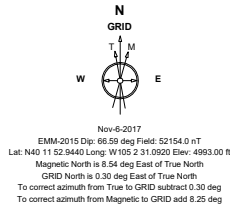


Cub Creek Energy, LLC

Location **Weld County, CO** Slot **KNIGHT 19**
 Field **WATTENBERG** Well **W KNIGHT 19**
 Installation **Knight Pad** Wellbore **W KNIGHT 19 (PWB)**



Created by sean.dolfinger
 Date plotted 14-Jul-2020
 Plot reference is W KNIGHT 19 (PWB).
 Ref wellpath is W KNIGHT 19 (PWP#1).
 Coordinates are in Feet reference KNIGHT 19.
 True Vertical Depths are reference Rig Datum.
 Measured Depths are reference Rig Datum.
 Rig Datum: Planned Datum #1
 Rig Datum to Mean Sea Level: 5011.00 ft.
 Plot North is aligned to GRID North.

Scale 1 cm = 400 ft

East (Feet) ->

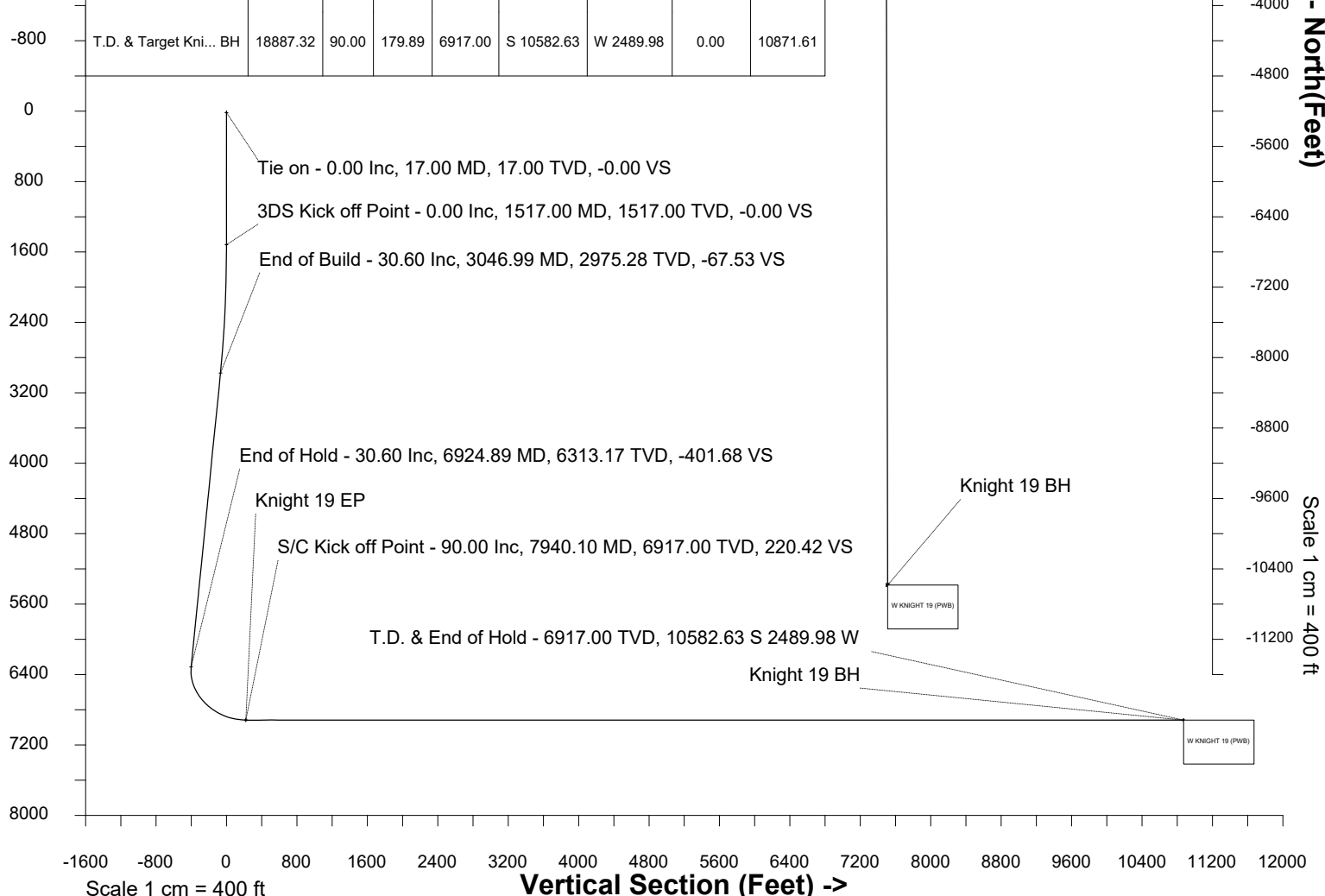
-3200 -2400 -1600 -800 0 800

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	292.99	1517.00	S 0.00	W 0.00	0.00	-0.00
End of Build	3046.99	30.60	292.99	2975.28	N 155.79	W 367.26	2.00	-67.53
End of Hold	6924.89	30.60	292.99	6313.17	N 926.64	W 2184.53	0.00	-401.68
Target Knight 19 EP	7940.10	90.00	179.89	6917.00	N 364.57	W 2511.87	10.00	220.42
T.D. & Target Kni... BH	18887.32	90.00	179.89	6917.00	S 10582.63	W 2489.98	0.00	10871.61

Scale 1 cm = 400 ft

<- True Vertical Depth (Feet)



<- North(Feet)

Scale 1 cm = 400 ft

Vertical Section (Feet) ->

Azimuth 193.24 with reference 0.00 N, 0.00 E from KNIGHT 19

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 19 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
KNIGHT 19	40.19775400	-105.04205500	1315214.5960	3127922.3434	104.31S	23.21W	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	-4994.00	0.00N	0.00E		0.00
1517.00	0.00	292.99	1517.00	-3494.00	0.00N	0.00E	==>	0.00
3046.99	30.60	292.99	2975.28	-2035.72	155.79N	367.26W	2.00	-67.53
6924.89	30.60	292.99	6313.17	1302.17	926.64N	2184.53W	==>	-401.68
7940.10	90.00	179.89	6917.00	1906.00	364.57N	2511.87W	10.00	220.42
18887.32	90.00	179.89	6917.00	1906.00	10582.63S	2489.98W	==>	10871.61

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	40.19775400	-105.04205500
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1517.00	0.00	292.99	1517.00	0.00N	0.00E	==>	0.00	40.19775400	-105.04205500
1617.00	2.00	292.99	1616.98	0.68N	1.61W	2.00	-0.30	40.19775589	-105.04206074
1717.00	4.00	292.99	1716.84	2.73N	6.42W	2.00	-1.18	40.19776157	-105.04207795
1817.00	6.00	292.99	1816.45	6.13N	14.45W	2.00	-2.66	40.19777103	-105.04210660
1917.00	8.00	292.99	1915.70	10.89N	25.67W	2.00	-4.72	40.19778425	-105.04214667
2017.00	10.00	292.99	2014.47	17.00N	40.07W	2.00	-7.37	40.19780122	-105.04219811
2117.00	12.00	292.99	2112.62	24.45N	57.63W	2.00	-10.60	40.19782192	-105.04226085
2217.00	14.00	292.99	2210.06	33.23N	78.34W	2.00	-14.40	40.19784633	-105.04233481
2317.00	16.00	292.99	2306.64	43.34N	102.17W	2.00	-18.79	40.19787441	-105.04241992
2417.00	18.00	292.99	2402.27	54.75N	129.08W	2.00	-23.73	40.19790613	-105.04251605
2517.00	20.00	292.99	2496.82	67.47N	159.05W	2.00	-29.25	40.19794145	-105.04262310
2617.00	22.00	292.99	2590.17	81.46N	192.04W	2.00	-35.31	40.19798033	-105.04274093
2717.00	24.00	292.99	2682.21	96.72N	228.01W	2.00	-41.93	40.19802272	-105.04286941
2817.00	26.00	292.99	2772.84	113.22N	266.91W	2.00	-49.08	40.19806857	-105.04300837
2917.00	28.00	292.99	2861.94	130.95N	308.71W	2.00	-56.76	40.19811782	-105.04315764

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 193.24 degrees
Bottom hole distance is 10871.61 Feet on azimuth 193.24 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 19 (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)
3017.00	30.00	292.99	2949.39	149.88N	353.33W	2.00	-64.97	40.19817041	-105.04331705
3046.99	30.60	292.99	2975.28	155.79N	367.26W	2.00	-67.53	40.19818683	-105.04336680
3117.00	30.60	292.99	3035.55	169.70N	400.07W	==>	-73.56	40.19822550	-105.04348399
3217.00	30.60	292.99	3121.62	189.58N	446.93W	==>	-82.18	40.19828072	-105.04365137
3317.00	30.60	292.99	3207.70	209.46N	493.80W	==>	-90.80	40.19833595	-105.04381876
3417.00	30.60	292.99	3293.77	229.34N	540.66W	==>	-99.41	40.19839118	-105.04398614
3517.00	30.60	292.99	3379.85	249.22N	587.52W	==>	-108.03	40.19844640	-105.04415353
3617.00	30.60	292.99	3465.92	269.10N	634.38W	==>	-116.65	40.19850163	-105.04432091
3717.00	30.60	292.99	3551.99	288.97N	681.24W	==>	-125.26	40.19855685	-105.04448830
3817.00	30.60	292.99	3638.07	308.85N	728.11W	==>	-133.88	40.19861208	-105.04465568
3917.00	30.60	292.99	3724.14	328.73N	774.97W	==>	-142.50	40.19866730	-105.04482307
4017.00	30.60	292.99	3810.22	348.61N	821.83W	==>	-151.11	40.19872253	-105.04499046
4117.00	30.60	292.99	3896.29	368.49N	868.69W	==>	-159.73	40.19877775	-105.04515784
4217.00	30.60	292.99	3982.37	388.36N	915.55W	==>	-168.35	40.19883298	-105.04532523
4317.00	30.60	292.99	4068.44	408.24N	962.42W	==>	-176.96	40.19888820	-105.04549262
4417.00	30.60	292.99	4154.52	428.12N	1009.28W	==>	-185.58	40.19894343	-105.04566001
4517.00	30.60	292.99	4240.59	448.00N	1056.14W	==>	-194.20	40.19899865	-105.04582739
4617.00	30.60	292.99	4326.66	467.88N	1103.00W	==>	-202.81	40.19905387	-105.04599478
4717.00	30.60	292.99	4412.74	487.76N	1149.86W	==>	-211.43	40.19910910	-105.04616217
4817.00	30.60	292.99	4498.81	507.63N	1196.73W	==>	-220.05	40.19916432	-105.04632956
4917.00	30.60	292.99	4584.89	527.51N	1243.59W	==>	-228.66	40.19921954	-105.04649695
5017.00	30.60	292.99	4670.96	547.39N	1290.45W	==>	-237.28	40.19927477	-105.04666434
5117.00	30.60	292.99	4757.04	567.27N	1337.31W	==>	-245.90	40.19932999	-105.04683173
5217.00	30.60	292.99	4843.11	587.15N	1384.17W	==>	-254.51	40.19938521	-105.04699912
5317.00	30.60	292.99	4929.19	607.02N	1431.04W	==>	-263.13	40.19944043	-105.04716651
5417.00	30.60	292.99	5015.26	626.90N	1477.90W	==>	-271.75	40.19949565	-105.04733390
5517.00	30.60	292.99	5101.33	646.78N	1524.76W	==>	-280.36	40.19955087	-105.04750129
5617.00	30.60	292.99	5187.41	666.66N	1571.62W	==>	-288.98	40.19960610	-105.04766868
5717.00	30.60	292.99	5273.48	686.54N	1618.48W	==>	-297.60	40.19966132	-105.04783607
5817.00	30.60	292.99	5359.56	706.42N	1665.35W	==>	-306.21	40.19971654	-105.04800346
5917.00	30.60	292.99	5445.63	726.29N	1712.21W	==>	-314.83	40.19977176	-105.04817085
6017.00	30.60	292.99	5531.71	746.17N	1759.07W	==>	-323.45	40.19982698	-105.04833824
6117.00	30.60	292.99	5617.78	766.05N	1805.93W	==>	-332.07	40.19988220	-105.04850564
6217.00	30.60	292.99	5703.86	785.93N	1852.79W	==>	-340.68	40.19993742	-105.04867303
6317.00	30.60	292.99	5789.93	805.81N	1899.66W	==>	-349.30	40.19999264	-105.04884042
6417.00	30.60	292.99	5876.00	825.68N	1946.52W	==>	-357.92	40.20004786	-105.04900781
6517.00	30.60	292.99	5962.08	845.56N	1993.38W	==>	-366.53	40.20010307	-105.04917521
6617.00	30.60	292.99	6048.15	865.44N	2040.24W	==>	-375.15	40.20015829	-105.04934260
6717.00	30.60	292.99	6134.23	885.32N	2087.10W	==>	-383.77	40.20021351	-105.04950999
6817.00	30.60	292.99	6220.30	905.20N	2133.97W	==>	-392.38	40.20026873	-105.04967739
6917.00	30.60	292.99	6306.38	925.08N	2180.83W	==>	-401.00	40.20032395	-105.04984478
6924.89	30.60	292.99	6313.17	926.64N	2184.53W	==>	-401.68	40.20032830	-105.04985799
7017.00	28.63	274.71	6393.41	937.63N	2228.20W	10.00	-402.38	40.20035908	-105.05001412
7117.00	29.48	254.11	6481.04	932.85N	2275.86W	10.00	-386.80	40.20034662	-105.05018482
7217.00	33.19	236.16	6566.63	910.82N	2322.37W	10.00	-354.70	40.20028678	-105.05035174
7317.00	38.94	222.20	6647.57	872.20N	2366.33W	10.00	-307.05	40.20018140	-105.05050978
7417.00	45.96	211.62	6721.41	818.18N	2406.38W	10.00	-245.29	40.20003367	-105.05065415
7517.00	53.75	203.39	6785.90	750.39N	2441.33W	10.00	-171.30	40.19984808	-105.05078047
7617.00	62.00	196.70	6839.07	670.90N	2470.09W	10.00	-87.33	40.19963027	-105.05088490
7717.00	70.52	190.98	6879.33	582.12N	2491.81W	10.00	4.07	40.19938686	-105.05096425
7817.00	79.21	185.84	6905.43	486.74N	2505.82W	10.00	100.12	40.19912525	-105.05101613
7917.00	87.97	180.99	6916.59	387.66N	2511.69W	10.00	197.91	40.19885338	-105.05103895
7940.10	90.00	179.89	6917.00	364.57N	2511.87W	10.00	220.42	40.19879000	-105.05104000
8017.00	90.00	179.89	6917.00	287.67N	2511.72W	==>	295.25	40.19857890	-105.05104084
8117.00	90.00	179.89	6917.00	187.67N	2511.52W	==>	392.54	40.19830440	-105.05104194
8217.00	90.00	179.89	6917.00	87.67N	2511.32W	==>	489.84	40.19802990	-105.05104304
8317.00	90.00	179.89	6917.00	12.33S	2511.12W	==>	587.14	40.19775541	-105.05104413
8417.00	90.00	179.89	6917.00	112.33S	2510.92W	==>	684.43	40.19748091	-105.05104523

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Bottom hole distance is 10871.61 Feet on azimuth 193.24 degrees from Wellhead
Calculation method uses Minimum Curvature method
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Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 19 (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)
8517.00	90.00	179.89	6917.00	212.33S	2510.72W	==>	781.73	40.19720641	-105.05104633
8617.00	90.00	179.89	6917.00	312.33S	2510.52W	==>	879.02	40.19693191	-105.05104742
8717.00	90.00	179.89	6917.00	412.33S	2510.32W	==>	976.32	40.19665741	-105.05104852
8817.00	90.00	179.89	6917.00	512.33S	2510.12W	==>	1073.61	40.19638291	-105.05104962
8917.00	90.00	179.89	6917.00	612.33S	2509.92W	==>	1170.91	40.19610842	-105.05105071
9017.00	90.00	179.89	6917.00	712.33S	2509.72W	==>	1268.21	40.19583392	-105.05105181
9117.00	90.00	179.89	6917.00	812.33S	2509.52W	==>	1365.50	40.19555942	-105.05105291
9217.00	90.00	179.89	6917.00	912.33S	2509.32W	==>	1462.80	40.19528492	-105.05105400
9317.00	90.00	179.89	6917.00	1012.33S	2509.12W	==>	1560.09	40.19501042	-105.05105510
9417.00	90.00	179.89	6917.00	1112.33S	2508.92W	==>	1657.39	40.19473592	-105.05105620
9517.00	90.00	179.89	6917.00	1212.33S	2508.72W	==>	1754.69	40.19446143	-105.05105729
9617.00	90.00	179.89	6917.00	1312.33S	2508.52W	==>	1851.98	40.19418693	-105.05105839
9717.00	90.00	179.89	6917.00	1412.33S	2508.32W	==>	1949.28	40.19391243	-105.05105949
9817.00	90.00	179.89	6917.00	1512.33S	2508.12W	==>	2046.57	40.19363793	-105.05106058
9917.00	90.00	179.89	6917.00	1612.33S	2507.92W	==>	2143.87	40.19336343	-105.05106168
10017.00	90.00	179.89	6917.00	1712.33S	2507.72W	==>	2241.16	40.19308893	-105.05106277
10117.00	90.00	179.89	6917.00	1812.33S	2507.52W	==>	2338.46	40.19281444	-105.05106387
10217.00	90.00	179.89	6917.00	1912.33S	2507.32W	==>	2435.76	40.19253994	-105.05106497
10317.00	90.00	179.89	6917.00	2012.32S	2507.12W	==>	2533.05	40.19226544	-105.05106606
10417.00	90.00	179.89	6917.00	2112.32S	2506.92W	==>	2630.35	40.19199094	-105.05106716
10517.00	90.00	179.89	6917.00	2212.32S	2506.72W	==>	2727.64	40.19171644	-105.05106826
10617.00	90.00	179.89	6917.00	2312.32S	2506.52W	==>	2824.94	40.19144194	-105.05106935
10717.00	90.00	179.89	6917.00	2412.32S	2506.32W	==>	2922.24	40.19116744	-105.05107045
10817.00	90.00	179.89	6917.00	2512.32S	2506.12W	==>	3019.53	40.19089295	-105.05107155
10917.00	90.00	179.89	6917.00	2612.32S	2505.92W	==>	3116.83	40.19061845	-105.05107264
11017.00	90.00	179.89	6917.00	2712.32S	2505.72W	==>	3214.12	40.19034395	-105.05107374
11117.00	90.00	179.89	6917.00	2812.32S	2505.52W	==>	3311.42	40.19006945	-105.05107484
11217.00	90.00	179.89	6917.00	2912.32S	2505.32W	==>	3408.71	40.18979495	-105.05107593
11317.00	90.00	179.89	6917.00	3012.32S	2505.12W	==>	3506.01	40.18952045	-105.05107703
11417.00	90.00	179.89	6917.00	3112.32S	2504.92W	==>	3603.31	40.18924595	-105.05107812
11517.00	90.00	179.89	6917.00	3212.32S	2504.72W	==>	3700.60	40.18897146	-105.05107922
11617.00	90.00	179.89	6917.00	3312.32S	2504.52W	==>	3797.90	40.18869696	-105.05108032
11717.00	90.00	179.89	6917.00	3412.32S	2504.32W	==>	3895.19	40.18842246	-105.05108141
11817.00	90.00	179.89	6917.00	3512.32S	2504.12W	==>	3992.49	40.18814796	-105.05108251
11917.00	90.00	179.89	6917.00	3612.32S	2503.92W	==>	4089.79	40.18787346	-105.05108361
12017.00	90.00	179.89	6917.00	3712.32S	2503.72W	==>	4187.08	40.18759896	-105.05108470
12117.00	90.00	179.89	6917.00	3812.32S	2503.52W	==>	4284.38	40.18732446	-105.05108580
12217.00	90.00	179.89	6917.00	3912.32S	2503.32W	==>	4381.67	40.18704996	-105.05108689
12317.00	90.00	179.89	6917.00	4012.32S	2503.12W	==>	4478.97	40.18677547	-105.05108799
12417.00	90.00	179.89	6917.00	4112.32S	2502.92W	==>	4576.26	40.18650097	-105.05108909
12517.00	90.00	179.89	6917.00	4212.32S	2502.72W	==>	4673.56	40.18622647	-105.05109018
12617.00	90.00	179.89	6917.00	4312.32S	2502.52W	==>	4770.86	40.18595197	-105.05109128
12717.00	90.00	179.89	6917.00	4412.32S	2502.32W	==>	4868.15	40.18567747	-105.05109238
12817.00	90.00	179.89	6917.00	4512.32S	2502.12W	==>	4965.45	40.18540297	-105.05109347
12917.00	90.00	179.89	6917.00	4612.32S	2501.92W	==>	5062.74	40.18512847	-105.05109457
13017.00	90.00	179.89	6917.00	4712.32S	2501.72W	==>	5160.04	40.18485397	-105.05109566
13117.00	90.00	179.89	6917.00	4812.32S	2501.52W	==>	5257.34	40.18457948	-105.05109676
13217.00	90.00	179.89	6917.00	4912.32S	2501.32W	==>	5354.63	40.18430498	-105.05109786
13317.00	90.00	179.89	6917.00	5012.32S	2501.12W	==>	5451.93	40.18403048	-105.05109895
13417.00	90.00	179.89	6917.00	5112.32S	2500.92W	==>	5549.22	40.18375598	-105.05110005
13517.00	90.00	179.89	6917.00	5212.32S	2500.72W	==>	5646.52	40.18348148	-105.05110115
13617.00	90.00	179.89	6917.00	5312.32S	2500.52W	==>	5743.81	40.18320698	-105.05110224
13717.00	90.00	179.89	6917.00	5412.32S	2500.32W	==>	5841.11	40.18293248	-105.05110334
13817.00	90.00	179.89	6917.00	5512.32S	2500.12W	==>	5938.41	40.18265798	-105.05110443
13917.00	90.00	179.89	6917.00	5612.32S	2499.92W	==>	6035.70	40.18238348	-105.05110553
14017.00	90.00	179.89	6917.00	5712.32S	2499.72W	==>	6133.00	40.18210899	-105.05110663
14117.00	90.00	179.89	6917.00	5812.32S	2499.52W	==>	6230.29	40.18183449	-105.05110772
14217.00	90.00	179.89	6917.00	5912.32S	2499.32W	==>	6327.59	40.18155999	-105.05110882
14317.00	90.00	179.89	6917.00	6012.32S	2499.12W	==>	6424.88	40.18128549	-105.05110991

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Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 19 (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)
14417.00	90.00	179.89	6917.00	6112.32S	2498.92W	==>	6522.18	40.18101099	-105.05111101
14517.00	90.00	179.89	6917.00	6212.32S	2498.72W	==>	6619.48	40.18073649	-105.05111211
14617.00	90.00	179.89	6917.00	6312.32S	2498.52W	==>	6716.77	40.18046199	-105.05111320
14717.00	90.00	179.89	6917.00	6412.32S	2498.32W	==>	6814.07	40.18018749	-105.05111430
14817.00	90.00	179.89	6917.00	6512.32S	2498.12W	==>	6911.36	40.17991299	-105.05111539
14917.00	90.00	179.89	6917.00	6612.32S	2497.92W	==>	7008.66	40.17963850	-105.05111649
15017.00	90.00	179.89	6917.00	6712.32S	2497.72W	==>	7105.96	40.17936400	-105.05111759
15117.00	90.00	179.89	6917.00	6812.32S	2497.52W	==>	7203.25	40.17908950	-105.05111868
15217.00	90.00	179.89	6917.00	6912.32S	2497.32W	==>	7300.55	40.17881500	-105.05111978
15317.00	90.00	179.89	6917.00	7012.31S	2497.12W	==>	7397.84	40.17854050	-105.05112087
15417.00	90.00	179.89	6917.00	7112.31S	2496.92W	==>	7495.14	40.17826600	-105.05112197
15517.00	90.00	179.89	6917.00	7212.31S	2496.72W	==>	7592.43	40.17799150	-105.05112307
15617.00	90.00	179.89	6917.00	7312.31S	2496.52W	==>	7689.73	40.17771700	-105.05112416
15717.00	90.00	179.89	6917.00	7412.31S	2496.32W	==>	7787.03	40.17744250	-105.05112526
15817.00	90.00	179.89	6917.00	7512.31S	2496.12W	==>	7884.32	40.17716800	-105.05112635
15917.00	90.00	179.89	6917.00	7612.31S	2495.92W	==>	7981.62	40.17689350	-105.05112745
16017.00	90.00	179.89	6917.00	7712.31S	2495.72W	==>	8078.91	40.17661901	-105.05112855
16117.00	90.00	179.89	6917.00	7812.31S	2495.52W	==>	8176.21	40.17634451	-105.05112964
16217.00	90.00	179.89	6917.00	7912.31S	2495.32W	==>	8273.51	40.17607001	-105.05113074
16317.00	90.00	179.89	6917.00	8012.31S	2495.12W	==>	8370.80	40.17579551	-105.05113183
16417.00	90.00	179.89	6917.00	8112.31S	2494.92W	==>	8468.10	40.17552101	-105.05113293
16517.00	90.00	179.89	6917.00	8212.31S	2494.72W	==>	8565.39	40.17524651	-105.05113403
16617.00	90.00	179.89	6917.00	8312.31S	2494.52W	==>	8662.69	40.17497201	-105.05113512
16717.00	90.00	179.89	6917.00	8412.31S	2494.32W	==>	8759.98	40.17469751	-105.05113622
16817.00	90.00	179.89	6917.00	8512.31S	2494.12W	==>	8857.28	40.17442301	-105.05113731
16917.00	90.00	179.89	6917.00	8612.31S	2493.92W	==>	8954.58	40.17414851	-105.05113841
17017.00	90.00	179.89	6917.00	8712.31S	2493.72W	==>	9051.87	40.17387401	-105.05113951
17117.00	90.00	179.89	6917.00	8812.31S	2493.52W	==>	9149.17	40.17359951	-105.05114060
17217.00	90.00	179.89	6917.00	8912.31S	2493.32W	==>	9246.46	40.17332501	-105.05114170
17317.00	90.00	179.89	6917.00	9012.31S	2493.12W	==>	9343.76	40.17305052	-105.05114279
17417.00	90.00	179.89	6917.00	9112.31S	2492.92W	==>	9441.06	40.17277602	-105.05114389
17517.00	90.00	179.89	6917.00	9212.31S	2492.72W	==>	9538.35	40.17250152	-105.05114498
17617.00	90.00	179.89	6917.00	9312.31S	2492.52W	==>	9635.65	40.17222702	-105.05114608
17717.00	90.00	179.89	6917.00	9412.31S	2492.32W	==>	9732.94	40.17195252	-105.05114718
17817.00	90.00	179.89	6917.00	9512.31S	2492.12W	==>	9830.24	40.17167802	-105.05114827
17917.00	90.00	179.89	6917.00	9612.31S	2491.92W	==>	9927.53	40.17140352	-105.05114937
18017.00	90.00	179.89	6917.00	9712.31S	2491.72W	==>	10024.83	40.17112902	-105.05115046
18117.00	90.00	179.89	6917.00	9812.31S	2491.52W	==>	10122.13	40.17085452	-105.05115156
18217.00	90.00	179.89	6917.00	9912.31S	2491.32W	==>	10219.42	40.17058002	-105.05115266
18317.00	90.00	179.89	6917.00	10012.31S	2491.12W	==>	10316.72	40.17030552	-105.05115375
18417.00	90.00	179.89	6917.00	10112.31S	2490.92W	==>	10414.01	40.17003102	-105.05115485
18517.00	90.00	179.89	6917.00	10212.31S	2490.72W	==>	10511.31	40.16975652	-105.05115594
18617.00	90.00	179.89	6917.00	10312.31S	2490.52W	==>	10608.61	40.16948202	-105.05115704
18717.00	90.00	179.89	6917.00	10412.31S	2490.32W	==>	10705.90	40.16920752	-105.05115813
18817.00	90.00	179.89	6917.00	10512.31S	2490.12W	==>	10803.20	40.16893302	-105.05115923
18887.32	90.00	179.89	6917.00	10582.63S	2489.98W	==>	10871.61	40.16874000	-105.05116000

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Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Knight 19 BH	10582.63S	2489.98W	6917.00	40.16874000	-105.05116000	1304632.44	3125432.47
Knight 19 EP	364.57N	2511.87W	6917.00	40.19879000	-105.05104000	1315579.15	3125410.58

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
590307	Planned	1517.00	1517.00	WdW Rate Gyro	Standard	
590306	Planned	18887.32	6917.00	ISCWSA MWD	Rev 4 + SAG + FLT	

Notes

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