

# PACIFIC GAS AND ELECTRIC COMPANY

## Gas Operations Support Team

### Data Response

Please note that prior to 2014 the Picarro Projects were proof of concept of the Picarro Surveyor technology. The surveys were not used for compliance purposes, or for targeted bundled repairs, until the 2014 Picarro Pilot Program: Leak Optimization Pilot Program began.

**QUESTION(S) 4806.23:** On average, how many man-hours (including travel time and labor) do you currently spend to identify a leak? Please provide your calculations.

**RESPONSE(S) 4806.23:** PG&E interprets this question as calling for data concerning leak survey, rather than customer-reported leaks. PG&E measures leak survey productivity in terms of the number of services surveyed, rather than leaks found. The following table provides PG&E's leak survey data for routine leak survey for the year 2013.

2013						
MAT*	MAT Description	Unit Description	Units	Recorded Man-Hours	Average Hrs/Unit	Average Srvcs/Hr
<i>Calculation: <math>b \div a = c</math></i>			<i>a</i>	<i>b</i>	<i>c</i>	<i>1 \div c</i>
DEA	Routine Leak Survey	Services Surveyed	861,495	86,170	0.10	10
<b>Leaks Found</b>			<b>Units</b>	<b>Man-Hours Recorded</b>	<b>Average Hrs/Unit</b>	<b>Average Srvcs/Hr</b>
line	<i>Calculation: <math>b \div a = c</math></i>		<i>a</i>	<i>b</i>	<i>c</i>	<i>na</i>
1	Routine Leak Survey	Distribution Leaks	30,995	na	na	na
2	Routine Leak Survey	Meter Set Leaks	60,142	na	na	na
3	Picarro Proof of Concept	Distribution Leaks	(437)	na	na	na
<i>(1+2+3) = Total Leaks</i>			90,700	86,170	1.0	na

Note: PG&E tracks Routine Leak Survey under Maintenance Activity Type (MAT) DEA

**QUESTION(S) 4806.24:** On average, what does it currently cost (including travel time, labor and materials) to identify a leak? Please provide your calculations.

**RESPONSE(S) 4806.24:** PG&E interprets this question as calling for data concerning leak survey, rather than customer-reported leaks. PG&E measures leak survey productivity in terms of the cost per service surveyed, rather than leaks found. The following table provides PG&E's leak survey data for routine leak survey for the year 2013.

2013					
MAT	MAT Description	Unit Description	Units	Recorded Costs	Average \$/Unit
<i>Calculation: <math>b \div a = c</math></i>			<i>a</i>	<i>b</i>	<i>c</i>
DEA	Routine Leak Survey	Services Surveyed	861,495	\$19,720,412	\$23

	Leaks Found		Units	Man-Hours Recorded	Average Hrs/Unit
line	<i>Calculation: b ÷ a = c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1	Routine Leak Survey	Distribution Leaks	30,995	na	na
2	Routine Leak Survey	Meter Set Leaks	60,142	na	na
3	Picarro Proof of Concept	Distribution Leaks	(437)	na	na
<i>(1+2+3) = Total Leaks</i>			90,700	\$19,720,412	\$217

**QUESTION(S) 4806.25:** On average, how many man-hours (including travel time and labor) do you currently spend to fix a leak? Please provide your calculations.

**RESPONSE(S) 4806.25:** PG&E tracks leak repairs based on the Maintenance Activity Types (MAT) listed in the table below. The average man-hours (including travel time and labor) to repair leaks is provided for each type of leak repair or replacement based on 2013 recorded units and total-man hours for each type. The calculation is included in the table.

2013					
MAT	MAT Description	Unit Description	Units Completed	Recorded Man-Hours	Average Hrs/Unit
<i>Calculation: b ÷ a = c</i>			<i>a</i>	<i>b</i>	<i>c</i>
FIG	Maint-Corr-G Main Lk	# of Main Leaks Repaired	3,696	106,006	28.7
FIH	Maint-Corr_G_Svc Leak_AG	# Svc Leak Repairs_AG	24,336	38,323	1.6
FIP	Maint-Corr_G_Svc Leak_BG	# Svc Leak Repairs_BG	6,259	87,050	13.9
50G	Impr Rel/Dep-Gas Svc Repl Leak	# of Services Replaced	4,661	161,743	34.7
50K	Emergent Leaking Main Replace	Feet of Main Installed	6,445	14,415	2.2

**QUESTION(S) 4806.26:** On average, what does it currently cost (including travel time, labor and materials) to fix a leak? Please provide your calculations.

**RESPONSE(S) 4806.26:** PG&E tracks leak repairs based on MATs listed in the table below. The average cost to repair leaks (all associated costs in addition to labor) is provided for each type of leak repair or replacement based on 2013 recorded units and total costs for each type. The calculation is included in the table.

2013					
MAT	MAT Description	Unit Description	Units Completed	Recorded Costs	Average \$/Unit
<i>Calculation: b ÷ a = c</i>			<i>a</i>	<i>b</i>	<i>c</i>
FIG	Maint-Corr-G Main Lk	# of Main Leaks Repaired	3,696	\$29,393,232	\$7,953
FIH	Maint-Corr_G_Svc Leak_AG	# Svc Leak Repairs_AG	24,336	\$8,589,001	\$353
FIP	Maint-Corr_G_Svc Leak_BG	# Svc Leak Repairs_BG	6,259	\$22,596,814	\$3,610
50G	Impr Rel/Dep-Gas Svc Repl Leak	# of Services Replaced	4,661	\$49,697,713	\$10,662
50K	Emergent Leaking Main Replace	Feet of Main Installed	6,445	\$5,305,518	\$823

**QUESTION(S) 4806.27:** On average, what does it cost (including travel time, labor and materials) to replace a riser?

**RESPONSE(S) 4806.27:** The average cost to replace a riser (all associated costs in addition to labor) is provided based on 2013 repairs of this type and total costs of these jobs. The calculation is included in the table.

2013				
Repair Type	Unit Description	Units Completed	Recorded Costs	Average \$/Unit
<i>Calculation: <math>b \div a = c</math></i>		<i>a</i>	<i>b</i>	<i>c</i>
Replace a Riser	# of Risers Replaced	445	\$1,230,595	\$2,765

**QUESTION(S) 4806.28:** On average, what does it cost (including travel time, labor and materials) to replace a service line and riser? Internally sleeving the service line with plastic is also considered replacement.

**RESPONSE(S) 4806.28:** PG&E tracks replacing a service line and riser under MAT 50G. The average cost to replace a service line and riser (all associated costs in addition to labor) is based on 2013 recorded units and total costs. The calculation is included in the table.

2013					
MAT	MAT Description	Unit Description	Units Completed	Recorded Costs	Average \$/Unit
<i>Calculation: <math>b \div a = c</math></i>			<i>a</i>	<i>b</i>	<i>c</i>
50G	Impr Rel/Dep-Gas Svc Repl Leak	# of Services Replaced	4,661	\$49,697,713	\$10,662

**QUESTION(S) 4806.29:** On average, how many man-hours (including travel time and labor) do you currently spend to monitor Non-Hazardous leaks? Please provide your calculations.

**RESPONSE(S) 4806.29:** The average man-hours to monitor Non-Hazardous leaks (all associated costs in addition to labor) is based on 2013 recorded units and total man-hours. The calculation is included in the table.

2013					
MAT	MAT Description	Unit Description	Units Completed	Recorded Man-Hours	Average Hrs/Unit
<i>Calculation: <math>b \div a = c</math></i>			<i>a</i>	<i>b</i>	<i>c</i>
DED	Rechecks	# of Rechecks Performed	7,335	8,821	1.2
JSA/ JQA	Rechecks – Grade 3	# of Rechecks Performed	6,008	3,937	0.7
Total	Rechecks – Grade 2, 2+, 3	# of Rechecks Performed	13,343	12,758	1.0

**QUESTION(S) 4806.30:** On average, what does it currently cost (including travel time, labor and materials) to monitor a Non-Hazardous leak? Please provide your calculations.

**RESPONSE(S) 4806.30:** The average cost to monitor a Non-Hazardous leak (all associated costs in addition to labor) is based on 2013 recorded units and total costs. The calculation is included in the table.

2013					
MAT	MAT Description	Unit Description	Units Completed	Recorded Costs	Average \$/Unit
Calculation: $b \div a = c$			a	b	c
DED	Rechecks – Grade 2, 2+	# of Rechecks Performed	7,335	\$1,355,858	\$185
JSA/ JQA	Rechecks – Grade 3	# of Rechecks Performed	6,008	\$1,100,034	\$183
Total	Rechecks – Grade 2, 2+, 3	# of Rechecks Performed	13,343	\$2,455,892	\$184

**QUESTION(S) 4806.32:** During the years 2011 to 2013 how many leaks did you repair (by year)?

**RESPONSE(S) 4806.32:** The table below shows how many leaks PG&E repaired, including leaks repaired by replacing the associated main or service line, by year. Please note that as the Picarro Projects prior to 2014 were proof of concept of the Picarro technology and not addressed with bundled repairs until the 2014 Leak Optimization Pilot Program, they cannot be excluded from the totals in the table below.

Leak Repairs*	Repair Year		
	2011	2012	2013
<b>Distribution Total</b>	<b>14,422</b>	<b>32,648</b>	<b>38,542</b>

\* IGIS Database, excluding Dig-Ins

**QUESTION(S) 4806.35:** How many Non-Hazardous leaks are you currently monitoring?

**RESPONSE(S) 4806.35:** The table below shows how many Non-Hazardous open leaks PG&E is currently monitoring by grade. Note: The Picarro technology has not been used for monitoring Non-Hazardous leaks for rechecks.

Non-Hazardous Open Leaks*	
Leak Grade	Count
2+	600
2	1,105
3	32,643
Total	34,348

\* Excludes Dig-Ins

**QUESTION(S) 4806.39:** During the years 2011 to 2013 how many leaks did you have in each of your class locations, including HCAs? Please use the attached spread sheet and format to record your answers.

**RESPONSE(S) 4806.39:** Please see attachment “All Gas Distribution Leaks 2011-2013\_R1.xls” for the list of leaks by year and grade between 2011 and 2013. PG&E’s gas leak data source does not include information about Class locations, and HCA’s are not applicable to distribution.

**QUESTION(S) 4806.40:** During the years 2011 to 2013, including Dig-Ins, how many leaks did you upgrade and how many did you downgrade? Please use the attached spread sheet and format to record your answers.

**RESPONSE(S) 4806.40:** From 1/1/2011 to 12/31/2013, a total of 73,123 leak rechecks were performed. Of that total, 7,754 resulted in upgrades, 31,774 resulted in downgrades, and 33,595 resulted in no grade

change. The attached spreadsheet "*Gas\_Distribution\_Leak\_Upgrades\_and\_Downgrades\_2011-2013\_R1.xls*" includes a list of the upgrades and downgrades. Because the same leak may be rechecked multiple times, the grade after a past recheck may not be the current grade of the leak (or the last grade for a leak that was later repaired). A column has been added to include the current grade (or last grade) of the leak, which determines the recheck frequency for leaks that are still open. Note: Line size is only available for leaks that have been repaired. The template indicates to exclude Dig-Ins. Dig-Ins are repaired and not upgraded or downgraded and therefore not included.