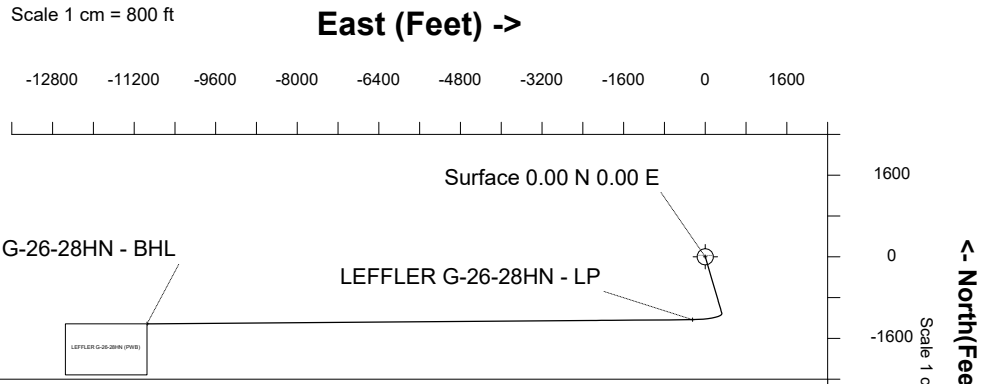
BAYSWATER E & P, LLC

Location	**Weld County, CO**	**Slot**	**LEFFLER G-26-28HN**
Field	**WATTENBERG**	**Well**	**LEFFLER G-26-28HN**
Installation	**Leffler Pad - Updates 05-20-2019**	**Wellbore**	**LEFFLER G-26-28HN (PWB)**

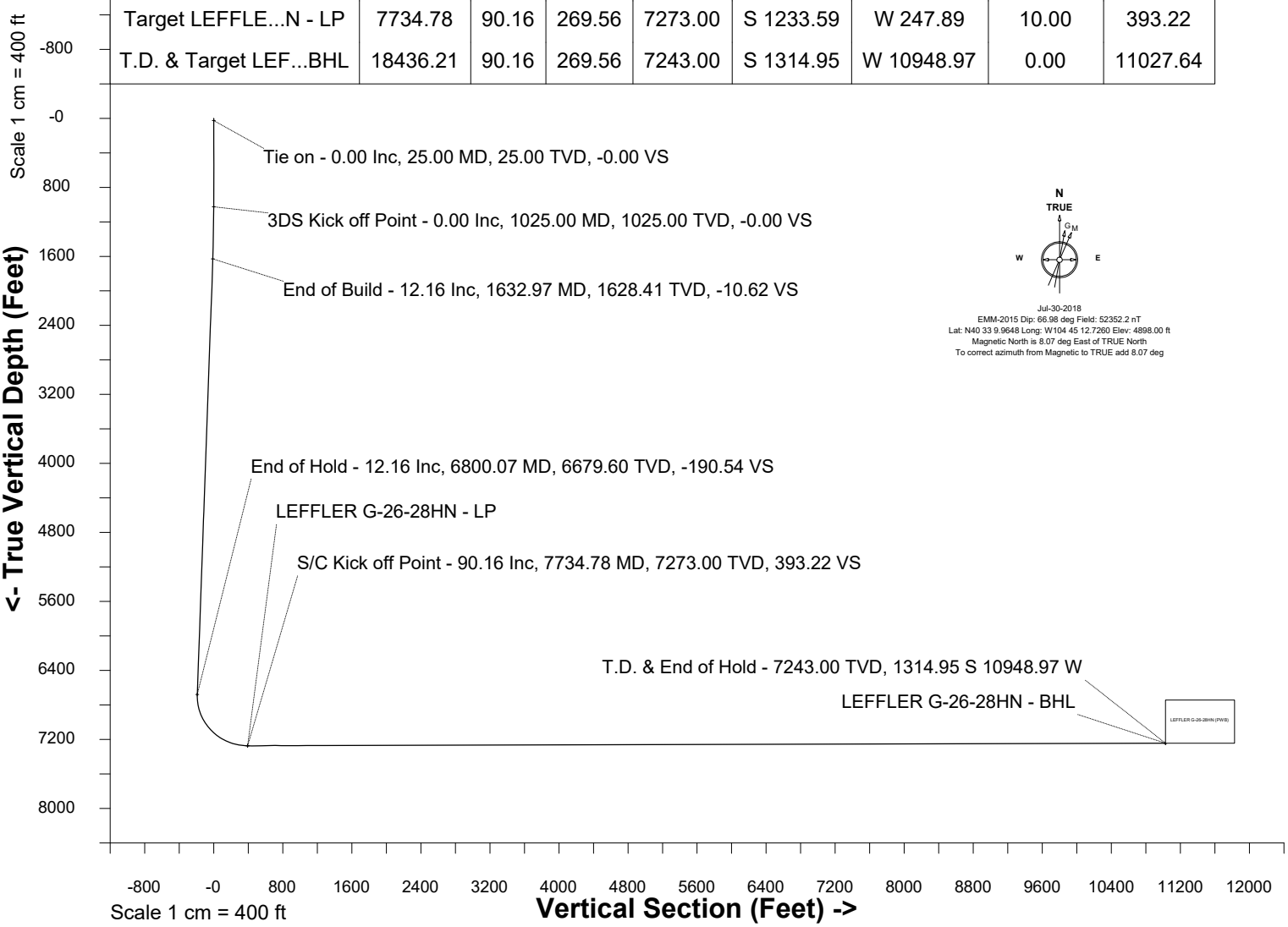
Created by sean.dolfinger
Date plotted 21-May-2019

Plot reference is LEFFLER G-26-28HN (PWB).
Ref wellpath is LEFFLER G-26-28HN (PWP#1).
Coordinates are in Feet reference LEFFLER G-26-28HN.
True Vertical Depths are reference Rig Datum.
Measured Depths are reference Rig Datum.
Rig Datum: Planned Datum #1
Rig Datum to Mean Sea Level: 4923.00 ft.
Plot North is aligned to TRUE North.



WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	25.00	0.00	0.00	25.00	S 0.00	W 0.00		-0.00
KOP	1025.00	0.00	163.64	1025.00	S 0.00	W 0.00	0.00	-0.00
End of Build	1632.97	12.16	163.64	1628.41	S 61.67	E 18.11	2.00	-10.62
End of Hold	6800.07	12.16	163.64	6679.60	S 1105.93	E 324.73	0.00	-190.54
Target LEFFLE...N - LP	7734.78	90.16	269.56	7273.00	S 1233.59	W 247.89	10.00	393.22
T.D. & Target LEF...BHL	18436.21	90.16	269.56	7243.00	S 1314.95	W 10948.97	0.00	11027.64



SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER G-26-28HN (PWB)

Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
LEFFLER G-26-28HN	40.55268500	-104.75337100	1445057.5072	3207473.1143	30.24S	45.57E	0.00

Declination

Date	Source	Time
Jul-30-2018	EMM-2015	11:39

Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Leffler Pad - Updates 05-20-2019	40.55276800	-104.75353500	1445087.3602	3207427.2886	NAD83 Based Colorado State Planes, Northern Zone, US Feet	True

Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
25.00	0.00	0.00	25.00	-4898.00	0.00N	0.00E		0.00
1025.00	0.00	163.64	1025.00	-3898.00	0.00N	0.00E	==>	0.00
1632.97	12.16	163.64	1628.41	-3294.59	61.67S	18.11E	2.00	-10.62
6800.07	12.16	163.64	6679.60	1756.60	1105.93S	324.73E	==>	-190.54
7734.78	90.16	269.56	7273.00	2350.00	1233.59S	247.89W	10.00	393.22
18436.21	90.16	269.56	7243.00	2320.00	1314.95S	10948.97W	==>	11027.64

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	40.55268500	-104.75337100
25.00	0.00	0.00	25.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
1025.00	0.00	163.64	1025.00	0.00N	0.00E	==>	0.00	40.55268500	-104.75337100
1125.00	2.00	163.64	1124.98	1.67S	0.49E	2.00	-0.29	40.55268040	-104.75336923
1225.00	4.00	163.64	1224.84	6.70S	1.97E	2.00	-1.15	40.55266662	-104.75336393
1325.00	6.00	163.64	1324.45	15.06S	4.42E	2.00	-2.59	40.55264367	-104.75335509
1425.00	8.00	163.64	1423.70	26.75S	7.85E	2.00	-4.61	40.55261157	-104.75334274
1525.00	10.00	163.64	1522.47	41.76S	12.26E	2.00	-7.19	40.55257038	-104.75332688
1625.00	12.00	163.64	1620.62	60.07S	17.64E	2.00	-10.35	40.55252013	-104.75330753
1632.97	12.16	163.64	1628.41	61.67S	18.11E	2.00	-10.62	40.55251574	-104.75330584
1725.00	12.16	163.64	1718.38	80.27S	23.57E	==>	-13.83	40.55246468	-104.75328619
1825.00	12.16	163.64	1816.14	100.48S	29.50E	==>	-17.31	40.55240921	-104.75326484
1925.00	12.16	163.64	1913.90	120.69S	35.44E	==>	-20.79	40.55235374	-104.75324348
2025.00	12.16	163.64	2011.65	140.90S	41.37E	==>	-24.27	40.55229827	-104.75322213
2125.00	12.16	163.64	2109.41	161.11S	47.30E	==>	-27.76	40.55224279	-104.75320078
2225.00	12.16	163.64	2207.16	181.32S	53.24E	==>	-31.24	40.55218732	-104.75317942
2325.00	12.16	163.64	2304.92	201.53S	59.17E	==>	-34.72	40.55213185	-104.75315807
2425.00	12.16	163.64	2402.68	221.74S	65.11E	==>	-38.20	40.55207637	-104.75313671
2525.00	12.16	163.64	2500.43	241.95S	71.04E	==>	-41.68	40.55202090	-104.75311536
2625.00	12.16	163.64	2598.19	262.16S	76.97E	==>	-45.17	40.55196543	-104.75309401
2725.00	12.16	163.64	2695.95	282.37S	82.91E	==>	-48.65	40.55190996	-104.75307265
2825.00	12.16	163.64	2793.70	302.57S	88.84E	==>	-52.13	40.55185448	-104.75305130

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 4923.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 263.15 degrees
Bottom hole distance is 11027.64 Feet on azimuth 263.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER G-26-28HN (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)
2925.00	12.16	163.64	2891.46	322.78S	94.78E	==>	-55.61	40.55179901	-104.75302995
3025.00	12.16	163.64	2989.22	342.99S	100.71E	==>	-59.09	40.55174354	-104.75300859
3125.00	12.16	163.64	3086.97	363.20S	106.64E	==>	-62.57	40.55168807	-104.75298724
3225.00	12.16	163.64	3184.73	383.41S	112.58E	==>	-66.06	40.55163259	-104.75296589
3325.00	12.16	163.64	3282.49	403.62S	118.51E	==>	-69.54	40.55157712	-104.75294453
3425.00	12.16	163.64	3380.24	423.83S	124.45E	==>	-73.02	40.55152165	-104.75292318
3525.00	12.16	163.64	3478.00	444.04S	130.38E	==>	-76.50	40.55146617	-104.75290183
3625.00	12.16	163.64	3575.76	464.25S	136.32E	==>	-79.98	40.55141070	-104.75288048
3725.00	12.16	163.64	3673.51	484.46S	142.25E	==>	-83.47	40.55135523	-104.75285912
3825.00	12.16	163.64	3771.27	504.67S	148.18E	==>	-86.95	40.55129976	-104.75283777
3925.00	12.16	163.64	3869.03	524.88S	154.12E	==>	-90.43	40.55124428	-104.75281642
4025.00	12.16	163.64	3966.78	545.09S	160.05E	==>	-93.91	40.55118881	-104.75279506
4125.00	12.16	163.64	4064.54	565.30S	165.99E	==>	-97.39	40.55113334	-104.75277371
4225.00	12.16	163.64	4162.30	585.51S	171.92E	==>	-100.88	40.55107787	-104.75275236
4325.00	12.16	163.64	4260.05	605.72S	177.85E	==>	-104.36	40.55102239	-104.75273100
4425.00	12.16	163.64	4357.81	625.93S	183.79E	==>	-107.84	40.55096692	-104.75270965
4525.00	12.16	163.64	4455.57	646.14S	189.72E	==>	-111.32	40.55091145	-104.75268830
4625.00	12.16	163.64	4553.32	666.35S	195.66E	==>	-114.80	40.55085597	-104.75266695
4725.00	12.16	163.64	4651.08	686.56S	201.59E	==>	-118.28	40.55080050	-104.75264559
4825.00	12.16	163.64	4748.84	706.77S	207.52E	==>	-121.77	40.55074503	-104.75262424
4925.00	12.16	163.64	4846.59	726.98S	213.46E	==>	-125.25	40.55068956	-104.75260289
5025.00	12.16	163.64	4944.35	747.19S	219.39E	==>	-128.73	40.55063408	-104.75258154
5125.00	12.16	163.64	5042.11	767.40S	225.33E	==>	-132.21	40.55057861	-104.75256018
5225.00	12.16	163.64	5139.86	787.61S	231.26E	==>	-135.69	40.55052314	-104.75253883
5325.00	12.16	163.64	5237.62	807.82S	237.19E	==>	-139.18	40.55046766	-104.75251748
5425.00	12.16	163.64	5335.38	828.03S	243.13E	==>	-142.66	40.55041219	-104.75249613
5525.00	12.16	163.64	5433.13	848.24S	249.06E	==>	-146.14	40.55035672	-104.75247477
5625.00	12.16	163.64	5530.89	868.45S	255.00E	==>	-149.62	40.55030125	-104.75245342
5725.00	12.16	163.64	5628.64	888.66S	260.93E	==>	-153.10	40.55024577	-104.75243207
5825.00	12.16	163.64	5726.40	908.87S	266.86E	==>	-156.59	40.55019030	-104.75241072
5925.00	12.16	163.64	5824.16	929.08S	272.80E	==>	-160.07	40.55013483	-104.75238936
6025.00	12.16	163.64	5921.91	949.29S	278.73E	==>	-163.55	40.55007935	-104.75236801
6125.00	12.16	163.64	6019.67	969.50S	284.67E	==>	-167.03	40.55002388	-104.75234666
6225.00	12.16	163.64	6117.43	989.71S	290.60E	==>	-170.51	40.54996841	-104.75232531
6325.00	12.16	163.64	6215.18	1009.92S	296.54E	==>	-174.00	40.54991294	-104.75230395
6425.00	12.16	163.64	6312.94	1030.13S	302.47E	==>	-177.48	40.54985746	-104.75228260
6525.00	12.16	163.64	6410.70	1050.34S	308.40E	==>	-180.96	40.54980199	-104.75226125
6625.00	12.16	163.64	6508.45	1070.55S	314.34E	==>	-184.44	40.54974652	-104.75223990
6725.00	12.16	163.64	6606.21	1090.76S	320.27E	==>	-187.92	40.54969104	-104.75221855
6800.07	12.16	163.64	6679.60	1105.93S	324.73E	==>	-190.54	40.54964940	-104.75220252
6825.00	11.74	175.52	6703.99	1110.98S	325.66E	10.00	-190.87	40.54963555	-104.75219914
6925.00	14.84	218.08	6801.52	1131.25S	318.54E	10.00	-181.38	40.54957991	-104.75222478
7025.00	22.36	239.28	6896.34	1151.10S	294.23E	10.00	-154.87	40.54952543	-104.75231227
7125.00	31.25	249.57	6985.55	1169.92S	253.46E	10.00	-112.15	40.54947377	-104.75245896
7225.00	40.63	255.55	7066.45	1187.14S	197.48E	10.00	-54.52	40.54942650	-104.75266038
7325.00	50.21	259.59	7136.58	1202.24S	128.00E	10.00	16.27	40.54938505	-104.75291043
7425.00	59.89	262.63	7193.80	1214.76S	47.11E	10.00	98.08	40.54935068	-104.75320149
7525.00	69.64	265.12	7236.39	1224.33S	42.72W	10.00	188.41	40.54932444	-104.75352474
7625.00	79.41	267.31	7263.04	1230.63S	138.77W	10.00	284.52	40.54930712	-104.75387034
7725.00	89.20	269.37	7272.95	1233.50S	238.11W	10.00	383.49	40.54929925	-104.75422780
7734.78	90.16	269.56	7273.00	1233.59S	247.89W	10.00	393.22	40.54929900	-104.75426300
7825.00	90.16	269.56	7272.75	1234.28S	338.10W	==>	482.87	40.54929711	-104.75458762
7925.00	90.16	269.56	7272.47	1235.04S	438.10W	==>	582.24	40.54929502	-104.75494744
8025.00	90.16	269.56	7272.19	1235.80S	538.10W	==>	681.62	40.54929293	-104.75530726
8125.00	90.16	269.56	7271.91	1236.56S	638.09W	==>	780.99	40.54929084	-104.75566708
8225.00	90.16	269.56	7271.63	1237.32S	738.09W	==>	880.37	40.54928874	-104.75602691
8325.00	90.16	269.56	7271.35	1238.08S	838.09W	==>	979.74	40.54928665	-104.75638673
8425.00	90.16	269.56	7271.07	1238.84S	938.09W	==>	1079.11	40.54928455	-104.75674655

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Vertical Section is from 0.00N 0.00E on azimuth 263.15 degrees
Bottom hole distance is 11027.64 Feet on azimuth 263.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER G-26-28HN (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)
8525.00	90.16	269.56	7270.78	1239.60S	1038.08W	==>	1178.49	40.54928245	-104.75710637
8625.00	90.16	269.56	7270.50	1240.36S	1138.08W	==>	1277.86	40.54928035	-104.75746620
8725.00	90.16	269.56	7270.22	1241.12S	1238.08W	==>	1377.24	40.54927825	-104.75782602
8825.00	90.16	269.56	7269.94	1241.88S	1338.07W	==>	1476.61	40.54927615	-104.75818584
8925.00	90.16	269.56	7269.66	1242.64S	1438.07W	==>	1575.98	40.54927405	-104.75854566
9025.00	90.16	269.56	7269.38	1243.40S	1538.07W	==>	1675.36	40.54927195	-104.75890548
9125.00	90.16	269.56	7269.10	1244.16S	1638.06W	==>	1774.73	40.54926984	-104.75926531
9225.00	90.16	269.56	7268.82	1244.92S	1738.06W	==>	1874.10	40.54926774	-104.75962513
9325.00	90.16	269.56	7268.54	1245.68S	1838.06W	==>	1973.48	40.54926563	-104.75998495
9425.00	90.16	269.56	7268.26	1246.44S	1938.05W	==>	2072.85	40.54926352	-104.76034477
9525.00	90.16	269.56	7267.98	1247.20S	2038.05W	==>	2172.23	40.54926141	-104.76070460
9625.00	90.16	269.56	7267.70	1247.96S	2138.05W	==>	2271.60	40.54925930	-104.76106442
9725.00	90.16	269.56	7267.42	1248.72S	2238.04W	==>	2370.97	40.54925719	-104.76142424
9825.00	90.16	269.56	7267.14	1249.48S	2338.04W	==>	2470.35	40.54925508	-104.76178406
9925.00	90.16	269.56	7266.86	1250.24S	2438.04W	==>	2569.72	40.54925296	-104.76214388
10025.00	90.16	269.56	7266.58	1251.00S	2538.03W	==>	2669.10	40.54925085	-104.76250371
10125.00	90.16	269.56	7266.30	1251.76S	2638.03W	==>	2768.47	40.54924873	-104.76286353
10225.00	90.16	269.56	7266.02	1252.52S	2738.03W	==>	2867.84	40.54924662	-104.76322335
10325.00	90.16	269.56	7265.74	1253.29S	2838.02W	==>	2967.22	40.54924450	-104.76358317
10425.00	90.16	269.56	7265.46	1254.05S	2938.02W	==>	3066.59	40.54924238	-104.76394299
10525.00	90.16	269.56	7265.18	1254.81S	3038.02W	==>	3165.97	40.54924026	-104.76430281
10625.00	90.16	269.56	7264.90	1255.57S	3138.01W	==>	3265.34	40.54923814	-104.76466264
10725.00	90.16	269.56	7264.62	1256.33S	3238.01W	==>	3364.71	40.54923602	-104.76502246
10825.00	90.16	269.56	7264.34	1257.09S	3338.01W	==>	3464.09	40.54923389	-104.76538228
10925.00	90.16	269.56	7264.06	1257.85S	3438.00W	==>	3563.46	40.54923177	-104.76574210
11025.00	90.16	269.56	7263.78	1258.61S	3538.00W	==>	3662.84	40.54922964	-104.76610192
11125.00	90.16	269.56	7263.50	1259.37S	3638.00W	==>	3762.21	40.54922752	-104.76646175
11225.00	90.16	269.56	7263.22	1260.13S	3737.99W	==>	3861.58	40.54922539	-104.76682157
11325.00	90.16	269.56	7262.94	1260.89S	3837.99W	==>	3960.96	40.54922326	-104.76718139
11425.00	90.16	269.56	7262.65	1261.65S	3937.99W	==>	4060.33	40.54922113	-104.76754121
11525.00	90.16	269.56	7262.37	1262.41S	4037.98W	==>	4159.71	40.54921900	-104.76790103
11625.00	90.16	269.56	7262.09	1263.17S	4137.98W	==>	4259.08	40.54921687	-104.76826085
11725.00	90.16	269.56	7261.81	1263.93S	4237.98W	==>	4358.45	40.54921473	-104.76862068
11825.00	90.16	269.56	7261.53	1264.69S	4337.97W	==>	4457.83	40.54921260	-104.76898050
11925.00	90.16	269.56	7261.25	1265.45S	4437.97W	==>	4557.20	40.54921046	-104.76934032
12025.00	90.16	269.56	7260.97	1266.21S	4537.97W	==>	4656.57	40.54920832	-104.76970014
12125.00	90.16	269.56	7260.69	1266.97S	4637.96W	==>	4755.95	40.54920619	-104.77005996
12225.00	90.16	269.56	7260.41	1267.73S	4737.96W	==>	4855.32	40.54920405	-104.77041978
12325.00	90.16	269.56	7260.13	1268.49S	4837.96W	==>	4954.70	40.54920191	-104.77077960
12425.00	90.16	269.56	7259.85	1269.25S	4937.95W	==>	5054.07	40.54919977	-104.77113943
12525.00	90.16	269.56	7259.57	1270.01S	5037.95W	==>	5153.44	40.54919762	-104.77149925
12625.00	90.16	269.56	7259.29	1270.77S	5137.95W	==>	5252.82	40.54919548	-104.77185907
12725.00	90.16	269.56	7259.01	1271.53S	5237.94W	==>	5352.19	40.54919334	-104.77221889
12825.00	90.16	269.56	7258.73	1272.29S	5337.94W	==>	5451.57	40.54919119	-104.77257871
12925.00	90.16	269.56	7258.45	1273.05S	5437.94W	==>	5550.94	40.54918904	-104.77293853
13025.00	90.16	269.56	7258.17	1273.81S	5537.93W	==>	5650.31	40.54918689	-104.77329835
13125.00	90.16	269.56	7257.89	1274.57S	5637.93W	==>	5749.69	40.54918475	-104.77365817
13225.00	90.16	269.56	7257.61	1275.33S	5737.93W	==>	5849.06	40.54918260	-104.77401800
13325.00	90.16	269.56	7257.33	1276.09S	5837.92W	==>	5948.44	40.54918044	-104.77437782
13425.00	90.16	269.56	7257.05	1276.85S	5937.92W	==>	6047.81	40.54917829	-104.77473764
13525.00	90.16	269.56	7256.77	1277.61S	6037.92W	==>	6147.18	40.54917614	-104.77509746
13625.00	90.16	269.56	7256.49	1278.37S	6137.91W	==>	6246.56	40.54917398	-104.77545728
13725.00	90.16	269.56	7256.21	1279.14S	6237.91W	==>	6345.93	40.54917183	-104.77581710
13825.00	90.16	269.56	7255.93	1279.90S	6337.91W	==>	6445.31	40.54916967	-104.77617692
13925.00	90.16	269.56	7255.65	1280.66S	6437.90W	==>	6544.68	40.54916751	-104.77653674
14025.00	90.16	269.56	7255.37	1281.42S	6537.90W	==>	6644.05	40.54916535	-104.77689657
14125.00	90.16	269.56	7255.09	1282.18S	6637.90W	==>	6743.43	40.54916319	-104.77725639
14225.00	90.16	269.56	7254.81	1282.94S	6737.89W	==>	6842.80	40.54916103	-104.77761621
14325.00	90.16	269.56	7254.53	1283.70S	6837.89W	==>	6942.17	40.54915887	-104.77797603

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Bottom hole distance is 11027.64 Feet on azimuth 263.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER G-26-28HN (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)
14425.00	90.16	269.56	7254.24	1284.46S	6937.89W	==>	7041.55	40.54915671	-104.77833585
14525.00	90.16	269.56	7253.96	1285.22S	7037.88W	==>	7140.92	40.54915454	-104.77869567
14625.00	90.16	269.56	7253.68	1285.98S	7137.88W	==>	7240.30	40.54915237	-104.77905549
14725.00	90.16	269.56	7253.40	1286.74S	7237.88W	==>	7339.67	40.54915021	-104.77941531
14825.00	90.16	269.56	7253.12	1287.50S	7337.87W	==>	7439.04	40.54914804	-104.77977513
14925.00	90.16	269.56	7252.84	1288.26S	7437.87W	==>	7538.42	40.54914587	-104.78013495
15025.00	90.16	269.56	7252.56	1289.02S	7537.87W	==>	7637.79	40.54914370	-104.78049477
15125.00	90.16	269.56	7252.28	1289.78S	7637.87W	==>	7737.17	40.54914153	-104.78085460
15225.00	90.16	269.56	7252.00	1290.54S	7737.86W	==>	7836.54	40.54913936	-104.78121442
15325.00	90.16	269.56	7251.72	1291.30S	7837.86W	==>	7935.91	40.54913718	-104.78157424
15425.00	90.16	269.56	7251.44	1292.06S	7937.86W	==>	8035.29	40.54913501	-104.78193406
15525.00	90.16	269.56	7251.16	1292.82S	8037.85W	==>	8134.66	40.54913283	-104.78229388
15625.00	90.16	269.56	7250.88	1293.58S	8137.85W	==>	8234.04	40.54913066	-104.78265370
15725.00	90.16	269.56	7250.60	1294.34S	8237.85W	==>	8333.41	40.54912848	-104.78301352
15825.00	90.16	269.56	7250.32	1295.10S	8337.84W	==>	8432.78	40.54912630	-104.78337334
15925.00	90.16	269.56	7250.04	1295.86S	8437.84W	==>	8532.16	40.54912412	-104.78373316
16025.00	90.16	269.56	7249.76	1296.62S	8537.84W	==>	8631.53	40.54912194	-104.78409298
16125.00	90.16	269.56	7249.48	1297.38S	8637.83W	==>	8730.91	40.54911975	-104.78445280
16225.00	90.16	269.56	7249.20	1298.14S	8737.83W	==>	8830.28	40.54911757	-104.78481262
16325.00	90.16	269.56	7248.92	1298.90S	8837.83W	==>	8929.65	40.54911539	-104.78517244
16425.00	90.16	269.56	7248.64	1299.66S	8937.82W	==>	9029.03	40.54911320	-104.78553226
16525.00	90.16	269.56	7248.36	1300.42S	9037.82W	==>	9128.40	40.54911101	-104.78589208
16625.00	90.16	269.56	7248.08	1301.18S	9137.82W	==>	9227.78	40.54910882	-104.78625190
16725.00	90.16	269.56	7247.80	1301.94S	9237.81W	==>	9327.15	40.54910663	-104.78661172
16825.00	90.16	269.56	7247.52	1302.70S	9337.81W	==>	9426.52	40.54910444	-104.78697155
16925.00	90.16	269.56	7247.24	1303.46S	9437.81W	==>	9525.90	40.54910225	-104.78733137
17025.00	90.16	269.56	7246.96	1304.23S	9537.80W	==>	9625.27	40.54910006	-104.78769119
17125.00	90.16	269.56	7246.68	1304.99S	9637.80W	==>	9724.64	40.54909787	-104.78805101
17225.00	90.16	269.56	7246.40	1305.75S	9737.80W	==>	9824.02	40.54909567	-104.78841083
17325.00	90.16	269.56	7246.12	1306.51S	9837.79W	==>	9923.39	40.54909348	-104.78877065
17425.00	90.16	269.56	7245.83	1307.27S	9937.79W	==>	10022.77	40.54909128	-104.78913047
17525.00	90.16	269.56	7245.55	1308.03S	10037.79W	==>	10122.14	40.54908908	-104.78949029
17625.00	90.16	269.56	7245.27	1308.79S	10137.78W	==>	10221.51	40.54908688	-104.78985011
17725.00	90.16	269.56	7244.99	1309.55S	10237.78W	==>	10320.89	40.54908468	-104.79020993
17825.00	90.16	269.56	7244.71	1310.31S	10337.78W	==>	10420.26	40.54908248	-104.79056975
17925.00	90.16	269.56	7244.43	1311.07S	10437.77W	==>	10519.64	40.54908028	-104.79092957
18025.00	90.16	269.56	7244.15	1311.83S	10537.77W	==>	10619.01	40.54907807	-104.79128939
18125.00	90.16	269.56	7243.87	1312.59S	10637.77W	==>	10718.38	40.54907587	-104.79164921
18225.00	90.16	269.56	7243.59	1313.35S	10737.76W	==>	10817.76	40.54907366	-104.79200903
18325.00	90.16	269.56	7243.31	1314.11S	10837.76W	==>	10917.13	40.54907146	-104.79236885
18425.00	90.16	269.56	7243.03	1314.87S	10937.76W	==>	11016.51	40.54906925	-104.79272867
18436.21	90.16	269.56	7243.00	1314.95S	10948.97W	==>	11027.64	40.54906900	-104.79276900

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Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER G-26-28HN (PWB)

Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
LEFFLER G-26-28HN - LP	1233.59S	247.89W	7273.00	40.54929900	-104.75426300	1443821.91	3207235.63
LEFFLER G-26-28HN - BHL	1314.95S	10948.97W	7243.00	40.54906900	-104.79276900	1443650.46	3196535.95

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
836564	Planned	1025.00	1025.00	WdW Rate Gyro	Standard
836563	Planned	18436.21	7243.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

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Date Printed: 21-May-2019

SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: LEFFLER G-26-28HN (PWB)
Wellpath: LEFFLER G-26-28HN (PWP#1)
Ellipse separations are reported ONLY if BOTH wells have uncertainty data
Only Depth and Magnetic Reference Field error terms are correlated across tie points
Scan limit is calculated on CENTRE to CENTRE distance

Summary data uses Closest Approach clearance calculation for all minima
Hole size/Casings ARE included
Hole size/Casings are NOT subtracted from Centre-Centre distance
Confidence limit of 95.00% / 2.80 SD.
Errors on Ref start at Slot Permanent Datum (25.00)

Report uses Common: D/(E+Csg) Factor Calculation

Wellbore

Name	Created	Last Revised
LEFFLER G-26-28HN (PWB)	May-20-2019	May-20-2019

Well

Name	Government ID	Last Revised
LEFFLER G-26-28HN		May-20-2019

Slot

Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
LEFFLER G-26-28HN	1445057.5072	3207473.1143	40.55268500	-104.75337100	30.24S	45.57E

Installation

Name	Easting	Northing	Map Name	North Alignment
Leffler Pad - Updates 05-20-2019	3207427.2886	1445087.3602	NAD83 Based Colorado State Planes, Northern Zone, US Feet	True

Field

Name	Easting	Northing	Map Name	North Alignment
WATTENBERG	3230716.7970	1397094.8569	NAD83 Based Colorado State Planes, Northern Zone, US Feet	Grid

Clearance Summary

Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
W Leffler 27C	W Leffler 27C (AWB)	Leffler 27C	Leffler Pad OFFSETS	152.27	9019.53	9019.53	74.60	9019.53	1.96	9005.91
W Thornton 21K-443	W Thornton 21K-443 (AWB)	Thornton 21K-443	Leffler Pad OFFSETS	160.51	17415.00	17415.00	53.83	17355.64	1.44	17339.24
W Leffler 32-27	W Leffler 32-27 (AWB)	Leffler 32-27	Leffler Pad OFFSETS	722.96	9960.18	9960.18	611.09	9990.16	6.30	10104.99
W Leffler 41-27	W Leffler 41-27 (AWB)	Leffler 41-27	Leffler Pad OFFSETS	746.49	1677.21	8294.19	741.11	1804.46	16.25	8546.59
W Leffler 42-27	W Leffler 42-27 (AWB)	Leffler 42-27	Leffler Pad OFFSETS	778.73	8309.67	8309.67	723.22	8349.74	12.61	8628.61
W Leffler 1-27	W Leffler 1-27 (AWB)	Leffler 1-27	Leffler Pad OFFSETS	817.89	9682.23	9682.23	716.57	9694.88	8.02	9760.50
W Leffler 31-27	W Leffler 31-27 (AWB)	Leffler 31-27	Leffler Pad OFFSETS	929.53	9963.18	9963.18	818.47	9990.16	8.30	10055.77

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Vertical Section is from 0.00N 0.00E on azimuth 263.15 degrees
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