			
81	10/11/11	6:15 PM	1,085 psig	80 °F	66 °F	75 °F			
82	10/11/11	6:30 PM	1,085 psig	79 °F	65 °F	75 °F	End of Test		
							Spike Test		145,600.0 oz.
							Hydrostatic Test	32,400.0 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>High Test Pressure:</td> <td>1,153 psig</td> </tr> <tr> <td>Low Test Pressure:</td> <td>1,072 psig</td> </tr> </table>	High Test Pressure:	1,153 psig	Low Test Pressure:	1,072 psig
High Test Pressure:	1,153 psig					
Low Test Pressure:	1,072 psig					

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Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497341-T79A
Construction Co.	Snelson	Job Number	41474005 -T79A
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-79A L-300B, MP 152.66 - 155.26	WATER	
File Name	RCP 61362 - T-79A, L-300B, MP 152.66 - 155.26		

General Pipe Data

Description	Segment					
	1	2	3	4	5	6
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained
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.	0.500 in.	0.500 in.	0.505 in.	0.375 in.
Inside Diameter	33.000 in.	33.125 in.	33.000 in.	33.000 in.	32.990 in.	33.250 in.
Spec./Grade	API5L-X65	API5L-X48	API5L-X48	API5L-X65	API5L-X60	API5L-X65
Length Unrestrained	61 ft			40 ft	44 ft	3 ft
Length Restrained		9,940 ft	3,718 ft			
Temperature - On Test	64 °F	76 °F	78.0 °F	64.0 °F	64.0 °F	64.0 °F
Temperature - End of Test	65 °F	75 °F	75.0 °F	65.0 °F	65.0 °F	65.0 °F
Pressure - On Test	1,152 psig	1,152 psig	1,152 psig	1,152 psig	1,085 psig	1,152 psig
Pressure - End of Test	1,085 psig	1,085 psig	1,085 psig	1,085 psig	1,085 psig	1,085 psig

Unrestrained Pipe

Sum:	Vo	6,576.64 gal 841,811 oz.		Vtp1	6,618.87 gal 847,215 oz.		Vtp2	6,615.79 gal 846,822 oz.	
Vo Unrestrained	2,710 gal			1,777 gal	1,954 gal	135 gal			
Fwp 1	1.003532			1.003532	1.003532	1.003532			
Fpp 1	1.003168			1.003168	1.003136	1.004256			
Fpt 1	1.000073			1.000073	1.000073	1.000073			
Fwt 1	1.000375			1.000375	1.000375	1.000375			
Fpwt 1 = Fpt/Fwt	0.999698			0.999698	0.999698	0.999698			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	2,727.66 gal			1,788.63 gal	1,966.24 gal	136.34 gal			
Fwp 2	1.003326			1.003326	1.003326	1.003326			
Fpp 2	1.002984			1.002984	1.002953	1.004008			
Fpt 2	1.000091			1.000091	1.000091	1.000091			
Fwt 2	1.000467			1.000467	1.000467	1.000467			
Fpwt = Fpt/Fwt	0.999624			0.999624	0.999624	0.999624			
Vtp = Vo(Fwp)(Fpp)(Fpwt)	2,726.40 gal			1,787.80 gal	1,965.33 gal	136.26 gal			

Restrained Pipe

Sum:	Vo	610,192.04 gal 78,104,582 oz.		Vtp1	612,953.80 gal 78,458,087 oz.		Vtp2	612,803.80 gal 78,438,888 oz.	
Vo Unrestrained		444,997 gal	165,195 gal						
Fwp 1		1.003532	1.003532						
Fpp 1		1.002703	1.002364						
Fpt 1		1.000194	1.000194						
Fwt 1		1.001813	1.001813						
Fpwt 1 = Fpt/Fwt		0.998384	0.998384						
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		447,052 gal	165,902 gal						
Fwp 2		1.003326	1.003326						
Fpp 2		1.002546	1.002226						
Fpt 2		1.000182	1.000182						
Fwt 2		1.001688	1.001688						
Fpwt = Fpt/Fwt		0.998496	0.998496						
Vtp = Vo(Fwp)(Fpp)(Fpwt)		446,941 gal	165,863 gal						

Combined Pipe

Sum:	Vo	616,768.69 gal 78,946,392 oz.		Vtp1	619,572.67 gal 79,305,302 oz.		Vtp2	619,419.59 gal 79,285,708 oz.	
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Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41497341-T79A
Construction Co.	Snelson	Job Number	41474005 -T79A
Hydro. Test Co.	Milbar hydro-test inc.	Project No.	FY12-112
Test Section	PG&E T-79A L-300B, MP 152.66 - 155.26	WATER	
File Name	RCP 61362 - T-79A, L-300B, MP 152.66 - 155.26		

Description	General Pipe Data					
	Segment					
	1	2	3	4	5	6
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained
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.	0.500 in.	0.500 in.	0.505 in.	0.375 in.
Inside Diameter	33.000 in.	33.125 in.	33.000 in.	33.000 in.	32.990 in.	33.250 in.
Spec./Grade	API5L-X65	API5L-X48	API5L-X46	API5L-X65	API5L-X60	API5L-X65
Length Unrestrained	61.00 ft			40 ft	44 ft	3 ft
Length Restrained		9,940 ft	3,718 ft			
Temperature -- On Test	64 °F	75 °F	75 °F	64 °F	64 °F	64 °F
Temperature -- End of Test	65 °F	76 °F	76 °F	65 °F	65 °F	65 °F
Pressure -- On Test	1,118 psig	1,118 psig	1,118 psig	1,118 psig	1,118 psig	1,118 psig
Pressure -- End of Test	1,118 psig	1,118 psig	1,118 psig	1,118 psig	1,118 psig	1,118 psig

Unrestrained Pipe						
Sum:	Vo	Vtp1		Vtp2		
		6,576.04 gal		6,617.56 gal		6,617.06 gal
		841,811 oz.		847,047 oz.		846,984 oz.
Vo Unrestrained	2,710 gal		1,777 gal	1,954 gal	135 gal	
Fwp 1	1.003427		1.003427	1.003427	1.003427	
Fpp 1	1.003075		1.003075	1.003043	1.004130	
Fpt 1	1.000073		1.000073	1.000073	1.000073	
Fwt 1	1.000375		1.000375	1.000375	1.000375	
Fpwt 1 = Fpt/Fwt	0.999698		0.999698	0.999698	0.999698	
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	2,727.12 gal		1,788.28 gal	1,965.65 gal	136.30 gal	
Fwp 2	1.003427		1.003427	1.003427	1.003427	
Fpp 2	1.003075		1.003075	1.003043	1.004130	
Fpt 2	1.000091		1.000091	1.000091	1.000091	
Fwt 2	1.000467		1.000467	1.000467	1.000467	
Fpwt = Fpt/Fwt	0.999624		0.999624	0.999624	0.999624	
Vtp = Vo(Fwp)(Fpp)(Fpwt)	2,726.92 gal		1,788.14 gal	1,965.71 gal	136.29 gal	

Restrained Pipe						
Sum:	Vo	Vtp1		Vtp2		
		610,192.04 gal		612,910.52 gal		612,843.84 gal
		78,104,582 oz.		78,452,546 oz.		78,444,011 oz.
Vo Restrained		444,997 gal	165,195 gal			
Fwp 1		1.003427	1.003427			
Fpp 1		1.002622	1.002292			
Fpt 1		1.000182	1.000182			
Fwt 1		1.001688	1.001688			
Fpwt 1 = Fpt/Fwt		0.998496	0.998496			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		447,020 gal	165,891 gal			
Fwp 2		1.003427	1.003427			
Fpp 2		1.002625	1.002296			
Fpt 2		1.000194	1.000194			
Fwt 2		1.001813	1.001813			
Fpwt = Fpt/Fwt		0.998334	0.998334			
Vtp = Vo(Fwp)(Fpp)(Fpwt)		446,971 gal	165,873 gal			

Combined Pipe						
Sum:	Vo	Vtp1		Vtp2		
		616,768.69 gal		619,528.08 gal		619,460.90 gal
		78,946,392 oz.		79,299,594 oz.		79,290,996 oz.
1 °F Change	67.17 gal	8,597.81 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	61 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
2	9,940 ft	Restrained	34.000 in.	0.4375 in.	API5L-X48	1,235 psig	Steel	Arc Weld	DSAW
3	3,718 ft	Restrained	34.000 in.	0.5000 in.	API5L-X46	1,353 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	44 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
6	3 ft	Unrestrained	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 Attention: Redacted	41497341-T79A
Construction Company	Snelson	Job Number
Address	601 West State Street Sedro-Wooley, WA 98284 Attention: Redacted	41474005 -T79A
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-79A L-300B, MP 152.66 - 155.26 From: 0+00 To: 137+86	
File Name	RCP 61362 - T-79A, L-300B, MP 152.66 - 155.26	

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	10/11/11 9:48 AM	Elevation at Test Point	2,097 ft	Min. Required Test Press At Test Point (1)	1,049.33 psig	Max. Allowable Test Press at Test Point (4)	1,175.00 psig
Time and Date Test Ended	10/11/11 6:30 PM	Max. Elevation in Test Section	2,137 ft	Min. Indicated Test Pressure (2)	1,072.00 psig	Max. Indicated Test Pressure (5)	1,153.00 psig
Actual Duration of Test	8 hours 42 minutes	Min. Elevation in Test Section	2,097 ft	Min. Test Pressure at Max. Elevation (3)	1,054.67 psig	Max. Test Pressure at Min. Elevation (6)	1,153.00 psig

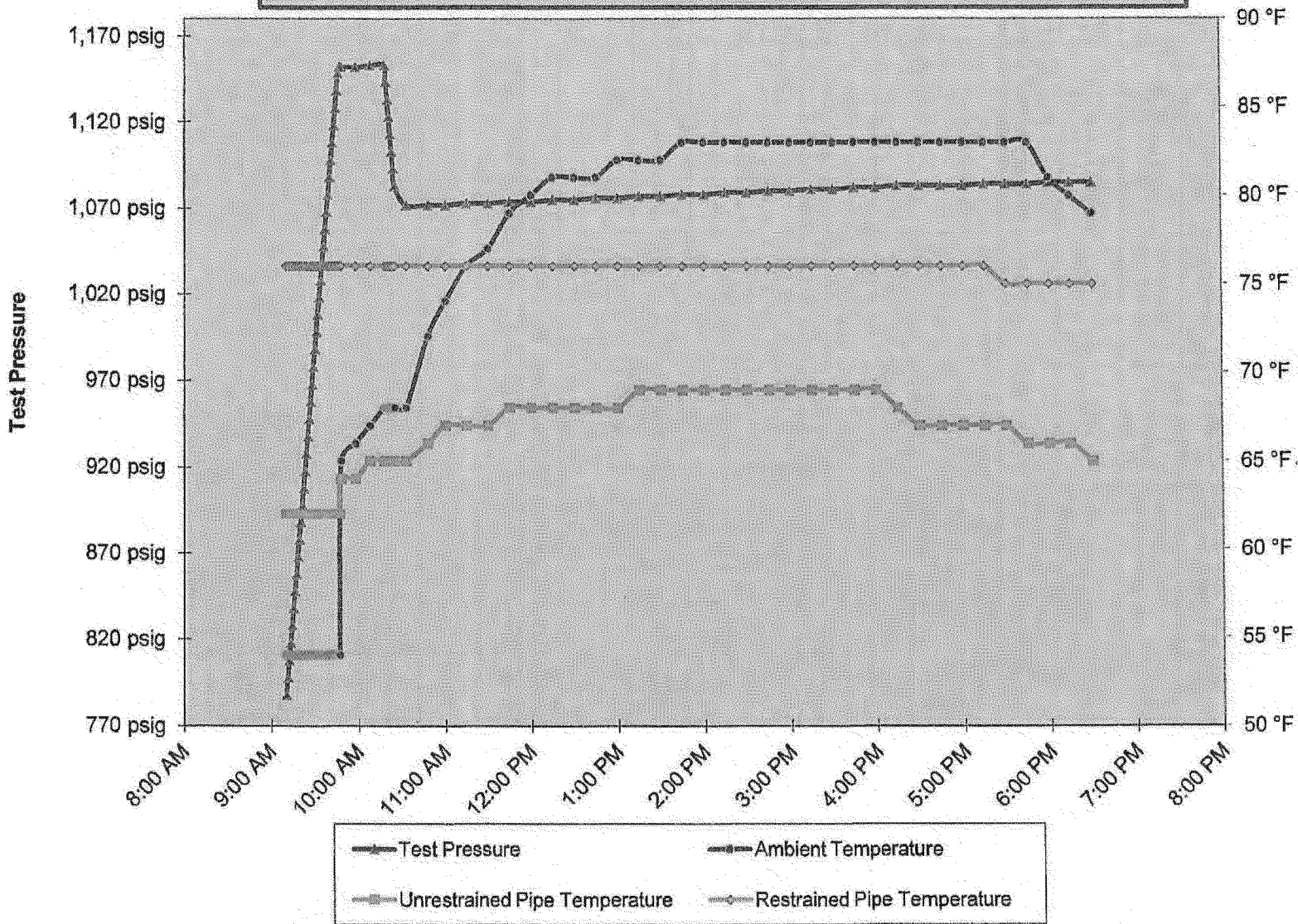
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Pipe

RCP

PG&E T-79A L-300B, MP 152.66 - 155.26

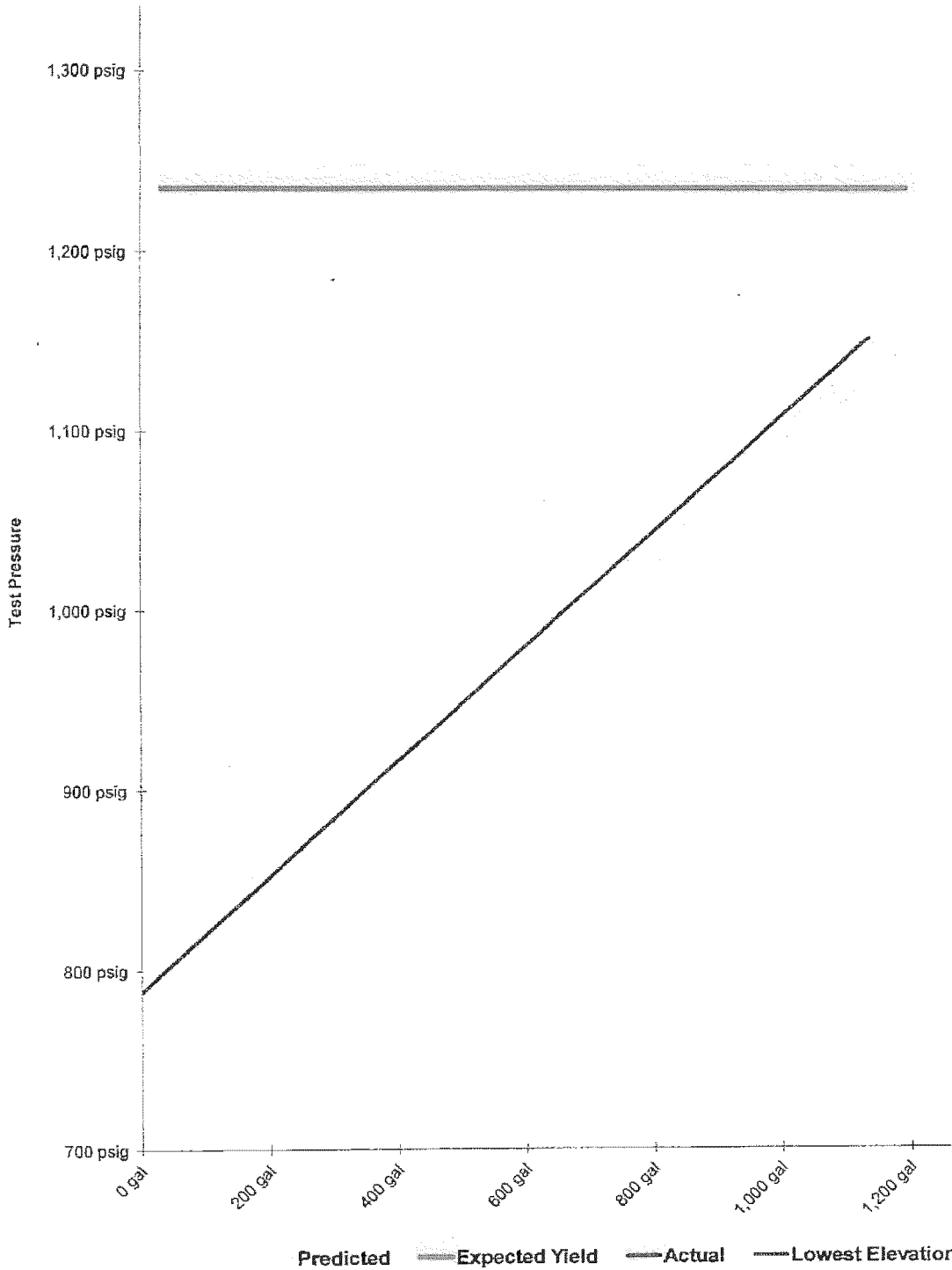


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PlotT

Spike Pressure Test
Stress Strain Curve -- PG&E T-79A L-300B, MP 152.66 - 155.26



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Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope		Spike Pressure Test Stress Strain Curve -- PG&E T-79A L-300B, MP 152.66 - 155.26	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
788 psig	0	0.00 gal		0	0.000	Pump gal per stroke	0.551 gal/stroke
798 psig	61	30.47 gal	32.71 gal	3.047	3.271	Pump Piston Diameter	3.000 in
808 psig	124	61.95 gal	65.42 gal	3.147	3.271	Pump Piston Stroke	6.00 in
818 psig	185	92.42 gal	98.13 gal	3.047	3.271	Pump Cylinders	3 ea
828 psig	248	123.89 gal	130.84 gal	3.147	3.271	Volume check gal per stroke	0.500 gal/stroke
838 psig	311	155.36 gal	163.56 gal	3.147	3.272	Volume Released (gallons)	31.25 gal
848 psig	373	186.34 gal	196.27 gal	3.097	3.272	Pressure Reduced (psi)	10 psi
858 psig	435	217.31 gal	228.99 gal	3.097	3.272	Maximum2	1,260 gal
868 psig	497	248.28 gal	261.71 gal	3.097	3.272	Minimum2	0 gal
878 psig	559	279.25 gal	294.44 gal	3.097	3.272	Maximum1	1,336 psig
888 psig	623	311.23 gal	327.16 gal	3.197	3.273	Minimum1	700 psig
898 psig	684	341.70 gal	359.89 gal	3.047	3.273	Gallons/Stroke Used	0.500 gal/stroke
908 psig	746	372.67 gal	392.62 gal	3.097	3.273	Predicted Gallons/Stroke	0.523 gal/stroke
918 psig	810	404.64 gal	425.35 gal	3.197	3.273	Pressure Increment	10 psi
928 psig	872	435.62 gal	458.08 gal	3.097	3.273		
938 psig	935	467.09 gal	490.82 gal	3.147	3.274	Max Pressure	1,152 psig
948 psig	996	497.56 gal	523.55 gal	3.047	3.274		
958 psig	1060	529.53 gal	556.29 gal	3.197	3.274	Buried Pipe Temperature	78 °F
968 psig	1120	559.51 gal	589.04 gal	2.997	3.274		
978 psig	1183	590.98 gal	621.78 gal	3.147	3.274	Exposed Pipe Temperature	66 °F
988 psig	1248	623.45 gal	654.52 gal	3.247	3.275		
998 psig	1308	653.43 gal	687.27 gal	2.997	3.275		
1,008 psig	1371	684.90 gal	720.02 gal	3.147	3.275	ASME B31.8 Appendix N-5	
1,018 psig	1435	716.87 gal	752.77 gal	3.197	3.275	Average Actual Elastic Slope	3.133
1,028 psig	1497	747.84 gal	785.52 gal	3.097	3.275		
1,038 psig	1561	779.81 gal	818.28 gal	3.197	3.276	Average Predicted Elastic Slope	3.274
1,048 psig	1624	811.29 gal	851.04 gal	3.147	3.276		
1,058 psig	1686	842.26 gal	883.80 gal	3.097	3.276	Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	5.953
1,068 psig	1747	872.73 gal	916.56 gal	3.047	3.276		
1,078 psig	1811	904.70 gal	949.32 gal	3.197	3.276	Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,152 psig
1,088 psig	1875	936.68 gal	982.09 gal	3.197	3.277		
1,098 psig	1936	967.15 gal	1,014.85 gal	3.047	3.277	Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
1,108 psig	1999	998.62 gal	1,047.62 gal	3.147	3.277		
1,118 psig	2063	1,030.59 gal	1,080.39 gal	3.197	3.277	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
1,128 psig	2124	1,061.07 gal	1,113.17 gal	3.047	3.277		
1,138 psig	2188	1,093.04 gal	1,145.94 gal	3.197	3.278		
1,148 psig	2248	1,123.01 gal	1,178.72 gal	2.997	3.278		
1,152 psig	2277	1,137.50 gal	1,191.83 gal	3.622	3.278		
1,152 psig		1,137.50 gal	1,191.83 gal	0.000	0.000	Redacted	
1,152 psig		1,137.50 gal	1,191.83 gal	0.000	0.000		
1,152 psig		1,137.50 gal	1,191.83 gal	0.000	0.000		
1,152 psig		1,137.50 gal	1,191.83 gal	0.000	0.000		
1,152 psig		1,137.50 gal	1,191.83 gal	0.000	0.000		
1,152 psig		1,137.50 gal	1,191.83 gal	0.000	0.000		
1,152 psig		1,137.50 gal	1,191.83 gal	0.000	0.000		

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Date

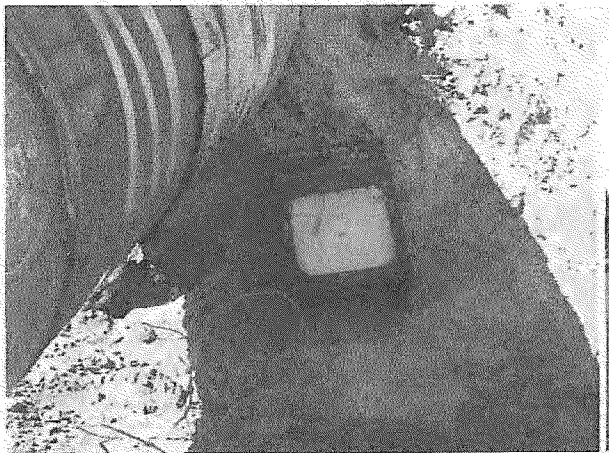
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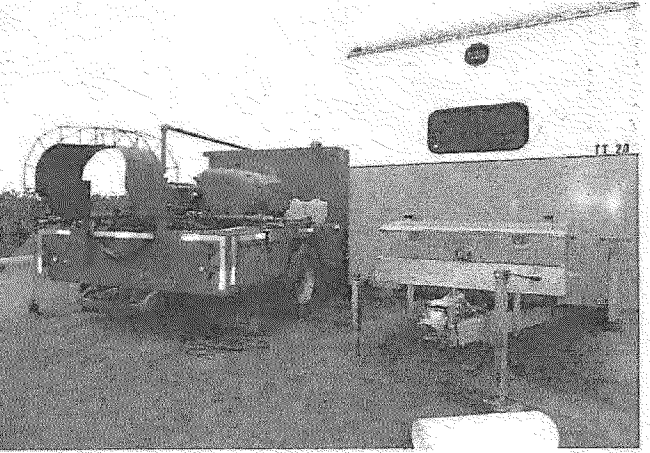
Test 79A test head



Test 79A test head & Tie In

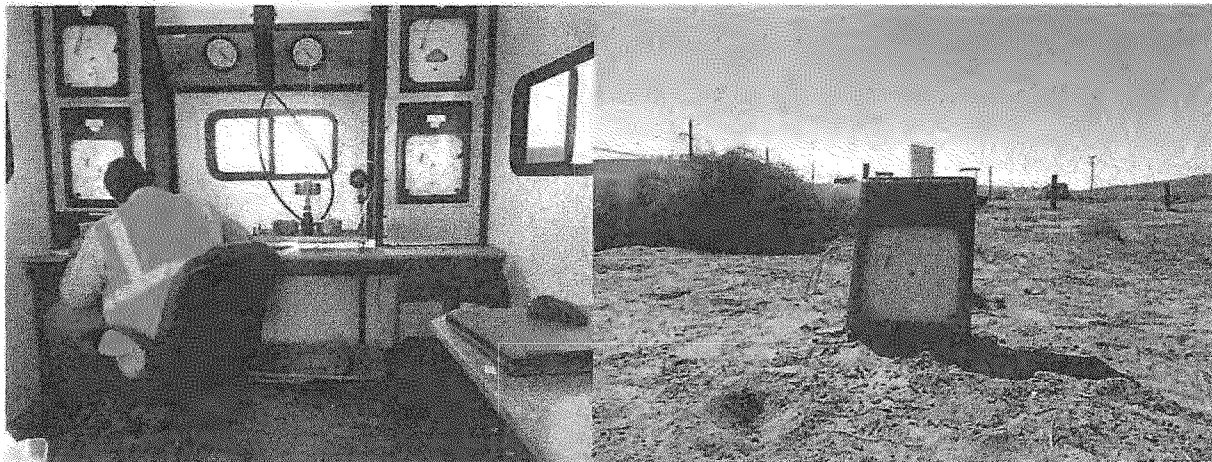


Test 79A Unrestrained & Alternate
Temp. Recorder



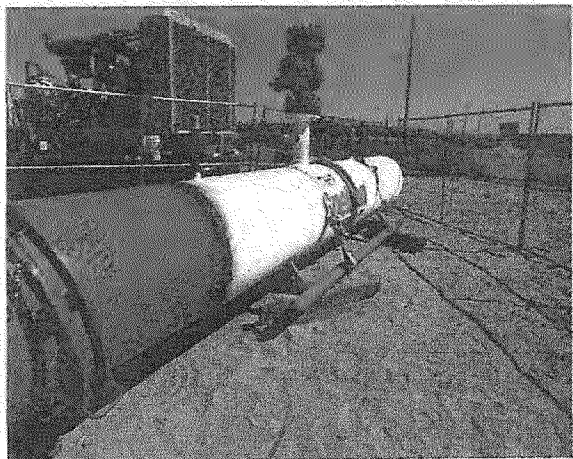
Test 79A Pump Truck

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Test T-79A Deadweight

Test T-79A Restrained Temp Rec



Test T-79A Test End



Test T-79A Test End

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