

Table S1. Facility A sampling date, state, year built, facility type, gas type, and gas composition for 130 GGP facilities reported in this study. Inlet gas composition is the most recent analysis performed by the study authors and is reported as mole fractions.

Facility ID	Sampling date	State	Year Built	Facility Type	Gas Type	%CH ₄	%C ₂ H ₆	%C ₃ H ₈	%i-C ₄ H ₁₀	%n-C ₄ H ₁₀	%N ₂	%H ₂ S	
1	2/16/2014	TX	2014	Shale	CD	77.1	12.8	5.3	3.3	1.0	0.2	0.22	
2	4/9/2014	UT	2004	Shale	CD	60.7	5.1	1.8	1.4	0.9	0.1	-	
3	7/17/2014	TX	2010	Tight Sand	CD	91.2	4.1	1.0	1.0	1.1	1.2	-	
4	7/17/2014	TX	2010	Tight Sand	CD	96.3	1.9	0.4	0.4	0.8	0.1	-	
5	4/9/2014	TX	2012	Shale	CD	87.1	5.8	1.9	1.3	1.0	0.8	-	
6	4/9/2014	UT	NR	Shale	CD	90.7	5.1	1.8	1.4	0.9	0.1	-	
7	4/9/2014	TX	2012	Shale	CD	82.7	10.8	3.1	1.6	0.8	0.8	-	
8	4/7/2014	UT	2004	Shale	CD	90.7	5.1	1.8	1.4	0.9	0.1	-	
9	1/29/2014	TX	2013	Shale	CD	78.3	14.0	5.5	2.9	1.2	0.0	-	
10	2/6/2014	TX	2013	Shale	CD	70.3	14.8	7.1	4.9	2.0	0.4	0.40	
11	1/24/2014	PA	2012	Shale	CD	97.7	1.9	0.1	0.0	-	0.1	-	
12	1/25/2014	NM	1999	Government	CD	86.7	6.4	2.7	2.0	1.8	0.4	-	
13	1/26/2014	TX	2013	Shale	CD	75.5	14.1	6.0	4.5	1.0	0.7	-	
14	2/12/2014	TX	2009	Tight Sand	CD	96.3	0.3	0.0	0.0	0.2	0.8	-	
15	2/19/2014	KS	1996	Government	CD	73.8	6.8	4.3	2.9	0.1	11.7	-	
16	4/24/2014	CO	1992	Shale	CD	77.8	11.5	4.5	3.7	2.5	0.4	-0.01	
17	1/7/2014	OK	1998	Government	CD	85.1	7.7	3.5	2.8	0.3	0.4	-0.01	
18	2/18/2014	TX	2009	Government	CD	80.7	6.4	3.0	2.8	0.2	7.6	-	
19	3/26/2014	NM	1999	Government	CD	86.3	6.4	0.1	2.3	1.5	0.5	-	
20	4/2/2014	WV	2007	CBM	CD	81.8	0.4	-	-	-	16.9	0.9	-0.01
21	2/12/2014	TX	NR	Government	CD	90.1	0.0	0.0	0.0	0.0	0.0	-	
22	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
23	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
24	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
25	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
26	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
27	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
28	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
29	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
30	2/12/2014	TX	NR	Government	CD	91.5	0.5	0.0	0.0	0.0	0.0	-0.01	
31	3/14/2014	OK	1983	Government	CD	80.8	8.8	2.0	2.1	0.1	11.1	-0.01	
32	3/14/2014	OK	NR	Government	CD	77.7	10.3	6.0	4.8	0.4	0.8	-0.01	
33	2/19/2014	TX	2004	Government	CD	84.1	1.0	1.0	1.0	1.0	0.0	-	
34	2/18/2014	TX	2007	Government	CD	81.0	5.1	2.5	2.4	0.2	8.6	-	
35	10/29/2013	TX	2008	CD	Government	95.7	0.9	0.0	0.0	0.0	2.7	-0.01	
36	10/27/2014	NM	1992	Government	CD	82.7	0.6	0.1	0.1	0.2	0.2	-	
37	2/26/2014	AR	2007	CD	Government	82.2	1.0	0.0	0.0	0.3	-0.01		
38	2/26/2014	AR	2007	CD	Government	82.2	1.0	0.0	0.0	0.3	-0.01		
39	2/26/2014	AR	2007	CD	Government	82.2	1.0	0.0	0.0	0.3	-0.01		
40	2/12/2014	TX	2012	Shale	CD	76.0	11.9	6.9	4.1	0.2	0.8	-	
41	2/12/2014	TX	2012	Shale	CD	76.0	11.9	6.9	4.1	0.2	0.8	-	
42	1/26/2014	TX	2012	Shale	CD	88.2	5.5	2.4	2.3	0.2	1.4	-	
43	1/26/2014	OK	2013	Shale	CD	83.3	6.8	3.1	2.8	0.2	1.7	-	
44	2/26/2014	AR	2007	CD	Government	82.2	1.0	0.0	0.0	0.3	-0.01		
45	4/2/2014	NM	1993	Government	CD	79.5	1.2	0.3	0.1	18.9	0.1	-0.01	
46	1/23/2014	PA	2012	CD	Government	97.5	2.1	0.1	0.0	0.0	0.2	-	
47	1/23/2014	PA	2012	CD	Government	97.5	2.1	0.1	0.0	0.0	0.2	-	
48	2/25/2014	AR	2009	CD	Government	97.7	1.4	0.0	-	-	0.7	0.2	-0.01
49	3/7/2014	AR	2009	CD	Government	97.7	1.4	0.0	-	-	0.7	0.2	-0.01
50	2/26/2014	AR	2007	CD	Government	82.2	1.0	0.0	0.0	0.3	-0.01		
51	2/11/2014	TX	NR	CD	Government	76.6	11.1	7.0	4.3	0.1	0.8	-	
52	2/24/2014	AR	2009	CD	Government	96.3	1.3	0.0	0.0	0.0	0.3	-0.01	
53	1/23/2014	PA	2012	CD	Government	97.5	2.1	0.1	0.0	0.0	0.2	-	
54	3/28/2014	TX	2009	CD	Government	93.3	0.9	0.2	0.1	19.6	0.1	-	
55	10/4/2014	TX	2010	CD	Government	95.6	1.4	0.1	0.0	1.9	1.0	-0.01	
56	10/24/2014	TX	2010	CD	Government	95.6	1.4	0.1	0.0	1.9	1.0	-0.01	
57	1/11/2014	NM	1993	CD	Government	95.5	1.7	0.4	0.3	0.0	0.1	-	
58	2/26/2014	AR	2007	CD	Government	82.2	1.0	0.0	0.0	0.3	-0.01		
59	3/25/2014	TX	2012	CD	Government	95.7	0.9	0.0	0.0	0.8	0.9	-0.01	
60	4/2/2014	WV	2007	CD	Government	82.2	1.0	0.0	0.0	0.3	-0.01		
61	2/12/2014	TX	NR	CD	Government	95.9	0.8	0.1	0.0	0.2	0.4	-0.01	
62	3/25/2014	OK	NR	CD	Government	85.3	7.9	3.4	2.1	0.9	6.4	-0.01	
63	1/26/2014	TX	2012	CD	Government	84.8	8.3	1.1	0.8	0.1	0.3	-0.01	
64	4/16/2014	CO	2009	CD	Government	70.2	14.7	7.3	4.5	2.6	0.6	-	
65	10/12/2014	PA	NR	CD	Government	96.4	2.4	0.2	0.2	0.5	-	-	
66	10/12/2014	PA	NR	CD	Government	96.4	2.4	0.2	0.2	0.5	-	-	
67	10/12/2014	PA	NR	CD	Government	96.4	2.4	0.2	0.2	0.5	-	-	
68	10/12/2014	PA	NR	CD	Government	96.4	2.4	0.2	0.2	0.5	-	-	
69	2/25/2014	AR	2009	CD	Government	97.0	1.4	0.0	-	-	1.4	0.2	-0.01
70	1/26/2014	TX	2012	CD	Government	84.8	8.3	1.1	0.8	0.1	0.3	-0.01	
71	4/17/2014	OK	2013	CD	Government	87.7	14.0	9.1	5.2	2.5	1.3	-	
72	4/17/2014	OK	2013	CD	Government	87.7	14.0	9.1	5.2	2.5	1.3	-	
73	2/27/2014	AR	2008	CD	Government	95.8	1.4	0.1	1.5	0.2	0.1	-0.01	
74	2/27/2014	AR	2008	CD	Government	95.8	1.4	0.1	1.5	0.2	0.1	-0.01	
75	1/29/2014	WV	NR	CD	Government	92.1	0.1	-	-	-	4.4	8.2	-
76	10/29/2013	TX	2008	CD	Government	88.1	6.1	2.7	2.0	0.6	0.5	-	
77	2/12/2014	TX	NR	CD	Government	95.6	1.4	0.1	0.0	0.0	0.3	-0.01	
78	2/12/2014	TX	NR	CD	Government	95.6	1.4	0.1	0.0	0.0	0.3	-0.01	
79	3/18/2014	OK	2008	CD	Government	95.5	2.4	0.6	0.4	0.7	0.4	-0.01	
80	2/14/2014	TX	2014	Tight Sand	CD	97.7	0.4	0.0	0.1	1.4	0.4	-	
81	1/27/2014	TX	2013	CD	Government	86.8	8.3	1.1	0.8	0.1	0.3	-0.01	
82	4/2/2014	WV	2007	CD	Government	82.0	11.3	7.9	6.8	1.5	9.6	-0.01	
83	10/22/2013	TX	2008	CD	Government	84.9	2.8	0.2	0.3	1.5	0.7	-	
84	10/22/2013	TX	2008	CD	Government	84.9	2.8	0.2	0.3	1.5	0.7	-	
85	1/28/2014	NM	1990	CD	Government	76.7	1.7	0.6	0.4	20.6	0.1	-	
86	3/19/2014	OK	2009	CD	Government	85.1	7.4	3.2	2.4	0.8	0.9	-0.01	
87	10/22/2013	TX	2008	CD	Government	84.7	18.4	10.0	5.8	1.1	0.1	-	
88	12/11/2013	PA	NR	CD	Government	95.2	3.2	0.5	0.3	0.1	0.8	-	
89	3/4/2014	NM	1994	CD	Government	83.9	0.6	0.1	0.0	15.4	0.1	-	
90	10/21/2013	PA	NR	CD	Government	97.9	2.1	0.1	0.4	0.2	0.2	-	
91	10/22/2013	TX	2008	CD	Government	85.9	1.9	0.1	0.1	1.5	0.8	-	
92	10/22/2013	TX	2008	CD	Government	85.9	1.9	0.1	0.1	1.5	0.8	-	
93	10/22/2013	TX	2008	CD	Government	85.9	1.9	0.1	0.1	1.5	0.8	-	
94	10/22/2013	TX	2008	CD	Government	85.9	1.9	0.1	0.1	1.5	0.8	-	
95	2/26/2014	AR	2009	CD	Government	95.8	1.0	0.0	0.0	2.7	0.5	-0.01	
96	2/26/2014	AR	2009	CD	Government	95.8	1.0	0.0	0.0	2.7	0.5	-0.01	
97	1/29/2014	TX	NR	CD	Government	92.5	3.5	0.5	0.3	0.1	3.2	-	
98	4/16/2014	CO	2009	CD	Government	67.5	13.8	8.1	6.8	2.5	1.0	-	
99	12/17/2013	WV	2007	CD	Government	77.0	15.1	4.9	2.4	0.1	0.5	-	
100	10/7/2014	OK	2009	CD	Government	84.3	4.9	3.2	2.7	0.1	4.9	-0.01	
101	10/21/2013	PA	NR	CD	Government	98.8	0.3	0.1	0.8	0.0	0.3	-0.01	
102	10/21/2013	TX	2008	CD	Government	76.5	13.2	5.9	3.2	1.1	0.2	0.06	
103	10/27/2014	TX	2013	CD	Government	74.2	14.4	6.3	4.1	1.0	0.1	-0.01	
104	2/12/2014	TX	2013	CD	Government	76.5	13.5	7.0	4.2	0.2	0.8	-	
105	4/9/2014	TX	2012	CD	Government	89.8	5.8	1.8	1.4	0.9	0.8	-	
106	1/26/2014	TX	2013	CD	Government	74.2	14.4	6.3	4.1	1.0	0.1	-0.01	
107	1/26/2014	TX	2013	CD	Government	74.2	14.4	6.3	4.1	1.0	0.1	-0.01	
108	1/26/2014	TX	2013	CD	Government	74.2	14.4	6.3	4.1	1.0	0.1	-0.01	
109	1/13/2014	TX	2012	CD	Government	72.7	14.9	4.8	3.3	1.8	0.8	NR	
110	1/16/2014	WV	NR	CD	Government	80.7	8.7	4.1	2.4	0.2	0.0	-	
111	1/16/2014	PA	NR	CD	Government	97.3	2.1	0.1	0.0	0.0	0.3	-	
112	1/27/2013	WV	2010	CD	Government	76.1</							