DrilTech, LLC

MWD Survey Report

Job No: DM-2019-062-SEDT-TX

Operator:	**Steward Energy II, LLC**
Well Name:	**Broken Spoke State Com #5H**
Location:	**Lea County, NM**
Rig:	**Norton Rig #6**
Directional Drilling Co:	**DrilTech, LLC**
Well API #:	**30-025-45530**
Tie Into:	**Surface**
Tie-In Date:	**5/2/19**
Date Completed:	**5/13/19**

Reference Coordinates:	LAT:	33	°	7	'	37.3560	" N
	LON:	103	°	4	'	20.8490	" W
Reference Grid Coordinates:	X:	927350.00 (ft)					
	Y:	776080.00 (ft)					

Reference Datum: **NAD 83**
Zone: **New Mexico East**
Coordinate System: **State Plane - Transverse Mercator Projection**

Survey Vertical Reference:	17.00 (ft)	Rotary Table to Ground Level
Elevation:	3788.00 (ft)	Ground Level to Mean Sea Level
Vertical Section Plane:	359.44 (deg)	

North Alignment: **Grid North**

Magnetic Data	Section 1	Section 2	Section 3	Section 4
Magnetic Declination (deg)	6.58			
Grid (deg)	-0.69			
TOTAL CORRECTION (deg)	**5.89**			
Depth Start (MD Ft)	0.00			
Depth End (MD Ft)	12900.00			

REMARKS:

Company: Steward Energy II, LLC
Well: Broken Spoke State Com #5H
Location: Lea County, NM
Rig: Norton Rig #6

Job Number: DM-2019-062-SEDT-TX
Vertical Section Plane: 359.44
Well API Number: 30-025-45530
Tie Into: Surface

All Azimuths Corrected To: **Grid North**
Calculation Method: Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N(+) / S(-) (ft)	Coordinates E(+)/W(-) (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')	Special Notes
Tie In	Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1	MWD	127.00	1.06	148.36	127	126.99	-1.01	-1.00	0.62	1.17	148.36	0.83	0.83	116.82	
2	MWD	219.00	1.23	121.38	92	218.98	-2.26	-2.24	1.91	2.94	139.60	0.61	0.18	-29.33	
3	MWD	312.00	0.35	94.66	93	311.97	-2.81	-2.78	3.04	4.12	132.45	1.00	-0.95	-28.73	
4	MWD	404.00	0.62	121.38	92	403.96	-3.10	-3.06	3.75	4.84	129.28	0.38	0.29	29.04	
5	MWD	496.00	0.44	192.39	92	495.96	-3.71	-3.67	4.10	5.50	131.85	0.69	-0.20	77.18	
6	MWD	588.00	2.11	197.40	92	587.93	-5.66	-5.63	3.51	6.64	148.03	1.82	1.82	5.45	
7	MWD	682.00	3.61	187.91	94	681.81	-10.24	-10.21	2.59	10.53	165.78	1.67	1.60	-10.10	
8	MWD	777.00	4.04	185.89	95	776.60	-16.52	-16.50	1.83	16.60	173.66	0.47	0.45	-2.13	
9	MWD	871.00	4.48	176.66	94	870.34	-23.48	-23.46	1.71	23.52	175.84	0.87	0.47	-9.82	
10	MWD	965.00	4.57	176.66	94	964.05	-30.88	-30.87	2.14	30.94	176.04	0.10	0.10	0.00	
11	MWD	1060.00	4.84	174.38	95	1058.73	-38.66	-38.63	2.75	38.73	175.93	0.35	0.28	-2.40	
12	MWD	1154.00	5.10	177.10	94	1152.38	-46.78	-46.75	3.35	46.87	175.90	0.37	0.28	2.89	
13	MWD	1249.00	5.63	175.52	95	1246.96	-55.65	-55.61	3.93	55.75	175.96	0.58	0.56	-1.66	
14	MWD	1343.00	5.89	176.84	94	1340.49	-65.07	-65.03	4.56	65.19	175.99	0.31	0.28	1.40	
15	MWD	1437.00	6.16	173.23	94	1433.97	-74.90	-74.85	5.42	75.05	175.86	0.49	0.29	-3.84	
16	MWD	1532.00	5.98	174.73	95	1528.43	-84.90	-84.84	6.47	85.09	175.64	0.25	-0.19	1.58	
17	MWD	1627.00	5.10	182.20	95	1622.99	-94.05	-93.99	6.76	94.23	175.88	1.20	-0.93	7.86	
18	MWD	1722.00	4.04	184.57	95	1717.69	-101.60	-101.54	6.34	101.74	176.43	1.13	-1.12	2.49	
19	MWD	1816.00	3.96	183.69	94	1811.46	-108.13	-108.08	5.86	108.24	176.90	0.11	-0.09	-0.94	
20	MWD	1910.00	4.22	182.02	94	1905.22	-114.83	-114.78	5.53	114.91	177.24	0.30	0.28	-1.78	
21	MWD	2005.00	4.57	179.65	95	1999.94	-122.10	-122.06	5.43	122.18	177.45	0.41	0.37	-2.49	
22	MWD	2098.00	3.52	187.74	93	2092.71	-128.63	-128.59	5.07	128.69	177.74	1.28	-1.13	8.70	
23	MWD	2193.00	3.52	184.75	95	2187.53	-134.42	-134.39	4.44	134.46	178.11	0.19	0.00	-3.15	
24	MWD	2288.00	3.43	188.26	95	2282.35	-140.14	-140.10	3.79	140.16	178.45	0.24	-0.09	3.69	
25	MWD	2338.00	3.25	181.58	50	2332.27	-143.03	-143.00	3.53	143.05	178.59	0.86	-0.36	-13.36	
26	MWD	2433.00	3.08	184.92	95	2427.12	-148.26	-148.24	3.24	148.27	178.75	0.26	-0.18	3.52	
27	MWD	2495.00	3.08	182.55	62	2489.03	-151.58	-151.56	3.02	151.59	178.86	0.21	0.00	-3.82	
28	MWD	2589.00	2.99	189.49	94	2582.90	-156.52	-156.50	2.50	156.52	179.08	0.40	-0.10	7.38	
29	MWD	2684.00	3.17	187.30	95	2677.77	-161.56	-161.55	1.76	161.56	179.37	0.23	0.19	-2.31	
30	MWD	2778.00	3.43	180.13	94	2771.61	-166.95	-166.94	1.43	166.95	179.51	0.52	0.28	-7.63	
31	MWD	2873.00	3.34	175.52	95	2866.44	-172.55	-172.54	1.64	172.55	179.46	0.30	-0.09	-4.85	
32	MWD	2967.00	3.34	181.93	94	2960.28	-178.02	-178.01	1.76	178.02	179.43	0.40	0.00	6.82	
33	MWD	3062.00	3.52	180.44	95	3055.11	-183.70	-183.69	1.64	183.70	179.49	0.21	0.19	-1.57	
34	MWD	3156.00	3.69	176.49	94	3148.93	-189.60	-189.59	1.80	189.60	179.45	0.32	0.18	-4.20	
35	MWD	3251.00	3.17	173.59	95	3243.76	-195.27	-195.26	2.29	195.27	179.33	0.58	-0.55	-3.05	
36	MWD	3345.00	3.25	169.98	94	3337.61	-200.48	-200.46	3.04	200.49	179.13	0.23	0.09	-3.84	
37	MWD	3440.00	3.69	182.99	95	3432.44	-206.19	-206.17	3.35	206.19	179.07	0.95	0.46	13.69	
38	MWD	3535.00	3.25	184.92	95	3527.26	-211.92	-211.90	2.96	211.92	179.20	0.48	-0.46	2.03	
39	MWD	3629.00	3.96	181.14	94	3621.08	-217.82	-217.80	2.66	217.82	179.30	0.80	0.76	-4.02	
40	MWD	3724.00	3.96	184.48	95	3715.85	-224.37	-224.35	2.34	224.37	179.40	0.24	0.00	3.52	
41	MWD	3818.00	3.43	188.18	94	3809.65	-230.38	-230.37	1.69	230.38	179.58	0.62	-0.56	3.94	
42	MWD	3912.00	2.90	181.50	94	3903.51	-235.53	-235.53	1.23	235.54	179.70	0.69	-0.56	-7.11	
43	MWD	4006.00	2.90	180.26	94	3997.39	-240.29	-240.29	1.15	240.29	179.72	0.07	0.00	-1.32	
44	MWD	4100.00	1.76	187.12	94	4091.31	-244.10	-244.10	0.96	244.10	179.77	1.25	-1.21	7.30	
45	MWD	4194.00	0.53	140.36	94	4185.29	-245.86	-245.87	1.06	245.87	179.75	1.54	-1.31	-49.74	
46	MWD	4289.00	0.62	111.36	95	4280.29	-246.40	-246.39	1.82	246.40	179.58	0.32	0.09	-30.53	
47	MWD	4383.00	0.79	95.89	94	4374.28	-246.66	-246.64	2.94	246.66	179.32	0.27	0.18	-16.46	
48	MWD	4476.00	0.53	100.28	93	4467.27	-246.81	-246.79	4.00	246.82	179.07	0.28	-0.28	4.72	
49	MWD	4569.00	0.53	48.78	93	4560.27	-246.61	-246.58	4.75	246.62	178.90	0.50	0.00	-55.38	

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		Location:	Lea County, NM			Well API Number:	30-025-45530									
		Rig:	Norton Rig #6			Tie Into:	Surface		Calculation Method:		Minimum Curvature					
Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N(+) / S(-) (ft)	Coordinates E(+)/W(-) (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')	Special Notes	
50	MWD	4601.00	1.14	12.04	32	4592.27	-246.21	-246.17	4.93	246.22	178.85	2.44	1.91	-114.81		
51	MWD	4632.00	3.25	1.06	31	4623.24	-245.03	-244.99	5.01	245.04	178.83	6.91	6.81	-35.42		
52	MWD	4664.00	6.07	0.27	32	4655.13	-242.43	-242.39	5.03	242.44	178.81	8.81	8.81	-2.47		
53	MWD	4695.00	8.88	0.27	31	4685.87	-238.40	-238.36	5.05	238.41	178.79	9.06	9.06	0.00		
54	MWD	4727.00	12.05	1.50	32	4717.33	-232.59	-232.55	5.15	232.60	178.73	9.93	9.91	3.84		
55	MWD	4758.00	13.89	3.17	31	4747.54	-225.64	-225.60	5.44	225.66	178.62	6.06	5.94	5.39		
56	MWD	4790.00	16.00	3.34	32	4778.46	-217.41	-217.36	5.91	217.44	178.44	6.60	6.59	0.53		
57	MWD	4821.00	17.85	2.46	31	4808.11	-208.40	-208.35	6.36	208.44	178.25	6.02	5.97	-2.84		
58	MWD	4852.00	20.14	1.50	31	4837.42	-198.32	-198.26	6.71	198.38	178.06	7.46	7.39	-3.10		
59	MWD	4884.00	22.69	2.02	32	4867.21	-186.65	-186.59	7.07	186.72	177.83	7.99	7.97	1.63		
60	MWD	4915.00	24.89	3.08	31	4895.57	-174.16	-174.09	7.63	174.26	177.49	7.23	7.10	3.42		
61	MWD	4947.00	27.17	2.64	32	4924.33	-160.14	-160.07	8.33	160.29	177.02	7.15	7.13	-1.38		
62	MWD	4978.00	29.46	2.20	31	4951.62	-145.46	-145.38	8.95	145.65	176.48	7.42	7.39	-1.42		
63	MWD	5010.00	31.74	1.06	32	4979.16	-129.18	-129.10	9.40	129.44	175.83	7.35	7.12	-3.56		
64	MWD	5041.00	34.03	0.44	31	5005.19	-112.36	-112.27	9.62	112.68	175.10	7.47	7.39	-2.00		
65	MWD	5073.00	36.05	1.06	32	5031.39	-93.99	-93.90	9.86	94.42	174.00	6.41	6.31	1.94		
66	MWD	5104.00	38.69	1.58	31	5056.02	-75.19	-75.09	10.30	75.79	172.19	8.58	8.52	1.68		
67	MWD	5136.00	41.86	1.32	32	5080.43	-54.52	-54.41	10.82	55.48	168.75	9.92	9.91	-0.81		
68	MWD	5167.00	44.76	0.97	31	5102.99	-33.26	-33.16	11.24	35.01	161.27	9.39	9.35	-1.13		
69	MWD	5199.00	47.66	0.35	32	5125.13	-10.17	-10.06	11.51	15.29	131.16	9.17	9.06	-1.94		
70	MWD	5230.00	50.03	359.91	31	5145.53	13.17	13.28	11.56	17.61	41.04	7.72	7.65	1159.87		
71	MWD	5261.00	52.32	359.74	31	5164.96	37.31	37.43	11.49	39.15	17.06	7.40	7.39	-0.55		
72	MWD	5293.00	54.26	359.65	32	5184.09	62.97	63.08	11.35	64.09	10.20	6.07	6.06	-0.28		
73	MWD	5324.00	56.72	359.65	31	5201.65	88.51	88.62	11.19	89.33	7.20	7.94	7.94	0.00		
74	MWD	5355.00	59.00	359.56	31	5218.14	114.76	114.87	11.01	115.40	5.48	7.36	7.35	-0.29	Start Tangent @ 5351' M.D.	
75	MWD	5386.00	59.27	359.47	31	5234.05	141.37	141.48	10.79	141.89	4.36	0.91	0.87	-0.29		
76	MWD	5418.00	59.79	359.83	32	5250.27	168.95	169.06	10.62	169.39	3.59	1.89	1.62	1.12		
77	MWD	5449.00	59.97	359.74	31	5265.83	195.76	195.87	10.52	196.15	3.07	0.63	0.58	-0.29		
78	MWD	5481.00	60.15	359.65	32	5281.80	223.49	223.60	10.37	223.84	2.66	0.61	0.56	-0.28		
79	MWD	5512.00	60.32	359.56	31	5297.19	250.40	250.51	10.18	250.72	2.33	0.60	0.55	-0.29		
80	MWD	5544.00	60.94	359.47	32	5312.89	278.29	278.40	9.95	278.57	2.05	1.95	1.94	-0.28	End Tangent @ 5551' M.D.	
81	MWD	5576.00	63.58	359.39	32	5327.78	306.61	306.72	9.67	306.87	1.80	8.25	8.25	-0.25		
82	MWD	5607.00	66.57	358.77	31	5340.84	334.71	334.82	9.21	334.95	1.58	9.81	9.65	-2.00		
83	MWD	5639.00	69.56	358.77	32	5352.79	364.39	364.49	8.58	364.60	1.35	9.34	9.34	0.00		
84	MWD	5671.00	72.19	359.56	32	5363.28	394.62	394.72	8.14	394.81	1.18	8.54	8.22	2.47		
85	MWD	5702.00	74.39	359.91	31	5372.19	424.31	424.41	8.00	424.49	1.08	7.18	7.10	1.13		
86	MWD	5733.00	76.50	0.35	31	5379.98	454.31	454.41	8.07	454.49	1.02	6.94	6.81	-1159.87		
87	MWD	5765.00	78.70	0.27	32	5386.85	485.56	485.67	8.24	485.73	0.97	6.88	6.88	-0.25		
88	MWD	5797.00	81.51	359.91	32	5392.35	517.08	517.19	8.29	517.25	0.92	8.85	8.78	1123.88		
89	MWD	5828.00	84.42	359.47	31	5396.15	547.84	547.95	8.12	548.01	0.85	9.49	9.39	-1.42		
90	MWD	5860.00	87.05	359.39	32	5398.53	579.75	579.86	7.80	579.91	0.77	8.22	8.22	-0.25		
91	MWD	5891.00	88.72	359.30	31	5399.67	610.73	610.83	7.45	610.88	0.70	5.39	5.39	-0.29		
92	MWD	5922.00	89.34	359.03	31	5400.19	641.72	641.82	7.00	641.86	0.62	2.18	2.00	-0.87	Curve Landed @ 5922' M.D	
93	MWD	5985.00	91.45	359.39	63	5399.76	704.72	704.81	6.13	704.84	0.50	3.40	3.35	0.57		
94	MWD	6079.00	90.40	358.68	94	5398.24	798.70	798.78	4.54	798.80	0.33	1.35	-1.12	-0.76		
95	MWD	6173.00	90.57	357.72	94	5397.45	892.68	892.73	1.59	892.74	0.10	1.04	0.18	-1.02		
96	MWD	6247.00	89.87	357.19	74	5397.16	966.63	966.66	-1.69	966.66	-0.10	1.19	-0.95	-0.72		
97	MWD	6267.00	89.87	357.98	20	5397.21	986.62	986.64	-2.54	986.64	-0.15	3.95	0.00	3.95		
98	MWD	6361.00	89.78	359.39	94	5397.50	1080.61	1080.61	-4.69	1080.62	-0.25	1.50	-0.10	1.50		
99	MWD	6455.00	90.92	0.18	94	5396.92	1174.60	1174.61	-5.05	1174.62	-0.25	1.48	1.21	-382.14		

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Location: Lea County, NM
Rig: Norton Rig #6

Job Number: DM-2019-062-SEDT-TX
Vertical Section Plane: 359.44
Well API Number: 30-025-45530
Tie Into: Surface

All Azimuths Corrected To: **Grid North**
Calculation Method: Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N(+) / S(-) (ft)	Coordinates E(+)/W(-) (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')	Special Notes
100	MWD	6549.00	91.36	0.62	94	5395.05	1268.57	1268.59	-4.39	1268.60	-0.20	0.66	0.47	0.47	
101	MWD	6644.00	90.57	0.53	95	5393.45	1363.54	1363.57	-3.44	1363.57	-0.14	0.84	-0.83	-0.09	
102	MWD	6738.00	91.28	0.27	94	5391.93	1457.51	1457.55	-2.78	1457.56	-0.11	0.80	0.76	-0.28	
103	MWD	6832.00	89.78	359.74	94	5391.06	1551.50	1551.55	-2.77	1551.55	-0.10	1.69	-1.60	382.41	
104	MWD	6925.00	90.84	0.53	93	5390.56	1644.49	1644.54	-2.55	1644.54	-0.09	1.42	1.14	-386.25	
105	MWD	7020.00	90.57	0.27	95	5389.39	1739.47	1739.53	-1.89	1739.53	-0.06	0.39	-0.28	-0.27	
106	MWD	7115.00	88.99	359.47	95	5389.76	1834.46	1834.53	-2.11	1834.53	-0.07	1.86	-1.66	378.11	
107	MWD	7209.00	90.40	0.35	94	5390.26	1928.45	1928.52	-2.25	1928.53	-0.07	1.77	1.50	-382.04	
108	MWD	7303.00	89.43	358.86	94	5390.40	2022.45	2022.52	-2.90	2022.52	-0.08	1.89	-1.03	381.39	
109	MWD	7397.00	89.78	358.68	94	5391.04	2116.44	2116.49	-4.92	2116.50	-0.13	0.42	0.37	-0.19	
110	MWD	7492.00	91.10	358.51	95	5390.32	2211.43	2211.46	-7.25	2211.47	-0.19	1.40	1.39	-0.18	
111	MWD	7604.00	91.54	358.42	112	5387.74	2323.38	2323.39	-10.25	2323.41	-0.25	0.40	0.39	-0.08	
112	MWD	7698.00	91.01	358.33	94	5385.64	2417.34	2417.33	-12.91	2417.36	-0.31	0.57	-0.56	-0.10	
113	MWD	7791.00	90.31	358.24	93	5384.57	2510.31	2510.28	-15.70	2510.33	-0.36	0.76	-0.75	-0.10	
114	MWD	7886.00	90.57	358.24	95	5383.84	2605.29	2605.23	-18.61	2605.30	-0.41	0.27	0.27	0.00	
115	MWD	7979.00	92.15	359.56	93	5381.64	2698.25	2698.18	-20.40	2698.26	-0.43	2.21	1.70	1.42	
116	MWD	8073.00	91.10	359.39	94	5378.97	2792.22	2792.14	-21.26	2792.22	-0.44	1.13	-1.12	-0.18	
117	MWD	8168.00	90.66	359.03	95	5377.51	2887.20	2887.12	-22.57	2887.21	-0.45	0.60	-0.46	-0.38	
118	MWD	8263.00	90.57	359.65	95	5376.49	2982.20	2982.11	-23.66	2982.20	-0.45	0.66	-0.09	0.65	
119	MWD	8356.00	90.31	0.00	93	5375.78	3075.19	3075.10	-23.95	3075.20	-0.45	0.47	-0.28	-386.72	
120	MWD	8448.00	89.78	0.09	92	5375.70	3167.19	3167.10	-23.88	3167.19	-0.43	0.58	-0.58	0.10	
121	MWD	8541.00	90.40	0.53	93	5375.56	3260.17	3260.10	-23.37	3260.19	-0.41	0.82	0.67	0.47	
122	MWD	8632.00	90.40	0.97	91	5374.92	3351.15	3351.09	-22.18	3351.17	-0.38	0.48	0.00	0.48	
123	MWD	8725.00	89.60	0.53	93	5374.92	3444.12	3444.08	-20.96	3444.15	-0.35	0.98	-0.86	-0.47	
124	MWD	8817.00	90.66	1.23	92	5374.71	3536.09	3536.07	-19.55	3536.12	-0.32	1.38	1.15	0.76	
125	MWD	8909.00	90.48	0.09	92	5373.80	3628.07	3628.06	-18.49	3628.10	-0.29	1.25	-0.20	-1.24	
126	MWD	9001.00	89.25	359.39	92	5374.02	3720.06	3720.05	-18.91	3720.10	-0.29	1.54	-1.34	390.54	
127	MWD	9093.00	90.13	359.91	92	5374.51	3812.06	3812.05	-19.47	3812.10	-0.29	1.11	0.96	0.57	
128	MWD	9185.00	90.84	0.18	92	5373.74	3904.05	3904.05	-19.40	3904.09	-0.28	0.83	0.77	-391.01	
129	MWD	9280.00	89.78	359.74	95	5373.22	3999.04	3999.04	-19.46	3999.09	-0.28	1.21	-1.12	378.48	
130	MWD	9374.00	89.87	359.74	94	5373.51	4093.04	4093.04	-19.89	4093.09	-0.28	0.10	0.10	0.00	MOL @ 9369' MD
131	MWD	9469.00	89.60	359.74	95	5373.95	4188.04	4188.04	-20.32	4188.09	-0.28	0.28	-0.28	0.00	
132	MWD	9564.00	89.52	0.62	95	5374.68	4283.03	4283.04	-20.02	4283.08	-0.27	0.93	-0.08	-378.02	
133	MWD	9658.00	90.48	1.32	94	5374.68	4376.99	4377.02	-18.43	4377.06	-0.24	1.26	1.02	0.74	
134	MWD	9753.00	90.40	1.23	95	5373.95	4471.94	4471.99	-16.32	4472.02	-0.21	0.13	-0.08	-0.09	
135	MWD	9848.00	89.43	0.70	95	5374.09	4566.90	4566.98	-14.72	4567.00	-0.18	1.16	-1.02	-0.56	
136	MWD	9942.00	90.04	1.06	94	5374.52	4660.87	4660.97	-13.28	4660.98	-0.16	0.75	0.65	0.38	
137	MWD	10036.00	89.96	1.23	94	5374.52	4754.83	4754.95	-11.40	4754.96	-0.14	0.20	-0.09	0.18	
138	MWD	10130.00	90.92	1.93	94	5373.80	4848.76	4848.91	-8.81	4848.91	-0.10	1.26	1.02	0.74	
139	MWD	10223.00	90.92	1.32	93	5372.31	4941.68	4941.86	-6.17	4941.86	-0.07	0.66	0.00	-0.66	
140	MWD	10317.00	90.22	0.27	94	5371.37	5035.65	5035.84	-4.86	5035.84	-0.06	1.34	-0.74	-1.12	
141	MWD	10412.00	89.34	0.44	95	5371.74	5130.63	5130.84	-4.28	5130.84	-0.05	0.94	-0.93	0.18	
142	MWD	10507.00	89.87	358.77	95	5372.39	5225.63	5225.83	-4.93	5225.83	-0.05	1.84	0.56	377.19	
143	MWD	10601.00	89.43	358.95	94	5372.97	5319.62	5319.81	-6.80	5319.81	-0.07	0.51	-0.47	0.19	
144	MWD	10696.00	89.96	357.63	95	5373.47	5414.60	5414.76	-9.64	5414.77	-0.10	1.50	0.56	-1.39	
145	MWD	10791.00	89.34	356.93	95	5374.05	5509.53	5509.65	-14.14	5509.67	-0.15	0.98	-0.65	-0.74	
146	MWD	10885.00	91.19	358.24	94	5373.62	5603.47	5603.56	-18.10	5603.59	-0.19	2.41	1.97	1.39	
147	MWD	10980.00	91.45	358.68	95	5371.43	5698.43	5698.50	-20.66	5698.54	-0.21	0.54	0.27	0.46	
148	MWD	11075.00	89.34	357.10	95	5370.77	5793.39	5793.43	-24.15	5793.48	-0.24	2.77	-2.22	-1.66	
149	MWD	11169.00	88.90	357.10	94	5372.22	5887.30	5887.30	-28.91	5887.37	-0.28	0.47	-0.47	0.00	

Company:	Steward Energy II, LLC	Job Number:	DM-2019-062-SEDT-TX	All Azimuths Corrected To:	**Grid North**
Well:	Broken Spoke State Com #5H	Vertical Section Plane:	359.44		
Location:	Lea County, NM	Well API Number:	30-025-45530		
Rig:	Norton Rig #6	Tie Into:	Surface	Calculation Method:	Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N(+) / S(-) (ft)	Coordinates E(+)/W(-) (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')	Special Notes
150	MWD	11263.00	89.25	356.84	94	5373.74	5981.20	5981.15	-33.88	5981.25	-0.32	0.46	0.37	-0.28	
151	MWD	11358.00	88.99	356.22	95	5375.20	6076.06	6075.97	-39.63	6076.10	-0.37	0.71	-0.27	-0.65	
152	MWD	11453.00	89.08	356.66	95	5376.80	6170.92	6170.77	-45.52	6170.94	-0.42	0.47	0.09	0.46	
153	MWD	11546.00	91.89	357.45	93	5376.01	6263.83	6263.63	-50.30	6263.84	-0.46	3.14	3.02	0.85	
154	MWD	11641.00	91.63	357.72	95	5373.09	6358.73	6358.50	-54.30	6358.74	-0.49	0.39	-0.27	0.28	
155	MWD	11735.00	91.45	358.33	94	5370.56	6452.67	6452.41	-57.54	6452.67	-0.51	0.68	-0.19	0.65	
156	MWD	11830.00	89.52	356.66	95	5369.76	6547.60	6547.31	-61.69	6547.60	-0.54	2.69	-2.03	-1.76	
157	MWD	11924.00	89.60	356.40	94	5370.48	6641.48	6641.14	-67.38	6641.48	-0.58	0.29	0.09	-0.28	
158	MWD	12020.00	90.48	358.33	96	5370.41	6737.41	6737.03	-71.80	6737.41	-0.61	2.21	0.92	2.01	
159	MWD	12115.00	90.22	358.86	95	5369.83	6832.40	6832.00	-74.13	6832.40	-0.62	0.62	-0.27	0.56	
160	MWD	12209.00	90.31	359.30	94	5369.40	6926.39	6925.99	-75.63	6926.40	-0.63	0.48	0.10	0.47	
161	MWD	12304.00	90.75	0.97	95	5368.52	7021.38	7020.98	-75.41	7021.38	-0.62	1.82	0.46	-377.19	
162	MWD	12398.00	90.84	1.50	94	5367.22	7115.32	7114.95	-73.39	7115.32	-0.59	0.57	0.10	0.56	
163	MWD	12492.00	90.40	2.20	94	5366.20	7209.23	7208.89	-70.35	7209.23	-0.56	0.88	-0.47	0.74	
164	MWD	12586.00	90.66	4.22	94	5365.33	7303.02	7302.73	-65.09	7303.02	-0.51	2.17	0.28	2.15	
165	MWD	12681.00	90.48	4.13	95	5364.38	7397.69	7397.48	-58.17	7397.71	-0.45	0.21	-0.19	-0.09	
166	MWD	12774.00	91.01	5.10	93	5363.18	7490.30	7490.17	-50.69	7490.34	-0.39	1.19	0.57	1.04	
167	MWD	12839.00	90.75	4.92	65	5362.18	7554.99	7554.91	-45.01	7555.04	-0.34	0.49	-0.40	-0.28	
168	PTB	12900.00	90.75	4.92	61	5361.38	7615.71	7615.68	-39.78	7615.78	-0.30	0.00	0.00	0.00	

Company:	Steward Energy II, LLC	Job Number:	DM-2019-062-SEDT-TX	All Azimuths Corrected To:	**Grid North**
Well:	Broken Spoke State Com #5H	Vertical Section Plane:	359.44		
Location:	Lea County, NM	Well API Number:	30-025-45530		
Rig:	Norton Rig #6	Tie Into:	Surface	Calculation Method:	Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N(+) / S(-) (ft)	Coordinates E(+)/W(-) (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')	Special Notes

Company:	Steward Energy II, LLC	Job Number:	DM-2019-062-SEDT-TX	All Azimuths Corrected To:	**Grid North**
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