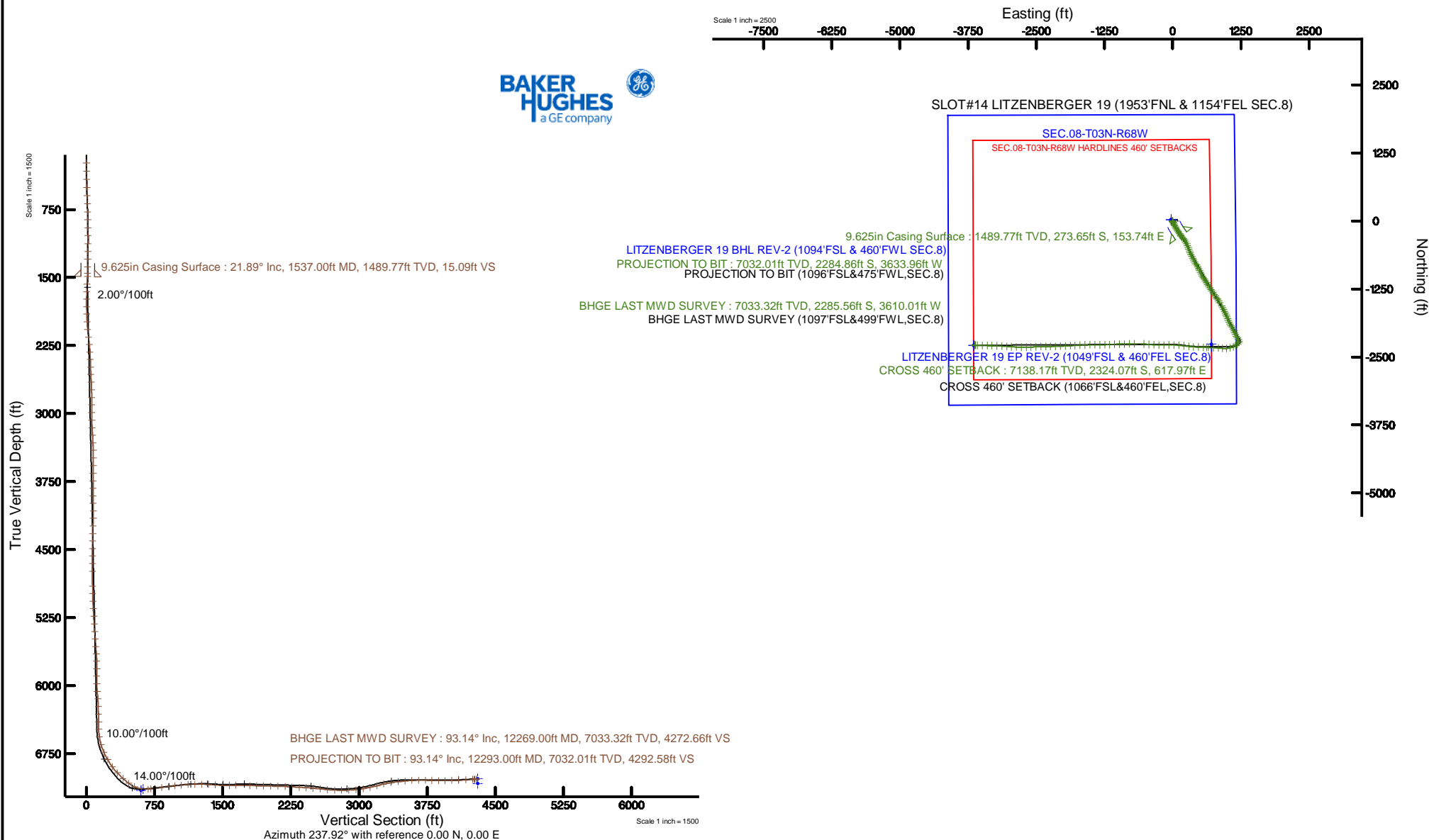


CUB CREEK ENERGY, LLC

Location: COLORADO Slot: SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Field: WELD COUNTY (NAD83, TRUE NORTH) Well: LITZENBERGER 19
Facility: SEC.08-T03N-R68W Wellbore: LITZENBERGER 19 PWB

Plot reference wellbore is LITZENBERGER 19 REV-2 (PWP)				Grid System: NAD83 (Lambert Colorado SP, Northern Zone 2011, US feet)			
True vertical depths are referenced to XTREME 18 (17) (RKB)				North Reference: True north			
Measured depths are referenced to XTREME 18 (17) (RKB)				Scale: True distance			
XTREME 18 (17) (RKB) to Mean Sea Level: 5099 feet				Depth: are in feet			
Mean Sea Level to Mud line (M Line) Slot: SLOTHA LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8): 0 feet				Created by: hughes on 2017-05-16			
Coordinates are in feet referenced to Slot				Database: Demarc			
Location Information							
Facility Name				Grid East (US Ft)		Grid North (US Ft)	
SEC.08-T03N-R68W				3120443.377		1231482.520	
Zone				Local N (Ft)		Local E (Ft)	
SLOTHA LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)				25.36		27.92	
XTREME 18 (17) (RKB) to Mud line (M Line) Slot: SLOTHA LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)				Grid East (US Ft)		Grid North (US Ft)	
Mean Sea Level to Mud line (M Line) Slot: SLOTHA LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)				3120512.426		1231482.171	
XTREME 18 (17) (RKB) to Mean Sea Level						5099	
						51	
						5099	
Survey Program							
Wellbore ID	Wellbore Name	Tool	Survey	Logbook Number		Survey	
LITZENBERGER 19	LITZENBERGER 19	Wellbore	Survey	LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)		LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)	
Tool	Survey	Wellbore	Survey	LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)		LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)	
Tool	Survey	Wellbore	Survey	LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)		LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)	



Actual Wellpath Report

LITZENBERGER 19 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWB
Facility	SEC.08-T03N-R68W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	True	User	Bushjamh
Scale	0.999957	Report Generated	10/16/2017 at 2:48:02 PM
Convergence at slot	0.31° East	Database/Source file	Denver/LITZENBERGER_19_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-25.50	27.92	3133512.43	1331457.17	40°14'32.136"N	105°01'18.228"W
Facility Reference Pt			3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W
Field Reference Pt			3133072.77	1341057.53	40°16'07.032"N	105°01'23.232"W

WELLPATH DATUM

Calculation method	Minimum curvature	XTREME 18 (17') (RKB) to Facility Vertical Datum	5099.00ft
Horizontal Reference Pt	Slot	XTREME 18 (17') (RKB) to Mean Sea Level	5099.00ft
Vertical Reference Pt	XTREME 18 (17') (RKB)	XTREME 18 (17') (RKB) to Mud Line at Slot (SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8))	5099.00ft
MD Reference Pt	XTREME 18 (17') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	237.92°

Actual Wellpath Report

LITZENBERGER 19 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	196.640	0.00	0.00	0.00	0.00	40°14'32.136"N	105°01'18.228"W	0.00	
17.00	0.000	196.640	17.00	0.00	0.00	0.00	40°14'32.136"N	105°01'18.228"W	0.00	
237.00	1.360	196.640	236.98	1.96	-2.50	-0.75	40°14'32.111"N	105°01'18.238"W	0.62	
328.00	2.150	162.830	327.94	3.21	-5.17	-0.55	40°14'32.085"N	105°01'18.235"W	1.40	
418.00	4.110	164.130	417.80	4.55	-9.88	0.83	40°14'32.038"N	105°01'18.217"W	2.18	
507.00	6.770	163.330	506.39	6.83	-17.98	3.20	40°14'31.958"N	105°01'18.187"W	2.99	
599.00	10.050	160.090	597.39	9.97	-30.72	7.50	40°14'31.832"N	105°01'18.131"W	3.60	
690.00	12.770	155.010	686.58	12.88	-47.31	14.45	40°14'31.669"N	105°01'18.042"W	3.18	
782.00	14.870	153.150	775.92	15.22	-67.06	24.08	40°14'31.473"N	105°01'17.918"W	2.33	
874.00	16.510	152.170	864.49	17.26	-89.15	35.51	40°14'31.255"N	105°01'17.770"W	1.81	
965.00	16.990	149.830	951.63	18.67	-112.08	48.23	40°14'31.028"N	105°01'17.606"W	0.91	
1056.00	17.290	150.170	1038.58	19.64	-135.31	61.64	40°14'30.799"N	105°01'17.433"W	0.35	
1148.00	18.370	145.710	1126.17	19.62	-159.15	76.61	40°14'30.563"N	105°01'17.240"W	1.89	
1239.00	20.080	145.370	1212.09	18.37	-183.85	93.57	40°14'30.319"N	105°01'17.021"W	1.88	
1331.00	20.990	146.460	1298.24	17.25	-210.58	111.65	40°14'30.055"N	105°01'16.788"W	1.07	
1422.00	21.850	147.020	1382.96	16.57	-238.37	129.87	40°14'29.780"N	105°01'16.553"W	0.97	
1496.00	21.630	145.970	1451.69	15.89	-261.23	145.00	40°14'29.555"N	105°01'16.358"W	0.60	
1628.00	22.570	139.130	1574.02	11.20	-300.55	175.19	40°14'29.166"N	105°01'15.969"W	2.07	
1716.00	22.790	141.420	1655.21	6.69	-326.65	196.87	40°14'28.908"N	105°01'15.689"W	1.03	
1807.00	23.450	146.730	1738.91	4.32	-355.57	217.80	40°14'28.622"N	105°01'15.419"W	2.40	
1896.00	23.680	149.410	1820.49	4.42	-385.76	236.61	40°14'28.324"N	105°01'15.177"W	1.23	
1988.00	23.620	152.330	1904.77	6.32	-417.99	254.57	40°14'28.005"N	105°01'14.945"W	1.27	
2080.00	22.760	154.980	1989.34	9.92	-450.44	270.66	40°14'27.685"N	105°01'14.738"W	1.47	
2171.00	23.470	161.300	2073.04	16.28	-483.56	283.91	40°14'27.358"N	105°01'14.567"W	2.83	
2262.00	23.880	163.760	2156.39	25.51	-518.41	294.88	40°14'27.013"N	105°01'14.426"W	1.18	
2352.00	23.770	160.890	2238.72	34.55	-553.04	305.91	40°14'26.671"N	105°01'14.283"W	1.29	
2443.00	23.960	155.790	2321.95	41.20	-587.22	319.49	40°14'26.333"N	105°01'14.108"W	2.28	
2534.00	24.080	151.630	2405.07	44.93	-620.41	335.89	40°14'26.005"N	105°01'13.897"W	1.87	
2624.00	23.700	152.730	2487.36	47.64	-652.64	352.90	40°14'25.687"N	105°01'13.677"W	0.65	
2713.00	23.530	155.120	2568.91	51.37	-684.66	368.57	40°14'25.370"N	105°01'13.475"W	1.09	

Actual Wellpath Report

LITZENBERGER 19 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2804.00	23.750	154.850	2652.28	55.86	-717.73	384.00	40°14'25.043"N	105°01'13.276"W	0.27	
2898.00	23.780	150.790	2738.31	59.09	-751.41	401.30	40°14'24.711"N	105°01'13.053"W	1.74	
2989.00	23.810	147.700	2821.58	59.94	-782.95	420.07	40°14'24.399"N	105°01'12.811"W	1.37	
3080.00	23.610	148.870	2904.90	60.17	-814.07	439.30	40°14'24.091"N	105°01'12.563"W	0.56	
3172.00	23.840	148.630	2989.12	60.71	-845.72	458.51	40°14'23.779"N	105°01'12.316"W	0.27	
3263.00	23.440	150.840	3072.49	61.86	-877.23	476.90	40°14'23.467"N	105°01'12.078"W	1.07	
3356.00	24.090	154.890	3157.61	65.11	-910.57	493.97	40°14'23.138"N	105°01'11.858"W	1.89	
3447.00	23.700	155.420	3240.81	69.75	-944.02	509.46	40°14'22.807"N	105°01'11.659"W	0.49	
3538.00	24.300	154.970	3323.94	74.44	-977.61	524.99	40°14'22.475"N	105°01'11.458"W	0.69	
3628.00	24.260	152.290	3405.98	78.12	-1010.76	541.42	40°14'22.148"N	105°01'11.247"W	1.23	
3721.00	23.610	146.640	3491.00	79.17	-1043.24	560.55	40°14'21.827"N	105°01'11.000"W	2.56	
3811.00	23.690	145.370	3573.44	77.96	-1073.17	580.73	40°14'21.531"N	105°01'10.740"W	0.57	
3903.00	23.550	147.260	3657.73	76.93	-1103.84	601.18	40°14'21.228"N	105°01'10.476"W	0.84	
3995.00	24.140	147.460	3741.88	76.57	-1135.15	621.24	40°14'20.918"N	105°01'10.217"W	0.65	
4087.00	23.810	146.720	3825.94	76.03	-1166.54	641.55	40°14'20.608"N	105°01'09.955"W	0.49	
4175.00	23.750	147.680	3906.47	75.59	-1196.36	660.77	40°14'20.314"N	105°01'09.708"W	0.45	
4264.00	23.170	150.820	3988.12	76.40	-1226.80	678.89	40°14'20.013"N	105°01'09.474"W	1.55	
4356.00	23.870	148.690	4072.47	77.57	-1258.51	697.38	40°14'19.699"N	105°01'09.235"W	1.20	
4447.00	23.950	145.310	4155.67	76.97	-1289.42	717.47	40°14'19.394"N	105°01'08.977"W	1.51	
4539.00	24.030	142.510	4239.72	74.36	-1319.64	739.49	40°14'19.095"N	105°01'08.692"W	1.24	
4629.00	23.680	145.130	4322.04	71.75	-1349.01	760.98	40°14'18.805"N	105°01'08.415"W	1.24	
4721.00	23.500	146.080	4406.35	70.27	-1379.39	781.78	40°14'18.505"N	105°01'08.147"W	0.46	
4811.00	23.520	147.180	4488.88	69.46	-1409.37	801.53	40°14'18.209"N	105°01'07.893"W	0.49	
4900.00	23.900	147.170	4570.37	69.00	-1439.45	820.93	40°14'17.911"N	105°01'07.643"W	0.43	
4992.00	23.580	148.230	4654.58	68.85	-1470.75	840.72	40°14'17.602"N	105°01'07.387"W	0.58	
5083.00	23.540	147.050	4738.00	68.68	-1501.47	860.19	40°14'17.298"N	105°01'07.136"W	0.52	
5264.00	23.480	150.380	4903.98	69.68	-1563.15	897.67	40°14'16.689"N	105°01'06.653"W	0.73	
5354.00	23.550	151.550	4986.51	71.59	-1594.55	915.09	40°14'16.379"N	105°01'06.428"W	0.52	
5446.00	23.690	153.230	5070.80	74.47	-1627.21	932.18	40°14'16.056"N	105°01'06.208"W	0.75	
5534.00	23.660	154.670	5151.39	78.18	-1658.95	947.69	40°14'15.742"N	105°01'06.008"W	0.66	

Actual Wellpath Report

LITZENBERGER 19 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5626.00	23.670	155.430	5235.66	82.76	-1692.43	963.27	40°14'15.411"N	105°01'05.807"W	0.33	
5716.00	23.650	155.820	5318.09	87.61	-1725.33	978.18	40°14'15.086"N	105°01'05.615"W	0.18	
5808.00	23.130	158.170	5402.53	93.36	-1758.94	992.45	40°14'14.754"N	105°01'05.431"W	1.16	
5898.00	23.320	158.490	5485.24	99.78	-1791.92	1005.56	40°14'14.428"N	105°01'05.262"W	0.25	
5988.00	23.660	157.060	5567.78	105.92	-1825.13	1019.13	40°14'14.100"N	105°01'05.087"W	0.74	
6076.00	24.380	157.140	5648.16	111.63	-1858.13	1033.07	40°14'13.774"N	105°01'04.907"W	0.82	
6165.00	24.700	152.560	5729.13	116.08	-1891.56	1048.77	40°14'13.444"N	105°01'04.705"W	2.17	
6257.00	24.270	146.200	5812.87	117.07	-1924.33	1068.15	40°14'13.120"N	105°01'04.455"W	2.90	
6347.00	23.450	145.810	5895.18	115.86	-1954.52	1088.51	40°14'12.821"N	105°01'04.192"W	0.93	
6439.00	22.340	152.590	5979.94	116.61	-1985.19	1106.85	40°14'12.518"N	105°01'03.956"W	3.11	
6530.00	23.490	159.650	6063.78	121.71	-2017.55	1121.12	40°14'12.198"N	105°01'03.772"W	3.27	
6621.00	23.710	156.970	6147.17	128.27	-2051.40	1134.58	40°14'11.864"N	105°01'03.598"W	1.20	
6713.00	23.760	151.670	6231.40	132.40	-2084.74	1150.62	40°14'11.535"N	105°01'03.392"W	2.32	
6805.00	23.600	152.330	6315.65	135.03	-2117.36	1167.96	40°14'11.212"N	105°01'03.168"W	0.34	
6895.00	23.770	150.480	6398.07	137.23	-2149.10	1185.27	40°14'10.899"N	105°01'02.945"W	0.85	
6985.00	23.380	148.850	6480.56	138.33	-2180.17	1203.44	40°14'10.592"N	105°01'02.711"W	0.84	
7077.00	16.420	177.050	6567.21	144.98	-2208.87	1213.59	40°14'10.308"N	105°01'02.580"W	12.69	
7166.00	20.550	204.260	6651.75	164.15	-2235.74	1207.80	40°14'10.042"N	105°01'02.654"W	10.62	
7258.00	24.900	223.060	6736.70	196.37	-2264.66	1187.91	40°14'09.757"N	105°01'02.911"W	9.15	
7348.00	29.070	237.990	6816.98	236.61	-2290.13	1156.38	40°14'09.505"N	105°01'03.317"W	8.81	
7440.00	37.100	247.000	6894.05	286.47	-2312.87	1111.79	40°14'09.280"N	105°01'03.892"W	10.21	
7530.00	44.430	255.470	6962.22	343.43	-2331.42	1056.19	40°14'09.097"N	105°01'04.609"W	10.19	
7621.00	50.280	265.650	7023.93	404.92	-2342.09	990.31	40°14'08.991"N	105°01'05.459"W	10.43	
7712.00	59.150	275.160	7076.52	467.21	-2341.23	916.25	40°14'09.000"N	105°01'06.414"W	12.94	
7803.00	70.160	275.060	7115.41	532.62	-2333.92	834.46	40°14'09.072"N	105°01'07.468"W	12.10	
7894.00	81.600	271.650	7137.58	604.43	-2328.83	746.52	40°14'09.123"N	105°01'08.602"W	13.08	
7985.00	93.940	272.400	7141.12	679.58	-2325.62	655.82	40°14'09.154"N	105°01'09.772"W	13.59	
8023.00†	94.964	272.289	7138.17	710.83	-2324.07	617.97	40°14'09.170"N	105°01'10.260"W	2.71	CROSS 460' SETBACK (1066'FSL&460'FEL,SEC.8)
8077.00	96.420	272.130	7132.81	755.22	-2322.00	564.27	40°14'09.190"N	105°01'10.952"W	2.71	
8168.00	96.450	271.720	7122.61	830.18	-2318.96	473.90	40°14'09.220"N	105°01'12.117"W	0.45	

Actual Wellpath Report

LITZENBERGER 19 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8260.00	95.950	273.530	7112.68	905.36	-2314.78	382.54	40°14'09.262"N	105°01'13.296"W	2.03	
8350.00	94.960	277.270	7104.12	976.44	-2306.34	293.36	40°14'09.345"N	105°01'14.445"W	4.28	
8440.00	94.900	277.210	7096.38	1045.81	-2295.04	204.41	40°14'09.457"N	105°01'15.592"W	0.09	
8532.00	93.170	274.800	7089.91	1118.03	-2285.44	113.15	40°14'09.551"N	105°01'16.769"W	3.22	
8624.00	91.080	272.140	7086.50	1192.82	-2279.88	21.39	40°14'09.606"N	105°01'17.952"W	3.68	
8714.00	88.740	269.130	7086.64	1268.53	-2278.89	-68.58	40°14'09.616"N	105°01'19.112"W	4.24	
8805.00	86.920	269.680	7090.08	1346.07	-2279.83	-159.51	40°14'09.607"N	105°01'20.285"W	2.09	
8895.00	86.800	270.610	7095.01	1422.09	-2279.60	-249.37	40°14'09.609"N	105°01'21.443"W	1.04	
8987.00	87.910	272.320	7099.26	1498.67	-2277.25	-341.24	40°14'09.632"N	105°01'22.628"W	2.21	
9079.00	90.220	276.440	7100.76	1572.63	-2270.23	-432.93	40°14'09.702"N	105°01'23.810"W	5.13	
9170.00	90.620	273.710	7100.09	1645.15	-2262.18	-523.57	40°14'09.781"N	105°01'24.979"W	3.03	
9352.00	88.710	268.480	7101.16	1797.42	-2258.70	-705.46	40°14'09.816"N	105°01'27.324"W	3.06	
9443.00	88.580	268.450	7103.31	1875.76	-2261.14	-796.40	40°14'09.791"N	105°01'28.497"W	0.15	
9531.00	88.890	269.170	7105.25	1951.26	-2262.97	-884.36	40°14'09.773"N	105°01'29.631"W	0.89	
9620.00	88.610	269.090	7107.19	2027.36	-2264.32	-973.33	40°14'09.760"N	105°01'30.778"W	0.33	
9712.00	88.650	267.630	7109.39	2106.65	-2266.95	-1065.26	40°14'09.734"N	105°01'31.964"W	1.59	
9804.00	87.970	267.070	7112.11	2186.74	-2271.20	-1157.12	40°14'09.692"N	105°01'33.148"W	0.96	
9893.00	86.890	267.270	7116.10	2264.31	-2275.59	-1245.92	40°14'09.649"N	105°01'34.293"W	1.23	
9983.00	86.920	269.440	7120.96	2341.79	-2278.17	-1335.75	40°14'09.623"N	105°01'35.451"W	2.41	
10072.00	87.170	271.090	7125.55	2416.88	-2277.76	-1424.63	40°14'09.627"N	105°01'36.597"W	1.87	
10164.00	86.120	269.980	7130.93	2494.23	-2276.90	-1516.46	40°14'09.635"N	105°01'37.781"W	1.66	
10254.00	84.980	267.500	7137.91	2571.28	-2278.87	-1606.16	40°14'09.616"N	105°01'38.938"W	3.03	
10346.00	84.880	266.540	7146.05	2651.35	-2283.64	-1697.67	40°14'09.569"N	105°01'40.118"W	1.05	
10438.00	87.660	267.310	7152.03	2731.63	-2288.56	-1789.34	40°14'09.520"N	105°01'41.300"W	3.14	
10527.00	89.780	267.080	7154.02	2809.23	-2292.91	-1878.20	40°14'09.477"N	105°01'42.446"W	2.40	
10617.00	92.490	266.440	7152.24	2888.05	-2298.00	-1968.03	40°14'09.427"N	105°01'43.604"W	3.09	
10709.00	95.000	267.860	7146.23	2968.15	-2302.56	-2059.71	40°14'09.381"N	105°01'44.786"W	3.13	
10801.00	97.620	267.980	7136.12	3047.33	-2305.88	-2151.09	40°14'09.349"N	105°01'45.964"W	2.85	
10889.00	100.620	268.510	7122.17	3122.32	-2308.55	-2237.92	40°14'09.322"N	105°01'47.084"W	3.46	
10980.00	103.010	270.010	7103.54	3198.39	-2309.70	-2326.98	40°14'09.311"N	105°01'48.232"W	3.08	

Actual Wellpath Report

LITZENBERGER 19 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11071.00	100.930	269.080	7084.66	3274.19	-2310.41	-2415.99	40°14'09.304"N	105°01'49.380"W	2.49	
11163.00	97.910	266.910	7069.61	3352.71	-2313.59	-2506.68	40°14'09.272"N	105°01'50.549"W	4.02	
11254.00	95.300	267.680	7059.14	3431.48	-2317.86	-2596.97	40°14'09.230"N	105°01'51.714"W	2.99	
11342.00	95.050	268.720	7051.20	3507.16	-2320.61	-2684.56	40°14'09.202"N	105°01'52.843"W	1.21	
11430.00	92.960	271.000	7045.06	3581.64	-2320.82	-2772.34	40°14'09.200"N	105°01'53.975"W	3.51	
11520.00	91.080	273.030	7041.88	3656.11	-2317.66	-2862.22	40°14'09.231"N	105°01'55.134"W	3.07	
11612.00	87.940	273.770	7042.67	3731.02	-2312.20	-2954.04	40°14'09.285"N	105°01'56.318"W	3.51	
11699.00	88.000	273.910	7045.75	3801.43	-2306.38	-3040.79	40°14'09.343"N	105°01'57.436"W	0.17	
11789.00	89.940	274.280	7047.37	3874.06	-2299.96	-3130.54	40°14'09.406"N	105°01'58.594"W	2.19	
11879.00	91.170	271.880	7046.50	3947.62	-2295.12	-3220.40	40°14'09.454"N	105°01'59.752"W	3.00	
11969.00	91.110	271.090	7044.71	4022.60	-2292.79	-3310.35	40°14'09.477"N	105°02'00.912"W	0.88	
12059.00	91.050	271.180	7043.01	4097.88	-2291.01	-3400.32	40°14'09.494"N	105°02'02.072"W	0.12	
12150.00	93.020	271.540	7039.78	4173.76	-2288.85	-3491.23	40°14'09.515"N	105°02'03.244"W	2.20	
12240.00	93.170	271.590	7034.92	4248.57	-2286.39	-3581.06	40°14'09.540"N	105°02'04.403"W	0.18	
12269.00	93.140	271.690	7033.32	4272.66	-2285.56	-3610.01	40°14'09.548"N	105°02'04.776"W	0.36	BHGE LAST MWD SURVEY (1097'FSL&499'FWL,SEC.8)
12293.00	93.140	271.690	7032.01	4292.58	-2284.86	-3633.96	40°14'09.555"N	105°02'05.085"W	0.00	PROJECTION TO BIT (1096'FSL&475'FWL,SEC.8)

HOLE & CASING SECTIONS - Ref Wellbore: LITZENBERGER 19 AWB Ref Wellpath: LITZENBERGER 19 AWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	17.00	1549.00	1532.00	17.00	1500.91	0.00	0.00	-277.26	156.41
9.625in Casing Surface	17.00	1537.00	1520.00	17.00	1489.77	0.00	0.00	-273.65	153.74
8.5in Open Hole	1549.00	12293.00	10744.00	1500.91	7032.01	-277.26	156.41	-2284.86	-3633.96

Actual Wellpath Report

LITZENBERGER 19 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWB
Facility	SEC.08-T03N-R68W		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.08-T03N-R68W	0.00	25.50	-27.92	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon
LITZENBERGER 19 BHL REV-2 (1094'FSL & 460'FWL SEC.8)	7027.00	-2287.55	-3649.10	3129875.88	1329150.08	40°14'09.528"N	105°02'05.280"W	point
LITZENBERGER 19 BHL REV-1 (1094'FSL & 460'FWL SEC.8)	7079.90	-2287.55	-3649.10	3129875.88	1329150.08	40°14'09.528"N	105°02'05.280"W	point
LITZENBERGER 19 EP REV-2 (1049'FSL & 460'FEL SEC.8)	7142.00	-2310.95	709.16	3134234.01	1329150.19	40°14'09.299"N	105°01'09.084"W	point
LITZENBERGER 19 EP REV-1 (1094'FSL & 460'FEL SEC.8)	7156.00	-2265.95	709.16	3134233.77	1329195.18	40°14'09.744"N	105°01'09.084"W	point
SEC.08-T03N-R68W HARDLINES 460' SETBACKS	7316.00	25.50	-27.92	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: LITZENBERGER 19 AWB Ref Wellpath: LITZENBERGER 19 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1496.00	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model) <237'-1496'>	LITZENBERGER 19 AWB
1496.00	12269.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI ATC 8.5" (SHORT, ROCKIES GT)<1628-12269>	LITZENBERGER 19 AWB
12269.00	12293.00	Blind Drilling (std)	Projection to bit	LITZENBERGER 19 AWB

Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#14 LITZENBERGER 19 (1953'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 19
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 19 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
8023.00	94.964	272.289	7138.17	CROSS 460' SETBACK (1066'FSL&460'FEL,SEC.8)
12269.00	93.140	271.690	7033.32	BHGE LAST MWD SURVEY (1097'FSL&499'FWL,SEC.8)
12293.00	93.140	271.690	7032.01	PROJECTION TO BIT (1096'FSL&475'FWL,SEC.8)