

30-025-43032

HOBBS OCD

JAN 19 2018

RECEIVED

**MWD
SURVEYS**

Customer: Devon Energy
 Well: Boomslang 14-23 Fer
 Field/Block: Delaware Basin
 Co./Parish: Lea County
 State: New Mexico

PGS Job #: LNM5150717
 MWD Operator: Trey Mason
 Directional Driller: Perry Bullard
 Date of First Survey: September 12, 2017
 Date of Last Survey:

**PRO**DIRECTIONALTotal Correction: 6.42 East GridVertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

Measured		Coordinates				Closure		Vib/Shk							
Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Temp (°F)	Color	Date	Time	Flow Rate	
Survey's are tied into: Gyro										Date Received:					
Company: Tie-In Survey Provider															
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
1	174	0.1	207.0	174.00	0.13	-0.14	-0.07	0.15	207.00	0.06					
2	262	0.1	207.0	262.00	0.27	-0.27	-0.14	0.31	207.00	0.00					
3	351	0.1	260.0	351.00	0.35	-0.35	-0.25	0.43	215.21	0.10					
4	445	0.2	267.0	445.00	0.37	-0.38	-0.50	0.62	232.66	0.11					
5	540	0.0	0.5	540.00	0.38	-0.39	-0.66	0.77	239.68	0.21					
6	633	0.2	259.0	633.00	0.41	-0.42	-0.82	0.92	243.03	0.22					
7	728	0.5	278.0	728.00	0.38	-0.39	-1.39	1.45	254.31	0.33					
8	823	0.4	234.0	822.99	0.51	-0.53	-2.07	2.14	255.69	0.37					
9	923	0.4	218.0	922.99	0.99	-1.01	-2.57	2.76	248.56	0.11					
10	1,013	0.3	258.0	1012.99	1.28	-1.31	-2.99	3.27	246.44	0.29					
11	1,108	0.5	205.0	1107.99	1.71	-1.73	-3.41	3.83	243.08	0.42					
12	1,206	0.7	224.0	1205.98	2.52	-2.55	-4.01	4.75	237.53	0.29					
13	1,220	0.7	224.0	1219.98	2.64	-2.67	-4.13	4.92	237.06	0.00					
14	1,314	0.5	229.0	1313.98	3.32	-3.36	-4.84	5.89	235.24	0.22					
15	1,402	0.4	219.0	1401.97	3.81	-3.85	-5.32	6.56	234.12	0.14					
16	1,451	0.6	232.9	1450.97	4.09	-4.13	-5.63	6.99	233.71	0.47	79 °F	Yellow	09/12/17	2:00	842 (gpm)
17	1,543	0.2	138.5	1542.97	4.50	-4.55	-5.91	7.45	232.43	0.70	81 °F	Green	09/12/17	2:20	897 (gpm)
18	1,634	0.4	245.0	1633.97	4.75	-4.80	-6.09	7.75	231.77	0.54	84 °F	Yellow	09/12/17	2:42	897 (gpm)
19	1,726	0.5	230.5	1725.97	5.14	-5.19	-6.69	8.47	232.21	0.16	88 °F	Green	09/12/17	3:03	897 (gpm)
20	1,821	0.3	316.9	1820.97	5.22	-5.27	-7.18	8.91	233.72	0.60	91 °F	Green	09/12/17	3:20	897 (gpm)
21	1,916	0.3	302.7	1915.96	4.90	-4.96	-7.56	9.04	236.76	0.08	99 °F	Green	09/12/17	3:35	897 (gpm)
22	2,011	0.5	242.2	2010.96	4.95	-5.01	-8.14	9.56	238.36	0.46	97 °F	Yellow	09/12/17	4:01	897 (gpm)
23	2,106	0.6	290.5	2105.96	4.96	-5.03	-8.97	10.29	240.70	0.48	99 °F	Yellow	09/12/17	4:18	897 (gpm)

CONFIDENTIAL

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Total Correction: 6.42 East Grid

Vertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

	Measured				Coordinates			Closure			Vib/Shk				
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Temp (°F)	Color	Date	Time	Flow Rate
24	2,201	0.5	278.7	2200.95	4.72	-4.80	-9.85	10.95	244.02	0.16	99 °F	Yellow	09/12/17	4:41	897 (gpm)
25	2,296	0.3	245.0	2295.95	4.76	-4.84	-10.48	11.54	245.22	0.32	106 °F	Yellow	09/12/17	5:02	897 (gpm)
26	2,391	0.4	241.1	2390.95	5.02	-5.10	-11.00	12.12	245.10	0.11	108 °F	Yellow	09/12/17	5:23	897 (gpm)
27	2,486	0.0	42.6	2485.95	5.18	-5.26	-11.29	12.45	244.99	0.42	109 °F	Yellow	09/12/17	5:41	897 (gpm)
28	2,581	0.3	340.8	2580.95	4.94	-5.03	-11.37	12.43	246.13	0.32	109 °F	Green	09/12/17	6:25	796 (gpm)
29	2,677	0.4	262.3	2676.95	4.75	-4.84	-11.78	12.74	247.68	0.47	109 °F	Yellow	09/12/17	7:15	796 (gpm)
30	2,772	0.6	277.0	2771.94	4.72	-4.82	-12.61	13.50	249.07	0.25	113 °F	Yellow	09/12/17	7:46	796 (gpm)
31	2,962	0.9	304.1	2961.93	3.75	-3.86	-14.83	15.32	255.40	0.24	113 °F	Green	09/12/17	8:36	796 (gpm)
32	3,057	0.4	310.8	3056.92	3.11	-3.23	-15.70	16.03	258.38	0.53	118 °F	Yellow	09/12/17	9:08	796 (gpm)
33	3,152	0.5	310.9	3151.92	2.62	-2.74	-16.26	16.49	260.43	0.11	117 °F	Green	09/12/17	9:38	796 (gpm)
34	3,247	0.4	274.4	3246.92	2.31	-2.44	-16.91	17.08	261.78	0.31	118 °F	Green	09/12/17	10:06	796 (gpm)
35	3,342	0.5	354.0	3341.91	1.87	-2.01	-17.28	17.40	263.38	0.61	120 °F	Green	09/12/17	10:33	796 (gpm)
36	3,437	0.6	354.7	3436.91	0.96	-1.10	-17.37	17.40	266.38	0.11	120 °F	Green	09/12/17	11:00	796 (gpm)
37	3,532	0.7	331.3	3531.90	-0.04	-0.09	-17.69	17.69	269.70	0.30	122 °F	Yellow	09/12/17	11:30	796 (gpm)
38	3,627	0.5	17.0	3626.90	-0.95	0.81	-17.85	17.87	272.60	0.53	124 °F	Yellow	09/12/17	12:01	796 (gpm)
39	3,722	0.7	335.0	3721.89	-1.87	1.73	-17.97	18.06	275.51	0.49	126 °F	Yellow	09/12/17	12:36	796 (gpm)
40	3,817	0.7	334.3	3816.89	-2.92	2.78	-18.47	18.68	278.57	0.01	124 °F	Green	09/12/17	13:14	796 (gpm)
41	3,912	0.4	282.6	3911.88	-3.52	3.38	-19.05	19.34	280.06	0.58	127 °F	Green	09/12/17	13:59	796 (gpm)
42	4,007	0.6	332.9	4006.88	-4.04	3.89	-19.60	19.98	281.24	0.49	131 °F	Green	09/12/17	14:58	796 (gpm)
43	4,102	0.4	345.6	4101.88	-4.81	4.66	-19.91	20.44	283.17	0.24	129 °F	Green	09/12/17	16:30	796 (gpm)
44	4,197	0.6	304.6	4196.87	-5.42	5.26	-20.40	21.07	284.46	0.42	130 °F	Green	09/12/17	17:39	796 (gpm)
45	4,293	0.4	333.0	4292.87	-6.01	5.84	-20.96	21.76	285.58	0.33	135 °F	Green	09/12/17	18:26	754 (gpm)
46	4,388	0.3	345.0	4387.87	-6.54	6.38	-21.18	22.12	286.77	0.13	135 °F	Green	09/12/17	19:06	754 (gpm)
47	4,483	1.9	94.1	4482.85	-6.66	6.51	-19.67	20.72	288.31	2.12	135 °F	Green	09/12/17	20:37	754 (gpm)
48	4,578	3.1	94.1	4577.76	-6.33	6.21	-15.54	16.73	291.79	1.26	133 °F	Green	09/12/17	21:37	754 (gpm)
49	4,673	3.1	88.3	4672.62	-6.18	6.10	-10.41	12.07	300.39	0.33	135 °F	Green	09/12/17	22:15	754 (gpm)

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Total Correction: 6.42 East Grid

Vertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

Measured						Coordinates		Closure				Vib/Shk			
Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Temp (°F)	Color	Date	Time	Flow Rate	
50	4,768	3.7	97.2	4767.45	-5.83	5.80	-4.80	7.53	320.37	0.84	133 °F	Green	09/12/17	23:08	754 (gpm)
51	4,863	5.0	87.8	4862.18	-5.55	5.57	2.38	6.06	23.11	1.56	133 °F	Green	09/13/17	0:08	754 (gpm)
52	4,958	5.8	83.3	4956.76	-6.20	6.29	11.28	12.92	60.86	0.95	135 °F	Green	09/13/17	1:02	754 (gpm)
53	5,053	5.5	84.9	5051.29	-7.10	7.25	20.58	21.83	70.59	0.36	136 °F	Green	09/13/17	1:48	754 (gpm)
54	5,148	5.5	83.8	5145.86	-7.92	8.15	29.64	30.75	74.63	0.11	136 °F	Green	09/13/17	3:06	754 (gpm)
55	5,243	5.1	83.0	5240.45	-8.86	9.16	38.36	39.44	76.57	0.43	133 °F	Green	09/13/17	4:46	754 (gpm)
56	5,325	5.1	78.1	5322.13	-10.00	10.35	45.55	46.71	77.19	0.53	106 °F	Green	09/14/17	16:16	500 (gpm)
57	5,420	5.3	66.6	5416.74	-12.55	12.97	53.70	55.25	76.43	1.12	108 °F	Green	09/14/17	17:08	563 (gpm)
58	5,515	5.3	66.7	5511.33	-15.97	16.44	61.76	63.91	75.09	0.01	109 °F	Green	09/14/17	17:35	563 (gpm)
59	5,610	5.1	66.8	5605.94	-19.31	19.84	69.67	72.44	74.10	0.21	111 °F	Green	09/14/17	18:04	563 (gpm)
60	5,706	5.3	67.9	5701.55	-22.60	23.19	77.70	81.09	73.38	0.23	113 °F	Green	09/14/17	18:29	563 (gpm)
61	5,801	4.2	71.2	5796.22	-25.31	25.96	85.06	88.94	73.03	1.19	113 °F	Green	09/14/17	19:19	563 (gpm)
62	5,896	3.0	68.4	5891.03	-27.30	28.00	90.67	94.89	72.84	1.28	115 °F	Green	09/14/17	20:03	599 (gpm)
63	5,991	2.0	66.1	5985.94	-28.86	29.59	94.49	99.02	72.61	1.06	117 °F	Green	09/14/17	20:45	599 (gpm)
64	6,086	1.9	64.5	6080.88	-30.19	30.94	97.43	102.22	72.38	0.12	118 °F	Green	09/14/17	21:13	599 (gpm)
65	6,182	1.8	32.1	6176.83	-32.13	32.90	99.67	104.96	71.73	1.08	120 °F	Green	09/14/17	21:54	599 (gpm)
66	6,277	1.9	24.1	6271.78	-34.82	35.60	101.10	107.19	70.60	0.29	122 °F	Green	09/14/17	22:17	599 (gpm)
67	6,372	1.9	28.8	6366.73	-37.63	38.42	102.50	109.47	69.45	0.16	122 °F	Green	09/14/17	22:39	599 (gpm)
68	6,467	0.7	353.1	6461.71	-39.58	40.37	103.19	110.81	68.63	1.47	122 °F	Green	09/14/17	23:29	599 (gpm)
69	6,562	0.6	310.9	6556.70	-40.49	41.28	102.75	110.73	68.11	0.50	122 °F	Green	09/14/17	23:49	599 (gpm)
70	6,657	0.7	320.1	6651.70	-41.26	42.05	102.00	110.33	67.60	0.15	122 °F	Green	09/15/17	0:10	599 (gpm)
71	6,752	0.7	319.7	6746.69	-42.16	42.94	101.25	109.98	67.02	0.01	124 °F	Green	09/15/17	0:31	599 (gpm)
72	6,846	0.8	340.2	6840.68	-43.22	43.99	100.66	109.85	66.39	0.30	124 °F	Green	09/15/17	0:53	599 (gpm)
73	6,941	0.6	342.0	6935.67	-44.32	45.09	100.28	109.95	65.79	0.21	126 °F	Green	09/15/17	1:16	599 (gpm)
74	7,036	0.5	349.2	7030.67	-45.20	45.97	100.05	110.10	65.32	0.13	126 °F	Green	09/15/17	1:38	599 (gpm)
75	7,131	0.6	1.1	7125.67	-46.10	46.87	99.98	110.42	64.88	0.16	127 °F	Green	09/15/17	2:00	599 (gpm)

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State: New Mexico

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Total Correction: 6.42 East Grid

Vertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

Measured Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	Coordinates		Closure		DLS	Temp (°F)	Vib/Shk		Date	Time	Flow Rate
					+N / -S	+E / -W	Dist.	Angle			Color				
76	7,226	0.6	18.2	7220.66	-47.07	47.84	100.15	110.99	64.46	0.19	127 °F	Green	09/15/17	2:23	599 (gpm)
77	7,320	0.4	19.3	7314.66	-47.85	48.62	100.41	111.56	64.16	0.21	129 °F	Green	09/15/17	2:46	599 (gpm)
78	7,415	0.3	44.2	7409.65	-48.34	49.11	100.69	112.03	64.00	0.19	129 °F	Green	09/15/17	3:12	599 (gpm)
79	7,510	0.3	106.3	7504.65	-48.44	49.22	101.10	112.45	64.04	0.33	129 °F	Green	09/15/17	3:41	599 (gpm)
80	7,605	0.6	148.8	7599.65	-47.94	48.72	101.60	112.68	64.38	0.45	129 °F	Green	09/15/17	4:06	599 (gpm)
81	7,700	0.9	162.5	7694.64	-46.80	47.59	102.08	112.63	65.01	0.37	131 °F	Green	09/15/17	4:33	599 (gpm)
82	7,795	1.0	155.2	7789.63	-45.33	46.12	102.65	112.54	65.81	0.17	131 °F	Green	09/15/17	5:00	599 (gpm)
83	7,889	0.8	142.5	7883.62	-44.06	44.86	103.40	112.71	66.55	0.30	131 °F	Green	09/15/17	5:24	599 (gpm)
84	7,984	1.1	136.2	7978.60	-42.87	43.67	104.43	113.20	67.31	0.33	131 °F	Green	09/15/17	5:50	599 (gpm)
85	8,079	1.2	139.1	8073.59	-41.45	42.26	105.71	113.85	68.21	0.12	131 °F	Green	09/15/17	6:21	599 (gpm)
86	8,174	1.3	142.5	8168.56	-39.83	40.66	107.02	114.48	69.20	0.13	131 °F	Green	09/15/17	6:51	599 (gpm)
87	8,269	0.8	76.4	8263.55	-39.12	39.96	108.32	115.46	69.75	1.28	131 °F	Green	09/15/17	7:33	599 (gpm)
88	8,364	1.2	58.0	8358.54	-39.80	40.64	109.81	117.09	69.69	0.53	131 °F	Green	09/15/17	8:06	599 (gpm)
89	8,460	1.3	67.8	8454.51	-40.73	41.58	111.67	119.16	69.58	0.25	131 °F	Green	09/15/17	8:41	599 (gpm)
90	8,650	1.2	96.9	8644.47	-41.27	42.16	115.64	123.09	69.97	0.33	133 °F	Yellow	09/15/17	9:48	599 (gpm)
91	8,745	1.1	106.5	8739.45	-40.88	41.78	117.50	124.71	70.43	0.23	133 °F	Green	09/15/17	10:27	599 (gpm)
92	8,840	0.8	98.1	8834.44	-40.51	41.43	119.03	126.04	70.81	0.35	133 °F	Green	09/15/17	11:04	599 (gpm)
93	8,935	0.8	84.1	8929.43	-40.48	41.40	120.35	127.27	71.02	0.21	135 °F	Green	09/15/17	11:48	599 (gpm)
94	9,030	1.0	88.9	9024.42	-40.55	41.49	121.84	128.71	71.20	0.22	135 °F	Green	09/15/17	12:23	599 (gpm)
95	9,125	1.0	89.2	9119.40	-40.57	41.52	123.50	130.29	71.42	0.01	135 °F	Green	09/15/17	13:08	599 (gpm)
96	9,220	0.8	90.7	9214.39	-40.56	41.52	124.99	131.71	71.62	0.21	136 °F	Yellow	09/15/17	13:48	599 (gpm)
97	9,315	0.6	50.9	9309.38	-40.86	41.82	126.04	132.80	71.64	0.54	136 °F	Yellow	09/15/17	14:29	599 (gpm)
98	9,410	0.4	43.3	9404.38	-41.41	42.38	126.65	133.55	71.50	0.22	136 °F	Yellow	09/15/17	15:05	599 (gpm)
99	9,505	0.1	68.5	9499.38	-41.68	42.65	126.96	133.93	71.43	0.33	138 °F	Green	09/15/17	16:01	599 (gpm)
100	9,600	0.3	48.2	9594.38	-41.87	42.85	127.22	134.24	71.39	0.22	138 °F	Green	09/15/17	16:48	599 (gpm)
101	9,696	0.1	319.9	9690.38	-42.10	43.08	127.35	134.44	71.31	0.33	138 °F	Yellow	09/15/17	17:27	599 (gpm)

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					+N / -S	+E / -W	Dist.	Angle			Color				
102	9,791	0.8	280.5	9785.37	-42.29	43.26	126.65	133.83	71.14	0.76	140 °F	Green	09/15/17	18:15	599 (gpm)
103	9,886	1.2	281.9	9880.36	-42.63	43.59	125.02	132.40	70.78	0.42	140 °F	Green	09/15/17	19:05	599 (gpm)
104	9,930	1.0	261.9	9924.35	-42.68	43.63	124.19	131.63	70.64	0.98	142 °F	Green	09/15/17	19:48	599 (gpm)
105	9,977	1.1	218.9	9971.34	-42.27	43.22	123.50	130.85	70.71	1.65	133 °F	Green	09/16/17	23:27	599 (gpm)
106	10,072	10.1	195.2	10065.80	-33.53	34.45	120.74	125.56	74.07	9.58	136 °F	Green	09/17/17	0:42	599 (gpm)
107	10,167	21.0	187.6	10157.19	-8.57	9.47	116.29	116.67	85.35	11.65	140 °F	Yellow	09/17/17	1:53	599 (gpm)
108	10,263	33.8	192.8	10242.26	34.64	-33.81	108.06	113.23	107.37	13.55	142 °F	Green	09/17/17	2:54	599 (gpm)
109	10,358	47.1	188.2	10314.40	95.05	-94.30	97.20	135.42	134.13	14.34	142 °F	Green	09/17/17	3:46	599 (gpm)
110	10,405	51.9	181.9	10344.94	130.58	-129.87	94.12	160.39	144.07	14.42	144 °F	Green	09/17/17	4:22	599 (gpm)
111	10,453	55.4	179.3	10373.38	169.23	-168.51	93.74	192.83	150.91	8.50	144 °F	Green	09/17/17	4:53	599 (gpm)
112	10,500	59.6	178.4	10398.63	208.85	-208.13	94.54	228.60	155.57	9.08	144 °F	Green	09/17/17	5:25	599 (gpm)
113	10,548	63.6	178.1	10421.46	251.06	-250.33	95.83	268.04	159.05	8.35	145 °F	Green	09/17/17	5:53	599 (gpm)
114	10,595	67.3	178.7	10440.98	293.79	-293.06	97.02	308.70	161.68	7.96	145 °F	Green	09/17/17	6:40	599 (gpm)
115	10,643	70.8	179.2	10458.14	338.61	-337.87	97.84	351.75	163.85	7.36	147 °F	Green	09/17/17	7:12	599 (gpm)
116	10,690	73.8	179.2	10472.43	383.38	-382.63	98.47	395.10	165.57	6.38	147 °F	Green	09/17/17	7:44	599 (gpm)
117	10,738	78.6	178.3	10483.88	429.97	-429.22	99.49	440.60	166.95	10.16	147 °F	Green	09/17/17	8:22	599 (gpm)
118	10,785	83.1	177.0	10491.35	476.34	-475.57	101.39	486.26	167.96	9.96	149 °F	Green	09/17/17	8:56	599 (gpm)
119	10,835	85.9	176.7	10496.14	526.05	-525.26	104.13	535.48	168.79	5.63	129 °F	Green	09/18/17	12:20	599 (gpm)
120	10,896	86.8	176.8	10500.02	586.85	-586.04	107.58	595.83	169.60	1.48	129 °F	Green	09/18/17	12:49	599 (gpm)
121	10,987	88.8	177.2	10503.52	677.69	-676.84	112.34	686.10	170.58	2.24	129 °F	Green	09/18/17	13:22	599 (gpm)
122	11,080	88.9	179.0	10505.38	770.63	-769.77	115.42	778.37	171.47	1.94	131 °F	Yellow	09/18/17	14:15	599 (gpm)
123	11,171	89.8	179.5	10506.42	861.62	-860.75	116.61	868.62	172.28	1.13	133 °F	Green	09/18/17	14:46	599 (gpm)
124	11,262	91.1	179.9	10505.70	952.62	-951.75	117.09	958.92	172.99	1.49	135 °F	Yellow	09/18/17	15:23	599 (gpm)
125	11,354	91.5	179.1	10503.61	1,044.59	-1,043.72	117.89	1,050.36	173.56	0.97	135 °F	Purple	09/18/17	16:37	599 (gpm)
126	11,446	89.5	178.4	10502.81	1,136.58	-1,135.69	119.90	1,142.00	173.97	2.30	136 °F	Yellow	09/18/17	17:45	599 (gpm)
127	11,537	87.5	178.3	10505.19	1,227.52	-1,226.62	122.52	1,232.72	174.30	2.20	138 °F	Yellow	09/18/17	20:05	599 (gpm)

MWD SURVEYS

Customer: Devon Energy
Well: Boomslang 14-23 Fer
Field/Block: Delaware Basin
Co./Parish: Lea County
State: New Mexico

PGS Job #: LNM5150717
MWD Operator: Trey Mason
Directional Driller: Perry Bullard
Date of First Survey: September 12, 2017
Date of Last Survey:



Total Correction: 6.42 East Grid

Vertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

Measured Depth	Inc.	Az.	T.V.D.	Ver. Sect.	Coordinates		Closure		DLS	Temp (°F)	Vib/Shk		Date	Time	Flow Rate
					+N / -S	+E / -W	Dist.	Angle			Color				
128	11,629	87.7	178.3	10509.05	1,319.42	-1,318.49	125.24	1,324.43	174.57	0.22	140 °F	Yellow	09/18/17	20:40	599 (gpm)
129	11,720	88.3	178.3	10512.22	1,410.34	-1,409.40	127.94	1,415.19	174.81	0.66	142 °F	Yellow	09/18/17	21:10	599 (gpm)
130	11,812	87.1	179.7	10515.91	1,502.26	-1,501.31	129.55	1,506.89	175.07	2.00	144 °F	Green	09/18/17	22:45	599 (gpm)
131	11,903	86.0	180.6	10521.39	1,593.08	-1,592.14	129.31	1,597.38	175.36	1.56	144 °F	Yellow	09/19/17	0:56	599 (gpm)
132	11,995	84.5	180.4	10529.01	1,684.75	-1,683.82	128.51	1,688.71	175.64	1.64	145 °F	Yellow	09/19/17	2:15	599 (gpm)
133	12,090	85.0	180.4	10537.70	1,779.35	-1,778.42	127.85	1,783.01	175.89	0.53	147 °F	Green	09/19/17	3:05	599 (gpm)
134	12,186	86.4	180.2	10544.90	1,875.06	-1,874.14	127.35	1,878.46	176.11	1.47	147 °F	Green	09/19/17	4:30	599 (gpm)
135	12,281	88.2	180.5	10549.37	1,969.95	-1,969.03	126.77	1,973.11	176.32	1.92	147 °F	Yellow	09/19/17	5:32	599 (gpm)
136	12,376	88.7	180.6	10551.94	2,064.90	-2,063.99	125.85	2,067.82	176.51	0.54	149 °F	Yellow	09/19/17	6:00	599 (gpm)
137	12,471	89.7	180.8	10553.27	2,159.87	-2,158.97	124.69	2,162.57	176.69	1.07	151 °F	Yellow	09/19/17	6:28	599 (gpm)
138	12,566	90.7	181.3	10552.94	2,254.83	-2,253.96	122.95	2,257.31	176.88	1.18	153 °F	Green	09/19/17	6:56	599 (gpm)
139	12,661	92.1	181.8	10550.62	2,349.74	-2,348.89	120.38	2,351.97	177.07	1.56	153 °F	Green	09/19/17	7:36	599 (gpm)
140	12,756	91.3	181.1	10547.80	2,444.65	-2,443.82	117.98	2,446.66	177.24	1.12	151 °F	Green	09/19/17	8:47	599 (gpm)
141	12,851	90.2	179.6	10546.56	2,539.63	-2,538.80	117.40	2,541.51	177.35	1.96	151 °F	Green	09/19/17	10:06	599 (gpm)
142	12,946	88.0	176.5	10548.05	2,634.57	-2,633.72	120.63	2,636.48	177.38	4.00	151 °F	Green	09/19/17	11:16	599 (gpm)
143	13,041	89.1	176.9	10550.45	2,729.42	-2,728.53	126.10	2,731.44	177.35	1.23	153 °F	Green	09/19/17	12:10	599 (gpm)
144	13,136	87.1	178.2	10553.60	2,824.30	-2,823.38	130.16	2,826.38	177.36	2.51	153 °F	Green	09/19/17	13:33	599 (gpm)
145	13,231	86.2	178.5	10559.15	2,919.11	-2,918.18	132.89	2,921.20	177.39	1.00	154 °F	Yellow	09/19/17	14:19	599 (gpm)
146	13,326	87.3	178.9	10564.54	3,013.95	-3,013.00	135.04	3,016.03	177.43	1.23	156 °F	Green	09/19/17	15:18	599 (gpm)
147	13,421	87.4	179.1	10568.93	3,108.84	-3,107.88	136.70	3,110.89	177.48	0.24	156 °F	Green	09/19/17	15:55	599 (gpm)
148	13,516	88.1	179.9	10572.66	3,203.77	-3,202.81	137.53	3,205.76	177.54	1.12	154 °F	Yellow	09/19/17	16:57	599 (gpm)
149	13,611	91.1	180.1	10573.32	3,298.75	-3,297.79	137.53	3,300.66	177.61	3.16	154 °F	Green	09/19/17	18:16	599 (gpm)
150	13,705	91.5	179.8	10571.19	3,392.73	-3,391.77	137.61	3,394.56	177.68	0.53	156 °F	Yellow	09/19/17	19:35	599 (gpm)
151	13,800	88.2	178.9	10571.44	3,487.71	-3,486.75	138.68	3,489.51	177.72	3.60	156 °F	Yellow	09/19/17	21:08	599 (gpm)
152	13,894	89.0	178.7	10573.74	3,581.67	-3,580.70	140.65	3,583.46	177.75	0.88	158 °F	Yellow	09/19/17	21:49	599 (gpm)
153	13,989	90.6	178.6	10574.07	3,676.66	-3,675.67	142.89	3,678.45	177.77	1.69	158 °F	Yellow	09/19/17	22:36	599 (gpm)

MWD SURVEYS

Customer: Devon Energy
Well: Boomslang 14-23 Fe
Field/Block: Delaware Basin
Co./Parish: Lea County
State: New Mexico

PGS Job #: LNM5150717
MWD Operator: Trey Mason
Directional Driller: Perry Bullard
Date of First Survey: September 12, 2017
Date of Last Survey:



Total Correction: 6.42 East Grid

Vertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

Measured Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	Coordinates		Closure		DLS	Temp (°F)	Vib/Shk		Date	Time	Flow Rate
					+N / -S	+E / -W	Dist.	Angle			Color				
154	14,083	89.6	178.8	10573.90	3,770.65	-3,769.64	145.02	3,772.43	177.80	1.08	158 °F	Yellow	09/20/17	0:06	599 (gpm)
155	14,178	87.9	178.4	10575.98	3,865.61	-3,864.59	147.34	3,867.40	177.82	1.84	156 °F	Yellow	09/20/17	2:21	599 (gpm)
156	14,273	88.4	178.9	10579.04	3,960.54	-3,959.51	149.58	3,962.34	177.84	0.74	158 °F	Green	09/20/17	2:58	599 (gpm)
157	14,368	88.2	178.2	10581.86	4,055.49	-4,054.44	151.98	4,057.29	177.85	0.77	160 °F	Yellow	09/20/17	3:38	599 (gpm)
158	14,462	89.3	178.7	10583.91	4,149.44	-4,148.38	154.53	4,151.26	177.87	1.29	160 °F	Yellow	09/20/17	4:19	599 (gpm)
159	14,558	88.4	179.8	10585.84	4,245.42	-4,244.35	155.78	4,247.21	177.90	1.48	160 °F	Yellow	09/20/17	5:44	599 (gpm)
160	14,652	88.4	178.8	10588.46	4,339.38	-4,338.31	156.93	4,341.14	177.93	1.06	160 °F	Green	09/20/17	6:34	599 (gpm)
161	14,747	87.0	178.8	10592.28	4,434.30	-4,433.21	158.92	4,436.05	177.95	1.47	160 °F	Green	09/20/17	7:56	599 (gpm)
162	14,842	88.0	179.6	10596.42	4,529.20	-4,528.10	160.24	4,530.94	177.97	1.35	162 °F	Green	09/20/17	8:38	388 (gpm)
163	14,936	88.2	180.5	10599.54	4,623.15	-4,622.05	160.16	4,624.83	178.02	0.98	160 °F	Green	09/20/17	9:46	599 (gpm)
164	15,031	87.7	180.6	10602.94	4,718.07	-4,716.99	159.25	4,719.67	178.07	0.54	162 °F	Green	09/20/17	10:32	599 (gpm)
165	15,125	88.5	180.1	10606.05	4,812.01	-4,810.93	158.68	4,813.55	178.11	1.00	162 °F	Yellow	09/20/17	11:14	599 (gpm)
166	15,219	88.2	180.0	10608.76	4,905.97	-4,904.89	158.59	4,907.46	178.15	0.34	162 °F	Yellow	09/20/17	12:08	599 (gpm)
167	15,315	88.7	181.1	10611.36	5,001.91	-5,000.85	157.67	5,003.34	178.19	1.26	162 °F	Green	09/20/17	13:30	599 (gpm)
168	15,410	91.4	182.2	10611.27	5,096.84	-5,095.80	154.94	5,098.16	178.26	3.07	160 °F	Yellow	09/20/17	15:04	599 (gpm)
169	15,504	91.6	181.8	10608.81	5,190.72	-5,189.71	151.66	5,191.93	178.33	0.48	162 °F	Yellow	09/20/17	15:57	599 (gpm)
170	15,598	91.3	181.7	10606.43	5,284.62	-5,283.64	148.79	5,285.73	178.39	0.34	163 °F	Green	09/20/17	16:59	599 (gpm)
171	15,693	92.1	182.4	10603.61	5,379.49	-5,378.53	145.39	5,380.50	178.45	1.12	163 °F	Green	09/20/17	17:52	599 (gpm)
172	15,787	91.2	179.8	10600.91	5,473.41	-5,472.47	143.59	5,474.35	178.50	2.93	163 °F	Yellow	09/20/17	20:06	563 (gpm)
173	15,882	90.2	177.3	10599.75	5,568.38	-5,567.42	145.99	5,569.34	178.50	2.83	165 °F	Green	09/20/17	20:56	563 (gpm)
174	15,977	89.5	178.3	10600.00	5,663.33	-5,662.35	149.64	5,664.33	178.49	1.28	163 °F	Yellow	09/20/17	22:42	563 (gpm)
175	16,072	89.8	178.4	10600.58	5,758.31	-5,757.31	152.37	5,759.32	178.48	0.33	165 °F	Yellow	09/20/17	23:32	563 (gpm)
176	16,167	90.0	178.0	10600.74	5,853.28	-5,852.26	155.36	5,854.32	178.48	0.47	167 °F	Green	09/21/17	0:29	563 (gpm)
177	16,262	89.2	177.8	10601.40	5,948.24	-5,947.19	158.84	5,949.32	178.47	0.87	163 °F	Yellow	09/21/17	3:17	563 (gpm)
178	16,357	88.2	179.1	10603.56	6,043.19	-6,042.13	161.41	6,044.29	178.47	1.73	163 °F	Yellow	09/21/17	5:23	563 (gpm)
179	16,452	88.0	180.9	10606.71	6,138.13	-6,137.08	161.41	6,139.20	178.49	1.91	163 °F	Yellow	09/21/17	7:24	563 (gpm)

MWD SURVEYS

Customer: Devon Energy
Well: Boomslang 14-23 Fe
Field/Block: Delaware Basin
Co./Parish: Lea County
State: New Mexico

PGS Job #: LNM5150717
MWD Operator: Trey Mason
Directional Driller: Perry Bullard
Date of First Survey: September 12, 2017
Date of Last Survey:



Total Correction: 6.42 East Grid

Vertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

Measured Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	Coordinates		Closure		DLS	Temp (°F)	Vib/Shk		Date	Time	Flow Rate
					+N / -S	+E / -W	Dist.	Angle			Color				
180	16,547	87.9	181.1	10610.11	6,233.04	-6,232.00	159.75	6,234.05	178.53	0.24	165 °F	Yellow	09/21/17	8:44	563 (gpm)
181	16,642	90.1	181.4	10611.77	6,327.98	-6,326.96	157.68	6,328.92	178.57	2.34	167 °F	Green	09/21/17	10:07	563 (gpm)
182	16,737	91.0	181.9	10610.85	6,422.91	-6,421.91	154.94	6,423.78	178.62	1.08	167 °F	Yellow	09/21/17	11:25	563 (gpm)
183	16,832	89.8	181.4	10610.19	6,517.85	-6,516.87	152.21	6,518.65	178.66	1.37	165 °F	Green	09/21/17	13:42	563 (gpm)
184	16,927	89.5	181.6	10610.77	6,612.79	-6,611.83	149.72	6,613.53	178.70	0.38	167 °F	Green	09/21/17	15:23	563 (gpm)
185	17,022	88.6	180.0	10612.35	6,707.75	-6,706.81	148.40	6,708.45	178.73	1.93	167 °F	Yellow	09/21/17	18:01	563 (gpm)
186	17,118	90.5	180.2	10613.10	6,803.74	-6,802.80	148.23	6,804.42	178.75	1.99	160 °F	Green	09/23/17	3:32	536 (gpm)
187	17,213	88.9	179.8	10613.60	6,898.73	-6,897.80	148.23	6,899.39	178.77	1.74	160 °F	Green	09/23/17	5:29	528 (gpm)
188	17,308	86.8	178.1	10617.16	6,993.65	-6,992.70	149.97	6,994.31	178.77	2.84	162 °F	Green	09/23/17	7:25	528 (gpm)
189	17,403	87.3	178.0	10622.05	7,088.49	-7,087.52	153.19	7,089.18	178.76	0.54	165 °F	Yellow	09/23/17	8:11	528 (gpm)
190	17,498	89.6	177.3	10624.62	7,183.40	-7,182.40	157.09	7,184.12	178.75	2.53	167 °F	Yellow	09/23/17	9:07	528 (gpm)
191	17,593	90.0	176.1	10624.95	7,278.28	-7,277.24	162.56	7,279.06	178.72	1.33	167 °F	Green	09/23/17	9:51	528 (gpm)
192	17,688	89.0	177.3	10625.78	7,373.15	-7,372.08	168.03	7,373.99	178.69	1.64	167 °F	Green	09/23/17	11:29	528 (gpm)
193	17,783	90.3	180.0	10626.36	7,468.13	-7,467.04	170.26	7,468.98	178.69	3.15	167 °F	Green	09/23/17	13:39	528 (gpm)
194	17,878	91.3	180.3	10625.04	7,563.11	-7,562.03	170.01	7,563.94	178.71	1.10	171 °F	Green	09/23/17	14:32	528 (gpm)
195	17,973	91.9	179.5	10622.38	7,658.07	-7,656.99	170.18	7,658.88	178.73	1.05	169 °F	Green	09/23/17	17:25	528 (gpm)
196	18,068	91.6	179.9	10619.48	7,753.03	-7,751.94	170.68	7,753.82	178.74	0.53	171 °F	Green	09/23/17	19:46	528 (gpm)
197	18,163	89.8	180.8	10618.32	7,848.00	-7,846.93	170.10	7,848.77	178.76	2.12	169 °F	Green	09/23/17	22:39	528 (gpm)
198	18,258	87.8	179.8	10620.31	7,942.97	-7,941.90	169.60	7,943.71	178.78	2.35	171 °F	Green	09/24/17	0:41	528 (gpm)
199	18,353	89.7	179.6	10622.38	8,037.94	-8,036.87	170.10	8,038.67	178.79	2.01	172 °F	Green	09/24/17	1:42	528 (gpm)
200	18,448	89.2	178.5	10623.29	8,132.93	-8,131.85	171.67	8,133.67	178.79	1.27	171 °F	Green	09/24/17	4:07	528 (gpm)
201	18,543	88.0	179.7	10625.62	8,227.90	-8,226.81	173.16	8,228.63	178.79	1.79	171 °F	Green	09/24/17	6:58	528 (gpm)
202	18,638	87.2	180.1	10629.59	8,322.81	-8,321.73	173.33	8,323.53	178.81	0.94	172 °F	Green	09/24/17	9:11	528 (gpm)
203	18,734	91.2	180.4	10630.93	8,418.78	-8,417.70	172.91	8,419.47	178.82	4.18	174 °F	Green	09/24/17	10:14	528 (gpm)
204	18,829	91.7	180.0	10628.53	8,513.74	-8,512.66	172.58	8,514.41	178.84	0.67	174 °F	Green	09/24/17	12:34	528 (gpm)
205	18,924	90.7	180.5	10626.54	8,608.71	-8,607.64	172.16	8,609.36	178.85	1.18	171 °F	Green	09/24/17	18:33	528 (gpm)

MWD SURVEYS

Customer: Devon Energy
Well: Boomslang 14-23 Fer
Field/Block: Delaware Basin
Co./Parish: Lea County
State: New Mexico

PGS Job #: LNM5150717
MWD Operator: Trey Mason
Directional Driller: Perry Bullard
Date of First Survey: September 12, 2017
Date of Last Survey:



Total Correction: 6.42 East Grid

Vertical Section Plane: 179.56 Nominal Dip Angle: 60.00 Magnetic Field Strength: 48122.8

	Measured				Coordinates				Closure			Vib/Shk				
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Temp (°F)	Color	Date	Time	Flow Rate	
206	19,018	89.2	180.1	10626.62	8,702.70	-8,701.64	171.67	8,703.33	178.87	1.65	171 °F	Green	09/24/17	21:42	528 (gpm)	
207	19,113	88.9	179.4	10628.20	8,797.68	-8,796.62	172.09	8,798.31	178.88	0.80	171 °F	Green	09/25/17	1:02	528 (gpm)	
208	19,209	86.7	179.3	10631.88	8,893.61	-8,892.54	173.17	8,894.23	178.88	2.29	171 °F	Green	09/25/17	5:28	528 (gpm)	
209	19,304	89.2	180.2	10635.28	8,988.54	-8,987.47	173.59	8,989.15	178.89	2.80	174 °F	Green	09/25/17	7:23	528 (gpm)	
210	19,399	88.5	180.1	10637.19	9,083.51	-9,082.45	173.34	9,084.10	178.91	0.74	172 °F	Green	09/25/17	11:33	514 (gpm)	
211	19,494	89.8	180.3	10638.60	9,178.49	-9,177.44	173.01	9,179.07	178.92	1.38	176 °F	Green	09/25/17	15:12	528 (gpm)	
212	19,589	87.3	179.5	10641.00	9,273.45	-9,272.40	173.17	9,274.01	178.93	2.76	176 °F	Green	09/25/17	18:12	528 (gpm)	
213	19,684	87.3	178.9	10645.48	9,368.35	-9,367.28	174.50	9,368.91	178.93	0.63	178 °F	Green	09/25/17	21:12	528 (gpm)	
214	19,779	88.8	179.6	10648.71	9,463.29	-9,462.22	175.74	9,463.85	178.94	1.74	178 °F	Green	09/26/17	0:22	528 (gpm)	
215	19,874	87.8	178.9	10651.53	9,558.24	-9,557.16	176.98	9,558.80	178.94	1.28	178 °F	Green	09/26/17	8:00	388 (gpm)	
216	19,969	89.9	178.4	10653.43	9,653.20	-9,652.11	179.22	9,653.78	178.94	2.27	181 °F	Green	09/26/17	12:07	518 (gpm)	
217	20,064	88.2	179.3	10655.01	9,748.18	-9,747.08	181.13	9,748.76	178.94	2.02	156 °F	Green	09/28/17	8:35	388 (gpm)	
218	20,159	89.1	179.5	10657.25	9,843.15	-9,842.04	182.12	9,843.73	178.94	0.97	158 °F	Green	09/28/17	9:55	521 (gpm)	
219	20,255	89.9	179.4	10658.08	9,939.15	-9,938.03	183.04	9,939.72	178.94	0.84	158 °F	Yellow	09/28/17	11:45	521 (gpm)	
220	20,350	90.9	179.3	10657.42	10,034.14	-10,033.03	184.12	10,034.71	178.95	1.06	160 °F	Green	09/28/17	13:20	521 (gpm)	
221	20,380	91.3	179.3	10656.85	10,064.14	-10,063.02	184.49	10,064.71	178.95	1.33	160 °F	Green	09/28/17	14:04	550 (gpm)	
PTB	20,440	91.3	179.3	10655.48	10,124.12	-10,123.00	185.22	10,124.69	178.95	0.00						