BAKER HUGHES INTEQ

Company: Sandridge Energy
Well: Hazel 3120 2-24H
Location: Comanche Co, KS
Rig: Lariat 38

Job Number: 5413380
Magnetic Decl.: 5.48
Grid Corr.: 0.58
Total Grid Corr.: 6.06

Calculation Method Minimum Curvature
Proposed Azimuth 181.27
Depth Reference Rig Flo Plan # 1
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Direction	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')
Tie In Coordinates														
Suface	20	0.00	0.00	N 0.0 E	0	20.00	0.00	0.00 S	0.00 W					
Gyro	246	0.50	219.13	S 39.1 W	226	246.00	0.78	0.76 S	0.62 W	0.99	219.13	0.22	0.22	96.96
Gyro	492	0.60	219.13	S 39.1 W	246	491.99	2.64	2.60 S	2.11 W	3.35	219.13	0.04	0.04	0.00
Gyro	767	0.30	219.13	S 39.1 W	275	766.98	4.35	4.27 S	3.48 W	5.51	219.13	0.11	-0.11	0.00
ATC1	998	0.54	219.13	S 39.1 W	231	997.97	5.68	5.59 S	4.54 W	7.20	219.13	0.10	0.10	0.00
ATC1	1456	0.30	217.31	S 37.3 W	458	1455.96	8.36	8.21 S	6.63 W	10.56	218.92	0.05	-0.05	-0.40
ATC1	1952	0.29	44.52	N 44.5 E	496	1951.95	8.49	8.35 S	6.54 W	10.61	218.06	0.12	0.00	-34.84
ATC1	2427	0.20	49.41	N 49.4 E	475	2426.95	7.07	6.95 S	5.07 W	8.61	216.08	0.02	-0.02	1.03
ATC1	2902	0.06	300.04	N 60.0 W	475	2901.95	6.39	6.29 S	4.65 W	7.82	216.49	0.05	-0.03	-23.03
ATC1	3376	0.06	154.66	S 25.3 E	474	3375.95	6.49	6.39 S	4.76 W	7.97	216.69	0.02	0.00	-30.67
ATC1	3850	0.28	201.39	S 21.4 W	474	3849.95	7.80	7.69 S	5.08 W	9.22	213.43	0.05	0.05	9.86
ATC1	4199	0.72	159.71	S 20.3 E	349	4198.93	10.64	10.54 S	4.63 W	11.52	203.70	0.16	0.13	-11.94
ATC1	4230	1.96	170.10	S 9.9 E	31	4229.92	11.35	11.25 S	4.47 W	12.10	201.67	4.06	4.00	33.52
ATC1	4262	3.94	176.12	S 3.9 E	32	4261.88	12.98	12.89 S	4.30 W	13.58	198.46	6.25	6.19	18.81
ATC1	4294	5.68	174.43	S 5.6 E	32	4293.77	15.65	15.56 S	4.07 W	16.08	194.67	5.45	5.44	-5.28
ATC1	4325	7.85	175.67	S 4.3 E	31	4324.55	19.28	19.20 S	3.76 W	19.56	191.10	7.02	7.00	4.00
ATC1	4357	10.42	173.75	S 6.3 E	32	4356.14	24.32	24.25 S	3.28 W	24.47	187.71	8.09	8.03	-6.00
ATC1	4389	13.50	174.30	S 5.7 E	32	4387.44	30.90	30.85 S	2.60 W	30.96	184.81	9.63	9.63	1.72
ATC1	4420	16.43	172.80	S 7.2 E	31	4417.39	38.83	38.80 S	1.69 W	38.84	182.49	9.53	9.45	-4.84
ATC1	4452	19.17	173.10	S 6.9 E	32	4447.85	48.51	48.51 S	0.49 W	48.51	180.58	8.57	8.56	0.94
ATC1	4484	20.94	175.48	S 4.5 E	32	4477.91	59.40	59.42 S	0.59 E	59.43	179.43	6.09	5.53	7.44
ATC1	4515	23.12	178.94	S 1.1 E	31	4506.65	70.99	71.03 S	1.14 E	71.04	179.08	8.18	7.03	11.16
ATC1	4547	25.26	183.09	S 3.1 W	32	4535.84	84.10	84.14 S	0.89 E	84.14	179.39	8.54	6.69	12.97
ATC1	4579	26.36	186.04	S 6.0 W	32	4564.65	98.00	98.02 S	0.23 W	98.02	180.13	5.28	3.44	9.22
ATC1	4610	28.15	187.23	S 7.2 W	31	4592.20	112.13	112.12 S	1.87 W	112.13	180.96	6.04	5.77	3.84
ATC1	4642	30.15	186.89	S 6.9 W	32	4620.15	127.64	127.59 S	3.79 W	127.64	181.70	6.27	6.25	-1.06
ATC1	4674	32.08	185.85	S 5.8 W	32	4647.54	144.11	144.02 S	5.62 W	144.13	182.23	6.26	6.03	-3.25
ATC1	4705	34.19	185.27	S 5.3 W	31	4673.50	161.01	160.89 S	7.26 W	161.05	182.58	6.88	6.81	-1.87
ATC1	4737	34.83	183.69	S 3.7 W	32	4699.87	179.11	178.96 S	8.67 W	179.17	182.77	3.44	2.00	-4.94
ATC1	4769	36.54	182.11	S 2.1 W	32	4725.86	197.76	197.60 S	9.61 W	197.83	182.78	6.07	5.34	-4.94
ATC1	4800	38.23	181.37	S 1.4 W	31	4750.49	216.58	216.41 S	10.18 W	216.65	182.69	5.64	5.45	-2.39
ATC1	4832	40.35	180.53	S 0.5 W	32	4775.26	236.85	236.67 S	10.51 W	236.90	182.54	6.83	6.63	-2.63
ATC1	4864	43.12	180.77	S 0.8 W	32	4799.14	258.14	257.97 S	10.75 W	258.19	182.39	8.67	8.66	0.75
ATC1	4895	45.44	181.00	S 1.0 W	31	4821.33	279.79	279.61 S	11.09 W	279.83	182.27	7.50	7.48	0.74
ATC1	4927	47.60	181.43	S 1.4 W	32	4843.35	303.00	302.82 S	11.58 W	303.04	182.19	6.82	6.75	1.34
ATC1	4959	49.34	182.08	S 2.1 W	32	4864.56	326.96	326.76 S	12.32 W	327.00	182.16	5.65	5.44	2.03
ATC1	4990	49.35	182.67	S 2.7 W	31	4884.76	350.47	350.26 S	13.29 W	350.51	182.17	1.44	0.03	1.90

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Total Grid Corr.: 6.06

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Proposed Azimuth 181.27
Depth Reference Rig Flo Plan # 1
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Direction	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')
ATC1	5022	49.38	183.14	S 3.1 W	32	4905.60	374.74	374.51 S	14.52 W	374.80	182.22	1.12	0.09	1.47
ATC1	5054	49.33	183.72	S 3.7 W	32	4926.44	399.01	398.75 S	15.98 W	399.07	182.29	1.38	-0.16	1.81
ATC1	5085	49.44	183.46	S 3.5 W	31	4946.62	422.52	422.24 S	17.45 W	422.60	182.37	0.73	0.35	-0.84
ATC1	5117	49.24	183.06	S 3.1 W	32	4967.47	446.78	446.47 S	18.83 W	446.87	182.41	1.14	-0.62	-1.25
ATC1	5149	51.78	181.69	S 1.7 W	32	4987.82	471.47	471.14 S	19.85 W	471.56	182.41	8.60	7.94	-4.28
ATC1	5180	54.94	180.16	S 0.2 W	31	5006.32	496.34	496.01 S	20.24 W	496.42	182.34	10.94	10.19	-4.94
ATC1	5212	57.78	179.98	S 0.0 E	32	5024.05	522.97	522.65 S	20.27 W	523.04	182.22	8.89	8.88	-0.56
ATC1	5244	60.82	179.10	S 0.9 E	32	5040.38	550.47	550.16 S	20.05 W	550.53	182.09	9.79	9.50	-2.75
ATC1	5275	64.49	178.48	S 1.5 E	31	5054.62	577.97	577.68 S	19.47 W	578.01	181.93	11.97	11.84	-2.00
ATC1	5307	67.98	178.22	S 1.8 E	32	5067.51	607.22	606.95 S	18.62 W	607.24	181.76	10.93	10.91	-0.81
ATC1	5339	70.45	178.43	S 1.6 E	32	5078.87	637.09	636.86 S	17.75 W	637.10	181.60	7.74	7.72	0.66
ATC1	5370	72.96	179.39	S 0.6 E	31	5088.60	666.50	666.28 S	17.19 W	666.50	181.48	8.61	8.10	3.10
ATC1	5402	76.61	179.44	S 0.6 E	32	5096.99	697.36	697.15 S	16.87 W	697.36	181.39	11.41	11.41	0.16
ATC1	5434	79.50	179.17	S 0.8 E	32	5103.62	728.64	728.46 S	16.49 W	728.64	181.30	9.07	9.03	-0.84
ATC1	5465	82.90	178.61	S 1.4 E	31	5108.36	759.25	759.08 S	15.90 W	759.25	181.20	11.11	10.97	-1.81
LCPG1	5534	89.69	180.77	S 0.8 W	69	5112.81	828.03	827.89 S	15.53 W	828.04	181.07	10.32	9.84	3.13
LCPG1	5566	90.49	180.98	S 1.0 W	32	5112.76	860.03	859.89 S	16.02 W	860.04	181.07	2.58	2.50	0.66
LCPG1	5661	89.32	180.52	S 0.5 W	95	5112.92	955.02	954.88 S	17.27 W	955.03	181.04	1.32	-1.23	-0.48
LCPG1	5756	90.25	181.22	S 1.2 W	95	5113.28	1050.02	1049.86 S	18.71 W	1050.03	181.02	1.23	0.98	0.74
LCPG1	5851	88.71	180.12	S 0.1 W	95	5114.14	1145.01	1144.85 S	19.82 W	1145.02	180.99	1.99	-1.62	-1.16
LCPG1	5946	90.28	181.38	S 1.4 W	95	5114.98	1239.99	1239.83 S	21.06 W	1240.01	180.97	2.12	1.65	1.33
LCPG1	6041	90.68	182.03	S 2.0 W	95	5114.18	1334.99	1334.79 S	23.89 W	1335.00	181.03	0.80	0.42	0.68
LCPG1	6135	90.87	181.29	S 1.3 W	94	5112.91	1428.98	1428.74 S	26.61 W	1428.98	181.07	0.81	0.20	-0.79
LCPG1	6231	91.03	181.63	S 1.6 W	96	5111.32	1524.96	1524.69 S	29.06 W	1524.97	181.09	0.39	0.17	0.35
LCPG1	6322	89.45	181.43	S 1.4 W	91	5110.94	1615.96	1615.66 S	31.49 W	1615.96	181.12	1.75	-1.74	-0.22
LCPG1	6414	90.12	180.65	S 0.7 W	92	5111.28	1707.95	1707.64 S	33.16 W	1707.96	181.11	1.12	0.73	-0.85
LCPG1	6506	90.58	180.36	S 0.4 W	92	5110.72	1799.94	1799.63 S	33.97 W	1799.95	181.08	0.59	0.50	-0.32
LCPG1	6597	90.62	179.57	S 0.4 E	91	5109.77	1890.91	1890.63 S	33.91 W	1890.93	181.03	0.87	0.04	-0.87
LCPG1	6688	88.31	178.88	S 1.1 E	91	5110.62	1981.85	1981.61 S	32.68 W	1981.88	180.94	2.65	-2.54	-0.76
LCPG1	6780	88.92	180.32	S 0.3 W	92	5112.84	2073.78	2073.58 S	32.04 W	2073.82	180.89	1.70	0.66	1.57
LCPG1	6872	88.30	180.79	S 0.8 W	92	5115.07	2165.74	2165.54 S	32.93 W	2165.79	180.87	0.85	-0.67	0.51
LCPG1	6964	87.97	182.00	S 2.0 W	92	5118.07	2257.69	2257.47 S	35.17 W	2257.74	180.89	1.36	-0.36	1.32
LCPG1	7055	89.35	182.67	S 2.7 W	91	5120.20	2348.65	2348.36 S	38.87 W	2348.69	180.95	1.69	1.52	0.74
LCPG1	7147	89.75	181.98	S 2.0 W	92	5120.92	2440.63	2440.28 S	42.61 W	2440.66	181.00	0.87	0.43	-0.75
LCPG1	7239	90.83	182.75	S 2.8 W	92	5120.45	2532.61	2532.20 S	46.40 W	2532.63	181.05	1.44	1.17	0.84
LCPG1	7331	91.02	181.98	S 2.0 W	92	5118.97	2624.58	2624.11 S	50.20 W	2624.59	181.10	0.86	0.21	-0.84
LCPG1	7423	91.08	181.75	S 1.8 W	92	5117.28	2716.56	2716.05 S	53.19 W	2716.57	181.12	0.26	0.07	-0.25
LCPG1	7515	90.83	181.84	S 1.8 W	92	5115.75	2808.54	2807.99 S	56.07 W	2808.55	181.14	0.29	-0.27	0.10

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LCPG1	7606	91.09	182.27	S 2.3 W	91	5114.22	2899.52	2898.92 S	59.34 W	2899.52	181.17	0.55	0.29	0.47
LCPG1	7701	90.49	182.34	S 2.3 W	95	5112.91	2994.50	2993.83 S	63.16 W	2994.50	181.21	0.64	-0.63	0.07
LCPG1	7796	90.87	182.32	S 2.3 W	95	5111.79	3089.47	3088.75 S	67.02 W	3089.47	181.24	0.40	0.40	-0.02
LCPG1	7891	89.01	182.09	S 2.1 W	95	5111.89	3184.46	3183.67 S	70.67 W	3184.46	181.27	1.97	-1.96	-0.24
LCPG1	7986	88.18	182.90	S 2.9 W	95	5114.22	3279.40	3278.55 S	74.81 W	3279.40	181.31	1.22	-0.87	0.85
LCPG1	8081	88.49	182.17	S 2.2 W	95	5116.98	3374.34	3373.42 S	79.01 W	3374.34	181.34	0.83	0.33	-0.77
LCPG1	8176	91.17	182.00	S 2.0 W	95	5117.26	3469.32	3468.34 S	82.46 W	3469.33	181.36	2.83	2.82	-0.18
LCPG1	8271	89.35	181.24	S 1.2 W	95	5116.83	3564.31	3563.30 S	85.15 W	3564.32	181.37	2.08	-1.92	-0.80
LCPG1	8366	91.17	180.98	S 1.0 W	95	5116.40	3659.31	3658.28 S	86.99 W	3659.31	181.36	1.94	1.92	-0.27
LCPG1	8461	91.60	180.54	S 0.5 W	95	5114.10	3754.28	3753.24 S	88.25 W	3754.28	181.35	0.65	0.45	-0.46
LCPG1	8556	89.69	180.34	S 0.3 W	95	5113.03	3849.26	3848.23 S	88.98 W	3849.26	181.32	2.02	-2.01	-0.21
LCPG1	8651	88.77	180.05	S 0.1 W	95	5114.31	3944.23	3943.22 S	89.30 W	3944.23	181.30	1.02	-0.97	-0.31
LCPG1	8746	88.95	180.09	S 0.1 W	95	5116.20	4039.19	4038.20 S	89.42 W	4039.19	181.27	0.19	0.19	0.04
LCPG1	8841	89.97	179.67	S 0.3 E	95	5117.09	4134.16	4133.19 S	89.22 W	4134.16	181.24	1.16	1.07	-0.44
LCPG1	8936	90.09	179.70	S 0.3 E	95	5117.04	4229.12	4228.19 S	88.70 W	4229.12	181.20	0.13	0.13	0.03
LCPG1	9031	90.83	180.13	S 0.1 W	95	5116.28	4324.09	4323.19 S	88.56 W	4324.09	181.17	0.90	0.78	0.45
LCPG1	9126	90.89	179.71	S 0.3 E	95	5114.85	4419.05	4418.18 S	88.42 W	4419.06	181.15	0.45	0.06	-0.44
LCPG1	9221	90.49	179.85	S 0.2 E	95	5113.71	4514.01	4513.17 S	88.06 W	4514.03	181.12	0.45	-0.42	0.15
LCPG1	9316	91.20	180.20	S 0.2 W	95	5112.31	4608.98	4608.16 S	88.10 W	4609.00	181.10	0.83	0.75	0.37
LCPG1	9411	90.52	179.98	S 0.0 E	95	5110.88	4703.95	4703.15 S	88.25 W	4703.97	181.07	0.75	-0.72	-0.23
LCPG1	9506	90.06	179.59	S 0.4 E	95	5110.40	4798.91	4798.14 S	87.89 W	4798.95	181.05	0.63	-0.48	-0.41
LCPG1	9601	89.41	179.26	S 0.7 E	95	5110.84	4893.86	4893.14 S	86.94 W	4893.91	181.02	0.77	-0.68	-0.35
LCPG2	9631	89.38	179.09	S 0.9 E	30	5111.16	4923.84	4923.13 S	86.51 W	4923.89	181.01	0.58	-0.10	-0.57
LCPG2	9726	89.08	179.91	S 0.1 E	95	5112.43	5018.79	5018.12 S	85.68 W	5018.85	180.98	0.92	-0.32	0.86
LCPG2	9821	88.34	180.79	S 0.8 W	95	5114.57	5113.75	5113.09 S	86.26 W	5113.82	180.97	1.21	-0.78	0.93
LCPG2	9916	88.76	181.02	S 1.0 W	95	5116.98	5208.72	5208.05 S	87.76 W	5208.79	180.97	0.50	0.44	0.24
LCPG2	10011	88.74	180.37	S 0.4 W	95	5119.05	5303.69	5303.02 S	88.91 W	5303.77	180.96	0.68	-0.02	-0.68
LCPG2	10106	89.51	181.61	S 1.6 W	95	5120.50	5398.67	5397.99 S	90.55 W	5398.75	180.96	1.54	0.81	1.31
LCPG2	10201	89.66	181.53	S 1.5 W	95	5121.19	5493.67	5492.95 S	93.15 W	5493.74	180.97	0.18	0.16	-0.08
LCPG2	10296	91.60	182.57	S 2.6 W	95	5120.14	5588.65	5587.88 S	96.55 W	5588.72	180.99	2.32	2.04	1.09
LCPG2	10391	89.69	182.84	S 2.8 W	95	5119.07	5683.61	5682.77 S	101.04 W	5683.66	181.02	2.03	-2.01	0.28
LCPG2	10486	90.86	182.29	S 2.3 W	95	5118.62	5778.58	5777.67 S	105.29 W	5778.63	181.04	1.36	1.23	-0.58
LCPG2	10581	91.51	183.51	S 3.5 W	95	5116.65	5873.52	5872.52 S	110.09 W	5873.55	181.07	1.45	0.68	1.28
LCPG2	10676	91.20	183.31	S 3.3 W	95	5114.41	5968.43	5967.33 S	115.74 W	5968.45	181.11	0.39	-0.33	-0.21
LCPG2	10737	90.43	182.42	S 2.4 W	61	5113.54	6029.40	6028.24 S	118.79 W	6029.41	181.13	1.93	-1.26	-1.46
Proj.	10779	90.43	182.42	S 2.4 W	42	5113.22	6071.39	6070.21 S	120.56 W	6071.40	181.14	0.00	0.00	0.00