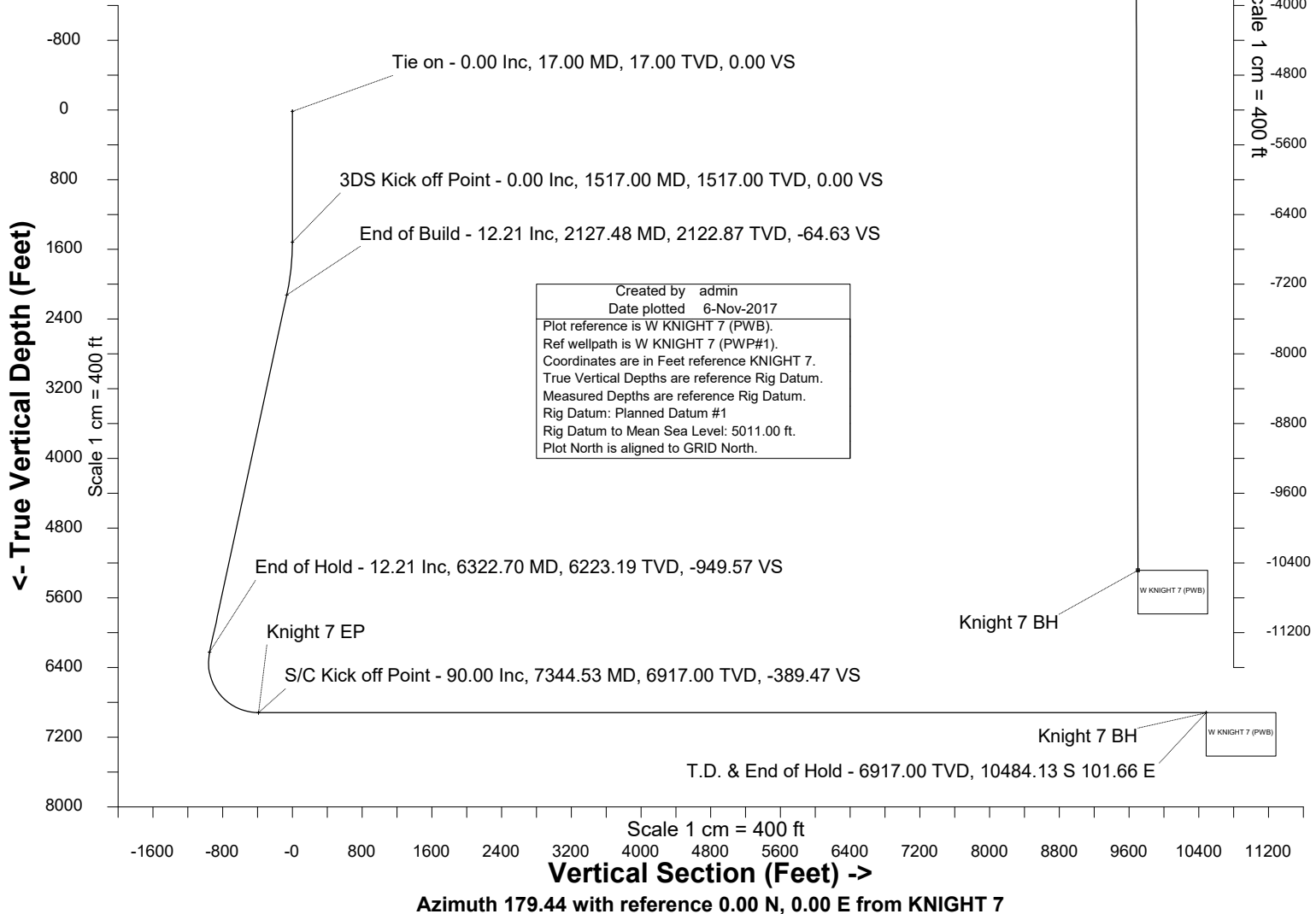
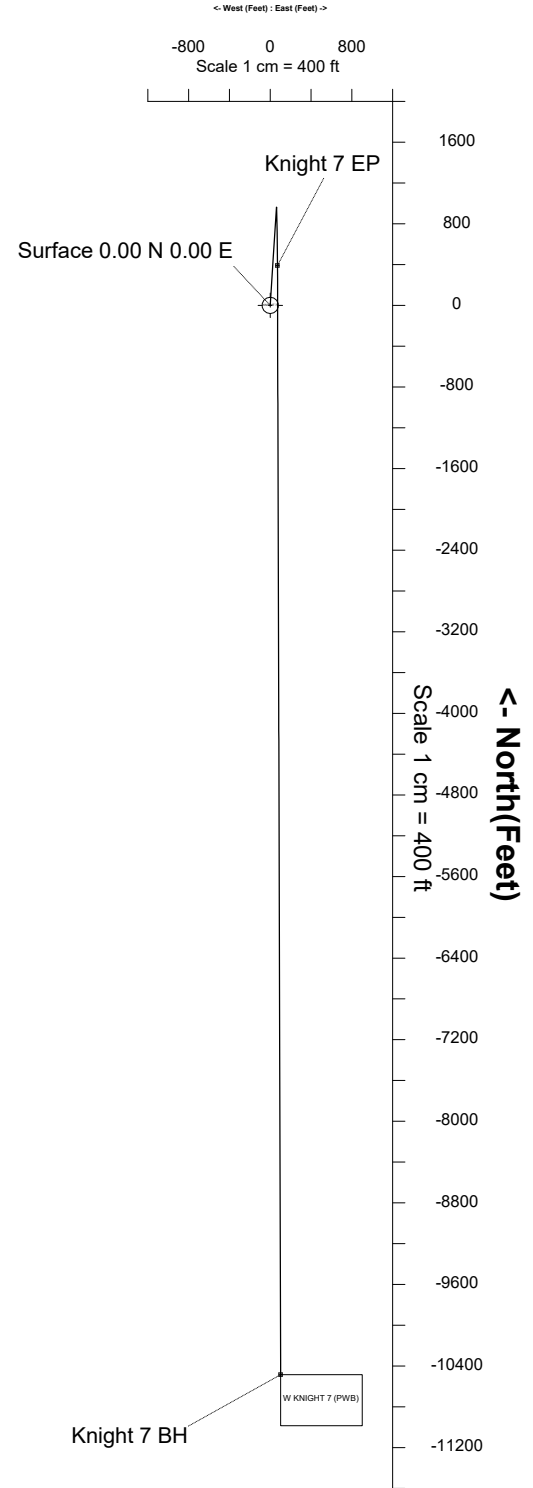


Cub Creek Energy, LLC

Location	Weld County, CO	Slot	KNIGHT 7
Field	WATTENBERG	Well	W KNIGHT 7
Installation	Knight Pad	Wellbore	W KNIGHT 7 (PWB)

WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	17.00	0.00	0.00	17.00	S 0.00	W 0.00		0.00
KOP	1517.00	0.00	3.57	1517.00	S 0.00	W 0.00	0.00	0.00
End of Build	2127.48	12.21	3.57	2122.87	N 64.67	E 4.03	2.00	-64.63
End of Hold	6322.70	12.21	3.57	6223.19	N 950.19	E 59.25	0.00	-949.57
Target Knight 7 EP	7344.53	90.00	179.84	6917.00	N 390.17	E 70.62	10.00	-389.47
T.D. & Target Kni... BH	18218.87	90.00	179.84	6917.00	S 10484.13	E 101.66	0.00	10484.62





SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 7 (PWB)



Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
KNIGHT 7	40.19780000	-105.04197000	1315231.4755	3127946.0006	87.43S	0.45E	0.00

Declination

Date	Source	Time
Nov-6-2017	EMM-2015 [2000.0-2020.0]	14:52

Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Knight Pad	40.19804000	-105.04197000	1315318.9022	3127945.5490	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
17.00	0.00	0.000	17.00	0.00N	0.00E		0.00	1315231.48	3127946.00
1517.00	0.00	3.570	1517.00	0.00N	0.00E	==>	0.00	1315231.48	3127946.00
2127.48	12.21	3.570	2122.87	64.67N	4.03E	2.00	-64.63	1315296.15	3127950.03
6322.70	12.21	3.570	6223.19	950.19N	59.25E	==>	-949.57	1316181.63	3128005.24
7344.53	90.00	179.840	6917.00	390.17N	70.62E	10.00	-389.47	1315621.63	3128016.61
18218.87	90.00	179.840	6917.00	10484.13S	101.66E	==>	10484.62	1304747.82	3128047.66

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	Rig Datum
17.00	0.00	0.000	17.00	0.00N	0.00E	==>	0.00	Slot Datum
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	
1500.00	0.00	0.000	1500.00	0.00N	0.00E	==>	0.00	
1600.00	1.66	3.570	1599.99	1.20N	0.07E	2.00	-1.20	
1700.00	3.66	3.570	1699.88	5.83N	0.36E	2.00	-5.83	
1800.00	5.66	3.570	1799.54	13.94N	0.87E	2.00	-13.93	
1900.00	7.66	3.570	1898.86	25.51N	1.59E	2.00	-25.50	
2000.00	9.66	3.570	1997.71	40.54N	2.53E	2.00	-40.52	
2100.00	11.66	3.570	2095.98	59.00N	3.68E	2.00	-58.96	
2200.00	12.21	3.570	2193.75	79.98N	4.99E	==>	-79.93	
2300.00	12.21	3.570	2291.49	101.09N	6.30E	==>	-101.02	
2400.00	12.21	3.570	2389.23	122.20N	7.62E	==>	-122.12	
2500.00	12.21	3.570	2486.96	143.31N	8.94E	==>	-143.21	
2600.00	12.21	3.570	2584.70	164.41N	10.25E	==>	-164.31	
2700.00	12.21	3.570	2682.44	185.52N	11.57E	==>	-185.40	
2800.00	12.21	3.570	2780.18	206.63N	12.88E	==>	-206.49	
2900.00	12.21	3.570	2877.92	227.74N	14.20E	==>	-227.59	
3000.00	12.21	3.570	2975.65	248.84N	15.52E	==>	-248.68	
3100.00	12.21	3.570	3073.39	269.95N	16.83E	==>	-269.78	

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Vertical Section is from 0.00N 0.00E on azimuth 179.440 degrees
Bottom hole distance is 10484.62 Feet on azimuth 179.44 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Microsoft
Date Printed: 1-Dec-2017



SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 7 (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
3200.00	12.21	3.570	3171.13	291.06N	18.15E	==>	-290.87	
3300.00	12.21	3.570	3268.87	312.17N	19.46E	==>	-311.96	
3400.00	12.21	3.570	3366.61	333.28N	20.78E	==>	-333.06	
3500.00	12.21	3.570	3464.34	354.38N	22.10E	==>	-354.15	
3600.00	12.21	3.570	3562.08	375.49N	23.41E	==>	-375.25	
3700.00	12.21	3.570	3659.82	396.60N	24.73E	==>	-396.34	
3800.00	12.21	3.570	3757.56	417.71N	26.05E	==>	-417.43	
3900.00	12.21	3.570	3855.30	438.81N	27.36E	==>	-438.53	
4000.00	12.21	3.570	3953.03	459.92N	28.68E	==>	-459.62	
4100.00	12.21	3.570	4050.77	481.03N	29.99E	==>	-480.72	
4200.00	12.21	3.570	4148.51	502.14N	31.31E	==>	-501.81	
4300.00	12.21	3.570	4246.25	523.25N	32.63E	==>	-522.91	
4400.00	12.21	3.570	4343.99	544.35N	33.94E	==>	-544.00	
4500.00	12.21	3.570	4441.73	565.46N	35.26E	==>	-565.09	
4600.00	12.21	3.570	4539.46	586.57N	36.57E	==>	-586.19	
4700.00	12.21	3.570	4637.20	607.68N	37.89E	==>	-607.28	
4800.00	12.21	3.570	4734.94	628.79N	39.21E	==>	-628.38	
4900.00	12.21	3.570	4832.68	649.89N	40.52E	==>	-649.47	
5000.00	12.21	3.570	4930.42	671.00N	41.84E	==>	-670.56	
5100.00	12.21	3.570	5028.15	692.11N	43.15E	==>	-691.66	
5200.00	12.21	3.570	5125.89	713.22N	44.47E	==>	-712.75	
5300.00	12.21	3.570	5223.63	734.32N	45.79E	==>	-733.85	
5400.00	12.21	3.570	5321.37	755.43N	47.10E	==>	-754.94	
5500.00	12.21	3.570	5419.11	776.54N	48.42E	==>	-776.03	
5600.00	12.21	3.570	5516.84	797.65N	49.74E	==>	-797.13	
5700.00	12.21	3.570	5614.58	818.76N	51.05E	==>	-818.22	
5800.00	12.21	3.570	5712.32	839.86N	52.37E	==>	-839.32	
5900.00	12.21	3.570	5810.06	860.97N	53.68E	==>	-860.41	
6000.00	12.21	3.570	5907.80	882.08N	55.00E	==>	-881.50	
6100.00	12.21	3.570	6005.53	903.19N	56.32E	==>	-902.60	
6200.00	12.21	3.570	6103.27	924.29N	57.63E	==>	-923.69	
6300.00	12.21	3.570	6201.01	945.40N	58.95E	==>	-944.79	
6400.00	4.53	10.090	6299.62	961.37N	60.29E	10.00	-960.74	
6500.00	5.61	171.590	6399.48	960.42N	61.70E	10.00	-959.78	
6600.00	15.57	176.940	6497.65	942.15N	63.13E	10.00	-941.49	
6700.00	25.56	178.150	6591.16	907.10N	64.55E	10.00	-906.43	
6800.00	35.55	178.710	6677.17	856.34N	65.91E	10.00	-855.66	
6900.00	45.55	179.040	6753.05	791.42N	67.16E	10.00	-790.73	
7000.00	55.55	179.280	6816.51	714.30N	68.28E	10.00	-713.61	
7100.00	65.55	179.470	6865.61	627.34N	69.22E	10.00	-626.64	
7200.00	75.55	179.630	6898.87	533.17N	69.95E	10.00	-532.47	
7300.00	85.55	179.770	6915.27	434.66N	70.47E	10.00	-433.95	
7400.00	90.00	179.840	6917.00	334.70N	70.77E	==>	-334.00	
7500.00	90.00	179.840	6917.00	234.70N	71.06E	==>	-234.00	
7600.00	90.00	179.840	6917.00	134.70N	71.35E	==>	-134.00	
7700.00	90.00	179.840	6917.00	34.70N	71.63E	==>	-34.01	
7800.00	90.00	179.840	6917.00	65.30S	71.92E	==>	65.99	
7900.00	90.00	179.840	6917.00	165.30S	72.20E	==>	165.99	
8000.00	90.00	179.840	6917.00	265.30S	72.49E	==>	265.99	
8100.00	90.00	179.840	6917.00	365.30S	72.77E	==>	365.98	
8200.00	90.00	179.840	6917.00	465.30S	73.06E	==>	465.98	
8300.00	90.00	179.840	6917.00	565.30S	73.34E	==>	565.98	
8400.00	90.00	179.840	6917.00	665.29S	73.63E	==>	665.98	
8500.00	90.00	179.840	6917.00	765.29S	73.92E	==>	765.98	
8600.00	90.00	179.840	6917.00	865.29S	74.20E	==>	865.97	
8700.00	90.00	179.840	6917.00	965.29S	74.49E	==>	965.97	
8800.00	90.00	179.840	6917.00	1065.29S	74.77E	==>	1065.97	
8900.00	90.00	179.840	6917.00	1165.29S	75.06E	==>	1165.97	
9000.00	90.00	179.840	6917.00	1265.29S	75.34E	==>	1265.96	

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Bottom hole distance is 10484.62 Feet on azimuth 179.44 degrees from Wellhead
Calculation method uses Minimum Curvature method
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SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 7 (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
9100.00	90.00	179.840	6917.00	1365.29S	75.63E	==>	1365.96	
9200.00	90.00	179.840	6917.00	1465.29S	75.91E	==>	1465.96	
9300.00	90.00	179.840	6917.00	1565.29S	76.20E	==>	1565.96	
9400.00	90.00	179.840	6917.00	1665.29S	76.49E	==>	1665.95	
9500.00	90.00	179.840	6917.00	1765.29S	76.77E	==>	1765.95	
9600.00	90.00	179.840	6917.00	1865.29S	77.06E	==>	1865.95	
9700.00	90.00	179.840	6917.00	1965.29S	77.34E	==>	1965.95	
9800.00	90.00	179.840	6917.00	2065.29S	77.63E	==>	2065.94	
9900.00	90.00	179.840	6917.00	2165.29S	77.91E	==>	2165.94	
10000.00	90.00	179.840	6917.00	2265.29S	78.20E	==>	2265.94	
10100.00	90.00	179.840	6917.00	2365.29S	78.48E	==>	2365.94	
10200.00	90.00	179.840	6917.00	2465.29S	78.77E	==>	2465.94	
10300.00	90.00	179.840	6917.00	2565.29S	79.05E	==>	2565.93	
10400.00	90.00	179.840	6917.00	2665.29S	79.34E	==>	2665.93	
10500.00	90.00	179.840	6917.00	2765.29S	79.63E	==>	2765.93	
10600.00	90.00	179.840	6917.00	2865.29S	79.91E	==>	2865.93	
10700.00	90.00	179.840	6917.00	2965.29S	80.20E	==>	2965.92	
10800.00	90.00	179.840	6917.00	3065.29S	80.48E	==>	3065.92	
10900.00	90.00	179.840	6917.00	3165.28S	80.77E	==>	3165.92	
11000.00	90.00	179.840	6917.00	3265.28S	81.05E	==>	3265.92	
11100.00	90.00	179.840	6917.00	3365.28S	81.34E	==>	3365.91	
11200.00	90.00	179.840	6917.00	3465.28S	81.62E	==>	3465.91	
11300.00	90.00	179.840	6917.00	3565.28S	81.91E	==>	3565.91	
11400.00	90.00	179.840	6917.00	3665.28S	82.20E	==>	3665.91	
11500.00	90.00	179.840	6917.00	3765.28S	82.48E	==>	3765.91	
11600.00	90.00	179.840	6917.00	3865.28S	82.77E	==>	3865.90	
11700.00	90.00	179.840	6917.00	3965.28S	83.05E	==>	3965.90	
11800.00	90.00	179.840	6917.00	4065.28S	83.34E	==>	4065.90	
11900.00	90.00	179.840	6917.00	4165.28S	83.62E	==>	4165.90	
12000.00	90.00	179.840	6917.00	4265.28S	83.91E	==>	4265.89	
12100.00	90.00	179.840	6917.00	4365.28S	84.19E	==>	4365.89	
12200.00	90.00	179.840	6917.00	4465.28S	84.48E	==>	4465.89	
12300.00	90.00	179.840	6917.00	4565.28S	84.77E	==>	4565.89	
12400.00	90.00	179.840	6917.00	4665.28S	85.05E	==>	4665.88	
12500.00	90.00	179.840	6917.00	4765.28S	85.34E	==>	4765.88	
12600.00	90.00	179.840	6917.00	4865.28S	85.62E	==>	4865.88	
12700.00	90.00	179.840	6917.00	4965.28S	85.91E	==>	4965.88	
12800.00	90.00	179.840	6917.00	5065.28S	86.19E	==>	5065.87	
12900.00	90.00	179.840	6917.00	5165.28S	86.48E	==>	5165.87	
13000.00	90.00	179.840	6917.00	5265.28S	86.76E	==>	5265.87	
13100.00	90.00	179.840	6917.00	5365.28S	87.05E	==>	5365.87	
13200.00	90.00	179.840	6917.00	5465.28S	87.33E	==>	5465.87	
13300.00	90.00	179.840	6917.00	5565.27S	87.62E	==>	5565.86	
13400.00	90.00	179.840	6917.00	5665.27S	87.91E	==>	5665.86	
13500.00	90.00	179.840	6917.00	5765.27S	88.19E	==>	5765.86	
13600.00	90.00	179.840	6917.00	5865.27S	88.48E	==>	5865.86	
13700.00	90.00	179.840	6917.00	5965.27S	88.76E	==>	5965.85	
13800.00	90.00	179.840	6917.00	6065.27S	89.05E	==>	6065.85	
13900.00	90.00	179.840	6917.00	6165.27S	89.33E	==>	6165.85	
14000.00	90.00	179.840	6917.00	6265.27S	89.62E	==>	6265.85	
14100.00	90.00	179.840	6917.00	6365.27S	89.90E	==>	6365.84	
14200.00	90.00	179.840	6917.00	6465.27S	90.19E	==>	6465.84	
14300.00	90.00	179.840	6917.00	6565.27S	90.48E	==>	6565.84	
14400.00	90.00	179.840	6917.00	6665.27S	90.76E	==>	6665.84	
14500.00	90.00	179.840	6917.00	6765.27S	91.05E	==>	6765.83	
14600.00	90.00	179.840	6917.00	6865.27S	91.33E	==>	6865.83	
14700.00	90.00	179.840	6917.00	6965.27S	91.62E	==>	6965.83	
14800.00	90.00	179.840	6917.00	7065.27S	91.90E	==>	7065.83	
14900.00	90.00	179.840	6917.00	7165.27S	92.19E	==>	7165.83	

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SYS DRILL
Well Design Combined Report
Wellbore: W KNIGHT 7 (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
15000.00	90.00	179.840	6917.00	7265.27S	92.47E	==>	7265.82	
15100.00	90.00	179.840	6917.00	7365.27S	92.76E	==>	7365.82	
15200.00	90.00	179.840	6917.00	7465.27S	93.05E	==>	7465.82	
15300.00	90.00	179.840	6917.00	7565.27S	93.33E	==>	7565.82	
15400.00	90.00	179.840	6917.00	7665.27S	93.62E	==>	7665.81	
15500.00	90.00	179.840	6917.00	7765.27S	93.90E	==>	7765.81	
15600.00	90.00	179.840	6917.00	7865.27S	94.19E	==>	7865.81	
15700.00	90.00	179.840	6917.00	7965.27S	94.47E	==>	7965.81	
15800.00	90.00	179.840	6917.00	8065.26S	94.76E	==>	8065.80	
15900.00	90.00	179.840	6917.00	8165.26S	95.04E	==>	8165.80	
16000.00	90.00	179.840	6917.00	8265.26S	95.33E	==>	8265.80	
16100.00	90.00	179.840	6917.00	8365.26S	95.61E	==>	8365.80	
16200.00	90.00	179.840	6917.00	8465.26S	95.90E	==>	8465.80	
16300.00	90.00	179.840	6917.00	8565.26S	96.19E	==>	8565.79	
16400.00	90.00	179.840	6917.00	8665.26S	96.47E	==>	8665.79	
16500.00	90.00	179.840	6917.00	8765.26S	96.76E	==>	8765.79	
16600.00	90.00	179.840	6917.00	8865.26S	97.04E	==>	8865.79	
16700.00	90.00	179.840	6917.00	8965.26S	97.33E	==>	8965.78	
16800.00	90.00	179.840	6917.00	9065.26S	97.61E	==>	9065.78	
16900.00	90.00	179.840	6917.00	9165.26S	97.90E	==>	9165.78	
17000.00	90.00	179.840	6917.00	9265.26S	98.18E	==>	9265.78	
17100.00	90.00	179.840	6917.00	9365.26S	98.47E	==>	9365.77	
17200.00	90.00	179.840	6917.00	9465.26S	98.76E	==>	9465.77	
17300.00	90.00	179.840	6917.00	9565.26S	99.04E	==>	9565.77	
17400.00	90.00	179.840	6917.00	9665.26S	99.33E	==>	9665.77	
17500.00	90.00	179.840	6917.00	9765.26S	99.61E	==>	9765.76	
17600.00	90.00	179.840	6917.00	9865.26S	99.90E	==>	9865.76	
17700.00	90.00	179.840	6917.00	9965.26S	100.18E	==>	9965.76	
17800.00	90.00	179.840	6917.00	10065.26S	100.47E	==>	10065.76	
17900.00	90.00	179.840	6917.00	10165.26S	100.75E	==>	10165.76	
18000.00	90.00	179.840	6917.00	10265.26S	101.04E	==>	10265.75	
18100.00	90.00	179.840	6917.00	10365.26S	101.33E	==>	10365.75	
18200.00	90.00	179.840	6917.00	10465.25S	101.61E	==>	10465.75	
18218.87	90.00	179.840	6917.00	10484.13S	101.66E	==>	10484.62	

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5011.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 179.440 degrees
Bottom hole distance is 10484.62 Feet on azimuth 179.44 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Microsoft
Date Printed: 1-Dec-2017



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Knight 7 EP	390.17N	70.62E	6917.00	40.19887000	-105.04171000	1315621.63	3128016.61
Knight 7 BH	10484.13S	101.66E	6917.00	40.16902000	-105.04180000	1304747.82	3128047.66

Notes