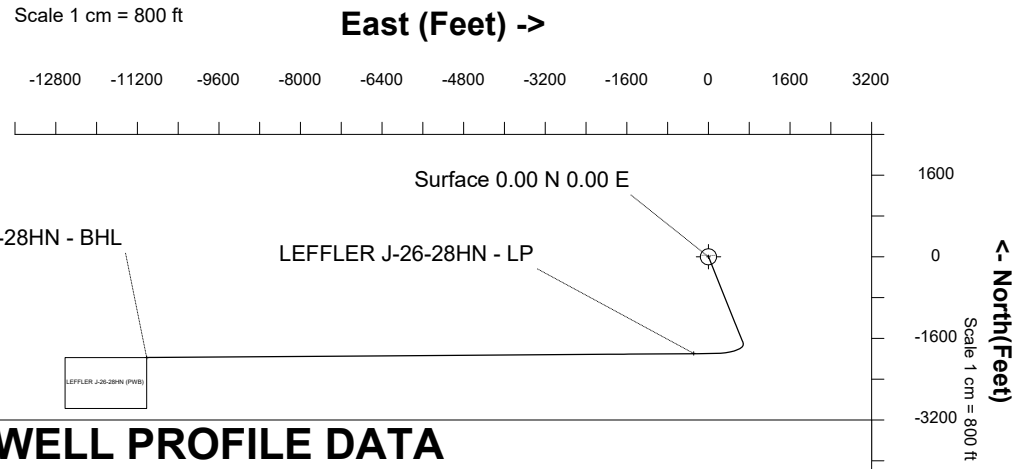
BAYSWATER E & P, LLC

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

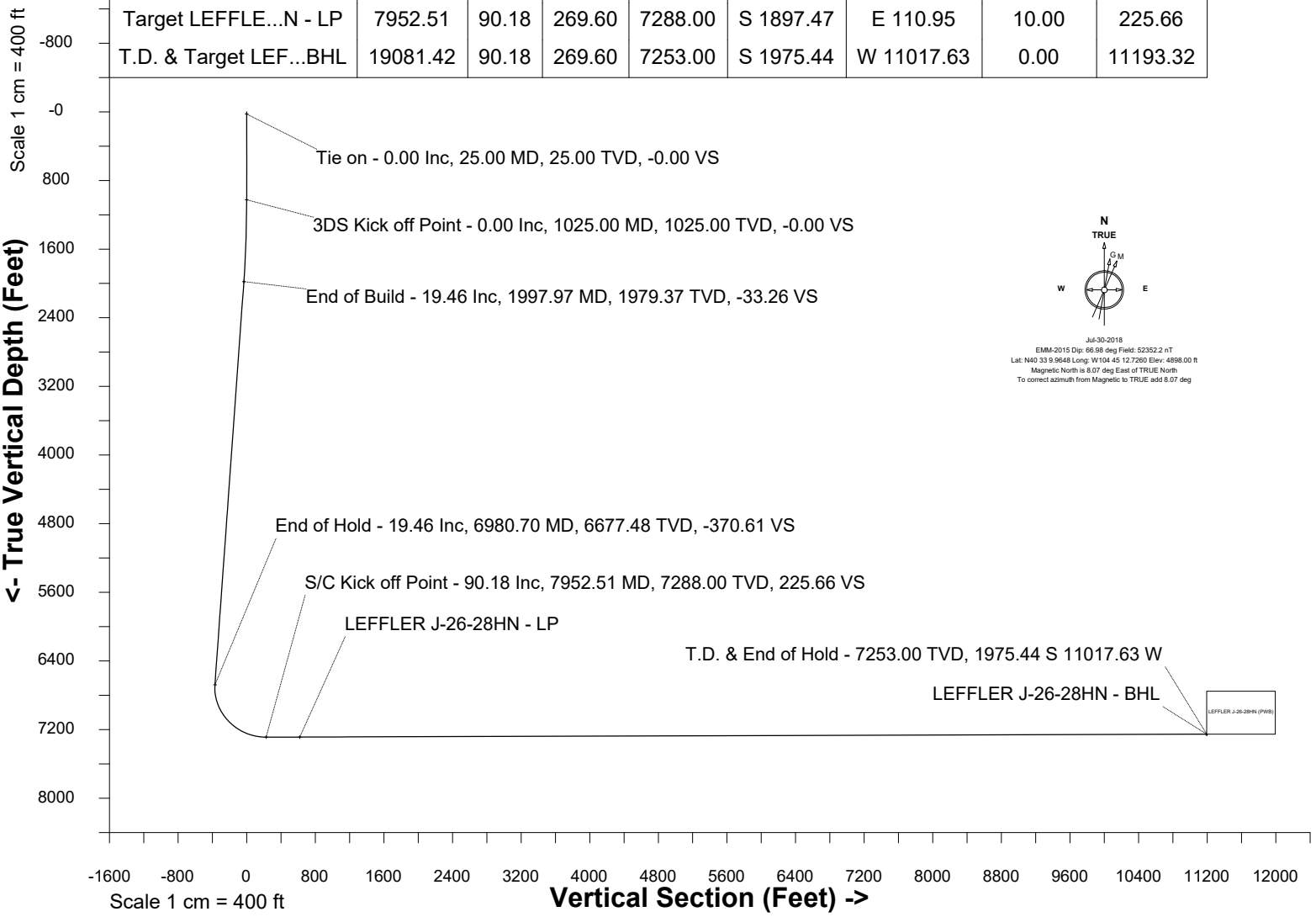
Created by sean.dolfinger
Date plotted 21-May-2019

Plot reference is LEFFLER J-26-28HN (PWB).
Ref wellpath is LEFFLER J-26-28HN (PWP#1).
Coordinates are in Feet reference LEFFLER J-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	158.11	1025.00	S 0.00	W 0.00	0.00	-0.00
End of Build	1997.97	19.46	158.11	1979.37	S 151.84	E 61.01	2.00	-33.26
End of Hold	6980.70	19.46	158.11	6677.48	S 1692.10	E 679.91	0.00	-370.61
Target LEFFLE...N - LP	7952.51	90.18	269.60	7288.00	S 1897.47	E 110.95	10.00	225.66
T.D. & Target LEF...BHL	19081.42	90.18	269.60	7253.00	S 1975.44	W 11017.63	0.00	11193.32



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

Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
LEFFLER J-26-28HN	40.55268700	-104.75321000	1445058.6125	3207517.8458	29.51S	90.31E	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	158.11	1025.00	-3898.00	0.00N	0.00E	==>	0.00
1997.97	19.46	158.11	1979.37	-2943.63	151.84S	61.01E	2.00	-33.26
6980.70	19.46	158.11	6677.48	1754.48	1692.10S	679.91E	==>	-370.61
7952.51	90.18	269.60	7288.00	2365.00	1897.47S	110.95E	10.00	225.66
19081.42	90.18	269.60	7253.00	2330.00	1975.44S	11017.63W	==>	11193.32

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	40.55268700	-104.75321000
25.00	0.00	0.00	25.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
1025.00	0.00	158.11	1025.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75321000
1125.00	2.00	158.11	1124.98	1.62S	0.65E	2.00	-0.35	40.55268256	-104.75320766
1225.00	4.00	158.11	1224.84	6.48S	2.60E	2.00	-1.42	40.55266923	-104.75320064
1325.00	6.00	158.11	1324.45	14.56S	5.85E	2.00	-3.19	40.55264703	-104.75318894
1425.00	8.00	158.11	1423.70	25.87S	10.39E	2.00	-5.67	40.55261599	-104.75317259
1525.00	10.00	158.11	1522.47	40.38S	16.23E	2.00	-8.85	40.55257615	-104.75315161
1625.00	12.00	158.11	1620.62	58.09S	23.34E	2.00	-12.72	40.55252756	-104.75312601
1725.00	14.00	158.11	1718.06	78.96S	31.73E	2.00	-17.29	40.55247027	-104.75309583
1825.00	16.00	158.11	1814.64	102.97S	41.38E	2.00	-22.55	40.55240435	-104.75306110
1925.00	18.00	158.11	1910.27	130.10S	52.28E	2.00	-28.50	40.55232989	-104.75302188
1997.97	19.46	158.11	1979.37	151.84S	61.01E	2.00	-33.26	40.55227021	-104.75299044
2025.00	19.46	158.11	2004.86	160.20S	64.37E	==>	-35.09	40.55224728	-104.75297836
2125.00	19.46	158.11	2099.15	191.11S	76.79E	==>	-41.86	40.55216243	-104.75293367
2225.00	19.46	158.11	2193.43	222.02S	89.21E	==>	-48.63	40.55207759	-104.75288897
2325.00	19.46	158.11	2287.72	252.93S	101.63E	==>	-55.40	40.55199274	-104.75284427
2425.00	19.46	158.11	2382.01	283.85S	114.05E	==>	-62.17	40.55190789	-104.75279958
2525.00	19.46	158.11	2476.30	314.76S	126.48E	==>	-68.94	40.55182304	-104.75275488
2625.00	19.46	158.11	2570.58	345.67S	138.90E	==>	-75.71	40.55173820	-104.75271019
2725.00	19.46	158.11	2664.87	376.58S	151.32E	==>	-82.48	40.55165335	-104.75266549
2825.00	19.46	158.11	2759.16	407.49S	163.74E	==>	-89.25	40.55156850	-104.75262079

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 259.83 degrees
Bottom hole distance is 11193.32 Feet on azimuth 259.83 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER J-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	19.46	158.11	2853.45	438.41S	176.16E	==>	-96.02	40.55148365	-104.75257610
3025.00	19.46	158.11	2947.74	469.32S	188.58E	==>	-102.79	40.55139880	-104.75253140
3125.00	19.46	158.11	3042.02	500.23S	201.00E	==>	-109.56	40.55131396	-104.75248671
3225.00	19.46	158.11	3136.31	531.14S	213.42E	==>	-116.33	40.55122911	-104.75244201
3325.00	19.46	158.11	3230.60	562.05S	225.84E	==>	-123.10	40.55114426	-104.75239732
3425.00	19.46	158.11	3324.89	592.96S	238.26E	==>	-129.88	40.55105941	-104.75235262
3525.00	19.46	158.11	3419.17	623.88S	250.68E	==>	-136.65	40.55097456	-104.75230793
3625.00	19.46	158.11	3513.46	654.79S	263.11E	==>	-143.42	40.55088972	-104.75226323
3725.00	19.46	158.11	3607.75	685.70S	275.53E	==>	-150.19	40.55080487	-104.75221854
3825.00	19.46	158.11	3702.04	716.61S	287.95E	==>	-156.96	40.55072002	-104.75217385
3925.00	19.46	158.11	3796.33	747.52S	300.37E	==>	-163.73	40.55063517	-104.75212915
4025.00	19.46	158.11	3890.61	778.44S	312.79E	==>	-170.50	40.55055032	-104.75208446
4125.00	19.46	158.11	3984.90	809.35S	325.21E	==>	-177.27	40.55046548	-104.75203976
4225.00	19.46	158.11	4079.19	840.26S	337.63E	==>	-184.04	40.55038063	-104.75199507
4325.00	19.46	158.11	4173.48	871.17S	350.05E	==>	-190.81	40.55029578	-104.75195038
4425.00	19.46	158.11	4267.76	902.08S	362.47E	==>	-197.58	40.55021093	-104.75190568
4525.00	19.46	158.11	4362.05	932.99S	374.89E	==>	-204.35	40.55012608	-104.75186099
4625.00	19.46	158.11	4456.34	963.91S	387.31E	==>	-211.12	40.55004124	-104.75181629
4725.00	19.46	158.11	4550.63	994.82S	399.74E	==>	-217.89	40.54995639	-104.75177160
4825.00	19.46	158.11	4644.92	1025.73S	412.16E	==>	-224.66	40.54987154	-104.75172691
4925.00	19.46	158.11	4739.20	1056.64S	424.58E	==>	-231.43	40.54978669	-104.75168221
5025.00	19.46	158.11	4833.49	1087.55S	437.00E	==>	-238.20	40.54970184	-104.75163752
5125.00	19.46	158.11	4927.78	1118.47S	449.42E	==>	-244.97	40.54961699	-104.75159283
5225.00	19.46	158.11	5022.07	1149.38S	461.84E	==>	-251.74	40.54953215	-104.75154814
5325.00	19.46	158.11	5116.35	1180.29S	474.26E	==>	-258.51	40.54944730	-104.75150344
5425.00	19.46	158.11	5210.64	1211.20S	486.68E	==>	-265.29	40.54936245	-104.75145875
5525.00	19.46	158.11	5304.93	1242.11S	499.10E	==>	-272.06	40.54927760	-104.75141406
5625.00	19.46	158.11	5399.22	1273.02S	511.52E	==>	-278.83	40.54919275	-104.75136937
5725.00	19.46	158.11	5493.51	1303.94S	523.94E	==>	-285.60	40.54910790	-104.75132467
5825.00	19.46	158.11	5587.79	1334.85S	536.37E	==>	-292.37	40.54902306	-104.75127998
5925.00	19.46	158.11	5682.08	1365.76S	548.79E	==>	-299.14	40.54893821	-104.75123529
6025.00	19.46	158.11	5776.37	1396.67S	561.21E	==>	-305.91	40.54885336	-104.75119060
6125.00	19.46	158.11	5870.66	1427.58S	573.63E	==>	-312.68	40.54876851	-104.75114591
6225.00	19.46	158.11	5964.94	1458.50S	586.05E	==>	-319.45	40.54868366	-104.75110121
6325.00	19.46	158.11	6059.23	1489.41S	598.47E	==>	-326.22	40.54859881	-104.75105652
6425.00	19.46	158.11	6153.52	1520.32S	610.89E	==>	-332.99	40.54851397	-104.75101183
6525.00	19.46	158.11	6247.81	1551.23S	623.31E	==>	-339.76	40.54842912	-104.75096714
6625.00	19.46	158.11	6342.10	1582.14S	635.73E	==>	-346.53	40.54834427	-104.75092245
6725.00	19.46	158.11	6436.38	1613.05S	648.15E	==>	-353.30	40.54825942	-104.75087776
6825.00	19.46	158.11	6530.67	1643.97S	660.57E	==>	-360.07	40.54817457	-104.75083307
6925.00	19.46	158.11	6624.96	1674.88S	673.00E	==>	-366.84	40.54808972	-104.75078838
6980.70	19.46	158.11	6677.48	1692.10S	679.91E	==>	-370.61	40.54804246	-104.75076348
7025.00	18.38	171.39	6719.40	1705.85S	683.71E	10.00	-371.93	40.54800470	-104.75074982
7125.00	19.62	202.22	6814.19	1737.06S	679.71E	10.00	-362.48	40.54791903	-104.75076421
7225.00	25.00	224.69	6906.84	1767.71S	658.45E	10.00	-336.14	40.54783493	-104.75084073
7325.00	32.53	238.50	6994.53	1796.85S	620.56E	10.00	-293.70	40.54775493	-104.75097706
7425.00	41.04	247.34	7074.60	1823.62S	567.20E	10.00	-236.46	40.54768147	-104.75116906
7525.00	50.02	253.53	7144.61	1847.19S	500.00E	10.00	-166.15	40.54761678	-104.75141089
7625.00	59.25	258.26	7202.45	1866.84S	420.98E	10.00	-84.91	40.54756282	-104.75169520
7725.00	68.63	262.14	7246.35	1881.99S	332.56E	10.00	4.80	40.54752125	-104.75201336
7825.00	78.08	265.56	7274.97	1892.17S	237.42E	10.00	100.24	40.54749331	-104.75235570
7925.00	87.57	268.74	7287.46	1897.08S	138.45E	10.00	198.52	40.54747985	-104.75271181
7952.51	90.18	269.60	7288.00	1897.47S	110.95E	10.00	225.66	40.54747876	-104.75281077
8025.00	90.18	269.60	7287.77	1897.98S	38.47E	==>	297.10	40.54747736	-104.75307159
8125.00	90.18	269.60	7287.46	1898.68S	61.53W	==>	395.65	40.54747544	-104.75343140
8225.00	90.18	269.60	7287.14	1899.38S	161.53W	==>	494.20	40.54747352	-104.75379122
8325.00	90.18	269.60	7286.83	1900.08S	261.52W	==>	592.75	40.54747159	-104.75415103
8425.00	90.18	269.60	7286.51	1900.78S	361.52W	==>	691.30	40.54746967	-104.75451084

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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 259.83 degrees
Bottom hole distance is 11193.32 Feet on azimuth 259.83 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER J-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	90.18	269.60	7286.20	1901.49S	461.52W	==>	789.86	40.54746774	-104.75487066
8625.00	90.18	269.60	7285.89	1902.19S	561.52W	==>	888.41	40.54746581	-104.75523047
8725.00	90.18	269.60	7285.57	1902.89S	661.51W	==>	986.96	40.54746388	-104.75559029
8825.00	90.18	269.60	7285.26	1903.59S	761.51W	==>	1085.51	40.54746195	-104.75595010
8925.00	90.18	269.60	7284.94	1904.29S	861.51W	==>	1184.06	40.54746002	-104.75630991
9025.00	90.18	269.60	7284.63	1904.99S	961.50W	==>	1282.61	40.54745808	-104.75666973
9125.00	90.18	269.60	7284.31	1905.69S	1061.50W	==>	1381.16	40.54745615	-104.75702954
9225.00	90.18	269.60	7284.00	1906.39S	1161.50W	==>	1479.71	40.54745421	-104.75738936
9325.00	90.18	269.60	7283.68	1907.09S	1261.50W	==>	1578.26	40.54745228	-104.75774917
9425.00	90.18	269.60	7283.37	1907.79S	1361.49W	==>	1676.82	40.54745034	-104.75810898
9525.00	90.18	269.60	7283.05	1908.49S	1461.49W	==>	1775.37	40.54744840	-104.75846880
9625.00	90.18	269.60	7282.74	1909.19S	1561.49W	==>	1873.92	40.54744646	-104.75882861
9725.00	90.18	269.60	7282.43	1909.89S	1661.48W	==>	1972.47	40.54744452	-104.75918842
9825.00	90.18	269.60	7282.11	1910.59S	1761.48W	==>	2071.02	40.54744258	-104.75954824
9925.00	90.18	269.60	7281.80	1911.29S	1861.48W	==>	2169.57	40.54744064	-104.75990805
10025.00	90.18	269.60	7281.48	1911.99S	1961.47W	==>	2268.12	40.54743869	-104.76026786
10125.00	90.18	269.60	7281.17	1912.69S	2061.47W	==>	2366.67	40.54743675	-104.76062768
10225.00	90.18	269.60	7280.85	1913.39S	2161.47W	==>	2465.22	40.54743480	-104.76098749
10325.00	90.18	269.60	7280.54	1914.10S	2261.47W	==>	2563.78	40.54743285	-104.76134731
10425.00	90.18	269.60	7280.22	1914.80S	2361.46W	==>	2662.33	40.54743090	-104.76170712
10525.00	90.18	269.60	7279.91	1915.50S	2461.46W	==>	2760.88	40.54742895	-104.76206693
10625.00	90.18	269.60	7279.60	1916.20S	2561.46W	==>	2859.43	40.54742700	-104.76242675
10725.00	90.18	269.60	7279.28	1916.90S	2661.45W	==>	2957.98	40.54742505	-104.76278656
10825.00	90.18	269.60	7278.97	1917.60S	2761.45W	==>	3056.53	40.54742310	-104.76314637
10925.00	90.18	269.60	7278.65	1918.30S	2861.45W	==>	3155.08	40.54742114	-104.76350619
11025.00	90.18	269.60	7278.34	1919.00S	2961.45W	==>	3253.63	40.54741919	-104.76386600
11125.00	90.18	269.60	7278.02	1919.70S	3061.44W	==>	3352.18	40.54741723	-104.76422581
11225.00	90.18	269.60	7277.71	1920.40S	3161.44W	==>	3450.74	40.54741527	-104.76458563
11325.00	90.18	269.60	7277.39	1921.10S	3261.44W	==>	3549.29	40.54741332	-104.76494544
11425.00	90.18	269.60	7277.08	1921.80S	3361.43W	==>	3647.84	40.54741136	-104.76530525
11525.00	90.18	269.60	7276.76	1922.50S	3461.43W	==>	3746.39	40.54740940	-104.76566507
11625.00	90.18	269.60	7276.45	1923.20S	3561.43W	==>	3844.94	40.54740743	-104.76602488
11725.00	90.18	269.60	7276.14	1923.90S	3661.42W	==>	3943.49	40.54740547	-104.76638469
11825.00	90.18	269.60	7275.82	1924.60S	3761.42W	==>	4042.04	40.54740351	-104.76674451
11925.00	90.18	269.60	7275.51	1925.30S	3861.42W	==>	4140.59	40.54740154	-104.76710432
12025.00	90.18	269.60	7275.19	1926.00S	3961.42W	==>	4239.14	40.54739957	-104.76746413
12125.00	90.18	269.60	7274.88	1926.71S	4061.41W	==>	4337.70	40.54739761	-104.76782395
12225.00	90.18	269.60	7274.56	1927.41S	4161.41W	==>	4436.25	40.54739564	-104.76818376
12325.00	90.18	269.60	7274.25	1928.11S	4261.41W	==>	4534.80	40.54739367	-104.76854357
12425.00	90.18	269.60	7273.93	1928.81S	4361.40W	==>	4633.35	40.54739170	-104.76890338
12525.00	90.18	269.60	7273.62	1929.51S	4461.40W	==>	4731.90	40.54738973	-104.76926320
12625.00	90.18	269.60	7273.31	1930.21S	4561.40W	==>	4830.45	40.54738775	-104.76962301
12725.00	90.18	269.60	7272.99	1930.91S	4661.40W	==>	4929.00	40.54738578	-104.76998282
12825.00	90.18	269.60	7272.68	1931.61S	4761.39W	==>	5027.55	40.54738380	-104.77034264
12925.00	90.18	269.60	7272.36	1932.31S	4861.39W	==>	5126.10	40.54738183	-104.77070245
13025.00	90.18	269.60	7272.05	1933.01S	4961.39W	==>	5224.65	40.54737985	-104.77106226
13125.00	90.18	269.60	7271.73	1933.71S	5061.38W	==>	5323.21	40.54737787	-104.77142208
13225.00	90.18	269.60	7271.42	1934.41S	5161.38W	==>	5421.76	40.54737589	-104.77178189
13325.00	90.18	269.60	7271.10	1935.11S	5261.38W	==>	5520.31	40.54737391	-104.77214170
13425.00	90.18	269.60	7270.79	1935.81S	5361.37W	==>	5618.86	40.54737193	-104.77250151
13525.00	90.18	269.60	7270.47	1936.51S	5461.37W	==>	5717.41	40.54736994	-104.77286133
13625.00	90.18	269.60	7270.16	1937.21S	5561.37W	==>	5815.96	40.54736796	-104.77322114
13725.00	90.18	269.60	7269.85	1937.91S	5661.37W	==>	5914.51	40.54736597	-104.77358095
13825.00	90.18	269.60	7269.53	1938.61S	5761.36W	==>	6013.06	40.54736399	-104.77394077
13925.00	90.18	269.60	7269.22	1939.32S	5861.36W	==>	6111.61	40.54736200	-104.77430058
14025.00	90.18	269.60	7268.90	1940.02S	5961.36W	==>	6210.17	40.54736001	-104.77466039
14125.00	90.18	269.60	7268.59	1940.72S	6061.35W	==>	6308.72	40.54735802	-104.77502020
14225.00	90.18	269.60	7268.27	1941.42S	6161.35W	==>	6407.27	40.54735603	-104.77538002
14325.00	90.18	269.60	7267.96	1942.12S	6261.35W	==>	6505.82	40.54735404	-104.77573983

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Vertical Section is from 0.00N 0.00E on azimuth 259.83 degrees
Bottom hole distance is 11193.32 Feet on azimuth 259.83 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER J-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	90.18	269.60	7267.64	1942.82S	6361.34W	==>	6604.37	40.54735205	-104.77609964
14525.00	90.18	269.60	7267.33	1943.52S	6461.34W	==>	6702.92	40.54735005	-104.77645946
14625.00	90.18	269.60	7267.02	1944.22S	6561.34W	==>	6801.47	40.54734806	-104.77681927
14725.00	90.18	269.60	7266.70	1944.92S	6661.34W	==>	6900.02	40.54734606	-104.77717908
14825.00	90.18	269.60	7266.39	1945.62S	6761.33W	==>	6998.57	40.54734406	-104.77753889
14925.00	90.18	269.60	7266.07	1946.32S	6861.33W	==>	7097.13	40.54734206	-104.77789871
15025.00	90.18	269.60	7265.76	1947.02S	6961.33W	==>	7195.68	40.54734006	-104.77825852
15125.00	90.18	269.60	7265.44	1947.72S	7061.32W	==>	7294.23	40.54733806	-104.77861833
15225.00	90.18	269.60	7265.13	1948.42S	7161.32W	==>	7392.78	40.54733606	-104.77897814
15325.00	90.18	269.60	7264.81	1949.12S	7261.32W	==>	7491.33	40.54733406	-104.77933796
15425.00	90.18	269.60	7264.50	1949.82S	7361.32W	==>	7589.88	40.54733205	-104.77969777
15525.00	90.18	269.60	7264.18	1950.52S	7461.31W	==>	7688.43	40.54733005	-104.78005758
15625.00	90.18	269.60	7263.87	1951.22S	7561.31W	==>	7786.98	40.54732804	-104.78041739
15725.00	90.18	269.60	7263.56	1951.93S	7661.31W	==>	7885.53	40.54732603	-104.78077721
15825.00	90.18	269.60	7263.24	1952.63S	7761.30W	==>	7984.09	40.54732402	-104.78113702
15925.00	90.18	269.60	7262.93	1953.33S	7861.30W	==>	8082.64	40.54732201	-104.78149683
16025.00	90.18	269.60	7262.61	1954.03S	7961.30W	==>	8181.19	40.54732000	-104.78185664
16125.00	90.18	269.60	7262.30	1954.73S	8061.29W	==>	8279.74	40.54731799	-104.78221646
16225.00	90.18	269.60	7261.98	1955.43S	8161.29W	==>	8378.29	40.54731598	-104.78257627
16325.00	90.18	269.60	7261.67	1956.13S	8261.29W	==>	8476.84	40.54731396	-104.78293608
16425.00	90.18	269.60	7261.35	1956.83S	8361.29W	==>	8575.39	40.54731195	-104.78329589
16525.00	90.18	269.60	7261.04	1957.53S	8461.28W	==>	8673.94	40.54730993	-104.78365570
16625.00	90.18	269.60	7260.73	1958.23S	8561.28W	==>	8772.49	40.54730791	-104.78401552
16725.00	90.18	269.60	7260.41	1958.93S	8661.28W	==>	8871.05	40.54730589	-104.78437533
16825.00	90.18	269.60	7260.10	1959.63S	8761.27W	==>	8969.60	40.54730387	-104.78473514
16925.00	90.18	269.60	7259.78	1960.33S	8861.27W	==>	9068.15	40.54730185	-104.78509495
17025.00	90.18	269.60	7259.47	1961.03S	8961.27W	==>	9166.70	40.54729983	-104.78545477
17125.00	90.18	269.60	7259.15	1961.73S	9061.27W	==>	9265.25	40.54729781	-104.78581458
17225.00	90.18	269.60	7258.84	1962.43S	9161.26W	==>	9363.80	40.54729578	-104.78617439
17325.00	90.18	269.60	7258.52	1963.13S	9261.26W	==>	9462.35	40.54729376	-104.78653420
17425.00	90.18	269.60	7258.21	1963.83S	9361.26W	==>	9560.90	40.54729173	-104.78689401
17525.00	90.18	269.60	7257.89	1964.54S	9461.25W	==>	9659.45	40.54728970	-104.78725383
17625.00	90.18	269.60	7257.58	1965.24S	9561.25W	==>	9758.01	40.54728767	-104.78761364
17725.00	90.18	269.60	7257.27	1965.94S	9661.25W	==>	9856.56	40.54728564	-104.78797345
17825.00	90.18	269.60	7256.95	1966.64S	9761.24W	==>	9955.11	40.54728361	-104.78833326
17925.00	90.18	269.60	7256.64	1967.34S	9861.24W	==>	10053.66	40.54728158	-104.78869307
18025.00	90.18	269.60	7256.32	1968.04S	9961.24W	==>	10152.21	40.54727955	-104.78905289
18125.00	90.18	269.60	7256.01	1968.74S	10061.24W	==>	10250.76	40.54727751	-104.78941270
18225.00	90.18	269.60	7255.69	1969.44S	10161.23W	==>	10349.31	40.54727548	-104.78977251
18325.00	90.18	269.60	7255.38	1970.14S	10261.23W	==>	10447.86	40.54727344	-104.79013232
18425.00	90.18	269.60	7255.06	1970.84S	10361.23W	==>	10546.41	40.54727140	-104.79049213
18525.00	90.18	269.60	7254.75	1971.54S	10461.22W	==>	10644.96	40.54726936	-104.79085194
18625.00	90.18	269.60	7254.44	1972.24S	10561.22W	==>	10743.52	40.54726732	-104.79121176
18725.00	90.18	269.60	7254.12	1972.94S	10661.22W	==>	10842.07	40.54726528	-104.79157157
18825.00	90.18	269.60	7253.81	1973.64S	10761.22W	==>	10940.62	40.54726324	-104.79193138
18925.00	90.18	269.60	7253.49	1974.34S	10861.21W	==>	11039.17	40.54726120	-104.79229119
19025.00	90.18	269.60	7253.18	1975.04S	10961.21W	==>	11137.72	40.54725915	-104.79265100
19081.42	90.18	269.60	7253.00	1975.44S	11017.63W	==>	11193.32	40.54725800	-104.79285400

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

Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
LEFFLER J-26-28HN - LP	1894.11S	289.03W	7288.00	40.54748800	-104.75425000	1443162.20	3207244.79
LEFFLER J-26-28HN - BHL	1975.44S	11017.63W	7253.00	40.54725800	-104.79285400	1442990.52	3196517.59

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
836627	Planned	1025.00	1025.00	WdW Rate Gyro	Standard
836626	Planned	19081.42	7253.00	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 J-26-28HN (PWB)
Wellpath: LEFFLER J-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 J-26-28HN (PWB)	May-20-2019	May-20-2019

Well

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

Slot

Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
LEFFLER J-26-28HN	1445058.6125	3207517.8458	40.55268700	-104.75321000	29.51S	90.31E

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 32-27	W Leffler 32-27 (AWB)	Leffler 32-27	Leffler Pad OFFSETS	58.23	10576.55	10576.55	-66.39	10580.71	0.47	10580.71
W Leffler 42-27	W Leffler 42-27 (AWB)	Leffler 42-27	Leffler Pad OFFSETS	113.61	8926.24	8926.24	46.46	8940.29	1.68	8940.29
W Thornton 21K-443	W Thornton 21K-443 (AWB)	Thornton 21K-443	Leffler Pad OFFSETS	132.50	18006.31	18006.31	8.35	17929.79	1.06	17929.79
W Leffler 41-27	W Leffler 41-27 (AWB)	Leffler 41-27	Leffler Pad OFFSETS	792.46	1230.31	8911.38	789.85	1377.95	21.19	9547.24
W Leffler 27C	W Leffler 27C (AWB)	Leffler 27C	Leffler Pad OFFSETS	817.47	9636.28	9636.28	726.93	9645.67	8.94	9744.09
W Leffler 1-27	W Leffler 1-27 (AWB)	Leffler 1-27	Leffler Pad OFFSETS	1482.70	10301.84	10301.84	1368.07	10334.65	12.55	10597.11
W Leffler 31-27	W Leffler 31-27 (AWB)	Leffler 31-27	Leffler Pad OFFSETS	1594.19	10580.71	10580.71	1469.81	10625.00	12.44	10892.39

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Vertical Section is from 0.00N 0.00E on azimuth 259.83 degrees
Prepared by
Date Printed: 22-May-2019