



RCP, Inc

801 Louisiana, Ste.200
Houston, Texas 77002

Redacted

October 29, 2011

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

Test Contractor: Pacific Gas and Electric Company -- 41598529
Asset Owner: Pacific Gas and Electric Company -- 41598529
Construction Contractor: ARB -- 0629-53-3500 T-122
Test Section: RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68
Test Date: October 29, 2011
Certificate Number: RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68

To whom it may concern,

This letter is to certify that the nitrogen pressure test performed on pipe owned by Pacific Gas and Electric Company and tested by Pacific Gas and Electric Company 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 667 psig for 15 minutes. The 15 minute spike test and subsequent pressure reduction with volume bleed was included as part of the 2.5 hour test duration period.

This nitrogen pressure test was completed successfully. Pressure was maintained on the test facilities in excess of 2.5 continuous hours without evidence of a leak failure. Nitrogen was the test medium. At the highest elevation point in the test section, the calculated test pressure was 628 psig and the MAOP per 49 CFR Part 192, Subpart J can be as high as 418 psig. The MAOP established by this test is sufficient to qualify for Pacific Gas and Electric Company's desired MAOP of 400 psig.

Sincerely,

Redacted

cc. file

Redacted



Nitrogen Test Certification

Company	Pacific Gas and Electric Company	Job Number	41598529
Construction Co.	ARB	Job Number	0629-53-3500 T-122
Hydro. Test Co.	Pacific Gas and Electric Company	Project No.	41598529
Test Section	RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68	Test Medium:	Nitrogen
File Name	RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68		

Nitrogen Test Pressure

APPLICABLE CODE FOR CERTIFICATION: _____ Test Date: 29-Oct-11

Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3)

This is to certify that the pipeline or pipeline section(s) described below was pressure tested, with nitrogen gas, in accordance with the following procedure:

Pipeline: RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68
 From: 0+00 To: MP 3,659.00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	11 ft	6.625 in.	0.280 in.	API5L-Grade B, SM, Arc Weld, Steel	2,958 psi
2	0 ft	2.375 in.	0.154 in.	API5L-Grade B, SM, Arc Weld, Steel	4,539 psi
3	387 ft	8.625 in.	0.172 in.	API5L-Grade B, SM, Arc Weld, Steel	1,396 psi
4	2,214 ft	8.625 in.	0.219 in.	API5L-Grade B, SM, Arc Weld, Steel	1,777 psi
5	237 ft	8.625 in.	0.188 in.	API5L-Grade B, SM, Arc Weld, Steel	1,526 psi
6	650 ft	8.625 in.	0.219 in.	API5L-X42, ERW-HF, Arc Weld, Steel	2,133 psi
7	147 ft	8.625 in.	0.172 in.	API5L-X42, ERW-HF, Arc Weld, Steel	1,675 psi
8	117 ft	8.625 in.	0.188 in.	API5L-X42, ERW-HF, Arc Weld, Steel	1,831 psi
9	65 ft	2.375 in.	0.154 in.	API5L-Grade B, SM, Arc Weld, Steel	4,539 psi
10	13 ft	6.625 in.	0.280 in.	API5L-Grade B, SM, Arc Weld, Steel	2,958 psi

Initial Test Conditions

Pressure at Test Point:	667 psig	Date/Time:	10/29/11 5:45 PM	Pipe Temperature	
Ambient Temperature:	68.0 °F	Elevation @ Test Point:	(7.0) ft	Unrestrained:	58.0 °F
Pressure @ High Point (Cal/Measure):	666 psig	Elevation @ High Point:	33.0 ft	Restrained:	66.0 °F
Pressure @ Low Point (Cal/Measure):	667 psig	Elevation @ Low Point:	(13.0) ft	Location:	00+00
				Location:	36+59
				Location:	02+50

Final Test Conditions

Pressure at Test Point:	629 psig	Date/Time:	10/29/11 8:15 PM	Pipe Temperature	
Ambient Temperature:	59.0 °F	Elevation @ Test Point:	(7.0) ft	Unrestrained:	60.0 °F
Pressure @ High Point (Cal/Measure):	628 psig	Elevation @ High Point:	33.0 ft	Restrained:	66.0 °F
Pressure @ Low Point (Cal/Measure):	629 psig	Elevation @ Low Point:	(13.0) ft	Location:	00+00
				Location:	36+59
				Location:	02+50

Test Duration: 2.50 hours

Minimum Test Pressure:	629 psig	628 psig	629 psig	
Maximum Test Pressure:	667 psig	666 psig	667 psig	
% SMYS:	39.8%	14.7%	47.8%	
Test Segment Observed % SMYS:	Minimum	14.7%	Maximum	47.8%

Minimum Test Pressure (Calculated/Measured): 628 psig

Maximum Allowable Operating Pressure: DOT Part 192
 Test Factor = 1.50 → 418 psig
 % of SMYS → 29.9%

The MAOP established by this test is sufficient to qualify for Pacific Gas and Electric Company's desired MAOP of 400 psig.

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 667 psig for 15 minutes. The 15 minute spike test and subsequent pressure reduction with volume bleed was included as part of the 2.5 hour test duration period. No leaks were observed during the test period. The test section included 3,830 feet of buried and 11 feet of exposed pipe. Pressure lost 38 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 2°F. Test pressure did not remain steady even though no leaks were observed.

Remarks

Redacted

29-Oct-11



Nitrogen Pressure Test Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41598529
Construction Co.	ARB	Job Number	0629-53-3500 T-122
Testing Co.	Pacific Gas and Electric Company	Project No.	41598529
Test Section	RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68	Nitrogen	
File Name	RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68		

Date	29-Oct-11	Test Log
------	-----------	-----------------

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment		
1	10/29/11	5:15 PM	198 psig	67 °F	58 °F	66 °F	Inject		
2	10/29/11	5:20 PM	250 psig	68 °F	58 °F	66 °F	Inject		
3	10/29/11	5:22 PM	300 psig	68 °F	58 °F	66 °F	Inject		
4	10/29/11	5:24 PM	350 psig	68 °F	58 °F	66 °F	Inject		
5	10/29/11	5:26 PM	400 psig	68 °F	58 °F	66 °F	Inject		
6	10/29/11	5:29 PM	450 psig	68 °F	58 °F	66 °F	Inject		
7	10/29/11	5:31 PM	500 psig	68 °F	58 °F	66 °F	Inject		
8	10/29/11	5:33 PM	550 psig	68 °F	58 °F	66 °F	Inject		
9	10/29/11	5:35 PM	600 psig	68 °F	58 °F	66 °F	Inject		
10	10/29/11	5:37 PM	650 psig	68 °F	58 °F	66 °F	Inject		
11	10/29/11	5:38 PM	665 psig	68 °F	58 °F	66 °F	Inject		
12	10/29/11	5:38 PM	670 psig	68 °F	58 °F	66 °F	Inject		
13	10/29/11	5:45 PM	667 psig	68 °F	58 °F	66 °F	Inject		
14	10/29/11	5:45 PM	667 psig	68 °F	58 °F	66 °F	Start Spike	On Test	
15	10/29/11	5:50 PM	667 psig	68 °F	58 °F	66 °F			
16	10/29/11	5:55 PM	666 psig	69 °F	58 °F	66 °F			
17	10/29/11	6:00 PM	665 psig	67 °F	58 °F	66 °F	End Spike		
18	10/29/11	6:15 PM	657 psig	67 °F	58 °F	66 °F	Bleed		
19	10/29/11	6:30 PM	648 psig	67 °F	58 °F	66 °F	Bleed		
20	10/29/11	6:45 PM	639 psig	68 °F	58 °F	66 °F	Bleed		
21	10/29/11	7:00 PM	629 psig	64 °F	58 °F	66 °F	Bleed		
22	10/29/11	7:00 PM	629 psig	64 °F	60 °F	66 °F			
23	10/29/11	7:10 PM	629 psig	63 °F	60 °F	66 °F			
24	10/29/11	7:20 PM	629 psig	62 °F	60 °F	66 °F			
25	10/29/11	7:30 PM	629 psig	61 °F	60 °F	66 °F			
26	10/29/11	7:40 PM	629 psig	60 °F	60 °F	66 °F			
27	10/29/11	7:50 PM	629 psig	60 °F	60 °F	66 °F			
28	10/29/11	8:00 PM	629 psig	59 °F	60 °F	66 °F			
29	10/29/11	8:15 PM	629 psig	59 °F	60 °F	66 °F	End of Test		
							Spike Test		
							Hydrostatic Test		

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure: 667 psig
		Low Test Pressure: 629 psig

Comments : Pressure chart recorder indicates pressure spikes when needle valves are opened or closed during bleed operation (to accurately read pressure). Spikes on chart are artificial representing flow differentials for small volume piping near chart recorder and were not experienced by large diameter piping.



Nitrogen Pressure Test Pipe Data Table

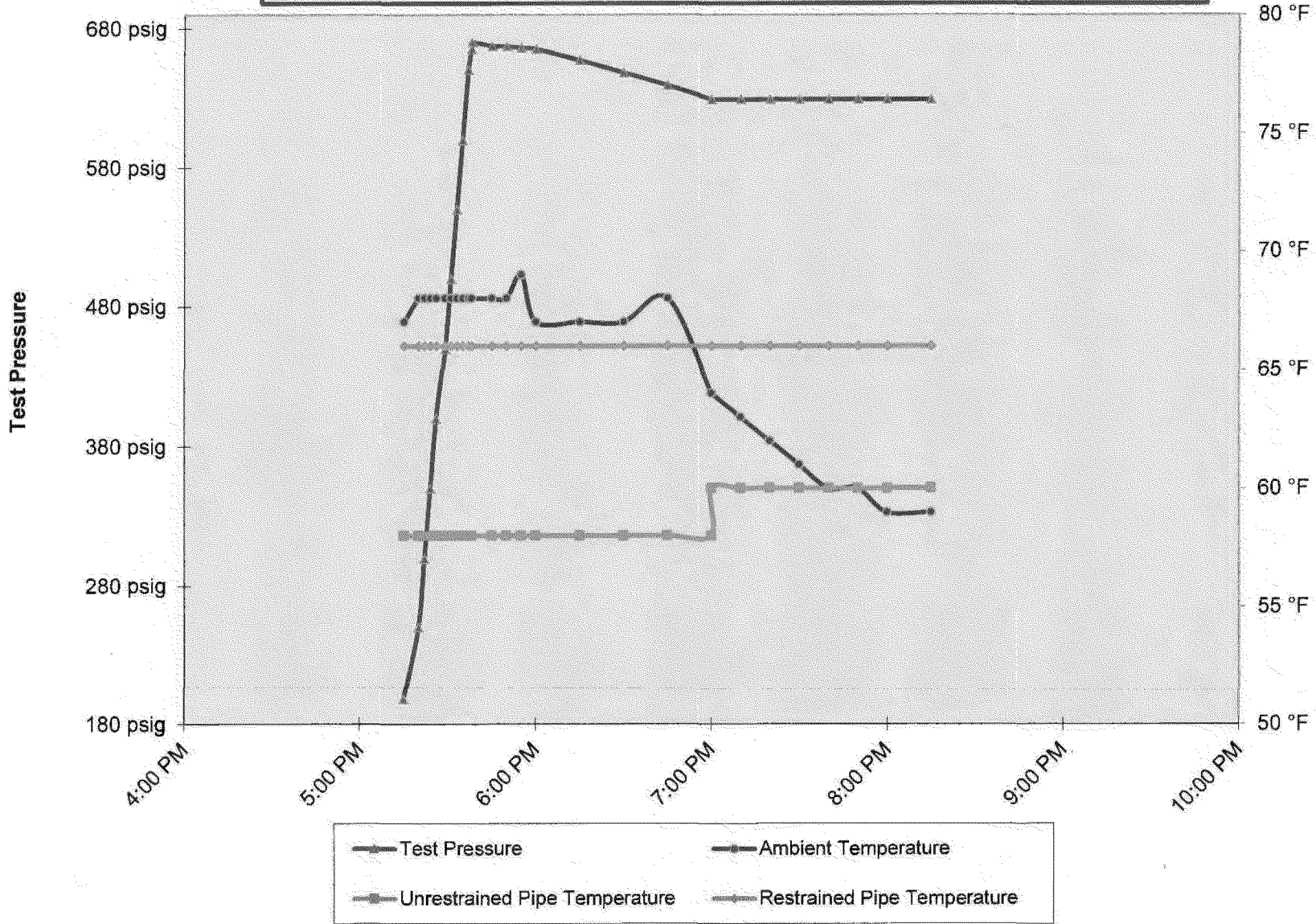
Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	11.00 ft	Unrestrained	6.625 in.	0.280 in.	API5L-Grade B	2,958 psig	Steel	Arc Weld	SM
2	0.21 ft	Unrestrained	2.375 in.	0.154 in.	API5L-Grade B	4,539 psig	Steel	Arc Weld	SM
3	387.00 ft	Restrained	8.625 in.	0.172 in.	API5L-Grade B	1,396 psig	Steel	Arc Weld	SM
4	2,214.00 ft	Restrained	8.625 in.	0.219 in.	API5L-Grade B	1,777 psig	Steel	Arc Weld	SM
5	237.00 ft	Restrained	8.625 in.	0.188 in.	API5L-Grade B	1,526 psig	Steel	Arc Weld	SM
6	650.00 ft	Restrained	8.625 in.	0.219 in.	API5L-X42	2,133 psig	Steel	Arc Weld	ERW-HF
7	147.00 ft	Restrained	8.625 in.	0.172 in.	API5L-X42	1,675 psig	Steel	Arc Weld	ERW-HF
8	117.00 ft	Restrained	8.625 in.	0.188 in.	API5L-X42	1,831 psig	Steel	Arc Weld	ERW-HF
9	65.00 ft	Restrained	2.375 in.	0.154 in.	API5L-Grade B	4,539 psig	Steel	Arc Weld	SM
10	13.00 ft	Restrained	6.625 in.	0.280 in.	API5L-Grade B	2,958 psig	Steel	Arc Weld	SM

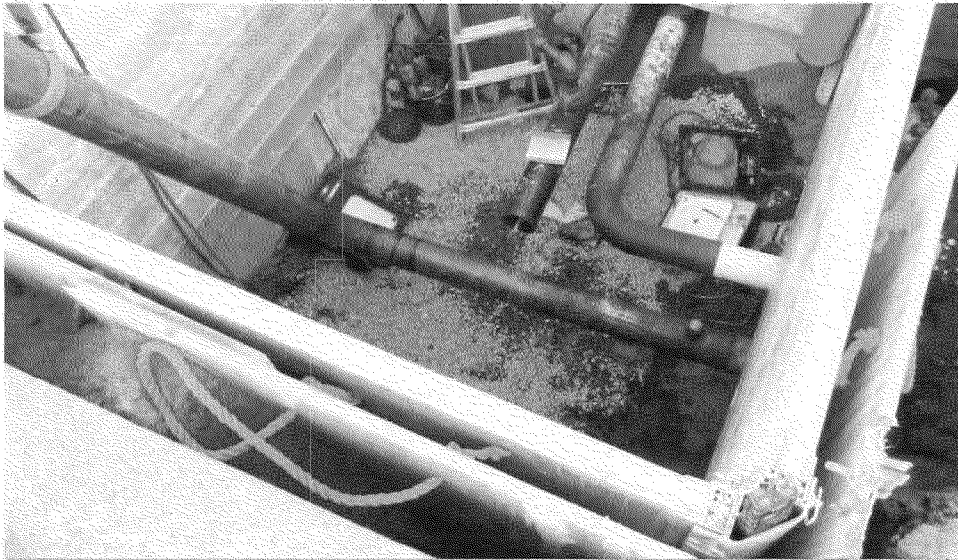
Nitrogen Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget Walnut Creek, CA 94598 Attention: Scott Clapp	41598529
Construction Company	ARB	Job Number
Address	1875 Loveridge Road Pittsburg, CA 94565 Attention: Redacted	0629-53-3500 T-122
Hydrostatic Test Co.	Pacific Gas and Electric Company	Project No.
Address	350 N. Wiget Walnut Creek, CA 94598 Attention: Redacted	41598529
Test Section	RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68 From: 0+00 To: 36+59	
File Name	RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68	

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	10/29/11 5:45 PM	Elevation at Test Point	(7) ft	Min. Required Test Press At Test Point (1)	617.33 psig	Max. Allowable Test Press at Test Point (4)	687.40 psig
Time and Date Test Ended	10/29/11 8:15 PM	Max. Elevation in Test Section	33 ft	Min. Indicated Test Pressure (2)	629.00 psig	Max. Indicated Test Pressure (5)	667.00 psig
Actual Duration of Test	2 hours 30 minutes	Min. Elevation in Test Section	(13) ft	Min. Test Pressure at Max. Elevation (3)	627.96 psig	Max. Test Pressure at Min. Elevation (6)	667.16 psig
Hydrostatic Test Date:	10/29/11 5:15 PM	Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3)					
Pacific Gas and Electric Company's desired MAOP				400 psig			
Nitrogen Density at Maximum Test Pressure				3.734 lb/sq. ft.			
Elevation @ Test Point:	(7.00) ft	Location:	00+00				
Elevation @ High Point:	33.00 ft	Location:	36+59				
Elevation @ Low Point:	(13.00) ft	Location:	02+50				
Minimum Test Pressure At Maximum Elevation	600.00 psig		Maximum Test Pressure at Minimum Elevation	690.00 psig			

RCP 61362 - T-122, DFM 0211, MP 0.02 - 0.68

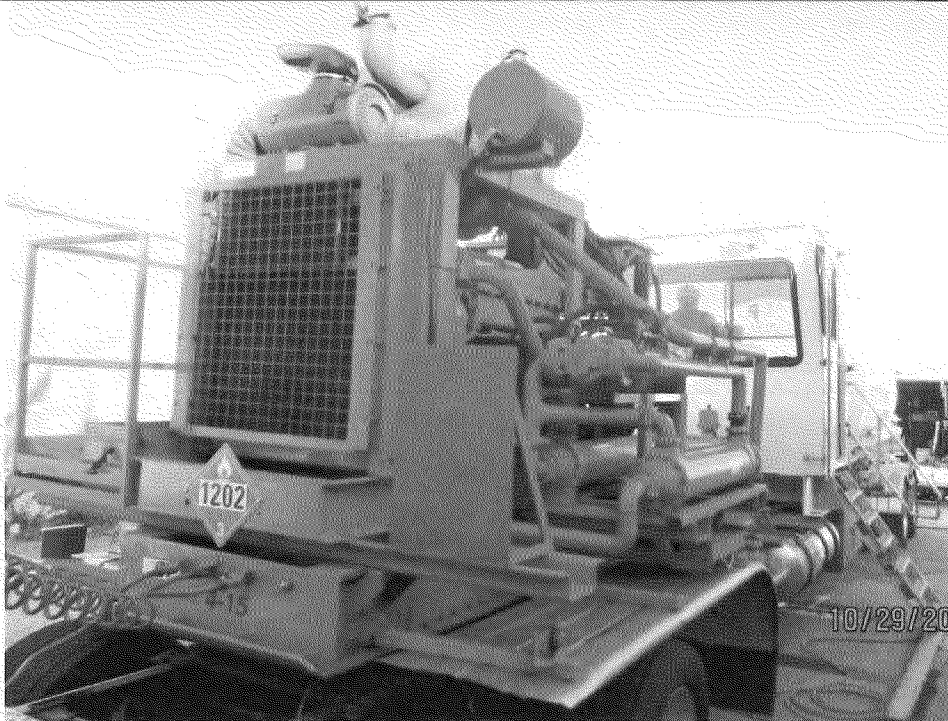




Test Header
and Piping

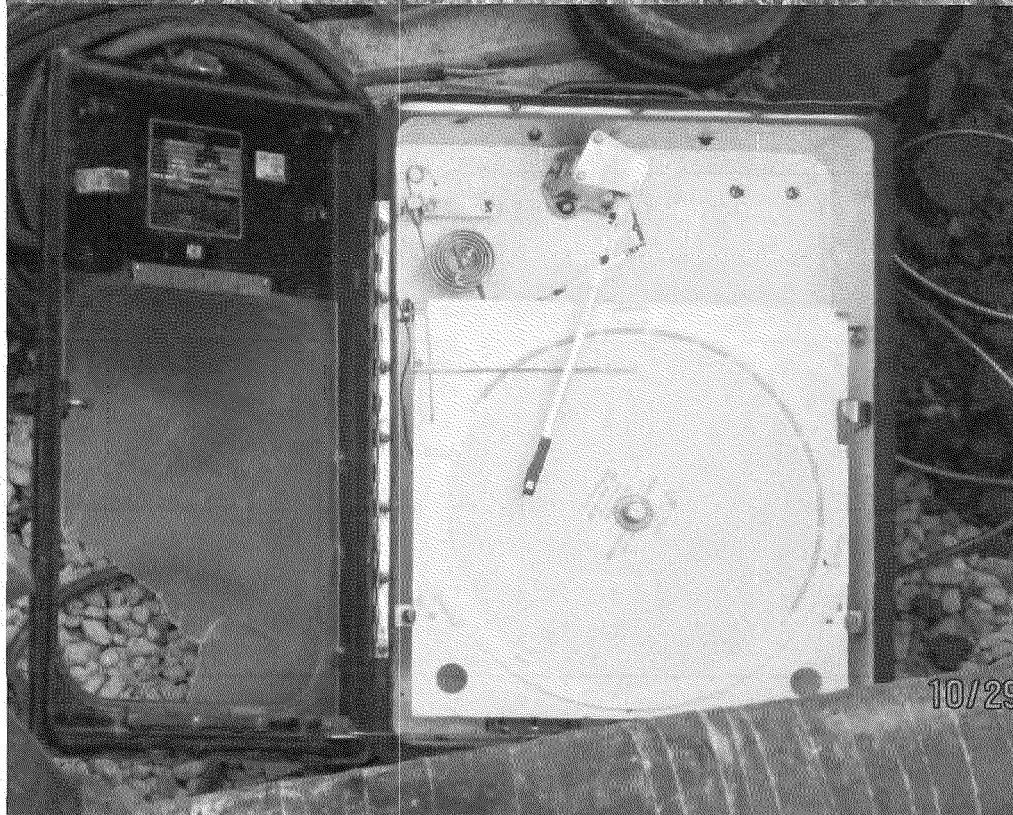


Nitrogen Fill
/ Pressure Truck

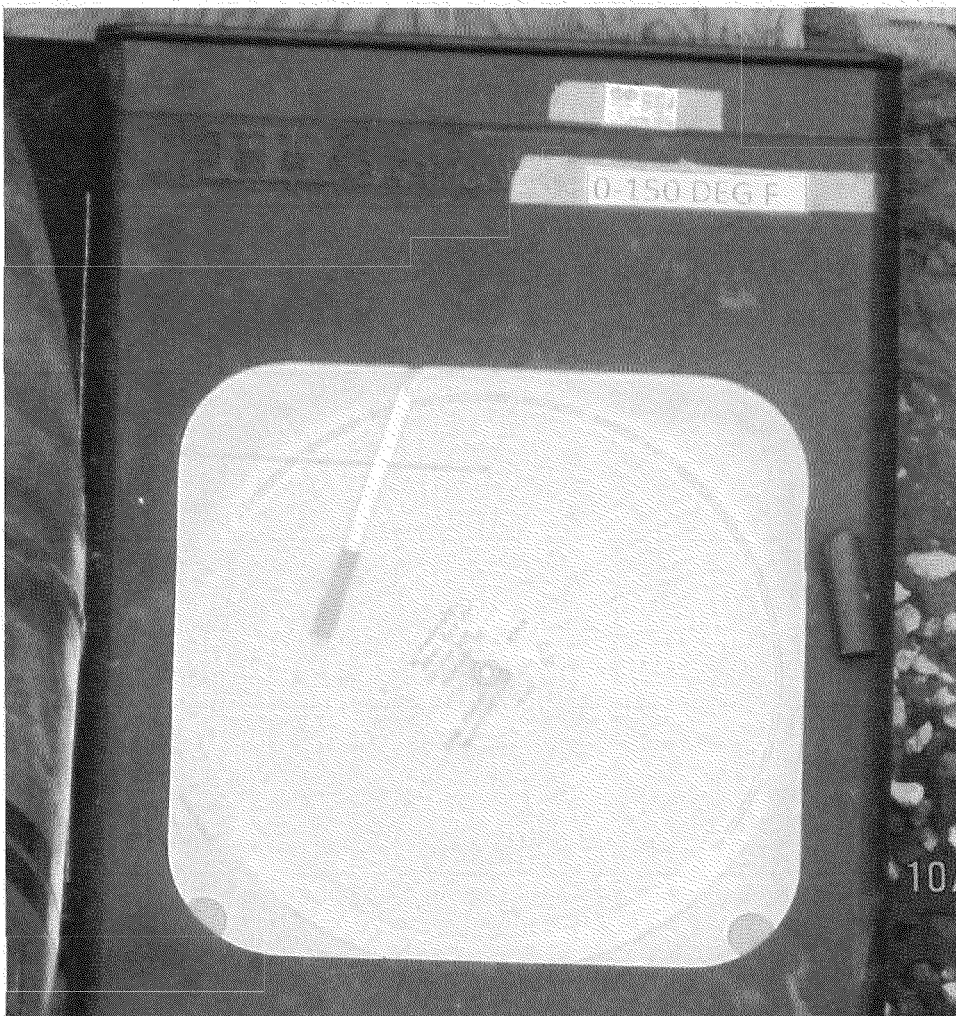




Test Pressure Recorder



Buried Pipe Temperature Recorder



**Exposed Pipe
Temperature
Recorder**



**Dead
Weight
Test
Gage**

Redacted

Test 22

13.1 ft



0 yds 200 400 600 800

Copyright © and (P) 1988-2008 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/streets/>
Certain mapping and direction data © 2008 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2008 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc. © 2008 by Applied Geographic Systems. All rights reserved.