

# Pacific Gas and Electric Company Gas Pipeline Facilities Strength Test Pressure Report (For Pipeline Facilities Designed to Operate over 100 PSIG)

62-4921 (12/2012)

Use in Accordance with Numbered Document A-34, A-37, and GO 112-E

Sheet 1 of 1 Z

Test Number 1 of 1 STPR Revision Number 0

### PART 1 - TEST DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER/ESTIMATOR)

Test D	escripti	on .												
Line No	ımber or	Statio	n Name L	3002-01 I	MP 2.9			Divi	sion/[	District	Diablo	Job Nu	ımber 3'	1021267
Purpos	e of Test	Repl	ace 6" Ino	perable v	alve & in	sta	ll blow off	MAG	OP to	be Estab	lished by	this Test	<u>400</u> PSIG	i
Descrip	otion of P	ipe be	ing Tested	(include re	ference dra	awin	gs, field station	ning, a	nd mile	points)				
6" & 8"	new pip	ing to	replace ex	isting ma	in. 2" ne	ew	piping for th	e inst	allatio	on of blo	w off stac	k - PSRS#	31527	
⊠ New	Facility	(no spi	ke test requi	ed) E	kisting Fa	cili	ty	If no	spike	e test for	existing	acility, exp	lain:	
Will sp	ike test b	e perf	ormed?	Yes 🛛 N	o (explain	on ri	ight)							
Static	Head Ca	lcula	tion			-								
Maxim	ım Eleva	tion	0	FT				For	Water	r(	Elev. Diff.	) x 0.433 =	0 PSIG	
Minimu	ım Elevat	ion	<u>0</u>	FT										
Elevati	on Differ	ence	0	FT				For Other Test Medium Contact the responsible engineer for guidance on completing this field.						
Pipe to	be Tes	ted												
Si		API				JF	Footage	Act		Location	Most		% of SN	
OD (in.)	WT (in.)	AST Spe			AW,	(E)	to be Tested	Foo	age	Class	Restrict		At Mi	
(,,,,,	()	Оро		SMLS	etc.)		l colou				Facto		Press	
6.625	0.188	X5:	2 5200	) HF	w	1		13.	45'	3	0.5	13.55	20.33	3 27.11
8.625	0.250	X42	2 4200	) HF	w	1			15'	3	0.5	16.43	24.6	32.86
2.375	0.154	GR	B 3500	) SN	LS	1		29		3	0.5	8.81	13.2	17.63
1.050	0.113	GR	B 3500		ILS	1		4.		3	0.5	12.01	7.96	10.62
6.625	0.280	A-23			ING	1		2 E	A	3	0.5	13.52		
6.625	0.280	A-23	3500	) C/	AP .	1		IE	A	3	0.5	13.52	20.2	3 27.04
All files	l l	dod in	the test (e	voont the	an linted	abo	unl are the		uall t	hiaknaaa	00000000			
			field 🔼				ve) are the supervising		wan t	nickness	and grad	e as the pi	pe 🗀	
ripe st	ecs veri	neu III	neid 🔼	m			dpervising	lest		M.	SHF	MILE	HERNA	NOEZ
Compo	nent(s) l	imiting	j test press	ure/Cont	rol Point	ехс	eptions							
Test S	pecifica	tions					isting facilitie	s)						
Test Fac	tor <u>1.5</u>	[1A]	Min. Test F PSIG	ressure at	Max. Elev	-	600	[1B]	Max.	Test Pres	sure at Mir	. Elev	800 PSIG	
Spike T	est	[10]	Spike Fact	or <u>N/A</u>	_			[1D]	Spike	Pressure	at Max. E	ev. Box [1A]	X [1C] =	V/A PSIG
(comple	,	[1E]	Spike Pres	sure at Mir	n. Elev	SIA	_ PSIG	[1D] Spike Pressure at Max. Elev. Box [1A] x [1C] = PSIG  [1F] Max. Post-Spike Pressure at Min. Elev.						
for spike	e test)								Box [		= <u>N/A</u>			
Test M	edium to	be Us	ed									S: 1 hour min		
Water/	Nitrogen			Minii	num Test	l Di	iration 1 F	lours		■ Pre-ii	nstallation T	est: Refer to	A-34, Alta	
Cianol	11100		-							• Spike	Test: 30 m	inutes minim	um (includ	ed in test)
Signat		notur	0)			Τ,	Print Name a	nd Di	20110	Mumbar		Date		LANLID
Prepared by (signature)					1	Mathew Chi					2-12	-14	LAN ID M8CD	
Approv	ed by (si	gnatu	re)			1	rint Name					Date	( ).	LAN ID
	122	_					LANTHY	lt	920	5-479	-8008	2-12	-14	L1LO
Test St	pervised	by (s	ignature)				lime and Da					Date Test	1	Duration of
Wil		e		2			Reached (from				Ended (fro			om Part 2)
						1	2:25 PM		114/	7	3:34 F	M 4/2/1	1 //	HR 91MIN



### 62-4921 (12/2012)

Use in Accordance with Numbered Document A-34, A-37, and GO 112-E

Sheet _	2 of _	2	
Test Number	/ of	1	
STPR Revision I	Number	0	

### PART 2 - TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

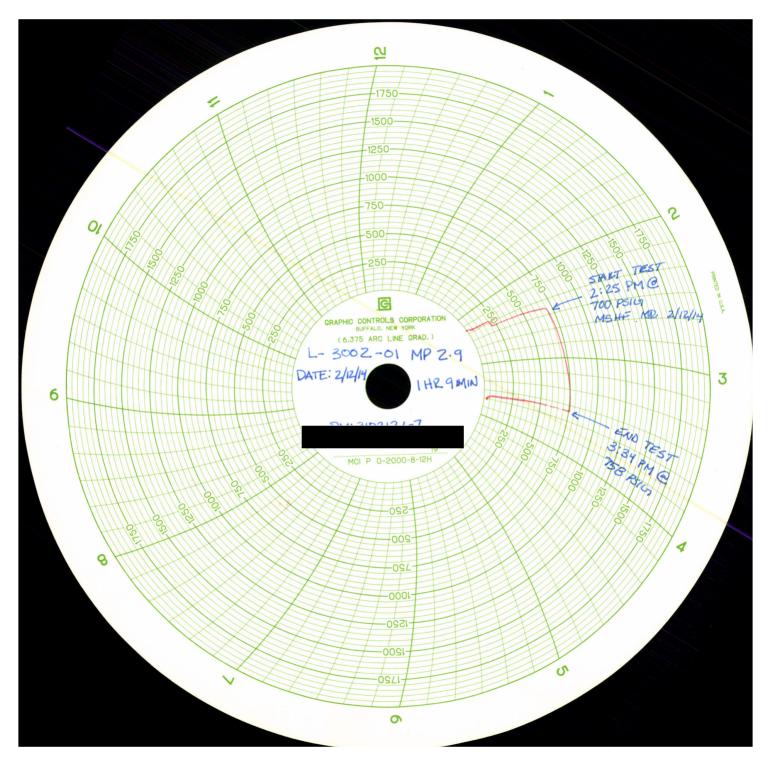
Test Elevation											
	Max.	Elevation	in Test	Section	0	FT	Min. E	levat	ion in Test Section	O FT	
Elevation at	-							_			
Test Point FT	Static Hea	ia b/t i	est Point	and IV	PSIG	[2B] Sta		tic Head b/t Test Poi	int and Min. Elev. PSIG		
No Spike Test: Calc	ulatio	ns and Te	st Re	sults (cor	nplete f	or strength test with	out a sp	ike te	est)		
Min. Required Test Press			_				_		nge During Test 20	PSIG	
Box [1A] + Box [2A] =	00	PSIG				PSIG					
[2C] Min. Test Pressure			[2D]	Max. Tes	Pressi	ure Indicated					
	00	PSIG	[20]		_	7 <u>58</u> PSIG					
Calculated Min. Test Pres						essure at Min. Elev.	1				
Box [2C] - Box [2A] =	700	PSIG	Box [2	D] + Box [2	B) = _7	58 PSIG					
Spike Test: Calculat	ions a	and Test F	Result	s (comple	te for s	trength test with a s	pike test	)			
Spike Pressure at Test P						sure at Test Point	Max. P	ost-S	pike Pressure at Test	Pressure Range	
Box [1E] - Box [2B] =	<u>A</u> F	PSIG	Box [1	A] + Box [2	A] =	PSIG	Point		Al/-	After Spike Test	
[2E] Spike Pressure Inc	licated		[2F]	Min Tost	Dracei	ire Indicated			ox [2B] = N/A PSIG		
	/A F		[41]	Milli, 1630		PSIG	[20]	Midx.	. Post-Spike Test Pres	N/A PSIG	
0.1.11.10.11.0											
Box [2E] + Box [2B] = N						essure at Max. Elev.	Calcula	ated M	lax. Post-Spike Pressu	ıre at Min. Elev.	
	/A F	/SIG	Box [2	- Box (2	AJ =	PSIG	Box [20	6] + Bo	ox [2B] = N/A PSI	G 	
Test Acceptance	_					1					
Were Leaks Observed ☐ Yes ☒ No	•					If yes, explain:					
Acceptable Strength T	est?				1	If no, explain:					
X Yes No						,,					
Report strength test failure	s to Re	gulatory Com	pliance						_		
		nd Date Te			ched	Time and Date Te				Test	
	2:25	SPM 2/	12/14	1	3:34 PM 2/12/14				1 HR 9 MIN		
Test Instruments											
Make, Range, and Seri	al No.	of Pressur	e Reco	ording De	evice				Date Last Calibrated		
MERCURY C Make, Range and Serie	-30	#	SN	: 890	8901310				1/10/2014		
Make, Range and Seria	al No.	of Dead We	eight T	ester					Date Last Calibrate	ed	
A dead weight tester and/o or greater than 90% of SM	r an eie YS.		ure reco	oraer is req	uirea to	r tests of any pipe seg	iment eq	ual to	14		
		NA							N/A		
Signatures											
Test Supervised by (si	gnatu	re)		Print Nar					Date	LAN ID	
mi pe				MIKE	HE	RNANDEZ			2/12/14	M5HF	
Testing Contractor (if	third p	arty)			Design of the last						
Approved by (signatur	e)	_		Print Nar	ne				Date	LAN ID	
In wit				AZ	12	A TARI	N		3/6/14	AXTB	

### Attachments

- Test chart
- · Schematic piping sketch
- Test log with pressure noted every 15 minutes

### Distribution

 Gas Job Closeout Desk, 6121 Bollinger Canyon Road, Building Z1, San Ramon, CA 94583











3400 Crow Canvon Road San Ramon, California 94583

Ph: 925-866-5418 Fax: 925-866-5681 http://pgeatwork/eo/ats/

### NIST Traceable

### **Calibration Report**

**Issued To:** 

GC Gas - Walnut Creek

350 Wiget Lane

Walnut Creek, CA 94958 United States

Manufacturer:

Crystal Engineering 3KPSIXP2I

Model Number: **Description:** 

Pressure Gauge, Digital 0-3000 x 0.1 psi

CO MTE ID:

ATSICR-36927 10150-ATSICR-36927

MC Asset ID Serial Number:

355429

Procedure:

DS Crystal 3KPSIXP2I Pressure Gauge, Digital

**Calibration Date: Calibration Due Date:**  01/07/2014 01/07/2015

TEST NUMBER

Swims Number: 08851000

**Condition As Found:** 

In Tolerance

**Condition As Left:** 

In Tolerance

### Remarks:

Calibration performed on the instrument referenced above in accordance with customer requirements, published specifications and the lab's standard operating procedures. All measurements with data and estimated measurement uncertainties (EMU) are traceable to the international System of Units (SI) through the National Institute of Standards and Technology (NIST).

No adjustments were made to the instrument. As left condition is the same as received

#### Standards Utilized

Standard ID	Manufacturer	Model No.	Description	Cal. Date	Due Date
00001-ATSICR-390	Mensor	15000 DPGII-6000	Pressure Reference, 0-6000 PSIG	02/20/2013	02/20/2014
00001-ATSICR-484	Mensor	2101-2500	Pressure Reference, 0-2500 PSIG	01/10/2013	01/10/2014

### **Calibration Data**

FUNCTION TESTED	Nominal Value	As Found	Out of Tol - As Left	Out of Tol	CALIBRATION TOLERANCE [EMU] [TUR] [Guardbanding if '4:1] By Test Point [Raids Red'] [Sid Ace. Red'd] [UT Spec]
Increasing	0.0 psig	0.0	Same		Reference Only
I .	300.0 psig	300.0	Same		299.4 to 300.6 psig g: 299.5 to 300.5 psig [EMU 0.26 psig][TUR 2.3:1] 4:1 Req.: [±0.05000000%] Spec: [±0.02% F.S.("Full Scale" = 3000 psig)]
I	600.0 psig	600.0	Same		599.4 to 600.6 psig g: 599.5 to 600.5 psig [EMU 0.26 psig][TUR 2.3:1] 4:1 Req.: [±0.02500000%] Spec: [±0.02% F.S.("Full Scale" = 3000 psig)]
l .	900.0 psig	899.9	Same		899.1 to 900.9 psig g: 899.2 to 900.8 psig [EMU 0.26 psig][TUR 3.5:1] 4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]
I	1200.0 psig	1199.8	Same		1198.8 to 1201.2 psig [EMU 0.26 psig][TUR 4.7:1]
1	1500.0 psig	1499.7	Same		1498.5 to 1501.5 psig  [EMU 0.26 psig][TUR 5.8:1]  4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]
ı I	1800.0 psig	1799.6	Same		1798.2 to 1801.8 psig [EMU 0.26 psig][TUR 7.0:1] 4:1 Req.: [±0.02500000%] Spec. [±0.1% I.V.]
I	2100.0 psig	2099.4	Same		2097.9 to 2102.1 psig [EMU 0.26 psig][TUR 8.2:1]



### Calibration Data

			ation D			
FUNCTION TESTED	Nominal Value	As Found	Out of Tol	As Left	Out of Tol	CALIBRATION TOLERANCE  [EMU] [TUR]  [Guardanding if <-4.1]  By Test Point: [Ratio Req'd] [Sid Acc. Req'd] [IUT Spec]
						4:1 Req.: [ ±0.02500000% ] Spec: [ ± 0.1% I.V. ]
.	2400.0 psig	2399.2		Same		2397.6 to 2402.4 psig [EMU 0.26 psig][TUR 9.4:1]
					0	4:1 Req.: [ ±0.02500000% ] Spec: [ ± 0.1% I.V. ]
	2700.0 psig	2699.6		Same		2697.3 to 2702.7 psig g: 2697.8 to 2702.2 psig [EMU 1.5 psig][TUR 1.8:1]
	3000.0 psig	2999.7		Same		4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.] 2997.0 to 3003.0 psig g: 2997.5 to 3002.5 psig [EMU 1.5 psig][TUR 2.0:1]
Decreasing	2700.0 psig	2699.7		Same		4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]  2697.3 to 2702.7 psig g: 2697.8 to 2702.2 psig [EMU 1.5 psig][TUR 1.8:1]
						4:1 Req.: [ ±0.02500000% ] Spec: [ ± 0.1% I.V. ]
1	2400.0 psig	2399.6		Same		2397.6 to 2402.4 psig [EMU 0.26 psig][TUR 9.4:1]
						4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]
d 9 a	2100.0 psig	2099.4		Same		2097.9 to 2102.1 psig [EMU 0.26 psig][TUR 8.2:1]
						4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]
1	1800.0 psig	1799.5	65.7	Same		1798.2 to 1801.8 psig [EMU 0.26 psig][TUR 7.0:1]
						4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]
I	1500.0 psig	1499.5		Same		1498.5 to 1501.5 psig [EMU 0.26 psig][TUR 5.8:1]
						4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]
I	1200.0 psig	1199.7		Same		1198.8 to 1201.2 psig [EMU 0.26 psig][TUR 4.7:1]
						4:1 Req.: [±0.02500000%] Spec: [±0.1% I.V.]
I	900.0 psig	899.8		Same		899.1 to 900.9 psig g: 899.2 to 900.8 psig [EMU 0.26 psig][TUR 3.5:1]
	600.0!-	500.0	72.7	0	-	4:1 Req.: [±0.02500000%] Spec: [± 0.1% I.V.]
l ,	600.0 psig	599.9		Same		599.4 to 600.6 psig g: 599.5 to 600.5 psig [EMU 0.26 psig][TUR 2.3:1] 4:1 Req. [±0.02500000%] Spec: [±0.02% F.S.f"Full Scale*
· · · · · · · · · · · · · · · · · · ·						= 3000 psig}]
l	300.0 psig	300.0		Same		299.4 to 300.6 psig g: 299.5 to 300.5 psig [EMU 0.26 psig][TUR 2.3:1] 4:1 Req.: [±0.05000000%] Spec: [±0.02% F.S.("Full Scale"
						= 3000 psig} ]
1	0.0 psig	0.0		Same		Reference Only
IUT Serial Number		355429		Same		Retrieved from IUT Memory

<sup>\*\*\*</sup> g: = Guard Banding Applied

 Temperature:
 22° C

 Humidity:
 29% RH

 Test No.:
 14371

Calibration Performed By:		Quality Reviewer:	
Griffin, Stanley	925-866-5428	Tavares, Donna L	1/7/2014
Name	Phone	Name	Date

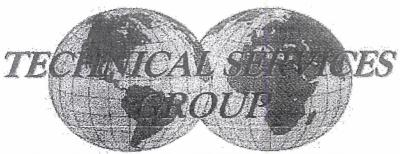
This report may not be reproduced, except in full, without written permission of PGE. The results stated in this report relate only to the items tested or calibrated. Measurements reported herein are traceable to physical constants and/or SI units via national standards maintained by NIST and were performed in compliance with ANSI/NCSL Z540-1-1994, 10CFR50, Appendix B, ISO 9002-94, or ISO 17025:2005. Guard Banding, if reported on this certificate, is applied at a Z-factor of 30% for test points with a test uncertainty ratio (TUR) below 4:1. The estimated measurement uncertainty (EMU), if reported on this certificate, is being reported at a confidence level of 95% or K=2 unless otherwise noted in the remarks section.



PUI {F850B7BF-050E-4AAB-AE6D-80CB85B50BAA} DUI {7003F54F-03C5-4EA4-9AE2-5D2B66E5511B}

Test Number: 14371





2900 Main St Alameda CA 94501 Phone (510)522-8326 Fax (510)522-3136

## Certificate of Calibration

PACIFIC GAS AND ELECTRIC W.C. 350 WIDGET LANE

**WALNUT CREEK** 

CA

94958

Customer ID #

2563

File #

Instrument Type

RECORDER,

**PRESSURE** 

Range

0-2000

Units

**PSIG** 

Resolution

50

Mfg.

MERCURY

Model

Cal By

MIKE MCCONNELL

90765

Curent Cal Cycle (Months)

Previous Cal Cycle

Standards Used

N/A

12

AMETEK DM-T-150 S/N 8681 DUE 3/3/2014 NIST 40568,001 Certificate Number:

Rated Accuracy

1%

Pass/Fail as Found

**PASS** 

Pass/Fail as Left

**PASS** 

Cal Date

1/10/2014

1/10/2014

Notes

TECHNICAL SERVICES GROUP CERTIFIES THAT THIS INSTRUMENT HAS BEEN CALIBRATED TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY AND CONFORMS TO ISO 10012 AND ANSI / NCSL Z-540. UNLESS OTHERWISE SPECIFIED MEASURMENT UNCERTAINTIES ARE LESS THAN 1/4 OF TOLERANCE OR 1 MINOR DIVISION.



### **CALIBRATION DATA SHEET** PRESSURE / TEMPERATURE

2900 MAIN ST ALAMEDA, CA 94501 PHONE (510) 522-8326 FAX (510) 522-3136

TSG JOB & ITEM #

CERTIFICATE NUMBER

CAL DATE

CAL DUE

**PGE WALNUT CREEK** 

2563

2401334

1/10/2014

1/10/2015

MFG.

MODEL

CAL BY

MFG S/N

MERCURY INSTRUMENTS

803-S

Mike McConnell

RANGE

MIN

UNITS

RESOLUTION

RATED ACCURACY, % FULL SCALE

2ND S/N

8901310

0

2,000 **PSIG**  50

1.00 %

N/A

INSTRUMENT DISCRIPTION

STANDARDS USED

PRESS.

TEMP. **VACUUM**  CASE SIZE

CONN. SIZE

CONN. LOCATION

THREAD TYPE

RECORDER

1/4"

**BACK** 

**NPT** 

X

MFG.

MODEL

S/N 8681 **RECAL** 

N.I.S.T#

X X **AMATEK FLUKE** 

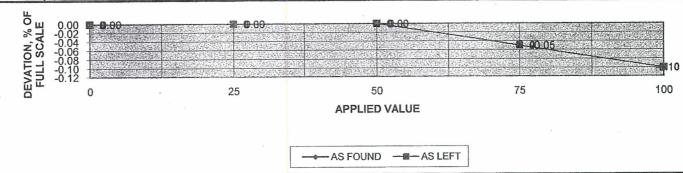
DM-T-150 515A

10520

3/3/2014 6/13/2014 40568.001 F26700

CALIBRATION DETAIL

			- · · · -						
% SPAN	APPLIED VALUE	OBSERVED INDICATION		ERROR		% DEVATION		PASS / FAIL	
	PSIG	AS FOUND	AS LEFT	AS FOUND	AS LEFT	AS FOUND	AS LEFT	AS FOUND	AS LEFT
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	PASS	PASS
25	500.00	500.00	500.00	0.00	0.00	0.00	0.00	PASS	PASS
50	1,000.00	1000.00	1000.00	0.00	0.00	0.00	0.00	PASS	PASS
75	1,500.00	1499.00	1499.00	-1.00	-1.00	-0.05	-0.05	PASS	PASS
100	2,000.00	1998.00	1998.00	-2.00	-2.00	-0.10	-0.10	PASS	PASS



IMPACT / NOTES :

TECHNICAL SERVICES GROUP CERTIFIES THAT THIS INSTRUMENT HAS BEEN CALIBRATED TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY AND CONFORMS TO ISO 10012 AND ANSI / NCSL Z-540. UNLESS OTHERWISE SPECIFIED MEASUREMENT UNCERTAINTIES ARE LESS THAN 1/4 OF TOLERANCE OR 1 MINOR DIVISION

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