

Great Western Operating Company, LLC

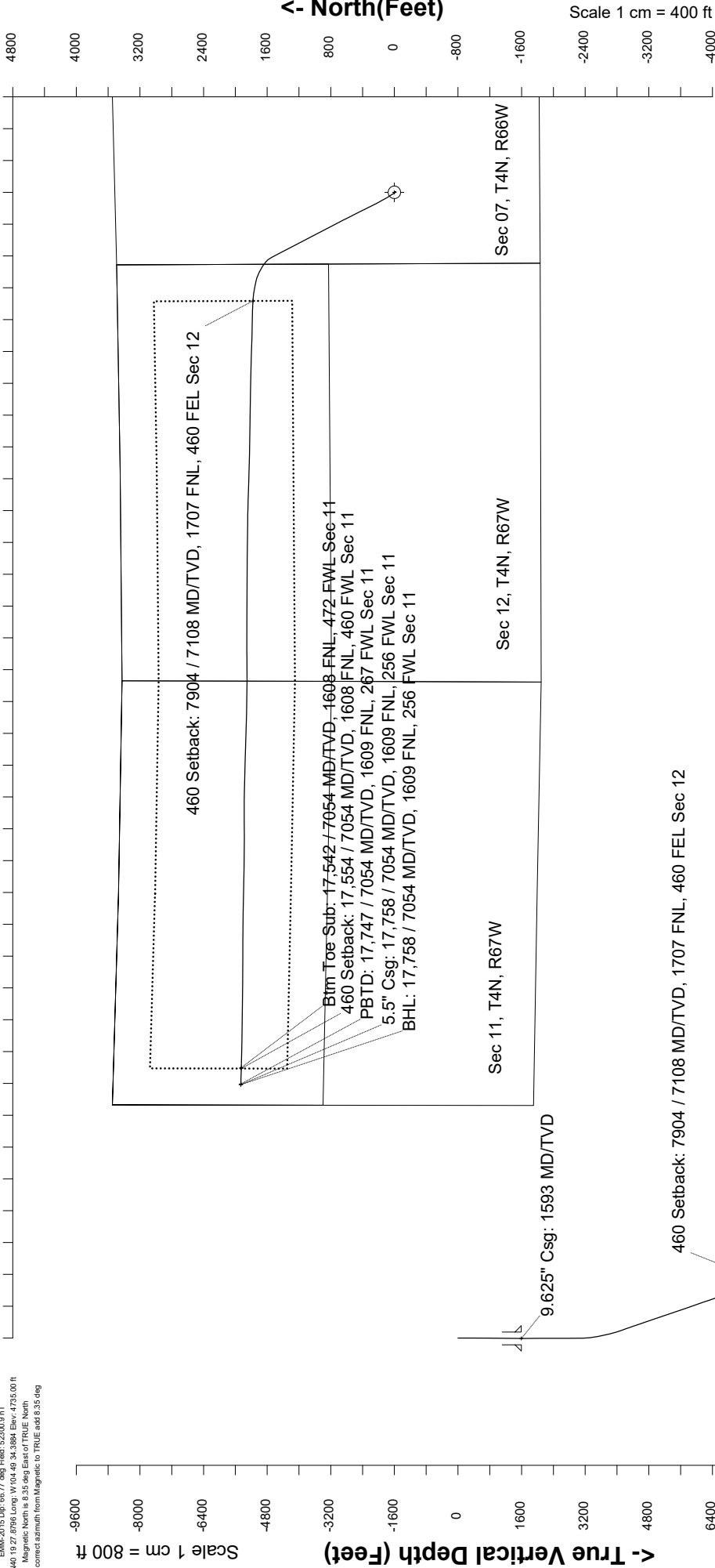
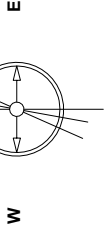
Location	Colorado	Slot	Slot 10 - Schneider HD 11-102HN
Field	Wattenburg	Well	Schneider HD 11-102HN
Installation	Schneider North	Wellbore	Schneider HD 11-102HN (AWB)

Created by	mmount
Date plotted	28-Oct-2019
Plot reference is Schneider HD 11-102HN (AWB).	
Ref wellpath is Schneider HD 11-102HN (AWP#1).	
Coordinates are in Feet reference Slot 10 - Schneider HD 11-102HN.	
True Vertical Depths are reference Rig Datum.	
Measured Depths are reference Rig Datum.	
Rig Datum: Actual Datum #1	
Rig Datum to Mean Sea Level: -755.00 ft.	
Plot North is aligned to TRUE North.	

Scale 1 cm = 400 ft

East (Feet) ->

May-14-2018
EMLM-2018.Dwg: d87.7 deg Field: 52300.9 mT
Lat: N40 19.27 8796 Long: W 104.40 34.3884 Elev: -4735.00 ft
Magnetic North is 9.35 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 8.35 deg



Scale 1 cm = 800 ft

Vertical Section (Feet) ->

Azimuth 279.77 with reference 0.00 N, 0.00 E from Slot 10 - Schneider HD 11-102HN

Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-102HN
MDs and TVDs are from Rig Floor 4755.0ft above Mean Sea Level

Wellbore Information

Date Created	Date Revised	API #	RKB above GL	Well Name
Oct-28-2019	Oct-28-2019	05-123-46406	20.00	Schneider HD 11-102HN

Slot Coordinates

Latitude	Longitude
40.32423300	-104.82651300

Pad Information

Pad Name	Ground Elev.
Schneider North	4735.00

Field

Name
Wattenburg

Wellpath Report

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
0.00	0.00	0.00	0.00	0.00	0.00		0.00	40.32423300	-104.82651300
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32423300	-104.82651300
96.00	0.04	330.73	96.00	0.02	-0.01	0.05	0.02	40.32423307	-104.82651305
185.00	0.22	58.63	185.00	0.14	0.12	0.25	-0.09	40.32423339	-104.82651258
273.00	0.22	351.65	273.00	0.40	0.24	0.28	-0.17	40.32423409	-104.82651215
365.00	0.83	159.70	365.00	-0.05	0.44	1.14	-0.44	40.32423285	-104.82651141
455.00	0.70	181.23	454.99	-1.22	0.66	0.35	-0.85	40.32422966	-104.82651065
545.00	0.75	146.87	544.98	-2.26	0.97	0.48	-1.34	40.32422680	-104.82650953
635.00	0.88	147.57	634.97	-3.33	1.66	0.14	-2.20	40.32422385	-104.82650705
725.00	0.92	137.64	724.96	-4.45	2.52	0.18	-3.24	40.32422078	-104.82650398
815.00	0.44	152.76	814.96	-5.29	3.16	0.56	-4.01	40.32421847	-104.82650166
905.00	0.75	146.43	904.95	-6.09	3.65	0.35	-4.63	40.32421628	-104.82649993
995.00	1.27	118.39	994.94	-7.06	4.85	0.78	-5.98	40.32421363	-104.82649561
1085.00	1.27	137.38	1084.91	-8.26	6.40	0.47	-7.71	40.32421032	-104.82649004
1175.00	1.05	136.23	1174.90	-9.59	7.65	0.25	-9.16	40.32420667	-104.82648557
1265.00	0.79	153.37	1264.88	-10.74	8.50	0.42	-10.19	40.32420351	-104.82648253
1355.00	0.26	278.00	1354.88	-11.27	8.57	1.07	-10.36	40.32420206	-104.82648226
1445.00	0.18	137.73	1444.88	-11.35	8.46	0.46	-10.27	40.32420186	-104.82648264
1544.00	0.09	305.07	1543.88	-11.42	8.51	0.27	-10.32	40.32420166	-104.82648250
1626.00	0.16	17.39	1625.88	-11.27	8.49	0.19	-10.28	40.32420206	-104.82648256
1716.00	1.32	208.65	1715.87	-12.06	8.03	1.64	-9.96	40.32419990	-104.82648421
1805.00	3.54	207.13	1804.79	-15.41	6.28	2.50	-8.80	40.32419071	-104.82649047
1895.00	3.48	207.19	1894.62	-20.31	3.77	0.07	-7.16	40.32417726	-104.82649949
1985.00	0.21	174.77	1984.56	-22.90	2.53	3.67	-6.38	40.32417013	-104.82650391
2074.00	0.06	220.50	2073.56	-23.10	2.52	0.19	-6.40	40.32416959	-104.82650397
2164.00	0.09	339.93	2163.56	-23.07	2.46	0.14	-6.34	40.32416967	-104.82650416
2254.00	0.11	314.79	2253.56	-22.94	2.38	0.05	-6.24	40.32417002	-104.82650447
2343.00	0.09	58.88	2342.56	-22.85	2.38	0.18	-6.22	40.32417029	-104.82650447
2433.00	0.10	105.33	2432.56	-22.83	2.51	0.08	-6.35	40.32417033	-104.82650398
2523.00	0.10	354.74	2522.56	-22.77	2.58	0.18	-6.41	40.32417049	-104.82650374
2613.00	0.10	324.40	2612.56	-22.63	2.53	0.06	-6.33	40.32417088	-104.82650393
2702.00	0.03	75.50	2701.56	-22.56	2.51	0.13	-6.30	40.32417107	-104.82650401
2792.00	0.07	292.28	2791.56	-22.54	2.48	0.11	-6.27	40.32417114	-104.82650411
2882.00	0.13	351.70	2881.56	-22.41	2.41	0.12	-6.18	40.32417148	-104.82650435
2971.00	0.17	258.71	2970.56	-22.34	2.27	0.25	-6.03	40.32417168	-104.82650486
3061.00	0.29	350.63	3060.56	-22.14	2.10	0.38	-5.83	40.32417222	-104.82650547
3151.00	4.38	335.75	3150.47	-18.78	0.65	4.56	-3.83	40.32418145	-104.82651066
3240.00	7.66	336.11	3238.96	-10.26	-3.15	3.69	1.36	40.32420485	-104.82652429
3330.00	10.41	333.31	3327.84	2.49	-9.23	3.09	9.52	40.32423985	-104.82654610
3420.00	12.64	324.58	3416.03	17.79	-18.59	3.14	21.34	40.32428182	-104.82657967
3509.00	14.57	324.27	3502.52	34.81	-30.77	2.17	36.23	40.32432856	-104.82662336
3599.00	15.85	326.31	3589.37	54.23	-44.20	1.54	52.76	40.32438185	-104.82667152
3689.00	18.33	327.90	3675.39	76.45	-58.54	2.80	70.66	40.32444284	-104.82672295
3779.00	21.43	332.72	3760.02	103.06	-73.60	3.89	90.02	40.32451588	-104.82677697
3868.00	21.30	331.29	3842.91	131.68	-88.82	0.60	109.87	40.32459446	-104.82683154
3958.00	23.88	330.74	3925.99	161.92	-105.58	2.88	131.51	40.32467746	-104.82689165
4048.00	29.18	333.21	4006.49	197.42	-124.39	6.01	156.07	40.32477491	-104.82695910
4137.00	30.28	331.90	4083.78	236.59	-144.73	1.44	182.77	40.32488241	-104.82703208
4227.00	30.13	333.30	4161.56	276.78	-165.57	0.80	210.12	40.32499275	-104.82710681
4317.00	29.94	333.01	4239.47	316.97	-185.91	0.27	236.98	40.32510307	-104.82717976
4406.00	30.26	333.71	4316.47	356.87	-205.93	0.53	263.47	40.32521258	-104.82725153
4496.00	30.28	333.66	4394.20	397.54	-226.04	0.04	290.19	40.32532421	-104.82732366
4586.00	29.92	333.81	4472.06	438.01	-246.01	0.41	316.74	40.32543531	-104.82739530
4676.00	30.13	332.83	4549.99	478.25	-266.23	0.59	343.49	40.32554576	-104.82746782
4765.00	30.33	332.10	4626.88	517.98	-286.95	0.47	370.65	40.32565482	-104.82754212
4855.00	30.01	333.86	4704.69	558.27	-307.50	1.05	397.73	40.32576541	-104.82761582
4945.00	30.22	333.78	4782.55	598.79	-327.42	0.24	424.24	40.32587664	-104.82768727
5034.00	29.69	333.53	4859.66	638.62	-347.14	0.61	450.43	40.32598596	-104.82775800
5124.00	29.65	332.12	4937.86	678.25	-367.48	0.78	477.20	40.32609474	-104.82783097
5214.00	29.05	332.61	5016.31	717.33	-387.95	0.72	504.00	40.32620201	-104.82790436
5304.00	29.07	332.28	5094.98	756.08	-408.17	0.18	530.50	40.32630839	-104.82797689
5393.00	29.45	333.68	5172.62	794.83	-427.93	0.88	556.55	40.32641476	-104.82804776
5483.00	28.87	331.38	5251.22	833.74	-448.15	1.40	583.07	40.32652155	-104.82812027
5573.00	29.20	332.90	5329.91	872.36	-468.55	0.90	609.73	40.32662755	-104.82819347

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5663.00	28.64	331.93	5408.68	910.93	-488.70	0.81	636.13	40.32673344	-104.82826574
5752.00	29.49	331.68	5486.47	949.04	-509.13	0.96	662.73	40.32683803	-104.82833901
5842.00	29.61	333.01	5564.77	988.35	-529.73	0.74	689.70	40.32694594	-104.82841289
5932.00	29.77	333.17	5642.95	1028.10	-549.91	0.20	716.32	40.32705506	-104.82848525
6022.00	30.13	332.48	5720.94	1068.07	-570.43	0.55	743.33	40.32716477	-104.82855886
6111.00	30.01	333.11	5797.96	1107.73	-590.82	0.38	770.15	40.32727364	-104.82863198
6201.00	29.34	332.86	5876.15	1147.43	-611.06	0.76	796.83	40.32738260	-104.82870457
6291.00	30.07	332.98	5954.33	1187.14	-631.36	0.81	823.57	40.32749159	-104.82877739
6380.00	29.80	332.89	6031.45	1226.69	-651.57	0.31	850.19	40.32760015	-104.82884987
6470.00	29.98	331.98	6109.48	1266.44	-672.32	0.54	877.39	40.32770928	-104.82892431
6560.00	29.80	332.06	6187.51	1306.05	-693.36	0.20	904.85	40.32781800	-104.82899978
6650.00	29.34	332.85	6265.79	1345.43	-713.90	0.67	931.77	40.32792609	-104.82907346
6739.00	29.78	332.51	6343.20	1384.44	-734.06	0.53	958.24	40.32803316	-104.82914574
6829.00	29.44	332.01	6421.45	1423.80	-754.75	0.47	985.32	40.32814119	-104.82921997
6919.00	29.90	332.55	6499.65	1463.23	-775.47	0.59	1012.43	40.32824945	-104.82929429
7008.00	30.59	332.53	6576.53	1503.01	-796.15	0.78	1039.55	40.32835863	-104.82936844
7098.00	30.12	331.53	6654.20	1543.18	-817.47	0.77	1067.38	40.32846889	-104.82944494
7188.00	32.38	324.90	6731.16	1582.77	-842.11	4.57	1098.37	40.32857755	-104.82953329
7277.00	35.49	309.71	6805.12	1618.84	-875.75	10.12	1137.65	40.32867657	-104.82965397
7367.00	40.48	302.20	6876.07	1651.14	-920.62	7.55	1187.35	40.32876522	-104.82981491
7457.00	47.99	300.33	6940.51	1683.64	-974.28	8.47	1245.74	40.32885442	-104.83000737
7546.00	56.28	293.18	6995.14	1714.99	-1037.01	11.26	1312.87	40.32894046	-104.83023234
7636.00	64.22	283.78	7039.84	1739.45	-1111.01	12.64	1389.96	40.32900761	-104.83049778
7726.00	71.69	280.38	7073.60	1756.83	-1192.53	9.01	1473.24	40.32905530	-104.83079014
7815.00	78.86	277.10	7096.22	1769.86	-1277.54	8.81	1559.23	40.32909105	-104.83109505
7905.00	86.47	273.22	7107.70	1777.85	-1366.36	9.47	1648.12	40.32911298	-104.83141362
7995.00	86.56	272.65	7113.17	1782.45	-1456.08	0.64	1737.31	40.32912560	-104.83173540
8084.00	89.89	271.23	7115.93	1785.46	-1544.97	4.07	1825.43	40.32913384	-104.83205422
8174.00	90.61	270.86	7115.54	1787.10	-1634.95	0.90	1914.39	40.32913833	-104.83237696
8264.00	90.52	271.19	7114.65	1788.71	-1724.93	0.38	2003.34	40.32914273	-104.83269969
8353.00	90.81	271.55	7113.62	1790.84	-1813.90	0.52	2091.38	40.32914856	-104.83301878
8443.00	91.12	271.80	7112.10	1793.47	-1903.85	0.44	2180.47	40.32915576	-104.83334140
8533.00	91.08	272.25	7110.37	1796.65	-1993.78	0.50	2269.63	40.32916447	-104.83366393
8623.00	91.08	272.12	7108.68	1800.08	-2083.70	0.14	2358.83	40.32917386	-104.83398644
8712.00	90.74	271.21	7107.26	1802.67	-2172.65	1.09	2446.93	40.32918094	-104.83430547
8802.00	90.87	271.05	7106.00	1804.44	-2262.62	0.23	2535.90	40.32918579	-104.83462817
8892.00	90.99	272.15	7104.54	1806.95	-2352.57	1.23	2624.97	40.32919266	-104.83495079
8981.00	90.80	271.36	7103.15	1809.68	-2441.52	0.91	2713.09	40.32920012	-104.83526981
9071.00	91.11	270.80	7101.65	1811.38	-2531.49	0.71	2802.05	40.32920475	-104.83559251
9161.00	90.66	269.91	7100.26	1811.93	-2621.48	1.11	2890.83	40.32920626	-104.83591525
9251.00	90.58	270.36	7099.28	1812.15	-2711.47	0.51	2979.55	40.32920681	-104.83623803
9340.00	90.93	270.39	7098.11	1812.73	-2800.46	0.39	3067.35	40.32920838	-104.83655720
9430.00	91.12	271.69	7096.50	1814.36	-2890.43	1.46	3156.29	40.32921284	-104.83687989
9520.00	90.42	270.40	7095.29	1816.00	-2980.40	1.63	3245.24	40.32921731	-104.83720259
9609.00	90.17	272.52	7094.83	1818.27	-3069.37	2.40	3333.30	40.32922351	-104.83752168
9699.00	89.59	270.90	7095.02	1820.96	-3159.32	1.91	3422.41	40.32923085	-104.83784432
9789.00	89.82	271.21	7095.49	1822.61	-3249.31	0.43	3511.37	40.32923536	-104.83816706
9878.00	89.96	271.37	7095.66	1824.62	-3338.29	0.24	3599.40	40.32924083	-104.83848619
9968.00	89.78	270.65	7095.86	1826.20	-3428.27	0.82	3688.35	40.32924515	-104.83880893
10058.00	90.12	271.71	7095.94	1828.06	-3518.25	1.24	3777.34	40.32925021	-104.83913166
10148.00	90.13	272.25	7095.74	1831.17	-3608.20	0.60	3866.51	40.32925871	-104.83945426
10237.00	90.14	271.58	7095.53	1834.14	-3697.15	0.75	3954.68	40.32926683	-104.83977329
10327.00	90.72	272.38	7094.86	1837.25	-3787.09	1.10	4043.84	40.32927533	-104.84009588
10417.00	90.19	270.74	7094.14	1839.70	-3877.05	1.91	4132.91	40.32928202	-104.84041854
10507.00	91.24	272.11	7093.02	1841.94	-3967.01	1.92	4221.95	40.32928812	-104.84074120
10596.00	90.32	271.10	7091.81	1844.43	-4055.96	1.53	4310.04	40.32929492	-104.84106025
10686.00	89.71	269.73	7091.78	1845.08	-4145.96	1.67	4398.84	40.32929667	-104.84138303
10776.00	89.55	271.15	7092.37	1845.77	-4235.95	1.59	4487.65	40.32929853	-104.84170580
10865.00	89.84	269.97	7092.84	1846.64	-4324.95	1.37	4575.50	40.32930087	-104.84202499
10955.00	90.22	271.47	7092.79	1847.77	-4414.94	1.72	4664.38	40.32930393	-104.84234775
11045.00	90.83	271.25	7091.97	1849.91	-4504.91	0.72	4753.41	40.32930975	-104.84267044
11135.00	90.44	270.94	7090.97	1851.63	-4594.88	0.55	4842.37	40.32931443	-104.84299316
11224.00	90.30	269.19	7090.40	1851.73	-4683.88	1.97	4930.09	40.32931466	-104.84331235
11314.00	90.69	269.93	7089.62	1851.04	-4773.87	0.93	5018.67	40.32931271	-104.84363512
11404.00	91.05	271.12	7088.25	1851.86	-4863.86	1.38	5107.49	40.32931493	-104.84395786
11494.00	90.89	270.58	7086.73	1853.20	-4953.83	0.63	5196.39	40.32931854	-104.84428058
11583.00	90.15	270.41	7085.92	1853.97	-5042.82	0.85	5284.22	40.32932060	-104.84459976
11673.00	90.04	269.01	7085.77	1853.51	-5132.82	1.56	5372.83	40.32931930	-104.84492254
11763.00	90.86	270.21	7085.06	1852.90	-5222.81	1.61	5461.42	40.32931757	-104.84524531
11853.00	90.96	270.88	7083.63	1853.75	-5312.80	0.75	5550.24	40.32931987	-104.84556805
11942.00	90.02	270.44	7082.87	1854.78	-5401.79	1.17	5638.12	40.32932263	-104.84588723
12032.00	90.29	270.08	7082.63	1855.19	-5491.79	0.50	5726.88	40.32932369	-104.84621002
12122.00	90.33	270.63	7082.14	1855.75	-5581.78	0.61	5815.67	40.32932517	-104.84653280
12211.00	90.61	269.66	7081.41	1855.97	-5670.78	1.13	5903.41	40.32932573	-104.84685200
12301.00	90.00	268.95	7080.93	1854.88	-5760.77	1.04	5991.92	40.32932268	-104.84717476
12391.00	90.36	269.87	7080.65	1853.95	-5850.76	1.10	6080.45	40.32932008	-104.84749754
12480.00	90.56	269.92	7079.94	1853.79	-5939.76	0.23	6168.13	40.32931957	-104.84781674
12570.00	90.51	270.38	7079.10	1854.02	-6029.76	0.51	6256.86	40.32932016	-104.84813952
12660.00	90.43	270.42	7078.36	1854.65	-6119.75	0.10	6345.66	40.32932182	-104.84846230
12749.00	90.44	269.96	7077.68	1854.95	-6208.75	0.52	6433.41	40.32932257	-104.84878149
12839.00	90.28	270.32	7077.12	1855.17	-6298.75	0.44	6522.14	40.32932311	-104.84910428
12929.00	90.80	271.46	7076.27	1856.57	-6388.73	1.39	6611.06	40.32932689	-104.84942702
13019.00	91.43	270.76	7074.52	1858.31	-6478.69	1.05	6700.02	40.32933161	-104.84974969
13108.00	90.62	270.50	7072.93	1859.29	-6567.67	0.96	6787.87	40.32933423	-104.85006883
13198.00	91.07	270.94	7071.60	1860.42	-6657.66	0.70	6876.75	40.32933726	-104.85039157
13288.00	90.43	271.69	7070.42	1862.48	-6747.62	1.10	6965.76	40.32934287	-104.85071425
13377.00	91.00	272.14	7069.31	1865.46	-6836.57	0.82	7053.92	40.32935096	-104.85103326

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
13467.00	89.96	271.98	7068.56	1868.69	-6926.50	1.17	7143.10	40.32935977	-104.85135583
13557.00	90.47	272.92	7068.22	1872.54	-7016.42	1.19	7232.37	40.32937026	-104.85167833
13647.00	90.18	271.71	7067.71	1876.17	-7106.34	1.38	7321.60	40.32938017	-104.85200086
13736.00	90.33	272.12	7067.31	1879.15	-7195.29	0.49	7409.77	40.32938827	-104.85231989
13826.00	89.84	271.72	7067.18	1882.16	-7285.24	0.70	7498.93	40.32939647	-104.85264251
13916.00	90.23	272.15	7067.12	1885.20	-7375.19	0.65	7588.09	40.32940474	-104.85296512
14005.00	89.77	269.63	7067.12	1886.59	-7464.17	2.88	7676.01	40.32940846	-104.85328427
14095.00	89.52	271.23	7067.68	1887.26	-7554.16	1.80	7764.82	40.32941024	-104.85360704
14185.00	89.99	270.57	7068.07	1888.67	-7644.15	0.90	7853.74	40.32941404	-104.85392980
14274.00	89.98	270.38	7068.09	1889.41	-7733.15	0.21	7941.57	40.32941599	-104.85424900
14364.00	89.30	268.75	7068.65	1888.73	-7823.14	1.96	8030.14	40.32941404	-104.85457176
14454.00	90.11	270.32	7069.12	1888.00	-7913.13	1.96	8118.71	40.32941196	-104.85489453
14543.00	90.02	269.79	7069.02	1888.08	-8002.13	0.60	8206.43	40.32941211	-104.85521374
14633.00	90.27	270.07	7068.79	1887.97	-8092.13	0.42	8295.11	40.32941173	-104.85553654
14723.00	89.78	268.69	7068.75	1887.00	-8182.12	1.63	8383.63	40.32940897	-104.85585931
14812.00	90.40	271.35	7068.61	1887.03	-8271.11	3.07	8471.34	40.32940898	-104.85617849
14902.00	90.15	270.29	7068.18	1888.32	-8361.10	1.21	8560.24	40.32941243	-104.85650124
14992.00	90.16	270.99	7067.93	1889.32	-8451.10	0.78	8649.10	40.32941511	-104.85682402
15081.00	90.38	271.49	7067.51	1891.25	-8540.07	0.61	8737.12	40.32942031	-104.85714315
15171.00	90.16	270.83	7067.09	1893.07	-8630.05	0.77	8826.10	40.32942522	-104.85746588
15261.00	90.29	271.34	7066.74	1894.78	-8720.04	0.58	8915.07	40.32942982	-104.85778862
15351.00	90.60	271.64	7066.04	1897.12	-8810.00	0.48	9004.13	40.32943615	-104.85811130
15440.00	90.42	271.78	7065.25	1899.77	-8898.96	0.26	9092.25	40.32944335	-104.85843036
15530.00	90.16	269.61	7064.79	1900.86	-8988.95	2.43	9181.12	40.32944626	-104.85875311
15620.00	90.46	271.46	7064.30	1901.70	-9078.94	2.08	9269.95	40.32944848	-104.85907588
15709.00	90.21	270.66	7063.78	1903.35	-9167.92	0.94	9357.92	40.32945291	-104.85939503
15799.00	90.18	269.68	7063.48	1903.62	-9257.92	1.09	9446.66	40.32945355	-104.85971782
15889.00	90.54	271.48	7062.91	1904.53	-9347.91	2.04	9535.50	40.32945596	-104.86004058
15978.00	90.17	270.01	7062.36	1905.69	-9436.90	1.70	9623.39	40.32945904	-104.86035975
16068.00	90.26	270.06	7062.02	1905.74	-9526.90	0.11	9712.10	40.32945909	-104.86068254
16158.00	90.37	271.22	7061.53	1906.75	-9616.89	1.29	9800.96	40.32946176	-104.86100531
16247.00	90.40	271.37	7060.93	1908.76	-9705.86	0.17	9888.98	40.32946718	-104.86132444
16337.00	90.32	269.49	7060.36	1909.43	-9795.85	2.09	9977.79	40.32946894	-104.86164721
16427.00	90.26	269.93	7059.91	1908.98	-9885.85	0.49	10066.40	40.32946759	-104.86196999
16517.00	90.39	270.27	7059.40	1909.13	-9975.85	0.40	10155.12	40.32946792	-104.86229278
16606.00	90.22	270.58	7058.92	1909.79	-10064.85	0.40	10242.94	40.32946964	-104.86261198
16696.00	90.32	269.70	7058.50	1910.01	-10154.84	0.98	10331.67	40.32947014	-104.86293477
16786.00	90.08	269.60	7058.19	1909.46	-10244.84	0.29	10420.27	40.32946853	-104.86325756
16876.00	90.45	271.23	7057.77	1910.12	-10334.84	1.86	10509.07	40.32947021	-104.86358034
16965.00	90.50	271.37	7057.03	1912.14	-10423.81	0.17	10597.10	40.32947565	-104.86389946
17055.00	90.35	271.62	7056.36	1914.48	-10513.78	0.32	10686.16	40.32948200	-104.86422214
17145.00	90.31	272.15	7055.85	1917.44	-10603.73	0.59	10775.31	40.32949002	-104.86454476
17234.00	90.08	270.55	7055.54	1919.54	-10692.70	1.82	10863.35	40.32949567	-104.86486387
17324.00	90.20	271.42	7055.32	1921.09	-10782.68	0.98	10952.29	40.32949981	-104.86518662
17414.00	90.44	271.37	7054.82	1923.28	-10872.65	0.27	11041.33	40.32950571	-104.86550932
17504.00	90.03	270.61	7054.45	1924.83	-10962.64	0.96	11130.28	40.32950987	-104.86583207
17593.00	90.27	271.46	7054.22	1926.44	-11051.62	0.99	11218.24	40.32951417	-104.86615123
17683.00	90.21	271.89	7053.84	1929.07	-11141.58	0.48	11307.35	40.32952128	-104.86647389
17733.00	89.94	270.69	7053.78	1930.20	-11191.57	2.46	11356.80	40.32952431	-104.86665317
17758.00	89.94	270.69	7053.80	1930.50	-11216.57	0.00	11381.49	40.32952511	-104.86674283

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
0.00	0.00	0.00	0.00	40.32423300	-104.82651300	Surface Location
1593.00	1592.88	-11.35	8.47	40.32420185	-104.82648261	9.625" Csg: 1593 MD/TVD
7903.69	7107.62	1777.78	-1365.06	40.32911278	-104.83140894	460 Setback: 7904 / 7108 MD/TVD, 1707 FNL, 460 FEL Sec 12
17542.34	7054.40	1925.36	-11000.98	40.32951128	-104.86596957	Btm Toe Sub: 17,542 / 7054 MD/TVD, 1608 FNL, 472 FWL Sec 11
17554.09	7054.37	1925.58	-11012.72	40.32951185	-104.86601170	460 Setback: 17,554 / 7054 MD/TVD, 1608 FNL, 460 FWL Sec 11
17747.22	7053.79	1930.37	-11205.79	40.32952477	-104.86670417	PBTD: 17,747 / 7054 MD/TVD, 1609 FNL, 267 FWL Sec 11
17758.00	7053.80	1930.50	-11216.57	40.32952511	-104.86674283	5.5" Csg: 17,758 / 7054 MD/TVD, 1609 FNL, 256 FWL Sec 11
17758.00	7053.80	1930.50	-11216.57	40.32952511	-104.86674283	BHL: 17,758 / 7054 MD/TVD, 1609 FNL, 256 FWL Sec 11

Hole Sections

Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]
13.500	0.00	0.00	0.00	0.00	1593.00	1592.88	-11.35	8.47
8.500	1593.00	1592.88	-11.35	8.47	17758.00	7053.80	1930.50	-11216.57

Casings

Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]
9 5/8in Casing	0.00	0.00	0.00	0.00	1593.00	1592.88	-11.35	8.47
5 1/2in Casing	0.00	0.00	0.00	0.00	17758.00	7053.80	1930.50	-11216.57

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
639068	As Drilled - 20191028	17758.00	7053.80	MWD

Coordinates are from Slot
MD's and TVD's are from Rig Floor 4755.0ft above Mean Sea Level
Vertical Section is from Wellhead on azimuth 279.77 degrees
Bottom hole distance is 11381.49 Feet on azimuth 279.77 degrees from Wellhead
Survey calculation uses Minimum Curvature method