

Location:	COLORADO	Slot:	SLOT#03 LITZENBERGER 6 (1928'FNL & 1154'FEL SEC.8)
Field:	WELD COUNTY (NAD83, TRUE NORTH)	Well:	LITZENBERGER 6
Facility:	SEC.08-T03N-R68W	Wellbore:	LITZENBERGER 6 PWB

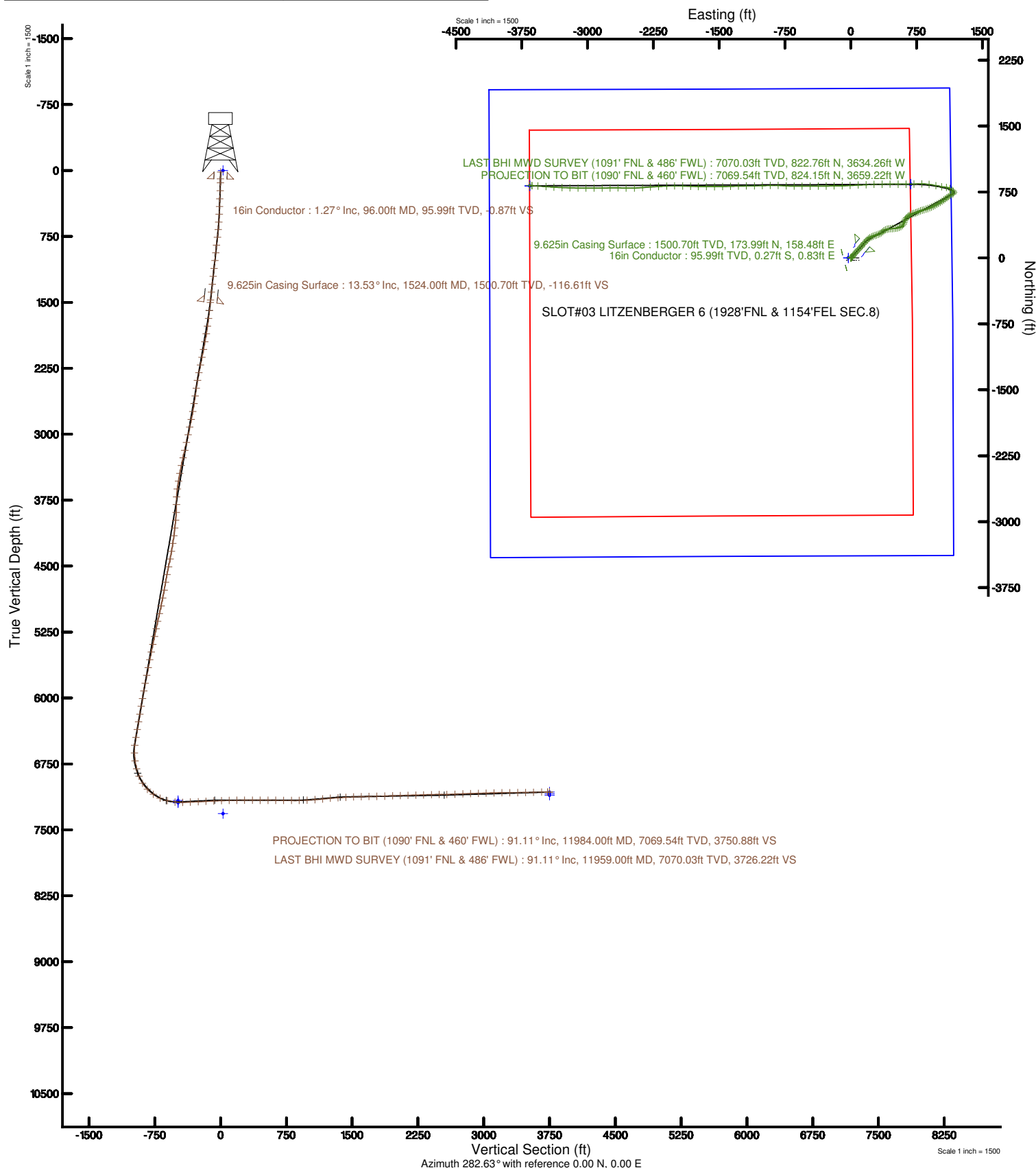


BGGM (1900.0 to 2018.0) Dip: 66.70° Field: 52313.3 nT
Magnetic North is 8.50 degrees East of True North (at 6/23/2017)

To correct azimuth from Magnetic to True add 8.50 degrees



Plot reference wellpath is LITZENBERGER & PWP REV.C.1	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to XTREME: 18 (17) (RKB)	* = Wellpath was transformed from a different geoidic datum
Measured depths are referenced to XTREME: 18 (17) (RKB)	North Reference: True north
XTREME: 18 (17) (RKB) to Mean Sea Level: 5099 feet	Scale: True distance
Mean Sea Level to Mean line (At Slot: SLOTH3 LITZENBERGER & (150FPN & 1154TPEL SEC-B)) 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: carlynn on 2017-06-29
	Drawings: Penny





Actual Wellpath Report

LITZENBERGER 6 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#03 LITZENBERGER 6 (1928'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 6 AWP
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	Wagnjam
Scale	0.999957	Report Generated	10/25/2017 at 4:17:46 PM
Convergence at slot	0.31° East	Database/Source file	WA_DEN_Denver_Defn/LITZENBERGER_6_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	27.92	3133512.29	1331482.67	40°14'32.388"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#03 LITZENBERGER 6 (1928'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	282.63°



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#03 LITZENBERGER 6 (1928'FNL & 1154'FEL SEC.8)
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Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 6 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (134 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00†	0.000	107.780	0.00	0.00	0.00	0.00	0.00	
17.00	0.000	107.780	17.00	0.00	0.00	0.00	0.00	
140.00	1.970	107.780	139.98	-2.11	-0.65	2.01	1.60	
231.00	2.400	58.840	230.92	-5.04	-0.14	5.13	2.03	
323.00	4.250	49.460	322.76	-8.47	3.08	9.37	2.09	
411.00	5.230	34.080	410.46	-11.90	8.52	14.10	1.81	
498.00	6.890	34.200	496.97	-15.26	16.12	19.25	1.91	
588.00	8.590	38.880	586.15	-20.22	25.82	26.51	2.01	
676.00	10.630	39.510	672.91	-26.80	37.20	35.80	2.32	
765.00	12.320	43.610	760.13	-35.40	50.40	47.57	2.11	
857.00	12.950	43.230	849.90	-45.70	65.02	61.40	0.69	
947.00	12.670	38.310	937.66	-55.11	80.12	74.43	1.25	
1036.00	12.020	44.000	1024.61	-64.17	94.44	86.92	1.55	
1128.00	13.010	44.610	1114.42	-74.64	108.70	100.84	1.09	
1220.00	12.000	43.940	1204.24	-85.09	122.96	114.75	1.11	
1311.00	12.310	40.860	1293.20	-94.60	137.11	127.66	0.79	
1403.00	12.960	39.000	1382.97	-103.82	152.55	140.57	0.83	
1495.00	13.600	40.360	1472.51	-113.44	168.81	154.07	0.77	
1620.00	13.300	40.830	1594.08	-127.07	190.88	172.99	0.26	
1712.00	13.030	44.260	1683.66	-137.51	206.32	187.14	0.90	
1801.00	13.120	51.920	1770.36	-149.17	219.74	202.10	1.95	
1891.00	12.910	59.250	1858.06	-162.95	231.18	218.78	1.85	
1983.00	12.950	65.580	1947.73	-178.65	240.69	237.00	1.54	
2073.00	12.870	66.800	2035.45	-194.82	248.81	255.40	0.32	
2164.00	12.950	75.520	2124.16	-212.12	255.35	274.59	2.14	
2254.00	12.980	73.490	2211.87	-229.92	260.75	294.04	0.51	
2344.00	12.830	68.160	2299.60	-246.99	267.34	313.01	1.33	
2435.00	12.870	63.290	2388.32	-263.16	275.65	331.44	1.19	
2525.00	12.880	53.050	2476.07	-277.42	286.19	348.41	2.53	
2616.00	12.450	49.790	2564.86	-289.92	298.62	364.01	0.92	



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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#03 LITZENBERGER 6 (1928'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 6 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (134 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
2704.00	12.570	55.150	2650.77	-302.12	310.22	379.11	1.33	
2796.00	12.250	66.000	2740.63	-316.72	319.91	396.25	2.55	
2888.00	12.940	75.290	2830.43	-333.71	326.49	415.13	2.32	
2979.00	11.790	81.060	2919.32	-351.41	330.53	434.17	1.85	
3069.00	12.840	86.080	3007.25	-369.54	332.64	453.23	1.67	
3159.00	12.840	86.860	3095.00	-388.75	333.87	473.19	0.19	
3249.00	13.300	87.010	3182.67	-408.35	334.96	493.52	0.51	
3338.00	13.070	81.560	3269.33	-427.60	336.97	513.69	1.42	
3428.00	13.030	78.230	3357.00	-446.33	340.53	533.69	0.84	
3520.00	13.200	66.240	3446.62	-464.24	346.88	553.46	2.96	
3608.00	12.830	60.280	3532.36	-479.55	355.77	571.15	1.58	
3700.00	12.990	49.260	3622.05	-493.27	367.59	587.85	2.68	
3792.00	13.400	21.870	3711.71	-501.16	384.25	599.67	6.75	
3882.00	13.070	14.770	3799.32	-503.21	403.76	606.15	1.84	
3974.00	13.050	24.180	3888.95	-505.68	423.30	613.06	2.31	
4065.00	12.630	36.790	3977.70	-511.81	440.64	623.23	3.11	
4156.00	13.210	41.820	4066.40	-520.96	456.36	636.12	1.39	
4246.00	12.970	45.930	4154.06	-531.52	471.05	650.23	1.07	
4336.00	12.550	56.410	4241.85	-543.83	483.49	665.64	2.61	
4428.00	12.810	64.060	4331.61	-558.72	493.48	683.13	1.85	
4519.00	13.320	70.610	4420.26	-575.50	501.37	702.10	1.72	
4610.00	12.900	73.600	4508.89	-593.27	507.72	721.73	0.88	
4700.00	12.930	72.190	4596.61	-610.74	513.64	740.95	0.35	
4789.00	11.900	66.770	4683.53	-626.76	520.30	758.87	1.75	
4881.00	12.300	64.980	4773.49	-642.21	528.19	776.46	0.60	
4973.00	13.920	70.780	4863.09	-659.37	535.98	795.79	2.27	
5065.00	13.240	73.690	4952.52	-677.99	542.58	816.36	1.05	
5156.00	13.520	75.100	5041.05	-696.54	548.24	836.64	0.47	
5247.00	14.810	73.160	5129.28	-716.10	554.34	858.05	1.51	
5334.00	14.340	69.470	5213.48	-734.80	561.34	878.78	1.20	



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LITZENBERGER 6 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#03 LITZENBERGER 6 (1928'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 6 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (134 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
5424.00	14.690	67.570	5300.61	-753.47	569.61	899.77	0.66	
5516.00	13.760	65.700	5389.79	-771.77	578.56	920.52	1.13	
5608.00	14.760	64.070	5478.95	-789.68	588.19	941.03	1.17	
5698.00	14.730	60.410	5565.99	-807.12	598.85	961.30	1.04	
5790.00	14.150	61.880	5655.09	-824.30	609.93	981.38	0.75	
5880.00	14.800	62.400	5742.23	-841.41	620.44	1001.27	0.74	
5973.00	14.830	56.980	5832.14	-858.80	632.43	1021.78	1.49	
6064.00	14.920	54.750	5920.09	-874.80	645.53	1041.11	0.64	
6155.00	14.760	53.550	6008.06	-890.25	659.18	1060.00	0.38	
6245.00	14.250	54.970	6095.19	-905.22	672.35	1078.30	0.69	
6337.00	13.960	52.980	6184.42	-920.03	685.53	1096.43	0.61	
6427.00	13.530	55.440	6271.84	-934.22	698.04	1113.77	0.81	
6518.00	13.460	56.880	6360.33	-948.84	709.87	1131.40	0.38	
6610.00	13.030	60.630	6449.88	-964.02	720.80	1149.41	1.04	
6700.00	12.440	57.830	6537.67	-978.44	730.94	1166.46	0.95	
6790.00	12.310	354.300	6625.95	-982.32	745.71	1173.74	14.40	
6881.00	7.510	303.790	6715.72	-973.70	758.70	1167.82	10.42	
6973.00	16.040	315.400	6805.71	-957.38	771.12	1153.87	9.58	
7063.00	23.530	304.260	6890.37	-930.17	790.12	1130.25	9.28	
7153.00	32.920	275.940	6969.93	-888.91	802.85	1090.82	17.92	
7242.00	44.320	278.890	7039.36	-833.68	810.18	1035.86	12.97	
7330.00	54.670	281.200	7096.44	-766.93	821.94	970.09	11.93	
7419.00	66.610	279.470	7140.00	-689.57	835.76	893.91	13.52	
7506.00	76.230	270.150	7167.74	-608.10	842.47	811.93	15.00	
7599.00	83.530	267.460	7184.08	-519.28	840.54	720.46	8.35	
7689.00	91.940	269.810	7187.63	-432.10	838.40	630.65	9.70	
7779.00	92.710	270.180	7183.98	-344.35	838.39	540.72	0.95	
7871.00	92.490	270.140	7179.81	-254.61	838.65	448.82	0.24	
7962.00	92.770	269.220	7175.63	-166.02	838.14	357.92	1.06	
8054.00	92.370	268.320	7171.50	-76.79	836.17	266.03	1.07	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#03 LITZENBERGER 6 (1928'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 6 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (134 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
8144.00	92.160	267.600	7167.95	10.21	832.97	176.16	0.83	
8235.00	90.740	267.250	7165.64	97.99	828.88	85.28	1.61	
8327.00	90.860	266.840	7164.36	186.60	824.14	-6.59	0.46	
8418.00	90.220	268.770	7163.50	274.57	820.65	-97.51	2.23	
8509.00	89.630	269.100	7163.62	362.98	818.96	-188.50	0.74	
8600.00	89.850	269.940	7164.03	451.61	818.20	-279.49	0.95	
8691.00	90.030	268.720	7164.13	540.16	817.14	-370.48	1.36	
8783.00	89.880	269.770	7164.20	629.66	815.92	-462.47	1.15	
8875.00	89.540	270.500	7164.67	719.48	816.14	-554.47	0.88	
8965.00	88.460	270.480	7166.24	807.46	816.91	-644.45	1.20	
9055.00	91.690	273.290	7166.12	895.86	819.87	-734.38	4.76	
9147.00	92.890	271.430	7162.44	986.31	823.66	-826.23	2.40	
9239.00	94.370	269.240	7156.62	1076.01	824.19	-918.03	2.87	
9329.00	95.120	268.420	7149.17	1163.11	822.36	-1007.70	1.23	
9419.00	95.210	269.190	7141.07	1250.15	820.49	-1097.32	0.86	
9511.00	92.950	268.670	7134.53	1339.30	818.78	-1189.06	2.52	
9603.00	92.890	268.770	7129.84	1428.49	816.73	-1280.92	0.13	
9693.00	91.790	268.190	7126.17	1515.68	814.34	-1370.81	1.38	
9783.00	91.820	268.910	7123.33	1602.94	812.07	-1460.74	0.80	
9875.00	91.080	269.770	7121.00	1692.44	811.01	-1552.70	1.23	
9967.00	91.260	270.440	7119.12	1782.24	811.18	-1644.68	0.75	
10059.00	91.750	271.610	7116.71	1872.32	812.82	-1736.63	1.38	
10149.00	91.970	272.140	7113.79	1960.69	815.76	-1826.54	0.64	
10239.00	91.820	271.390	7110.81	2049.03	818.53	-1916.44	0.85	
10330.00	92.000	269.840	7107.78	2137.99	819.51	-2007.38	1.71	
10421.00	91.170	267.640	7105.26	2226.29	817.51	-2098.32	2.58	
10513.00	91.750	266.980	7102.92	2314.99	813.19	-2190.19	0.95	
10605.00	91.660	265.810	7100.18	2403.28	807.41	-2281.96	1.27	
10697.00	90.220	265.040	7098.67	2491.15	800.07	-2373.66	1.77	
10789.00	91.050	268.540	7097.65	2579.64	794.92	-2465.49	3.91	



Actual Wellpath Report

LITZENBERGER 6 AWP

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WELLPATH DATA (134 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
10883.00	92.370	271.350	7094.84	2671.29	794.83	-2559.44	3.30	
10976.00	91.780	270.280	7091.48	2762.26	796.15	-2652.37	1.31	
11066.00	91.940	269.530	7088.55	2850.00	796.01	-2742.32	0.85	
11158.00	91.820	269.530	7085.54	2939.56	795.25	-2834.26	0.13	
11249.00	91.720	269.720	7082.73	3028.19	794.66	-2925.22	0.24	
11341.00	91.290	269.740	7080.31	3117.83	794.22	-3017.19	0.47	
11432.00	90.890	271.150	7078.58	3206.77	794.93	-3108.16	1.61	
11524.00	90.280	271.820	7077.64	3297.03	797.31	-3200.13	0.98	
11615.00	90.650	272.520	7076.90	3386.51	800.76	-3291.06	0.87	
11707.00	90.710	273.370	7075.81	3477.19	805.48	-3382.93	0.93	
11799.00	91.600	274.430	7073.95	3568.11	811.74	-3474.70	1.50	
11891.00	91.420	273.990	7071.53	3659.08	818.49	-3566.42	0.52	
11959.00	91.110	273.200	7070.03	3726.22	822.76	-3634.26	1.25	LAST BHI MWD SURVEY (1091' FNL & 486' FWL)
11984.00	91.110	273.200	7069.54	3750.88	824.15	-3659.22	0.00	PROJECTION TO BIT (1090' FNL & 460' FWL)

HOLE & CASING SECTIONS - Ref Wellbore: LITZENBERGER 6 AWB Ref Wellpath: LITZENBERGER 6 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]
16in Conductor	17.00	96.00	79.00	17.00	95.99	0.00	0.00	-0.27	0.83
13.5in Open Hole	96.00	1550.00	1454.00	95.99	1525.98	-0.27	0.83	178.60	162.42
9.625in Casing Surface	17.00	1524.00	1507.00	17.00	1500.70	0.00	0.00	173.99	158.48
8.5in Open Hole	1550.00	11984.00	10434.00	1525.98	7069.54	178.60	162.42	824.15	-3659.22



Actual Wellpath Report

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Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 6 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	0.00	-27.92	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon
LITZENBERGER 6 BHL REV-3 (1094'FNL & 460'FWL SEC.8)	7070.00	819.95	-3659.81	3129848.28	1332282.83	40°14'40.488"N	105°02'05.424"W	point
LITZENBERGER 6 BHL REV-1 (1094'FNL & 460'FWL SEC.8)	7090.20	819.95	-3659.81	3129848.28	1332282.83	40°14'40.488"N	105°02'05.424"W	point
LITZENBERGER 6 BHL REV-2 (1094'FNL & 460'FWL SEC.8)	7107.00	819.95	-3659.81	3129848.28	1332282.83	40°14'40.488"N	105°02'05.424"W	point
LITZENBERGER 6 EP REV-1 (1094'FNL & 460'FEL SEC.8)	7166.00	837.90	683.95	3134191.68	1332324.21	40°14'40.668"N	105°01'09.408"W	point
LITZENBERGER 6 EP REV-3 (1094'FNL & 460'FEL SEC.8)	7183.00	837.91	683.95	3134191.68	1332324.21	40°14'40.668"N	105°01'09.408"W	point
LITZENBERGER 6 EP REV-2 (1094'FNL & 460'FEL SEC.8)	7193.00	837.91	683.95	3134191.68	1332324.21	40°14'40.668"N	105°01'09.408"W	point
SEC.08-T03N-R68W HARDLINES 460' SETBACKS	7316.00	0.00	-27.92	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: LITZENBERGER 6 AWB Ref Wellpath: LITZENBERGER 6 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1495.00	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)	BHI NAVITRAK 13.5" (STD ROTATING, AXIAL, ROCKIES GT)<140-1495>	LITZENBERGER 6 AWB
1495.00	11959.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI ATC 8.5" (SHORT, ROCKIES GT)<1620-11959>	LITZENBERGER 6 AWB
11959.00	11984.00	Blind Drilling (std)	Projection to bit	LITZENBERGER 6 AWB



Actual Wellpath Report

LITZENBERGER 6 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#03 LITZENBERGER 6 (1928'FNL & 1154'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 6 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
11959.00	91.110	273.200	7070.03	LAST BHI MWD SURVEY (1091' FNL & 486' FWL)
11984.00	91.110	273.200	7069.54	PROJECTION TO BIT (1090' FNL & 460' FWL)