



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
0	Tie in	0	0.00	0.00		0.00	0.00	0.00	0.00					
1	MWD	180	0.20	302.20	180	180.00	0.17	0.17 N	0.27 W	0.31	302.20	0.11	0.1	167.9
2	MWD	241	0.40	324.70	61	241.00	0.40	0.40 N	0.48 W	0.62	309.72	0.37	0.3	36.9
3	MWD	330	0.40	323.30	89	330.00	0.90	0.90 N	0.84 W	1.23	316.85	0.01	0.0	-1.6
4	MWD	422	0.30	326.60	92	421.99	1.36	1.36 N	1.17 W	1.79	319.31	0.11	-0.1	3.6
5	MWD	514	0.50	300.40	92	513.99	1.76	1.76 N	1.65 W	2.41	316.95	0.29	0.2	-28.5
6	MWD	604	0.50	291.50	90	603.99	2.11	2.11 N	2.35 W	3.16	311.85	0.09	0.0	-9.9
7	MWD	695	0.30	301.20	91	694.99	2.37	2.37 N	2.92 W	3.77	309.08	0.23	-0.2	10.7
8	MWD	787	0.20	275.90	92	786.99	2.52	2.52 N	3.29 W	4.14	307.40	0.16	-0.1	-27.5
9	MWD	878	0.20	243.10	91	877.99	2.46	2.46 N	3.59 W	4.35	304.43	0.12	0.0	-36.0
10	MWD	972	0.40	259.70	94	971.98	2.33	2.33 N	4.06 W	4.68	299.83	0.23	0.2	17.7
11	MWD	1044	0.20	264.10	72	1043.98	2.27	2.27 N	4.43 W	4.98	297.12	0.28	-0.3	6.1
12	MWD	1191	0.20	223.50	147	1190.98	2.06	2.06 N	4.86 W	5.28	292.93	0.09	0.0	-27.6
13	MWD	1285	0.30	235.10	94	1284.98	1.80	1.80 N	5.18 W	5.48	289.14	0.12	0.1	12.3
14	MWD	1379	0.10	243.50	94	1378.98	1.62	1.62 N	5.45 W	5.69	286.55	0.21	-0.2	8.9
15	MWD	1474	0.10	325.10	95	1473.98	1.65	1.65 N	5.57 W	5.81	286.50	0.14	0.0	85.9
16	MWD	1568	0.00	174.30	94	1567.98	1.72	1.72 N	5.62 W	5.88	287.00	0.11	-0.1	-160.4
17	MWD	1662	0.10	294.30	94	1661.98	1.75	1.75 N	5.70 W	5.96	287.10	0.11	0.1	127.7
18	MWD	1757	0.00	204.30	95	1756.98	1.79	1.79 N	5.77 W	6.04	287.20	0.11	-0.1	-94.7
19	MWD	1851	0.20	287.80	94	1850.98	1.84	1.84 N	5.93 W	6.21	287.21	0.21	0.2	88.8
20	MWD	1945	0.30	314.50	94	1944.98	2.06	2.06 N	6.26 W	6.59	288.21	0.16	0.1	28.4
21	MWD	2039	0.30	321.30	94	2038.98	2.42	2.42 N	6.59 W	7.02	290.19	0.04	0.0	7.2
22	MWD	2134	0.40	308.70	95	2133.98	2.83	2.83 N	7.00 W	7.55	291.97	0.13	0.1	-13.3
23	MWD	2228	0.40	287.20	94	2227.97	3.13	3.13 N	7.57 W	8.19	292.44	0.16	0.0	-22.9
24	MWD	2322	0.50	306.70	94	2321.97	3.47	3.47 N	8.22 W	8.92	292.89	0.19	0.1	20.7
25	MWD	2416	0.40	181.20	94	2415.97	3.39	3.39 N	8.55 W	9.20	291.60	0.85	-0.1	-133.5
26	MWD	2511	0.50	168.50	95	2510.97	2.65	2.65 N	8.48 W	8.88	287.35	0.15	0.1	-13.4
27	MWD	2605	0.60	167.00	94	2604.96	1.77	1.77 N	8.28 W	8.47	282.04	0.11	0.1	-1.6
28	MWD	2699	0.50	150.50	94	2698.96	0.93	0.93 N	7.97 W	8.02	276.66	0.20	-0.1	-17.6



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
29	MWD	2794	0.50	168.00	95	2793.95	0.16	0.16 N	7.68 W	7.68	271.23	0.16	0.0	18.4
30	MWD	2888	0.40	152.20	94	2887.95	-0.53	0.53 S	7.44 W	7.46	265.95	0.17	-0.1	-16.8
31	MWD	2982	0.80	140.00	94	2981.95	-1.32	1.32 S	6.87 W	6.99	259.12	0.44	0.4	-13.0
32	MWD	3077	2.20	129.00	95	3076.91	-2.98	2.98 S	5.02 W	5.84	239.36	1.50	1.5	-11.6
33	MWD	3171	3.30	133.40	94	3170.80	-5.97	5.97 S	1.66 W	6.20	195.50	1.19	1.2	4.7
34	MWD	3265	3.20	130.60	94	3264.65	-9.54	9.54 S	2.30 E	9.81	166.43	0.20	-0.1	-3.0
35	MWD	3359	3.30	132.90	94	3358.50	-13.09	13.09 S	6.28 E	14.51	154.38	0.17	0.1	2.4
36	MWD	3454	3.40	131.70	95	3453.34	-16.82	16.82 S	10.38 E	19.77	148.32	0.13	0.1	-1.3
37	MWD	3548	3.50	131.00	94	3547.17	-20.56	20.56 S	14.63 E	25.23	144.56	0.12	0.1	-0.7
38	MWD	3642	3.60	124.00	94	3640.99	-24.09	24.09 S	19.24 E	30.83	141.38	0.47	0.1	-7.4
39	MWD	3736	3.60	120.90	94	3734.80	-27.26	27.26 S	24.22 E	36.46	138.37	0.21	0.0	-3.3
40	MWD	3830	3.80	121.50	94	3828.60	-30.40	30.40 S	29.41 E	42.30	135.95	0.22	0.2	0.6
41	MWD	3925	3.80	118.50	95	3923.40	-33.55	33.55 S	34.86 E	48.38	133.90	0.21	0.0	-3.2
42	MWD	4019	3.30	122.40	94	4017.21	-36.48	36.48 S	39.88 E	54.05	132.45	0.59	-0.5	4.1
43	MWD	4113	3.60	129.00	94	4111.04	-39.79	39.79 S	44.46 E	59.66	131.83	0.53	0.3	7.0
44	MWD	4208	2.50	129.60	95	4205.91	-42.99	42.99 S	48.37 E	64.71	131.63	1.16	-1.2	0.6
45	MWD	4302	1.60	139.00	94	4299.85	-45.28	45.28 S	50.81 E	68.06	131.71	1.02	-1.0	10.0
46	MWD	4396	1.40	297.90	94	4393.84	-45.74	45.74 S	50.66 E	68.25	132.08	3.14	-0.2	169.0
47	MWD	4490	0.40	252.50	94	4487.82	-45.30	45.30 S	49.33 E	66.97	132.56	1.23	-1.1	-48.3
48	MWD	4585	0.50	245.60	95	4582.82	-45.57	45.57 S	48.64 E	66.65	133.13	0.12	0.1	-7.3
49	MWD	4679	0.50	253.30	94	4676.82	-45.86	45.86 S	47.87 E	66.29	133.77	0.07	0.0	8.2
50	MWD	4773	0.50	254.30	94	4770.81	-46.09	46.09 S	47.08 E	65.88	134.39	0.01	0.0	1.1
51	MWD	4868	0.30	229.70	95	4865.81	-46.36	46.36 S	46.50 E	65.66	134.92	0.27	-0.2	-25.9
52	MWD	4962	0.20	258.60	94	4959.81	-46.55	46.55 S	46.15 E	65.55	135.25	0.17	-0.1	30.7
53	MWD	5057	0.10	230.20	95	5054.81	-46.64	46.64 S	45.92 E	65.45	135.44	0.13	-0.1	-29.9
54	MWD	5151	0.30	234.60	94	5148.81	-46.83	46.83 S	45.66 E	65.40	135.73	0.21	0.2	4.7
55	MWD	5245	0.30	190.40	94	5242.81	-47.22	47.22 S	45.41 E	65.51	136.12	0.24	0.0	-47.0



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
56	MWD	5339	0.10	221.40	94	5336.81	-47.52	47.52 S	45.31 E	65.66	136.36	0.23	-0.2	33.0
57	MWD	5434	0.30	165.40	95	5431.81	-47.82	47.82 S	45.32 E	65.89	136.54	0.27	0.2	-58.9
58	MWD	5528	0.20	182.60	94	5525.81	-48.22	48.22 S	45.38 E	66.22	136.74	0.13	-0.1	18.3
59	MWD	5622	0.20	155.60	94	5619.81	-48.54	48.54 S	45.44 E	66.49	136.89	0.10	0.0	-28.7
60	MWD	5716	0.30	139.50	94	5713.80	-48.87	48.87 S	45.66 E	66.89	136.94	0.13	0.1	-17.1
61	MWD	5811	0.20	155.30	95	5808.80	-49.21	49.21 S	45.89 E	67.29	137.00	0.13	-0.1	16.6
62	MWD	5905	0.30	138.30	94	5902.80	-49.55	49.55 S	46.13 E	67.69	137.05	0.13	0.1	-18.1
63	MWD	5999	0.20	10.00	94	5996.80	-49.57	49.57 S	46.32 E	67.84	136.94	0.48	-0.1	-136.5
64	MWD	6093	1.10	357.80	94	6090.80	-48.51	48.51 S	46.31 E	67.06	136.32	0.96	1.0	370.0
65	MWD	6188	2.20	358.90	95	6185.75	-45.77	45.77 S	46.24 E	65.06	134.71	1.16	1.2	1.2
66	MWD	6282	3.10	349.70	94	6279.65	-41.47	41.47 S	45.75 E	61.75	132.19	1.06	1.0	-9.8
67	MWD	6376	3.60	345.10	94	6373.49	-36.11	36.11 S	44.54 E	57.34	129.04	0.60	0.5	-4.9
68	MWD	6471	3.80	338.80	95	6468.30	-30.30	30.30 S	42.64 E	52.30	125.40	0.48	0.2	-6.6
69	MWD	6565	4.30	335.60	94	6562.06	-24.18	24.18 S	40.05 E	46.79	121.12	0.58	0.5	-3.4
70	MWD	6659	5.50	327.90	94	6655.72	-17.16	17.16 S	36.20 E	40.06	115.36	1.45	1.3	-8.2
71	MWD	6753	7.00	323.30	94	6749.16	-8.75	8.75 S	30.39 E	31.62	106.06	1.68	1.6	-4.9
72	MWD	6848	8.10	320.60	95	6843.33	1.07	1.07 N	22.68 E	22.70	87.31	1.22	1.2	-2.8
73	MWD	6942	7.70	321.10	94	6936.44	11.08	11.08 N	14.52 E	18.27	52.64	0.43	-0.4	0.5
74	MWD	7036	7.40	321.30	94	7029.62	20.71	20.71 N	6.78 E	21.79	18.13	0.32	-0.3	0.2
75	MWD	7131	6.90	320.10	95	7123.88	29.86	29.86 N	0.71 W	29.87	358.65	0.55	-0.5	-1.3
76	MWD	7225	6.90	321.50	94	7217.20	38.61	38.61 N	7.84 W	39.40	348.52	0.18	0.0	1.5
77	MWD	7319	7.40	322.70	94	7310.47	47.85	47.85 N	15.03 W	50.15	342.57	0.56	0.5	1.3
78	MWD	7413	7.60	323.00	94	7403.67	57.63	57.63 N	22.43 W	61.84	338.73	0.22	0.2	0.3
79	MWD	7508	7.00	322.80	95	7497.90	67.25	67.25 N	29.72 W	73.53	336.16	0.63	-0.6	-0.2
80	MWD	7602	7.30	321.90	94	7591.17	76.52	76.52 N	36.86 W	84.93	334.28	0.34	0.3	-1.0
81	MWD	7696	7.00	322.40	94	7684.44	85.75	85.75 N	44.04 W	96.40	332.82	0.33	-0.3	0.5
82	MWD	7791	6.30	322.40	95	7778.80	94.47	94.47 N	50.76 W	107.24	331.75	0.74	-0.7	0.0



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
83	MWD	7885	6.50	322.60	94	7872.21	102.78	102.78 N	57.13 W	117.60	330.93	0.21	0.2	0.2
84	MWD	7979	6.00	321.90	94	7965.65	110.88	110.88 N	63.40 W	127.72	330.24	0.54	-0.5	-0.7
85	MWD	8073	5.70	323.10	94	8059.16	118.47	118.47 N	69.23 W	137.22	329.70	0.34	-0.3	1.3
86	MWD	8168	6.20	322.80	95	8153.65	126.33	126.33 N	75.17 W	147.00	329.25	0.53	0.5	-0.3
87	MWD	8262	6.10	319.00	94	8247.11	134.15	134.15 N	81.51 W	156.97	328.72	0.45	-0.1	-4.0
88	MWD	8283	5.80	319.80	21	8268.00	135.80	135.80 N	82.93 W	159.12	328.59	1.48	-1.4	3.8
89	MWD	8344	5.30	319.20	61	8328.71	140.29	140.29 N	86.76 W	164.95	328.27	0.83	-0.8	-1.0
90	MWD	8438	7.70	331.50	94	8422.10	149.11	149.11 N	92.60 W	175.52	328.16	2.94	2.6	13.1
91	MWD	8532	12.00	352.40	94	8514.72	164.34	164.34 N	96.90 W	190.78	329.47	5.88	4.6	22.2
92	MWD	8579	19.10	4.00	47	8559.98	176.87	176.87 N	97.01 W	201.73	331.26	16.42	15.1	-741.3
93	MWD	8626	24.80	6.30	47	8603.56	194.36	194.36 N	95.39 W	216.50	333.86	12.26	12.1	4.9
94	MWD	8673	29.10	3.20	47	8645.45	215.58	215.58 N	93.67 W	235.05	336.51	9.62	9.1	-6.6
95	MWD	8720	32.30	0.70	47	8685.86	239.55	239.55 N	92.88 W	256.93	338.81	7.33	6.8	-5.3
96	MWD	8767	36.00	358.70	47	8724.75	265.93	265.93 N	93.04 W	281.73	340.72	8.23	7.9	761.7
97	MWD	8815	39.00	358.00	48	8762.82	295.13	295.13 N	93.89 W	309.70	342.35	6.31	6.3	-1.5
98	MWD	8862	42.00	358.00	47	8798.56	325.63	325.63 N	94.95 W	339.19	343.74	6.38	6.4	0.0
99	MWD	8908	46.20	357.90	46	8831.59	357.62	357.62 N	96.10 W	370.30	344.96	9.13	9.1	-0.2
100	MWD	8955	49.90	358.00	47	8863.00	392.54	392.54 N	97.35 W	404.43	346.07	7.87	7.9	0.2
101	MWD	9002	55.90	357.40	47	8891.34	429.98	429.98 N	98.86 W	441.20	347.05	12.81	12.8	-1.3
102	MWD	9049	61.70	357.00	47	8915.67	470.12	470.12 N	100.83 W	480.81	347.90	12.36	12.3	-0.9
103	MWD	9096	64.40	357.10	47	8936.97	511.96	511.96 N	102.98 W	522.21	348.63	5.75	5.7	0.2
104	MWD	9143	66.10	357.10	47	8956.65	554.58	554.58 N	105.14 W	564.46	349.26	3.62	3.6	0.0
105	MWD	9190	68.80	357.60	47	8974.67	597.94	597.94 N	107.15 W	607.46	349.84	5.83	5.7	1.1
106	MWD	9237	74.40	359.80	47	8989.50	642.50	642.50 N	108.14 W	651.54	350.45	12.71	11.9	4.7
107	MWD	9284	80.00	1.40	47	8999.91	688.31	688.31 N	107.66 W	696.68	351.11	12.37	11.9	-762.6
108	MWD	9331	85.80	1.50	47	9005.72	734.92	734.92 N	106.48 W	742.59	351.76	12.34	12.3	0.2
109	MWD	9378	87.70	0.70	47	9008.38	781.83	781.83 N	105.58 W	788.93	352.31	4.39	4.0	-1.7
110	MWD	9425	91.30	0.50	47	9008.79	828.82	828.82 N	105.08 W	835.45	352.77	7.67	7.7	-0.4



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
111	MWD	9472	91.60	0.30	47	9007.60	875.80	875.80 N	104.76 W	882.05	353.18	0.77	0.6	-0.4
112	MWD	9567	91.40	359.60	95	9005.12	970.77	970.77 N	104.84 W	976.41	353.84	0.77	-0.2	378.2
113	MWD	9661	89.90	358.90	94	9004.05	1064.75	1064.75 N	106.07 W	1070.02	354.31	1.76	-1.6	-0.7
114	MWD	9755	89.50	357.40	94	9004.54	1158.70	1158.70 N	109.10 W	1163.82	354.62	1.65	-0.4	-1.6
115	MWD	9849	91.30	2.70	94	9003.89	1252.66	1252.66 N	109.02 W	1257.39	355.03	5.95	1.9	-377.3
116	MWD	9943	89.00	1.50	94	9003.64	1346.59	1346.59 N	105.58 W	1350.72	355.52	2.76	-2.4	-1.3
117	MWD	10038	86.80	359.10	95	9007.12	1441.51	1441.51 N	105.08 W	1445.33	355.83	3.43	-2.3	376.4
118	MWD	10132	87.70	1.30	94	9011.63	1535.39	1535.39 N	104.75 W	1538.96	356.10	2.53	1.0	-380.6
119	MWD	10223	90.00	0.90	91	9013.46	1626.35	1626.35 N	103.00 W	1629.61	356.38	2.57	2.5	-0.4
120	MWD	10318	90.70	1.00	95	9012.88	1721.34	1721.34 N	101.43 W	1724.32	356.63	0.74	0.7	0.1
121	MWD	10412	90.40	0.20	94	9011.98	1815.33	1815.33 N	100.45 W	1818.10	356.83	0.91	-0.3	-0.9
122	MWD	10506	87.70	359.90	94	9013.53	1909.30	1909.30 N	100.36 W	1911.94	356.99	2.89	-2.9	382.7
123	MWD	10600	90.20	1.00	94	9015.26	2003.28	2003.28 N	99.63 W	2005.75	357.15	2.91	2.7	-381.8
124	MWD	10691	94.50	1.90	91	9011.53	2094.15	2094.15 N	97.33 W	2096.41	357.34	4.83	4.7	1.0
125	MWD	10782	93.50	2.90	91	9005.18	2184.85	2184.85 N	93.52 W	2186.85	357.55	1.55	-1.1	1.1
126	MWD	10873	88.50	3.00	91	9003.59	2275.68	2275.68 N	88.84 W	2277.42	357.76	5.50	-5.5	0.1
127	MWD	10964	87.30	2.30	91	9006.93	2366.52	2366.52 N	84.64 W	2368.04	357.95	1.53	-1.3	-0.8
128	MWD	11056	87.60	1.90	92	9011.02	2458.37	2458.37 N	81.27 W	2459.71	358.11	0.54	0.3	-0.4
129	MWD	11148	88.20	1.70	92	9014.39	2550.26	2550.26 N	78.38 W	2551.47	358.24	0.69	0.7	-0.2
130	MWD	11242	88.40	0.70	94	9017.18	2644.20	2644.20 N	76.42 W	2645.30	358.34	1.08	0.2	-1.1
131	MWD	11336	91.80	1.40	94	9017.01	2738.17	2738.17 N	74.69 W	2739.19	358.44	3.69	3.6	0.7
132	MWD	11430	92.80	3.20	94	9013.24	2832.01	2832.01 N	70.92 W	2832.90	358.57	2.19	1.1	1.9
133	MWD	11524	87.60	2.50	94	9012.91	2925.86	2925.86 N	66.25 W	2926.61	358.70	5.58	-5.5	-0.7
134	MWD	11618	90.30	3.10	94	9014.64	3019.72	3019.72 N	61.66 W	3020.35	358.83	2.94	2.9	0.6
135	MWD	11712	88.60	2.60	94	9015.54	3113.60	3113.60 N	56.99 W	3114.12	358.95	1.89	-1.8	-0.5
136	MWD	11807	90.70	2.90	95	9016.12	3208.48	3208.48 N	52.43 W	3208.91	359.06	2.23	2.2	0.3
137	MWD	11901	91.20	2.10	94	9014.56	3302.38	3302.38 N	48.33 W	3302.73	359.16	1.00	0.5	-0.9



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
138	MWD	11995	92.50	2.50	94	9011.53	3396.25	3396.25 N	44.56 W	3396.55	359.25	1.45	1.4	0.4
139	MWD	12089	89.10	2.20	94	9010.21	3490.15	3490.15 N	40.71 W	3490.39	359.33	3.63	-3.6	-0.3
140	MWD	12183	89.30	1.00	94	9011.53	3584.10	3584.10 N	38.08 W	3584.31	359.39	1.29	0.2	-1.3
141	MWD	12278	91.50	0.40	95	9010.86	3679.09	3679.09 N	36.92 W	3679.27	359.43	2.40	2.3	-0.6
142	MWD	12372	90.60	1.30	94	9009.14	3773.06	3773.06 N	35.53 W	3773.23	359.46	1.35	-1.0	1.0
143	MWD	12466	89.40	1.50	94	9009.14	3867.03	3867.03 N	33.23 W	3867.17	359.51	1.29	-1.3	0.2
144	MWD	12560	88.20	3.30	94	9011.11	3960.92	3960.92 N	29.30 W	3961.03	359.58	2.30	-1.3	1.9
145	MWD	12655	86.50	1.60	95	9015.50	4055.73	4055.73 N	25.24 W	4055.80	359.64	2.53	-1.8	-1.8
146	MWD	12749	87.70	1.30	94	9020.26	4149.57	4149.57 N	22.86 W	4149.64	359.68	1.32	1.3	-0.3
147	MWD	12843	90.30	1.90	94	9021.90	4243.51	4243.51 N	20.24 W	4243.56	359.73	2.84	2.8	0.6
148	MWD	12936	83.40	359.80	93	9027.01	4336.30	4336.30 N	18.86 W	4336.34	359.75	7.75	-7.4	384.8
149	MWD	13031	84.50	359.50	95	9037.02	4430.77	4430.77 N	19.43 W	4430.81	359.75	1.20	1.2	-0.3
150	MWD	13125	88.90	359.30	94	9042.43	4524.59	4524.59 N	20.42 W	4524.63	359.74	4.69	4.7	-0.2
151	MWD	13219	91.60	359.10	94	9042.02	4618.57	4618.57 N	21.73 W	4618.62	359.73	2.88	2.9	-0.2
152	MWD	13313	91.70	358.90	94	9039.31	4712.51	4712.51 N	23.37 W	4712.57	359.72	0.24	0.1	-0.2
153	MWD	13408	89.10	356.10	95	9038.65	4807.40	4807.40 N	27.51 W	4807.48	359.67	4.02	-2.7	-2.9
154	MWD	13502	90.30	358.10	94	9039.14	4901.27	4901.27 N	32.27 W	4901.38	359.62	2.48	1.3	2.1
155	MWD	13596	91.00	358.90	94	9038.07	4995.24	4995.24 N	34.73 W	4995.36	359.60	1.13	0.7	0.9
156	MWD	13690	91.40	359.70	94	9036.11	5089.21	5089.21 N	35.88 W	5089.33	359.60	0.95	0.4	0.9
157	MWD	13785	90.60	359.40	95	9034.45	5184.19	5184.19 N	36.62 W	5184.32	359.60	0.90	-0.8	-0.3
158	MWD	13879	90.90	0.50	94	9033.22	5278.18	5278.18 N	36.70 W	5278.31	359.60	1.21	0.3	-381.8
159	MWD	13973	88.60	0.10	94	9033.63	5372.17	5372.17 N	36.21 W	5372.29	359.61	2.48	-2.4	-0.4
160	MWD	14067	92.40	2.70	94	9032.81	5466.11	5466.11 N	33.92 W	5466.22	359.64	4.90	4.0	2.8
161	MWD	14161	93.50	3.10	94	9027.97	5559.87	5559.87 N	29.17 W	5559.94	359.70	1.24	1.2	0.4
162	MWD	14256	92.40	3.20	95	9023.08	5654.60	5654.60 N	23.95 W	5654.65	359.76	1.16	-1.2	0.1
163	MWD	14350	86.50	0.70	94	9023.98	5748.49	5748.49 N	20.76 W	5748.53	359.79	6.82	-6.3	-2.7
164	MWD	14444	87.60	0.40	94	9028.82	5842.36	5842.36 N	19.86 W	5842.39	359.81	1.21	1.2	-0.3
165	MWD	14538	87.80	0.40	94	9032.59	5936.28	5936.28 N	19.20 W	5936.31	359.81	0.21	0.2	0.0



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
166	MWD	14632	89.70	0.40	94	9034.64	6030.25	6030.25 N	18.54 W	6030.28	359.82	2.02	2.0	0.0
167	MWD	14726	89.80	359.00	94	9035.05	6124.25	6124.25 N	19.04 W	6124.28	359.82	1.49	0.1	381.5
168	MWD	14821	92.90	0.40	95	9032.81	6219.20	6219.20 N	19.53 W	6219.24	359.82	3.58	3.3	-377.5
169	MWD	14915	93.20	0.10	94	9027.81	6313.07	6313.07 N	19.12 W	6313.10	359.83	0.45	0.3	-0.3
170	MWD	15009	93.60	359.60	94	9022.24	6406.90	6406.90 N	19.37 W	6406.93	359.83	0.68	0.4	382.4
171	MWD	15103	89.50	357.80	94	9019.70	6500.82	6500.82 N	21.50 W	6500.86	359.81	4.76	-4.4	-1.9
172	MWD	15198	91.60	359.10	95	9018.78	6595.78	6595.78 N	24.07 W	6595.82	359.79	2.60	2.2	1.4
173	MWD	15292	92.40	359.80	94	9015.50	6689.71	6689.71 N	24.97 W	6689.76	359.79	1.13	0.9	0.7
174	MWD	15386	90.70	359.30	94	9012.96	6783.67	6783.67 N	25.71 W	6783.72	359.78	1.89	-1.8	-0.5
175	MWD	15480	89.80	359.10	94	9012.55	6877.66	6877.66 N	27.03 W	6877.71	359.77	0.98	-1.0	-0.2
176	MWD	15575	90.20	360.00	95	9012.55	6972.66	6972.66 N	27.77 W	6972.71	359.77	1.04	0.4	0.9
177	MWD	15669	89.80	359.20	94	9012.55	7066.65	7066.65 N	28.43 W	7066.71	359.77	0.95	-0.4	-0.9
178	MWD	15763	91.40	359.30	94	9011.57	7160.64	7160.64 N	29.66 W	7160.70	359.76	1.71	1.7	0.1
179	MWD	15857	88.10	358.50	94	9011.98	7254.60	7254.60 N	31.46 W	7254.67	359.75	3.61	-3.5	-0.9
180	MWD	15952	90.50	359.60	95	9013.14	7349.58	7349.58 N	33.04 W	7349.65	359.74	2.78	2.5	1.2
181	MWD	16046	88.50	358.70	94	9013.96	7443.56	7443.56 N	34.43 W	7443.64	359.73	2.33	-2.1	-1.0
182	MWD	16140	92.00	359.80	94	9013.55	7537.53	7537.53 N	35.66 W	7537.62	359.73	3.90	3.7	1.2
183	MWD	16234	89.60	0.40	94	9012.23	7631.51	7631.51 N	35.50 W	7631.60	359.73	2.63	-2.6	-382.3
184	MWD	16329	91.70	1.80	95	9011.16	7726.48	7726.48 N	33.67 W	7726.56	359.75	2.66	2.2	1.5
185	MWD	16423	89.40	1.60	94	9010.25	7820.43	7820.43 N	30.89 W	7820.49	359.77	2.46	-2.4	-0.2
186	MWD	16517	90.70	2.30	94	9010.17	7914.37	7914.37 N	27.69 W	7914.42	359.80	1.57	1.4	0.7
187	MWD	16611	89.10	1.70	94	9010.34	8008.31	8008.31 N	24.41 W	8008.35	359.83	1.82	-1.7	-0.6
188	MWD	16706	92.70	3.20	95	9008.84	8103.20	8103.20 N	20.35 W	8103.22	359.86	4.11	3.8	1.6
189	MWD	16801	87.90	1.10	95	9008.35	8198.10	8198.10 N	16.79 W	8198.11	359.88	5.51	-5.1	-2.2
190	MWD	16896	89.10	2.20	95	9010.83	8293.02	8293.02 N	14.05 W	8293.03	359.90	1.71	1.3	1.2
191	MWD	16990	90.50	4.00	94	9011.16	8386.88	8386.88 N	8.97 W	8386.88	359.94	2.43	1.5	1.9
192	MWD	17084	90.90	3.70	94	9010.01	8480.66	8480.66 N	2.66 W	8480.66	359.98	0.53	0.4	-0.3



Company: Pioneer Natural Resources
 Well Name: University 178B #19H
 Field: Spraberry
 Location: Rankin, Tx
 API: 42-461-39446
 County: Upton County, Tx
 Rig: H&P 606

Job Number: TX14520PI Calculation Method: Minimum Curvature
 Magnetic Dip Angle: 59.490 ° Vert. Section Azi: 0.00
 Mag Field Strength: 47894.7 nT North Reference: Grid
 Magnetic Declination: 7.030 ° TVD Reference Elev. 2726.00 MSL
 Grid Convergence Angle: -0.75 ° TVD Reference Datum: RKB
 Total Correction M>G: 7.03 ° Tie Into: Surface
 Well Head Latitude: 31.2604567 Longitude -101.79103378

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)			
193	MWD	17179	92.50	4.70	95	9007.20	8575.36	8575.36 N	4.30 E	8575.36	0.03	1.99	1.7	1.1
194	MWD	17273	90.80	3.30	94	9004.49	8669.08	8669.08 N	10.85 E	8669.09	0.07	2.34	-1.8	-1.5
195	MWD	17367	90.50	3.30	94	9003.42	8762.92	8762.92 N	16.26 E	8762.93	0.11	0.32	-0.3	0.0
196	MWD	17462	90.70	2.50	95	9002.43	8857.79	8857.79 N	21.07 E	8857.82	0.14	0.87	0.2	-0.8
197	MWD	17557	88.40	2.00	95	9003.17	8952.71	8952.71 N	24.80 E	8952.74	0.16	2.48	-2.4	-0.5
198	MWD	17651	92.40	4.00	94	9002.52	9046.55	9046.55 N	29.72 E	9046.60	0.19	4.76	4.3	2.1
199	MWD	17746	93.10	4.40	95	8997.96	9141.19	9141.19 N	36.66 E	9141.26	0.23	0.85	0.7	0.4
200	MWD	17840	92.50	3.50	94	8993.37	9234.85	9234.85 N	43.13 E	9234.95	0.27	1.15	-0.6	-1.0
201	MWD	17935	88.00	1.70	95	8992.95	9329.73	9329.73 N	47.44 E	9329.85	0.29	5.10	-4.7	-1.9
202	MWD	18029	88.70	1.80	94	8995.66	9423.64	9423.64 N	50.31 E	9423.78	0.31	0.75	0.7	0.1
203	MWD	18123	93.40	3.30	94	8993.94	9517.50	9517.50 N	54.49 E	9517.66	0.33	5.25	5.0	1.6
204	MWD	18218	93.60	2.50	95	8988.14	9612.20	9612.20 N	59.29 E	9612.39	0.35	0.87	0.2	-0.8
205	MWD	18312	89.70	1.40	94	8985.43	9706.09	9706.09 N	62.48 E	9706.29	0.37	4.31	-4.1	-1.2
206	MWD	18406	89.50	1.80	94	8986.09	9800.05	9800.05 N	65.11 E	9800.27	0.38	0.48	-0.2	0.4
207	MWD	18501	91.30	3.30	95	8985.43	9894.95	9894.95 N	69.33 E	9895.19	0.40	2.47	1.9	1.6
208	MWD	18595	91.30	3.00	94	8983.29	9988.78	9988.78 N	74.50 E	9989.06	0.43	0.32	0.0	-0.3
209	MWD	18690	91.50	3.90	95	8980.97	10083.58	10083.58 N	80.21 E	10083.90	0.46	0.97	0.2	0.9
210	MWD	18784	92.10	4.20	94	8978.02	10177.30	10177.30 N	86.85 E	10177.67	0.49	0.71	0.6	0.3
211	MWD	18878	90.20	4.30	94	8976.13	10271.02	10271.02 N	93.81 E	10271.45	0.52	2.02	-2.0	0.1
212	MWD	18973	91.90	4.70	95	8974.39	10365.71	10365.71 N	101.26 E	10366.20	0.56	1.84	1.8	0.4
213	MWD	19028	92.50	5.10	55	8972.28	10420.46	10420.46 N	105.96 E	10421.00	0.58	1.31	1.1	0.7
214	PTB	19080	92.50	5.10	52	8970.01	10472.21	10472.21 N	110.58 E	10472.79	0.60	0.00	0.0	0.0

*Block 3,
University Land*

Latitude: 31.26100115°
Longitude: -101.79011722°

Latitude: 31.26101153°
Longitude: -101.79186146°

96.

1

PIONEER NATURAL RESOURCES

University "86"

University "88"

#2.

#19H Surface Hole Location
X: 1544552.40 Latitude: 31.2604
Y: 582623.17 Longitude: -101.7
317' FFL, 100' FSL - Section

11

Point of Penetration/First Take Point
X: 1544402.43 Latitude: 31.26045956°
Y: 582626.17 Longitude: -101.791513°
467' FFL 100' FSL - Section 17

114

Last Take Point/Bottom Hole
X: 1544620.64 Latitude: 31.289213
Y: 593082.42 Longitude: -101.79
467' FEL, 100' FNL – Section C

University "3-17"
chevron

Railroad Commission Drawing

University 178B #19H
PIONEER NATURAL RESOURCES USA, Inc.
University 178B Pooled Unit 1319.
University "8" - N/2 of Section 8,
University "8B" - S/2 of Section 8,
University "3-17" - all of Section 17, Block
University Lands, Upton County, Texas

March 12, 2014

Revised: April 9, 2014 - 140312R1

P. O. Box 1963 Midland, Texas 79702 (432) 684-6728 Firm# 10086500

Scale: 1" = 1000'