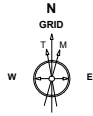


<b>Cub Creek Energy, LLC</b>			
<b>Location</b>	<b>Weld County, CO</b>	<b>Slot</b>	<b>KNIGHT 5</b>
<b>Field</b>	<b>WATTENBERG</b>	<b>Well</b>	<b>W KNIGHT 5</b>
<b>Installation</b>	<b>Knight Pad</b>	<b>Wellbore</b>	<b>W KNIGHT 5 (PWB)</b>

Slot KNIGHT 5

Well W KNIGHT 5

Wellbore W KNIGHT 5 (PWB)



Nov-6-2017

EMM-2015 Dip: 66.59 deg Field: 52154.0 nT  
Lat: N40 11 52.9440 Long: W105 2 31.0920 Elev: 4993.00 ft  
Magnetic North is 8.54 deg East of True North  
GRID North is 0.30 deg East of True North  
To correct azimuth from True to GRID subtract 0.30 deg  
To correct azimuth from Magnetic to GRID add 8.25 deg

Date plotted 14-Jul-2020

Date plotted 14-Jul-2020

Ref wellpath is W KNIGHT 5 (PWP#1).

Coordinates are in Feet reference KNIC

True Vertical Depths are reference Rig Datum.

Measured Depths are reference Rig Datum.  
Rig Datum = Planned Datum #1

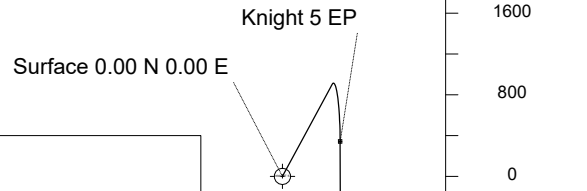
Rig Datum: Planned Datum #1  
Rig Datum: Mean Sea Level

Rig Datum to Mean Sea Level: 5012.00 ft.  
Plot North is aligned to GRID North

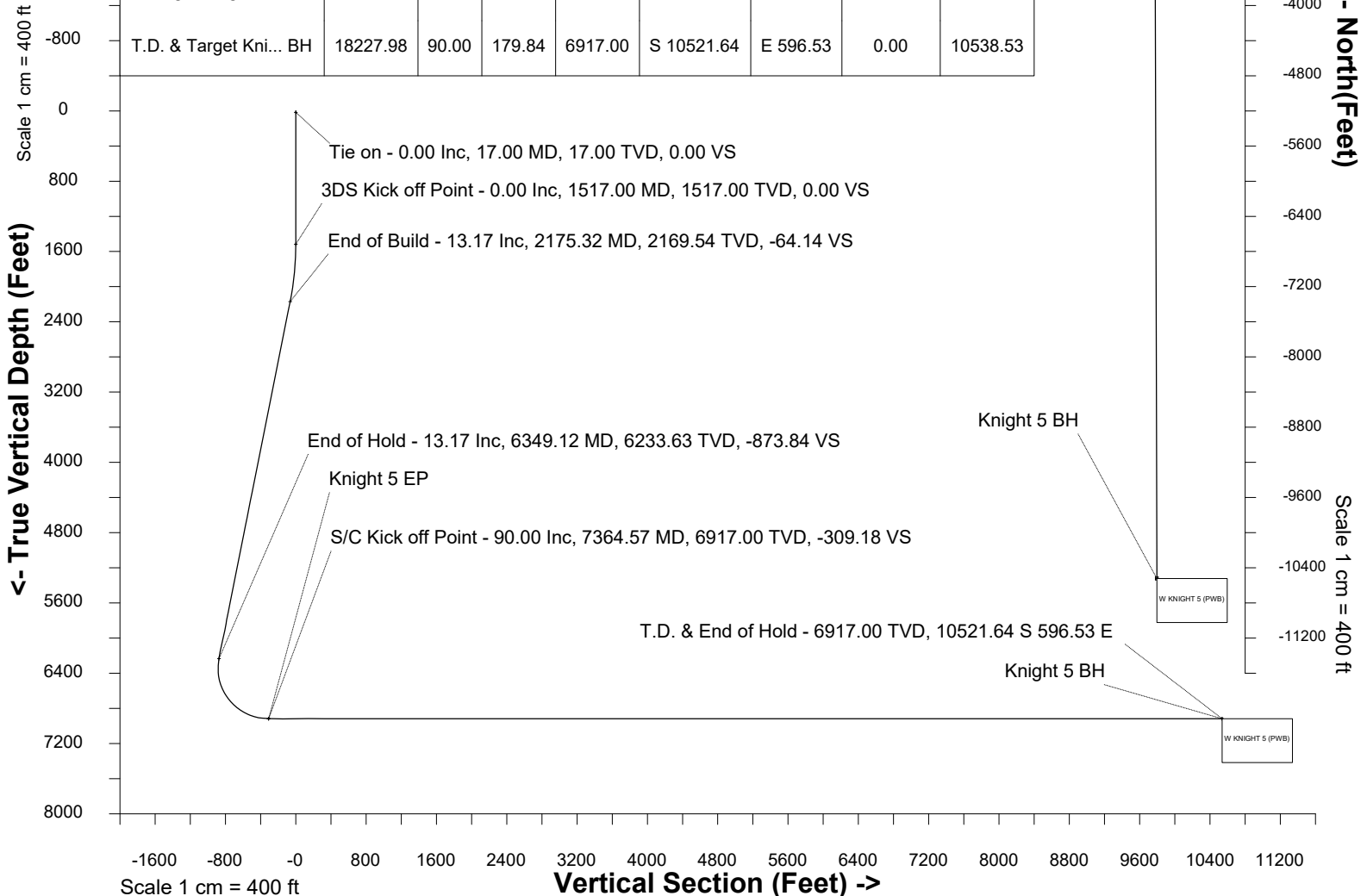
Plot North is aligned to GRID North.

Scale 1 cm = 400 ft      **East (Feet) ->**

-800      0      800      1600



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	28.36	1517.00	S 0.00	W 0.00	0.00	0.00
End of Build	2175.32	13.17	28.36	2169.54	N 66.27	E 35.77	2.00	-64.14
End of Hold	6349.12	13.17	28.36	6233.63	N 902.87	E 487.37	0.00	-873.84
Target Knight 5 EP	7364.57	90.00	179.84	6917.00	N 341.73	E 565.32	10.00	-309.18
T.D. & Target Kni... BH	18227.98	90.00	179.84	6917.00	S 10521.64	E 596.53	0.00	10538.53



**Azimuth 176.76 with reference 0.00 N, 0.00 E from KNIGHT 5**

SYSDRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 5 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
KNIGHT 5	40.19796000	-105.04197000	1315289.7600	3127945.6995	29.14S	0.15E	0.00

Declination		
Date	Source	Time
Nov-6-2017	EMM-2015	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	NAD83 Based Colorado State Planes, Northern Zone, US Feet	Grid

Summary Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
17.00	0.00	0.00	17.00	-4995.00	0.00N	0.00E		0.00
1517.00	0.00	28.36	1517.00	-3495.00	0.00N	0.00E	==>	0.00
2175.32	13.17	28.36	2169.54	-2842.46	66.27N	35.77E	2.00	-64.14
6349.12	13.17	28.36	6233.63	1221.63	902.87N	487.37E	==>	-873.84
7364.57	90.00	179.84	6917.00	1905.00	341.73N	565.32E	10.00	-309.18
18227.98	90.00	179.84	6917.00	1905.00	10521.64S	596.53E	==>	10538.53

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	40.19796000	-105.04197000
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1517.00	0.00	28.36	1517.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04197000
1600.00	1.66	28.36	1599.99	1.06N	0.57E	2.00	-1.02	40.19796290	-105.04196794
1700.00	3.66	28.36	1699.88	5.14N	2.78E	2.00	-4.98	40.19797407	-105.04195997
1800.00	5.66	28.36	1799.54	12.29N	6.63E	2.00	-11.90	40.19799364	-105.04194602
1900.00	7.66	28.36	1898.86	22.50N	12.14E	2.00	-21.77	40.19802158	-105.04192612
2000.00	9.66	28.36	1997.71	35.75N	19.30E	2.00	-34.60	40.19805785	-105.04190027
2100.00	11.66	28.36	2095.98	52.02N	28.08E	2.00	-50.35	40.19810240	-105.04186852
2175.32	13.17	28.36	2169.54	66.27N	35.77E	2.00	-64.14	40.19814140	-105.04184072
2200.00	13.17	28.36	2193.57	71.22N	38.44E	==>	-68.93	40.19815494	-105.04183107
2300.00	13.17	28.36	2290.94	91.26N	49.26E	==>	-88.33	40.19820981	-105.04179197
2400.00	13.17	28.36	2388.32	111.30N	60.08E	==>	-107.73	40.19826467	-105.04175287
2500.00	13.17	28.36	2485.69	131.35N	70.90E	==>	-127.12	40.19831954	-105.04171377
2600.00	13.17	28.36	2583.06	151.39N	81.72E	==>	-146.52	40.19837441	-105.04167466
2700.00	13.17	28.36	2680.43	171.44N	92.54E	==>	-165.92	40.19842928	-105.04163556
2800.00	13.17	28.36	2777.80	191.48N	103.36E	==>	-185.32	40.19848414	-105.04159646

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 5012.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 176.76 degrees  
Bottom hole distance is 10538.53 Feet on azimuth 176.76 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by  
Date Printed: 14-Jul-2020

SYSDRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 5 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
2900.00	13.17	28.36	2875.17	211.53N	114.18E	==>	-204.72	40.19853901	-105.04155736
3000.00	13.17	28.36	2972.54	231.57N	125.00E	==>	-224.12	40.19859388	-105.04151825
3100.00	13.17	28.36	3069.91	251.61N	135.82E	==>	-243.52	40.19864874	-105.04147915
3200.00	13.17	28.36	3167.29	271.66N	146.64E	==>	-262.92	40.19870361	-105.04144005
3300.00	13.17	28.36	3264.66	291.70N	157.46E	==>	-282.32	40.19875848	-105.04140095
3400.00	13.17	28.36	3362.03	311.75N	168.28E	==>	-301.72	40.19881334	-105.04136184
3500.00	13.17	28.36	3459.40	331.79N	179.10E	==>	-321.12	40.19886821	-105.04132274
3600.00	13.17	28.36	3556.77	351.83N	189.92E	==>	-340.52	40.19892308	-105.04128364
3700.00	13.17	28.36	3654.14	371.88N	200.74E	==>	-359.92	40.19897794	-105.04124454
3800.00	13.17	28.36	3751.51	391.92N	211.56E	==>	-379.32	40.19903281	-105.04120543
3900.00	13.17	28.36	3848.88	411.97N	222.38E	==>	-398.72	40.19908768	-105.04116633
4000.00	13.17	28.36	3946.26	432.01N	233.20E	==>	-418.12	40.19914254	-105.04112723
4100.00	13.17	28.36	4043.63	452.06N	244.02E	==>	-437.52	40.19919741	-105.04108812
4200.00	13.17	28.36	4141.00	472.10N	254.84E	==>	-456.92	40.19925228	-105.04104902
4300.00	13.17	28.36	4238.37	492.14N	265.66E	==>	-476.32	40.19930714	-105.04100992
4400.00	13.17	28.36	4335.74	512.19N	276.48E	==>	-495.72	40.19936201	-105.04097081
4500.00	13.17	28.36	4433.11	532.23N	287.30E	==>	-515.12	40.19941688	-105.04093171
4600.00	13.17	28.36	4530.48	552.28N	298.12E	==>	-534.52	40.19947174	-105.04089261
4700.00	13.17	28.36	4627.85	572.32N	308.94E	==>	-553.92	40.19952661	-105.04085350
4800.00	13.17	28.36	4725.23	592.37N	319.76E	==>	-573.32	40.19958148	-105.04081440
4900.00	13.17	28.36	4822.60	612.41N	330.58E	==>	-592.72	40.19963634	-105.04077530
5000.00	13.17	28.36	4919.97	632.45N	341.40E	==>	-612.11	40.19969121	-105.04073619
5100.00	13.17	28.36	5017.34	652.50N	352.22E	==>	-631.51	40.19974608	-105.04069709
5200.00	13.17	28.36	5114.71	672.54N	363.04E	==>	-650.91	40.19980094	-105.04065799
5300.00	13.17	28.36	5212.08	692.59N	373.86E	==>	-670.31	40.19985581	-105.04061888
5400.00	13.17	28.36	5309.45	712.63N	384.68E	==>	-689.71	40.19991068	-105.04057978
5500.00	13.17	28.36	5406.82	732.67N	395.50E	==>	-709.11	40.19996554	-105.04054067
5600.00	13.17	28.36	5504.20	752.72N	406.32E	==>	-728.51	40.20002041	-105.04050157
5700.00	13.17	28.36	5601.57	772.76N	417.14E	==>	-747.91	40.20007528	-105.04046247
5800.00	13.17	28.36	5698.94	792.81N	427.95E	==>	-767.31	40.20013014	-105.04042336
5900.00	13.17	28.36	5796.31	812.85N	438.77E	==>	-786.71	40.20018501	-105.04038426
6000.00	13.17	28.36	5893.68	832.90N	449.59E	==>	-806.11	40.20023988	-105.04034515
6100.00	13.17	28.36	5991.05	852.94N	460.41E	==>	-825.51	40.20029474	-105.04030605
6200.00	13.17	28.36	6088.42	872.98N	471.23E	==>	-844.91	40.20034961	-105.04026694
6300.00	13.17	28.36	6185.79	893.03N	482.05E	==>	-864.31	40.20040448	-105.04022784
6349.12	13.17	28.36	6233.63	902.87N	487.37E	==>	-873.84	40.20043143	-105.04020863
6400.00	9.06	44.28	6283.55	910.85N	492.92E	10.00	-881.49	40.20045323	-105.04018860
6500.00	7.29	118.98	6382.77	913.42N	504.00E	10.00	-883.43	40.20046013	-105.04014890
6600.00	14.94	155.09	6480.93	898.61N	515.01E	10.00	-868.02	40.20041934	-105.04010977
6700.00	24.34	165.54	6575.03	866.88N	525.61E	10.00	-835.74	40.20033209	-105.04007240
6800.00	34.07	170.33	6662.22	819.19N	535.49E	10.00	-787.56	40.20020103	-105.04003793
6900.00	43.91	173.17	6739.85	756.98N	544.34E	10.00	-724.96	40.20003015	-105.04000740
7000.00	53.80	175.15	6805.57	682.15N	551.89E	10.00	-649.82	40.19982464	-105.03998174
7100.00	63.72	176.67	6857.36	596.98N	557.93E	10.00	-564.44	40.19959075	-105.03996173
7200.00	73.65	177.96	6893.67	504.04N	562.25E	10.00	-471.40	40.19933557	-105.03994798
7300.00	83.58	179.12	6913.39	406.16N	564.73E	10.00	-373.54	40.19906687	-105.03994091
7364.57	90.00	179.84	6917.00	341.73N	565.32E	10.00	-309.18	40.19889000	-105.03994000
7400.00	90.00	179.84	6917.00	306.30N	565.42E	==>	-273.80	40.19879274	-105.03994029
7500.00	90.00	179.84	6917.00	206.30N	565.71E	==>	-173.95	40.19851825	-105.03994112
7600.00	90.00	179.84	6917.00	106.30N	566.00E	==>	-74.09	40.19824375	-105.03994195
7700.00	90.00	179.84	6917.00	6.30N	566.28E	==>	25.76	40.19796925	-105.03994278
7800.00	90.00	179.84	6917.00	93.70S	566.57E	==>	125.62	40.19769475	-105.03994361
7900.00	90.00	179.84	6917.00	193.70S	566.86E	==>	225.48	40.19742025	-105.03994444
8000.00	90.00	179.84	6917.00	293.70S	567.15E	==>	325.33	40.19714575	-105.03994527
8100.00	90.00	179.84	6917.00	393.70S	567.43E	==>	425.19	40.19687125	-105.03994610
8200.00	90.00	179.84	6917.00	493.70S	567.72E	==>	525.04	40.19659675	-105.03994692
8300.00	90.00	179.84	6917.00	593.70S	568.01E	==>	624.90	40.19632225	-105.03994775
8400.00	90.00	179.84	6917.00	693.70S	568.30E	==>	724.75	40.19604776	-105.03994858

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Vertical Section is from 0.00N 0.00E on azimuth 176.76 degrees  
Bottom hole distance is 10538.53 Feet on azimuth 176.76 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by  
Date Printed: 14-Jul-2020

SYSDRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 5 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
8500.00	90.00	179.84	6917.00	793.70S	568.58E	==>	824.61	40.19577326	-105.03994941
8600.00	90.00	179.84	6917.00	893.70S	568.87E	==>	924.46	40.19549876	-105.03995024
8700.00	90.00	179.84	6917.00	993.70S	569.16E	==>	1024.32	40.19522426	-105.03995107
8800.00	90.00	179.84	6917.00	1093.70S	569.44E	==>	1124.17	40.19494976	-105.03995190
8900.00	90.00	179.84	6917.00	1193.69S	569.73E	==>	1224.03	40.19467526	-105.03995273
9000.00	90.00	179.84	6917.00	1293.69S	570.02E	==>	1323.89	40.19440076	-105.03995355
9100.00	90.00	179.84	6917.00	1393.69S	570.31E	==>	1423.74	40.19412626	-105.03995438
9200.00	90.00	179.84	6917.00	1493.69S	570.59E	==>	1523.60	40.19385176	-105.03995521
9300.00	90.00	179.84	6917.00	1593.69S	570.88E	==>	1623.45	40.19357727	-105.03995604
9400.00	90.00	179.84	6917.00	1693.69S	571.17E	==>	1723.31	40.19330277	-105.03995687
9500.00	90.00	179.84	6917.00	1793.69S	571.46E	==>	1823.16	40.19302827	-105.03995770
9600.00	90.00	179.84	6917.00	1893.69S	571.74E	==>	1923.02	40.19275377	-105.03995853
9700.00	90.00	179.84	6917.00	1993.69S	572.03E	==>	2022.87	40.19247927	-105.03995935
9800.00	90.00	179.84	6917.00	2093.69S	572.32E	==>	2122.73	40.19220477	-105.03996018
9900.00	90.00	179.84	6917.00	2193.69S	572.60E	==>	2222.59	40.19193027	-105.03996101
10000.00	90.00	179.84	6917.00	2293.69S	572.89E	==>	2322.44	40.19165577	-105.03996184
10100.00	90.00	179.84	6917.00	2393.69S	573.18E	==>	2422.30	40.19138127	-105.03996267
10200.00	90.00	179.84	6917.00	2493.69S	573.47E	==>	2522.15	40.19110677	-105.03996350
10300.00	90.00	179.84	6917.00	2593.69S	573.75E	==>	2622.01	40.19083227	-105.03996433
10400.00	90.00	179.84	6917.00	2693.69S	574.04E	==>	2721.86	40.19055778	-105.03996516
10500.00	90.00	179.84	6917.00	2793.69S	574.33E	==>	2821.72	40.19028328	-105.03996598
10600.00	90.00	179.84	6917.00	2893.69S	574.62E	==>	2921.57	40.19000878	-105.03996681
10700.00	90.00	179.84	6917.00	2993.69S	574.90E	==>	3021.43	40.18973428	-105.03996764
10800.00	90.00	179.84	6917.00	3093.69S	575.19E	==>	3121.29	40.18945978	-105.03996847
10900.00	90.00	179.84	6917.00	3193.69S	575.48E	==>	3221.14	40.18918528	-105.03996930
11000.00	90.00	179.84	6917.00	3293.69S	575.76E	==>	3321.00	40.18891078	-105.03997013
11100.00	90.00	179.84	6917.00	3393.69S	576.05E	==>	3420.85	40.18863628	-105.03997096
11200.00	90.00	179.84	6917.00	3493.69S	576.34E	==>	3520.71	40.18836178	-105.03997178
11300.00	90.00	179.84	6917.00	3593.68S	576.63E	==>	3620.56	40.18808728	-105.03997261
11400.00	90.00	179.84	6917.00	3693.68S	576.91E	==>	3720.42	40.18781278	-105.03997344
11500.00	90.00	179.84	6917.00	3793.68S	577.20E	==>	3820.27	40.18753828	-105.03997427
11600.00	90.00	179.84	6917.00	3893.68S	577.49E	==>	3920.13	40.18726379	-105.03997510
11700.00	90.00	179.84	6917.00	3993.68S	577.78E	==>	4019.98	40.18698929	-105.03997593
11800.00	90.00	179.84	6917.00	4093.68S	578.06E	==>	4119.84	40.18671479	-105.03997676
11900.00	90.00	179.84	6917.00	4193.68S	578.35E	==>	4219.70	40.18644029	-105.03997758
12000.00	90.00	179.84	6917.00	4293.68S	578.64E	==>	4319.55	40.18616579	-105.03997841
12100.00	90.00	179.84	6917.00	4393.68S	578.93E	==>	4419.41	40.18589129	-105.03997924
12200.00	90.00	179.84	6917.00	4493.68S	579.21E	==>	4519.26	40.18561679	-105.03998007
12300.00	90.00	179.84	6917.00	4593.68S	579.50E	==>	4619.12	40.18534229	-105.03998090
12400.00	90.00	179.84	6917.00	4693.68S	579.79E	==>	4718.97	40.18506779	-105.03998173
12500.00	90.00	179.84	6917.00	4793.68S	580.07E	==>	4818.83	40.18479329	-105.03998256
12600.00	90.00	179.84	6917.00	4893.68S	580.36E	==>	4918.68	40.18451879	-105.03998338
12700.00	90.00	179.84	6917.00	4993.68S	580.65E	==>	5018.54	40.18424429	-105.03998421
12800.00	90.00	179.84	6917.00	5093.68S	580.94E	==>	5118.40	40.18396979	-105.03998504
12900.00	90.00	179.84	6917.00	5193.68S	581.22E	==>	5218.25	40.18369529	-105.03998587
13000.00	90.00	179.84	6917.00	5293.68S	581.51E	==>	5318.11	40.18342079	-105.03998670
13100.00	90.00	179.84	6917.00	5393.68S	581.80E	==>	5417.96	40.18314630	-105.03998753
13200.00	90.00	179.84	6917.00	5493.68S	582.09E	==>	5517.82	40.18287180	-105.03998835
13300.00	90.00	179.84	6917.00	5593.68S	582.37E	==>	5617.67	40.18259730	-105.03998918
13400.00	90.00	179.84	6917.00	5693.68S	582.66E	==>	5717.53	40.18232280	-105.03999001
13500.00	90.00	179.84	6917.00	5793.68S	582.95E	==>	5817.38	40.18204830	-105.03999084
13600.00	90.00	179.84	6917.00	5893.68S	583.23E	==>	5917.24	40.18177380	-105.03999167
13700.00	90.00	179.84	6917.00	5993.67S	583.52E	==>	6017.10	40.18149930	-105.03999250
13800.00	90.00	179.84	6917.00	6093.67S	583.81E	==>	6116.95	40.18122480	-105.03999333
13900.00	90.00	179.84	6917.00	6193.67S	584.10E	==>	6216.81	40.18095030	-105.03999415
14000.00	90.00	179.84	6917.00	6293.67S	584.38E	==>	6316.66	40.18067580	-105.03999498
14100.00	90.00	179.84	6917.00	6393.67S	584.67E	==>	6416.52	40.18040130	-105.03999581
14200.00	90.00	179.84	6917.00	6493.67S	584.96E	==>	6516.37	40.18012680	-105.03999664
14300.00	90.00	179.84	6917.00	6593.67S	585.25E	==>	6616.23	40.17985230	-105.03999747

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Date Printed: 14-Jul-2020

SYSDRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 5 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
14400.00	90.00	179.84	6917.00	6693.67S	585.53E	==>	6716.08	40.17957780	-105.03999830
14500.00	90.00	179.84	6917.00	6793.67S	585.82E	==>	6815.94	40.17930330	-105.03999912
14600.00	90.00	179.84	6917.00	6893.67S	586.11E	==>	6915.79	40.17902880	-105.03999995
14700.00	90.00	179.84	6917.00	6993.67S	586.39E	==>	7015.65	40.17875430	-105.04000078
14800.00	90.00	179.84	6917.00	7093.67S	586.68E	==>	7115.51	40.17847980	-105.04000161
14900.00	90.00	179.84	6917.00	7193.67S	586.97E	==>	7215.36	40.17820530	-105.04000244
15000.00	90.00	179.84	6917.00	7293.67S	587.26E	==>	7315.22	40.17793080	-105.04000327
15100.00	90.00	179.84	6917.00	7393.67S	587.54E	==>	7415.07	40.17765630	-105.04000409
15200.00	90.00	179.84	6917.00	7493.67S	587.83E	==>	7514.93	40.17738180	-105.04000492
15300.00	90.00	179.84	6917.00	7593.67S	588.12E	==>	7614.78	40.17710730	-105.04000575
15400.00	90.00	179.84	6917.00	7693.67S	588.41E	==>	7714.64	40.17683281	-105.04000658
15500.00	90.00	179.84	6917.00	7793.67S	588.69E	==>	7814.49	40.17655831	-105.04000741
15600.00	90.00	179.84	6917.00	7893.67S	588.98E	==>	7914.35	40.17628381	-105.04000824
15700.00	90.00	179.84	6917.00	7993.67S	589.27E	==>	8014.21	40.17600931	-105.04000906
15800.00	90.00	179.84	6917.00	8093.67S	589.55E	==>	8114.06	40.17573481	-105.04000989
15900.00	90.00	179.84	6917.00	8193.67S	589.84E	==>	8213.92	40.17546031	-105.04001072
16000.00	90.00	179.84	6917.00	8293.67S	590.13E	==>	8313.77	40.17518581	-105.04001155
16100.00	90.00	179.84	6917.00	8393.66S	590.42E	==>	8413.63	40.17491131	-105.04001238
16200.00	90.00	179.84	6917.00	8493.66S	590.70E	==>	8513.48	40.17463681	-105.04001320
16300.00	90.00	179.84	6917.00	8593.66S	590.99E	==>	8613.34	40.17436231	-105.04001403
16400.00	90.00	179.84	6917.00	8693.66S	591.28E	==>	8713.19	40.17408781	-105.04001486
16500.00	90.00	179.84	6917.00	8793.66S	591.57E	==>	8813.05	40.17381331	-105.04001569
16600.00	90.00	179.84	6917.00	8893.66S	591.85E	==>	8912.91	40.17353881	-105.04001652
16700.00	90.00	179.84	6917.00	8993.66S	592.14E	==>	9012.76	40.17326431	-105.04001735
16800.00	90.00	179.84	6917.00	9093.66S	592.43E	==>	9112.62	40.17298981	-105.04001817
16900.00	90.00	179.84	6917.00	9193.66S	592.71E	==>	9212.47	40.17271531	-105.04001900
17000.00	90.00	179.84	6917.00	9293.66S	593.00E	==>	9312.33	40.17244081	-105.04001983
17100.00	90.00	179.84	6917.00	9393.66S	593.29E	==>	9412.18	40.17216631	-105.04002066
17200.00	90.00	179.84	6917.00	9493.66S	593.58E	==>	9512.04	40.17189181	-105.04002149
17300.00	90.00	179.84	6917.00	9593.66S	593.86E	==>	9611.89	40.17161731	-105.04002232
17400.00	90.00	179.84	6917.00	9693.66S	594.15E	==>	9711.75	40.17134281	-105.04002314
17500.00	90.00	179.84	6917.00	9793.66S	594.44E	==>	9811.60	40.17106831	-105.04002397
17600.00	90.00	179.84	6917.00	9893.66S	594.73E	==>	9911.46	40.17079381	-105.04002480
17700.00	90.00	179.84	6917.00	9993.66S	595.01E	==>	10011.32	40.17051931	-105.04002563
17800.00	90.00	179.84	6917.00	10093.66S	595.30E	==>	10111.17	40.17024481	-105.04002646
17900.00	90.00	179.84	6917.00	10193.66S	595.59E	==>	10211.03	40.16997031	-105.04002728
18000.00	90.00	179.84	6917.00	10293.66S	595.87E	==>	10310.88	40.16969581	-105.04002811
18100.00	90.00	179.84	6917.00	10393.66S	596.16E	==>	10410.74	40.16942131	-105.04002894
18200.00	90.00	179.84	6917.00	10493.66S	596.45E	==>	10510.59	40.16914681	-105.04002977
18227.98	90.00	179.84	6917.00	10521.64S	596.53E	==>	10538.53	40.16907000	-105.04003000

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Well Design Combined Report  
Wellbore: W KNIGHT 5 (PWB)



**Targets**

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Knight 5 BH	10521.64S	596.53E	6917.00	40.16907000	-105.04003000	1304768.59	3128542.20
Knight 5 EP	341.73N	565.32E	6917.00	40.19889000	-105.03994000	1315631.47	3128511.00

**Survey Tool Program**

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
590209	Planned	1500.00	1500.00	WdW Rate Gyro	Standard
590208	Planned	18227.98	6917.00	ISCWSA MWD	Rev 4 + SAG + FLT

**Notes**

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