

Minimum Radius of Curvature

API: 05-123-51897 **Well: State Seventy Holes 3U-20-01** **Wellhead Location** **Lat : 40.348200**
Operator: Civitas Resources **Area: DJ** **Long : -104.311110**
Rig: **Type: U-Lateral** **Magnetic Declination:**
TD: 15,861' **Plane of Proposal: 176.00**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
0.00	0.00	0.00		0.0	0.00	0.00	0.00	0.00	0.00			
210	1.37	249.79	210	210.0	0.70	-0.87	-2.36	2.51	249.79	0.65	0.65	118.95
301	0.31	339.65	91	301.0	0.77	-1.01	-3.46	3.61	253.70	1.54	-1.16	98.75
391	1.24	46.51	90	391.0	-0.08	-0.11	-2.84	2.84	267.71	1.28	1.03	-325.71
483	3.09	46.47	92	482.9	-2.30	2.28	-0.32	2.30	352.00	2.01	2.01	-0.04
577	5.13	43.56	94	576.6	-6.75	7.07	4.41	8.33	31.97	2.18	2.17	-3.10
672	7.73	45.63	95	671.0	-13.75	14.62	11.91	18.85	39.17	2.75	2.74	2.18
766	8.71	44.53	94	764.1	-22.56	24.11	21.42	32.25	41.61	1.06	1.04	-1.17
862	8.88	44.44	96	858.9	-32.29	34.58	31.70	46.92	42.51	0.18	0.18	-0.09
956	9.19	45.45	94	951.8	-41.98	45.03	42.13	61.67	43.10	0.37	0.33	1.07
1050	7.95	45.67	94	1044.7	-51.07	54.84	52.13	75.66	43.55	1.32	-1.32	0.23
1145	7.91	44.97	95	1138.8	-59.61	64.05	61.45	88.77	43.81	0.11	-0.04	-0.74
1240	8.09	49.55	95	1232.9	-67.87	73.02	71.16	101.96	44.26	0.70	0.19	4.82
1335	7.47	49.16	95	1327.0	-75.55	81.39	80.92	114.77	44.83	0.65	-0.65	-0.41
1430	6.94	45.76	95	1421.3	-82.96	89.43	89.70	126.67	45.09	0.72	-0.56	-3.58
1524	5.04	34.39	94	1514.8	-89.86	96.80	96.10	136.41	44.79	2.37	-2.02	-12.10
1665	4.46	25.14	141	1655.3	-99.51	106.88	101.93	147.69	43.64	0.68	-0.41	-6.56
1760	4.11	21.48	95	1750.0	-105.81	113.39	104.75	154.37	42.73	0.47	-0.37	-3.85
1854	5.48	41.84	94	1843.7	-111.98	119.87	108.97	162.00	42.27	2.30	1.46	21.66
1949	5.21	44.35	95	1938.3	-118.00	126.33	115.02	170.85	42.32	0.38	-0.28	2.64
2043	4.91	43.34	94	2031.9	-123.56	132.31	120.76	179.13	42.39	0.33	-0.32	-1.07
2138	4.46	47.30	95	2126.6	-128.63	137.77	126.26	186.88	42.50	0.58	-0.47	4.17
2232	4.20	45.10	94	2220.3	-133.17	142.68	131.39	193.96	42.64	0.33	-0.28	-2.34
2327	6.27	53.03	95	2314.9	-138.27	148.26	138.00	202.54	42.95	2.30	2.18	8.35
2421	6.14	51.84	94	2408.4	-143.89	154.45	146.05	212.57	43.40	0.19	-0.14	-1.27
2516	5.83	51.23	95	2502.8	-149.49	160.61	153.81	222.38	43.76	0.33	-0.33	-0.64
2610	5.70	49.86	94	2596.4	-154.97	166.61	161.10	231.76	44.04	0.20	-0.14	-1.46
2704	5.79	49.46	94	2689.9	-160.54	172.70	168.27	241.12	44.26	0.10	0.10	-0.43
2799	5.35	47.75	95	2784.5	-166.14	178.79	175.19	250.32	44.42	0.49	-0.46	-1.80
2894	4.68	42.46	95	2879.1	-171.55	184.63	181.09	258.61	44.44	0.86	-0.71	-5.57
2988	6.63	50.57	94	2972.6	-177.34	190.91	187.87	267.84	44.54	2.24	2.07	8.63
3083	5.74	47.13	95	3067.1	-183.50	197.62	195.59	278.04	44.70	1.01	-0.94	-3.62
3178	5.52	47.97	95	3161.6	-189.29	203.91	202.46	287.35	44.80	0.25	-0.23	0.88
3273	4.82	47.17	95	3256.2	-194.61	209.69	208.78	295.90	44.88	0.74	-0.74	-0.84
3368	4.64	42.10	95	3350.9	-199.78	215.25	214.29	303.73	44.87	0.48	-0.19	-5.34
3462	4.77	43.51	94	3444.6	-205.05	220.91	219.53	311.43	44.82	0.19	0.14	1.50
3557	4.95	39.20	95	3539.2	-210.71	226.95	224.84	319.46	44.73	0.43	0.19	-4.54
3673	4.29	39.37	116	3654.9	-217.51	234.18	230.75	328.76	44.58	0.57	-0.57	0.15
3768	6.23	40.65	95	3749.5	-223.76	240.84	236.36	337.45	44.46	2.05	2.04	1.35
3863	5.35	37.52	95	3844.0	-230.75	248.26	242.42	346.99	44.32	0.98	-0.93	-3.29
3957	6.67	41.80	94	3937.5	-237.83	255.81	248.73	356.79	44.20	1.48	1.40	4.55
4052	5.39	40.34	95	4031.9	-244.87	263.32	255.29	366.76	44.11	1.36	-1.35	-1.54
4147	7.51	39.37	95	4126.3	-252.58	271.52	262.12	377.40	43.99	2.23	2.23	-1.02
4241	6.67	38.40	94	4219.6	-261.07	280.55	269.41	388.96	43.84	0.90	-0.89	-1.03
4335	5.26	30.34	94	4313.1	-268.66	288.55	274.97	398.59	43.62	1.74	-1.50	-8.57
4430	6.58	29.10	95	4407.6	-276.82	297.06	279.82	408.10	43.29	1.40	1.39	-1.31
4524	4.95	30.29	94	4501.1	-284.68	305.27	284.49	417.28	42.98	1.74	-1.73	1.27
4618	8.26	48.10	94	4594.5	-292.18	313.28	291.56	427.97	42.94	4.10	3.52	18.95
4712	7.73	49.99	94	4687.6	-300.05	321.86	301.43	440.97	43.12	0.63	-0.56	2.01
4808	6.14	47.79	96	4782.9	-307.02	329.46	310.18	452.50	43.27	1.68	-1.66	-2.29
4902	4.77	49.68	94	4876.4	-312.44	335.37	316.88	461.39	43.38	1.47	-1.46	2.01
4996	5.21	44.66	94	4970.1	-317.58	340.93	322.86	469.54	43.44	0.66	0.47	-5.34
5089	4.60	41.53	93	5062.7	-322.98	346.73	328.30	477.49	43.44	0.72	-0.66	-3.37
5183	6.10	40.83	94	5156.3	-329.16	353.33	334.07	486.25	43.39	1.60	1.60	-0.74
5277	5.17	35.41	94	5249.9	-335.98	360.56	339.79	495.43	43.30	1.14	-0.99	-5.77
5372	6.63	43.38	95	5344.4	-343.00	368.03	346.03	505.16	43.24	1.76	1.54	8.39
5466	5.26	36.46	94	5437.9	-349.95	375.44	352.32	514.87	43.18	1.64	-1.46	-7.36
5560	5.26	42.37	94	5531.5	-356.20	382.09	357.78	523.45	43.12	0.58	0.00	6.29

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
5656	11.14	103.31	96	5626.6	-356.48	383.21	369.80	532.55	43.98	10.13	6.13	63.48
5750	13.04	147.12	94	5718.7	-344.47	372.19	384.43	535.08	45.93	9.72	2.02	46.61
5845	20.99	167.96	95	5809.5	-318.17	346.48	393.82	524.54	48.66	10.42	8.37	21.94
5939	30.09	176.20	94	5894.3	-277.84	306.41	398.91	503.00	52.47	10.37	9.68	8.77
6034	41.41	180.78	95	5971.3	-222.52	251.04	400.06	472.30	57.89	12.24	11.92	4.82
6129	47.72	178.67	95	6038.9	-156.04	184.42	400.45	440.87	65.27	6.82	6.64	-2.22
6224	56.08	178.14	95	6097.5	-81.41	109.76	402.55	417.24	74.75	8.81	8.80	-0.56
6318	65.97	180.17	94	6143.0	0.59	27.64	403.69	404.63	86.08	10.69	10.52	2.16
6413	74.11	177.44	95	6175.4	89.69	-61.55	405.60	410.25	98.63	8.98	8.57	-2.87
6507	85.68	178.27	94	6191.9	182.02	-153.87	409.05	437.03	110.61	12.34	12.31	0.88
6601	88.82	180.26	94	6196.4	275.75	-247.73	410.25	479.25	121.13	3.95	3.34	2.12
6696	90.81	182.19	95	6196.7	370.34	-342.70	408.22	533.00	130.01	2.92	2.09	2.03
6791	89.97	178.54	95	6196.0	465.05	-437.68	407.62	598.09	137.04	3.94	-0.88	-3.84
6885	90.63	178.93	94	6195.5	558.94	-531.66	409.69	671.20	142.38	0.82	0.70	0.41
6979	89.93	175.85	94	6195.1	652.90	-625.54	413.97	750.12	146.50	3.36	-0.74	-3.28
7074	90.90	176.33	95	6194.4	747.89	-720.32	420.45	834.05	149.73	1.14	1.02	0.51
7169	87.94	174.66	95	6195.3	842.87	-815.01	427.91	920.51	152.30	3.58	-3.12	-1.76
7263	88.33	174.70	94	6198.4	936.80	-908.55	436.62	1008.02	154.33	0.42	0.41	0.04
7358	88.03	174.79	95	6201.4	1031.73	-1003.11	445.32	1097.51	156.06	0.33	-0.32	0.09
7452	89.79	175.14	94	6203.2	1125.69	-1096.72	453.56	1186.81	157.53	1.91	1.87	0.37
7546	89.97	176.82	94	6203.4	1219.69	-1190.49	460.15	1276.32	158.87	1.80	0.19	1.79
7641	90.23	177.79	95	6203.2	1314.66	-1285.38	464.62	1366.78	160.13	1.06	0.27	1.02
7735	90.46	179.07	94	6202.7	1408.57	-1379.34	467.20	1456.32	161.29	1.38	0.24	1.36
7829	90.19	178.41	94	6202.1	1502.46	-1473.32	469.26	1546.24	162.33	0.76	-0.29	-0.70
7923	90.10	179.33	94	6201.9	1596.34	-1567.30	471.12	1636.57	163.27	0.98	-0.10	0.98
8017	90.46	176.77	94	6201.4	1690.27	-1661.23	474.32	1727.62	164.06	2.75	0.38	-2.72
8112	90.63	176.91	95	6200.5	1785.26	-1756.09	479.55	1820.39	164.73	0.23	0.18	0.15
8206	90.63	177.44	94	6199.5	1879.23	-1849.97	484.18	1912.28	165.33	0.56	0.00	0.56
8301	90.50	178.27	95	6198.6	1974.18	-1944.89	487.74	2005.12	165.92	0.88	-0.14	0.87
8395	90.23	176.29	94	6198.0	2068.15	-2038.78	492.20	2097.35	166.43	2.13	-0.29	-2.11
8490	91.38	177.00	95	6196.6	2163.13	-2133.61	497.76	2190.90	166.87	1.42	1.21	0.75
8584	89.62	174.97	94	6195.8	2257.12	-2227.36	504.34	2283.75	167.24	2.86	-1.87	-2.16
8679	89.79	174.75	95	6196.3	2352.10	-2321.98	512.85	2377.94	167.55	0.29	0.18	-0.23
8774	90.15	174.57	95	6196.4	2447.07	-2416.57	521.69	2472.24	167.82	0.42	0.38	-0.19
8868	91.16	173.73	94	6195.3	2541.01	-2510.07	531.27	2565.68	168.05	1.40	1.07	-0.89
8963	90.50	175.19	95	6193.9	2635.97	-2604.61	540.44	2660.09	168.28	1.69	-0.69	1.54
9058	91.47	175.01	95	6192.3	2730.94	-2699.25	548.56	2754.43	168.51	1.04	1.02	-0.19
9153	89.00	177.00	95	6191.9	2825.93	-2794.01	555.17	2848.63	168.76	3.34	-2.60	2.09
9248	88.29	177.92	95	6194.1	2920.87	-2888.89	559.38	2942.54	169.04	1.22	-0.75	0.97
9343	89.93	178.05	95	6195.6	3015.80	-2983.81	562.72	3036.41	169.32	1.73	1.73	0.14
9437	90.99	177.96	94	6194.8	3109.74	-3077.75	565.99	3129.36	169.58	1.13	1.13	-0.10
9531	87.89	176.38	94	6195.8	3203.70	-3171.62	570.63	3222.54	169.80	3.70	-3.30	-1.68
9625	88.33	177.35	94	6198.9	3297.63	-3265.42	575.77	3315.80	170.00	1.13	0.47	1.03
9720	90.85	178.58	95	6199.5	3392.57	-3360.35	579.14	3409.89	170.22	2.95	2.65	1.29
9814	90.23	176.25	94	6198.7	3486.53	-3454.25	583.38	3503.16	170.41	2.56	-0.66	-2.48
9908	89.84	176.69	94	6198.6	3580.52	-3548.07	589.17	3596.65	170.57	0.63	-0.41	0.47
10002	90.06	175.72	94	6198.7	3674.52	-3641.86	595.39	3690.21	170.72	1.06	0.23	-1.03
10097	89.62	174.57	95	6199.0	3769.51	-3736.52	603.43	3784.93	170.83	1.30	-0.46	-1.21
10191	90.32	177.70	94	6199.0	3863.50	-3830.29	609.77	3878.52	170.95	3.41	0.74	3.33
10285	90.19	177.22	94	6198.6	3957.46	-3924.20	613.93	3971.93	171.11	0.53	-0.14	-0.51
10380	92.62	170.34	95	6196.2	4052.30	-4018.55	624.21	4066.74	171.17	7.68	2.56	-7.24
10475	94.34	162.14	95	6190.5	4145.67	-4110.57	646.74	4161.13	171.06	8.80	1.81	-8.63
10570	89.79	151.66	95	6187.0	4235.23	-4197.74	683.94	4253.10	170.75	12.02	-4.79	-11.03
10663	90.32	143.15	93	6187.0	4316.81	-4276.02	733.99	4338.56	170.26	9.17	0.57	-9.15
10758	92.93	134.16	95	6184.3	4392.22	-4347.24	796.65	4419.63	169.62	9.85	2.75	-9.46
10851	92.22	124.29	93	6180.1	4455.77	-4405.92	868.53	4490.71	168.85	10.63	-0.76	-10.61
10946	91.69	116.14	95	6176.8	4509.11	-4453.66	950.51	4553.96	167.95	8.59	-0.56	-8.58
11041	92.27	105.69	95	6173.5	4549.05	-4487.50	1039.07	4606.23	166.96	11.01	0.61	-11.00

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11135	93.15	96.09	94	6169.1	4573.16	-4505.22	1131.17	4645.06	165.91	10.24	0.94	-10.21
11230	94.39	85.51	95	6162.8	4581.08	-4506.55	1225.81	4670.29	164.78	11.19	1.31	-11.14
11324	95.80	76.39	94	6154.4	4572.86	-4491.85	1318.18	4681.27	163.65	9.78	1.50	-9.70
11419	94.26	66.25	95	6146.1	4548.90	-4461.57	1407.70	4678.38	162.49	10.76	-1.62	-10.67
11514	94.52	57.22	95	6138.8	4510.01	-4416.76	1491.04	4661.65	161.35	9.48	0.27	-9.51
11608	93.55	47.61	94	6132.2	4458.20	-4359.64	1565.26	4632.11	160.25	10.25	-1.03	-10.22
11703	92.18	37.08	95	6127.4	4392.79	-4289.61	1629.07	4588.53	159.20	11.16	-1.44	-11.08
11797	91.56	26.86	94	6124.3	4316.86	-4210.01	1678.75	4532.37	158.26	10.89	-0.66	-10.87
11892	91.83	17.43	95	6121.5	4231.71	-4122.16	1714.50	4464.49	157.42	9.93	0.28	-9.93
11986	88.82	8.88	94	6121.0	4141.99	-4030.72	1735.87	4388.62	156.70	9.64	-3.20	-9.10
12081	90.90	0.54	95	6121.2	4048.17	-3936.13	1743.67	4305.05	156.11	9.05	2.19	-8.78
12175	91.38	358.38	94	6119.3	3954.37	-3842.16	1742.78	4218.94	155.60	2.35	0.51	380.68
12269	92.14	357.23	94	6116.5	3860.46	-3748.27	1739.18	4132.11	155.11	1.47	0.81	-1.22
12365	90.54	356.04	96	6114.2	3764.50	-3652.47	1733.55	4042.99	154.61	2.08	-1.67	-1.24
12460	91.47	355.34	95	6112.6	3669.52	-3557.76	1726.41	3954.51	154.11	1.23	0.98	-0.74
12555	89.93	354.45	95	6111.4	3574.55	-3463.14	1717.96	3865.84	153.62	1.87	-1.62	-0.94
12649	90.77	353.57	94	6110.8	3480.61	-3369.66	1708.15	3777.88	153.12	1.29	0.89	-0.94
12744	89.13	353.26	95	6110.9	3385.71	-3275.29	1697.26	3688.93	152.61	1.76	-1.73	-0.33
12839	90.06	352.65	95	6111.6	3290.84	-3181.01	1685.60	3600.01	152.08	1.17	0.98	-0.64
12933	88.78	355.38	94	6112.5	3196.92	-3087.54	1675.80	3513.01	151.51	3.21	-1.36	2.90
13029	87.67	354.45	96	6115.5	3100.98	-2991.97	1667.30	3425.16	150.87	1.51	-1.16	-0.97
13123	90.68	357.89	94	6116.8	3007.02	-2898.21	1661.02	3340.45	150.18	4.86	3.20	3.66
13218	88.20	356.66	95	6117.8	2912.05	-2803.33	1656.51	3256.18	149.42	2.91	-2.61	-1.29
13312	89.40	357.14	94	6119.7	2818.09	-2709.49	1651.43	3173.10	148.64	1.37	1.28	0.51
13406	88.38	356.04	94	6121.6	2724.11	-2615.68	1645.84	3090.40	147.82	1.60	-1.09	-1.17
13500	89.00	356.04	94	6123.7	2630.14	-2521.93	1639.35	3007.92	146.97	0.66	0.66	0.00
13595	88.16	354.28	95	6126.1	2535.18	-2427.30	1631.33	2924.56	146.10	2.05	-0.88	-1.85
13690	90.32	357.50	95	6127.3	2440.21	-2332.57	1624.53	2842.53	145.14	4.08	2.27	3.39
13785	90.23	357.27	95	6126.9	2345.24	-2237.67	1620.19	2762.64	144.09	0.26	-0.09	-0.24
13880	90.81	356.79	95	6126.0	2250.26	-2142.80	1615.27	2683.41	142.99	0.79	0.61	-0.51
13974	91.07	355.91	94	6124.5	2156.27	-2049.01	1609.29	2605.43	141.85	0.98	0.28	-0.94
14069	91.34	354.98	95	6122.5	2061.30	-1954.33	1601.75	2526.85	140.66	1.02	0.28	-0.98
14164	92.05	354.28	95	6119.7	1966.37	-1859.79	1592.86	2448.68	139.42	1.05	0.75	-0.74
14258	91.38	355.16	94	6116.9	1872.44	-1766.23	1584.21	2372.62	138.11	1.18	-0.71	0.94
14353	90.19	355.95	95	6115.5	1777.45	-1671.53	1576.85	2297.93	136.67	1.50	-1.25	0.83
14447	91.25	355.34	94	6114.4	1683.46	-1577.81	1569.71	2225.64	135.15	1.30	1.13	-0.65
14542	88.38	355.51	95	6114.7	1588.48	-1483.12	1562.14	2154.05	133.51	3.03	-3.02	0.18
14636	88.25	354.50	94	6117.4	1494.53	-1389.52	1553.96	2084.60	131.80	1.08	-0.14	-1.07
14731	88.20	353.00	95	6120.4	1399.66	-1295.13	1543.62	2014.98	130.00	1.58	-0.05	-1.58
14826	89.84	355.47	95	6122.0	1304.73	-1200.64	1534.08	1948.06	128.05	3.12	1.73	2.60
14921	90.99	354.50	95	6121.3	1209.75	-1106.01	1525.78	1884.47	125.94	1.58	1.21	-1.02
15015	90.06	355.64	94	6120.5	1115.76	-1012.36	1517.70	1824.36	123.70	1.57	-0.99	1.21
15110	90.81	355.34	95	6119.7	1020.77	-917.66	1510.23	1767.17	121.28	0.85	0.79	-0.32
15206	88.29	355.73	96	6120.5	924.79	-821.96	1502.76	1712.86	118.68	2.66	-2.63	0.41
15301	87.72	353.79	95	6123.8	829.87	-727.42	1494.09	1661.76	115.96	2.13	-0.60	-2.04
15396	87.50	356.44	95	6127.8	734.97	-632.86	1486.00	1615.15	113.07	2.80	-0.23	2.79
15491	87.50	356.13	95	6131.9	640.06	-538.15	1479.85	1574.66	109.98	0.33	0.00	-0.33
15586	88.51	356.70	95	6135.2	545.13	-443.39	1473.92	1539.16	106.74	1.22	1.06	0.60
15681	89.17	356.66	95	6137.1	450.15	-348.57	1468.42	1509.22	103.35	0.70	0.69	-0.04
15776	90.81	355.42	95	6137.1	355.16	-253.80	1461.86	1483.73	99.85	2.16	1.73	-1.31
15861	90.81	355.42	85	6135.9	270.17	-169.08	1455.07	1464.86	96.63	0.00	0.00	0.00