


	A	B
1	 <b>Pacific Gas and Electric Company</b>	Catho
2		
3		
4	<b>CPA</b>	
5		
6	Soil Resistivity	
7		
8	Recorded by:	
9		
10	Reviewed by:	
11		
12	<b>A. Cathodic Protection Current Formula</b>	
13		
14	TOTAL CURRENT REQUIREMENTS (Amps) = PIPE LENGTH (Ft)x PIPE	
15		
16		
17	<b>B. -- STEEL MAINS</b>	
18	<b>NOMINAL PIPE SIZE (Inches)</b>	<b>LENGTH OF PIPE (Feet)</b>
19	1/2	0
20	3/4	0
21	1	0
22	1 1/4	0
23	1 1/2	0
24	2	0
25	3	0
26	4	0
27	6	0
28	8	0
29	10	0
30	12	0
31	16	0
32	20	0
33		
34	<b>TOTAL CURRENT REQUIREMENT</b>	
35		
36	<b>C. -- GAS SERVICES</b>	
37	<b># OF SERVICES</b>	<b>NOMINAL PIPE SIZE (Inches)</b>
38	0	1/2 CU
39	0	1/2" STL

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	C	D	E	F
1				
2	<b>Corrosion Protection Area Current</b>		<b>Requirement Worksheet</b>	
3				
4	<b>Date</b>			
5				
6				
7				
8	<b>Recorded by (Lan ID):</b>			
9				
10	<b>Reviewed by (Lan ID):</b>			
11				
12				
13				
14				
15	OUTSIDE WALL AREA/RUNNING FOOT (Sq ft/ft) x CURRENT REQUIREMENTS PER SQ. FT. (milliamps/sq.ft) / 1000			
16				
17				
18	<b>CIRCUMFERENTIAL AREA PER FT OF PIPE (Sq Ft / Foot)</b>	<b>TOTAL OUTSIDE PIPE AREA (Square Feet)</b>	<b>CURRENT REQUIREMENTS (Milliamps/ Sq. Ft)</b>	<b>CALCULATED CPA TOTAL CURRENT REQUIREMENTS (Amperes)</b>
19	0.16	0	0.05	0.0000
20	0.27	0	0.05	0.0000
21	0.34	0	0.05	0.0000
22	0.43	0	0.05	0.0000
23	0.50	0	0.05	0.0000
24	0.62	0	0.05	0.0000
25	0.92	0	0.05	0.0000
26	1.18	0	0.05	0.0000
27	1.73	0	0.05	0.0000
28	2.26	0	0.05	0.0000
29	2.81	0	0.05	0.0000
30	3.34	0	0.05	0.0000
31	4.19	0	0.05	0.0000
32	5.24	0	0.05	0.0000
33				
34		<b>0.0</b>		<b>0.0000</b>
35				
36				
37	<b>AVERAGE LENGTH OF PIPE (Feet)</b>	<b>CIRCUMFERENTIAL AREA PER FT OF PIPE (Sq Ft / Foot)</b>	<b>TOTAL OUTSIDE PIPE AREA (Square Feet)</b>	<b>CURRENT REQUIREMENTS (Milliamps/ Sq. Ft)</b>
38	74	0.16	0	7.8
39	74	0.16	0	0.05

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	G	H	I
1	GD&TS 01/09 FO-16-F		
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14			
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16			
17			
18	<b>COMMENTS</b>		
19			
20			
21			
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23			
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26			
27			
28			
29			
30			
31			
32			
33		0.00	Miles of main
34			
35			
36			
37	<b>CALCULATED CPA TOTAL CURRENT REQUIREMENTS (Amperes)</b>		
38	0.000		
39	0.000		



	A	B
40	0	3/4" STL
41	0	1" STL
42	0	1-1/4" STL
43	0	1-1/2" STL
44	0	2" STL
45	0	3" STL
46	0	4" STL
47	0	6" STL
48	N/A	PL. (All)
49	TOTAL CURRENT REQUIREMENT	
50		
51	TOTAL CALCULATED OUTSIDE PIPE AREA IN SQ. FT. (INCLUDES ALL PIPE)	
52		
53	TOTAL CALCULATED CURRENT (MAINS and SERVICES):	
54		
55	ACTUAL RECTIFIER OUTPUT INTO THE CPA SYSTEM: (AMP's)	
56		
57	ACTUAL OUTPUT PER PER SQ. FT. OF PIPE: (MA's)	
58		
59	HAS CORROSION LEAKAGE INCREASED WITHIN THE CPA DURING A PREDETERMINED PERIOD OF TIME?	
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		



	C	D	E	F
40	74	0.27	0	0.05
41	74	0.34	0	0.05
42	74	0.43	0	0.05
43	74	0.50	0	0.05
44	74	0.62	0	0.05
45	74	0.92	0	0.05
46	74	1.18	0	0.05
47	74	1.73	0	0.05
48	N/A	N/A	N/A	N/A
49			0	
50				
51				
52				
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61				
62				
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64				
65				
66				
67				
68				
69				



	G	H	I
40	0.000		
41	0.000		
42	0.000		
43	0.000		
44	0.000		
45	0.000		
46	0.000		
47	0.000		
48	0.000	0.00	miles of services
49	0.000		
50			
51	0.0		
52			
53	0.000		
54			
55		0	
56			
57	#DIV/0!		
58			
59	No		
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1	<b>Cathodic Protection Area Map Review Worksheet</b>																								
2																									
3																									
4	CPA #	0																							
5																									
6		<b>Footages Of Stl. Main By Size Per Map</b>														<b>Number Of Stl. Services By Size Per Map</b>									
7	Map Numbers	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	16"	20"	1/2"cu	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"	6"
8																									
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34																									
35																									
36																									
37																									
38																									
39																									
40																									
41																									
42	Totals =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



CPA Leak History Data

	A	B	C	D
1	<b>Corrosion Leak History Data</b>			
2	When was the last CPA review?			
3	Has corrosion leakage per mile of protected main increased in the CPA since the last CPA review?			
4				
5	Miles of protected main & services with CPA:			
6		A)	Miles of protected main & services within CPA when previously resurveyed?	
7		B)	Miles of protected main & services now?	
8	How was corrosion leak analysis made?			
9		A)	Based upon a leak history analysis since the last resurvey?	
10		B)	Based upon the leak history over the past 5 year period vs. the previous 5 year period?	
11		C)	Based upon a combination of A) and B) above?	
12	Corrosion leak data:			
13		A)	Previous number of corrosion leaks identified =	
14		B)	Latest number of corrosion leaks identified =	
15				
16	Has The CPA # Changed?	Current CPA # As Of 1-98	Current CPA # As Of 12-97	Previous CPA # If Different
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				



CPA Leak History Data

	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	
1																								
2																								
3												No												
4																								
5																								
6												?												
7												0.00												
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
	Yr. Repaired	Lk No	Status	Yr. Found	Grd.	Orig Grd.	Original Found Date	Cap or Exp	MAP	PLAT	Blk	Dia.	Mat.	Type Facility	Undr CP?	Yr. Pipe Inst.	Rpt'd By	Leak Cause	Source	Repair Type	Repair Code	No. of Clamps	Date Found	
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								

CPA Leak History Data

	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
	Yr. Found	First Check	Sec Check	Perm Repair	Date Repaired	Year Repaired	Perm Repair Date	Yr. Repaired	CPA #				
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1	<b>Cathodic Protection Area Map Review Worksheet Of Non-Protectable Facilities</b>																								
2																									
3																									
4	CPA	0																							
5																									
6		<b>Footages Of Stl. Main By Size Per Map</b>														<b>Number Of Stl. Services By Size Per Map</b>									
7	Map Numbers	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	16"	20"	1/2"cu	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"	6"
8																									
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38																									
39																									
40																									
41																									
42	Totals =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

