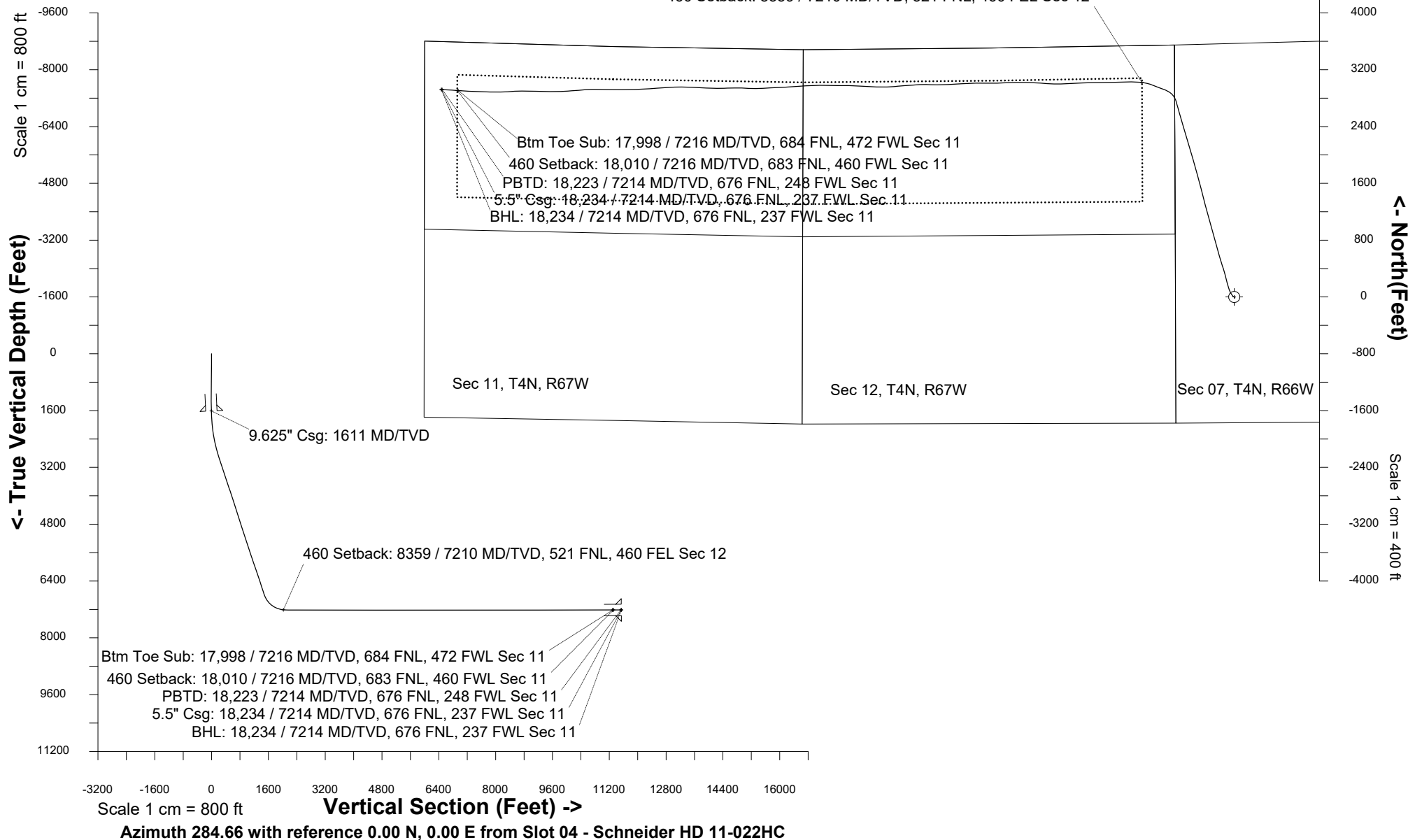
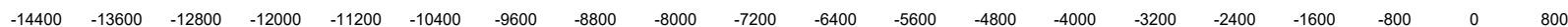


Location	Colorado	Slot	Slot 04 - Schneider HD 11-022HC
Field	Wattenburg	Well	Schneider HD 11-022HC
Installation	Schneider North	Wellbore	Schneider HD 11-022HC - Final

Scale 1 cm = 400 ft

East (Feet) ->



Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-022HC
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-29-2019	Oct-30-2019	05-123-46411	20.00	Schneider HD 11-022HC

Slot Coordinates

Latitude	Longitude
40.32407800	-104.82676500

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	40.32407800	-104.82676500
14.00	0.00	17.67	14.00	0.00	0.00	0.00	0.00	40.32407800	-104.82676500
96.00	0.09	17.67	96.00	0.06	0.02	0.11	0.00	40.32407817	-104.82676493
185.00	0.22	230.01	185.00	0.02	-0.09	0.34	0.09	40.32407805	-104.82676532
273.00	0.97	181.67	272.99	-0.83	-0.24	0.95	0.02	40.32407571	-104.82676587
365.00	0.97	160.05	364.98	-2.35	0.00	0.40	-0.60	40.32407156	-104.82676499
455.00	0.70	119.80	454.97	-3.33	0.74	0.70	-1.56	40.32406885	-104.82676235
545.00	1.05	92.81	544.96	-3.65	2.04	0.59	-2.90	40.32406799	-104.82675769
635.00	1.32	137.20	634.95	-4.45	3.57	1.03	-4.58	40.32406579	-104.82675221
725.00	1.58	145.37	724.92	-6.23	4.98	0.37	-6.39	40.32406090	-104.82674715
815.00	1.36	161.11	814.89	-8.26	6.03	0.51	-7.92	40.32405532	-104.82674338
905.00	0.92	165.24	904.87	-9.97	6.56	0.50	-8.87	40.32405063	-104.82674148
995.00	1.10	120.94	994.86	-11.11	7.48	0.87	-10.05	40.32404749	-104.82673816
1085.00	1.23	98.00	1084.84	-11.69	9.18	0.53	-11.84	40.32404590	-104.82673208
1175.00	0.53	150.38	1174.83	-12.19	10.34	1.11	-13.09	40.32404454	-104.82672791
1265.00	0.70	339.35	1264.83	-12.04	10.35	1.36	-13.06	40.32404496	-104.82672787
1355.00	1.27	324.49	1354.81	-10.71	9.58	0.69	-11.98	40.32404860	-104.82673064
1445.00	0.70	299.88	1444.80	-9.62	8.53	0.77	-10.68	40.32405158	-104.82673443
1535.00	3.21	344.45	1534.74	-6.92	7.37	3.06	-8.88	40.32405900	-104.82673856
1562.00	4.13	345.85	1561.69	-5.25	6.93	3.42	-8.04	40.32406358	-104.82674014
1619.00	5.48	344.89	1618.49	-0.63	5.72	2.37	-5.70	40.32407626	-104.82674448
1708.00	4.25	285.57	1707.21	4.36	1.43	5.54	-0.28	40.32408996	-104.82675986
1797.00	3.26	267.96	1796.03	5.15	-4.27	1.70	5.44	40.32409214	-104.82678032
1887.00	3.00	269.55	1885.89	5.04	-9.18	0.30	10.16	40.32409184	-104.82679794
1976.00	4.41	300.67	1974.71	6.77	-14.46	2.70	15.70	40.32409658	-104.82681685
2066.00	7.25	325.11	2064.25	13.20	-20.68	4.12	23.35	40.32411422	-104.82683918
2155.00	10.56	327.11	2152.16	24.65	-28.33	3.73	33.64	40.32414567	-104.82686659
2245.00	11.74	321.76	2240.47	38.77	-38.47	1.74	47.03	40.32418442	-104.82690298
2334.00	15.08	332.10	2327.04	56.12	-49.50	4.61	62.09	40.32423205	-104.82694252
2423.00	17.25	336.45	2412.52	78.45	-60.19	2.79	78.09	40.32429335	-104.82698087
2513.00	20.18	336.44	2497.75	104.92	-71.73	3.26	95.95	40.32436600	-104.82702225
2602.00	22.71	340.74	2580.59	135.22	-83.54	3.35	115.04	40.32444917	-104.82706459
2692.00	24.82	346.70	2662.96	170.01	-93.61	3.55	133.59	40.32454467	-104.82710074
2781.00	28.50	350.97	2742.50	209.18	-101.25	4.66	150.89	40.32465218	-104.82712812
2871.00	31.20	346.20	2820.56	253.04	-110.18	3.99	170.63	40.32477257	-104.82716015
2961.00	32.88	341.56	2896.86	298.86	-123.47	3.31	195.09	40.32489835	-104.82720782
3050.00	33.45	341.59	2971.36	345.05	-138.86	0.64	221.67	40.32502515	-104.82726301
3140.00	33.53	343.91	3046.42	392.47	-153.58	1.43	247.91	40.32515531	-104.82731582
3229.00	32.69	342.95	3120.97	439.07	-167.44	1.11	273.11	40.32528321	-104.82736552
3319.00	33.30	341.85	3196.46	485.78	-182.27	0.95	299.28	40.32541144	-104.82741868
3408.00	32.41	344.17	3271.22	531.95	-196.38	1.73	324.62	40.32553816	-104.82746932
3498.00	33.02	344.48	3346.95	578.78	-209.52	0.70	349.18	40.32566671	-104.82751645
3587.00	32.76	344.79	3421.68	625.38	-222.33	0.35	373.37	40.32579463	-104.82756238
3677.00	33.09	344.23	3497.22	672.52	-235.40	0.50	397.94	40.32592403	-104.82760924
3766.00	33.54	344.93	3571.60	719.65	-248.39	0.67	422.44	40.32605338	-104.82765585
3856.00	33.38	344.80	3646.68	767.55	-261.35	0.19	447.09	40.32618486	-104.82770232
3945.00	33.52	344.30	3720.94	814.83	-274.42	0.35	471.70	40.32631465	-104.82774919
4035.00	33.48	341.65	3796.00	862.32	-288.96	1.63	497.79	40.32644500	-104.82780134
4124.00	34.38	344.38	3869.84	909.82	-303.45	1.99	523.83	40.32657540	-104.82785333
4213.00	32.99	344.83	3943.90	957.41	-316.56	1.59	548.56	40.32670602	-104.82790034
4303.00	32.50	345.98	4019.60	1004.52	-328.83	0.88	572.35	40.32683533	-104.82794435
4393.00	33.07	345.29	4095.26	1051.73	-340.92	0.76	596.00	40.32696491	-104.82798772
4482.00	33.39	344.79	4169.71	1098.84	-353.51	0.47	620.10	40.32709425	-104.82803288
4571.00	33.14	343.72	4244.13	1145.83	-366.76	0.72	644.81	40.32722322	-104.82808039
4661.00	33.27	345.73	4319.43	1193.37	-379.74	1.23	669.40	40.32735371	-104.82812695
4750.00	33.17	342.97	4393.89	1240.31	-392.89	1.70	694.00	40.32748256	-104.82817411
4840.00	32.99	345.67	4469.31	1287.59	-406.16	1.65	718.81	40.32761235	-104.82822173
4929.00	33.15	346.12	4543.89	1334.69	-418.00	0.33	742.18	40.32774164	-104.82826417
5019.00	33.13	345.90	4619.25	1382.44	-429.89	0.14	765.77	40.32787269	-104.82830684
5109.00	33.08	346.09	4694.64	1430.13	-441.79	0.13	789.35	40.32800360	-104.82834951
5198.00	33.75	344.91	4768.93	1477.58	-454.07	1.05	813.23	40.32813384	-104.82839354
5288.00	33.21	344.78	4844.00	1525.50	-467.04	0.61	837.92	40.32826539	-104.82844009
5378.00	32.82	344.92	4919.46	1572.83	-479.86	0.44	862.29	40.32839531	-104.82848606
5467.00	32.58	344.83	4994.36	1619.25	-492.41	0.28	886.18	40.32852272	-104.82853106
5557.00	32.87	344.73	5070.07	1666.20	-505.18	0.33	910.42	40.32865159	-104.82857687

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5646.00	32.98	345.35	5144.78	1712.93	-517.67	0.40	934.33	40.32877987	-104.82862166
5736.00	32.39	343.54	5220.53	1759.75	-530.69	1.27	958.78	40.32890838	-104.82866839
5825.00	33.24	343.73	5295.33	1806.03	-544.28	0.96	983.64	40.32903541	-104.82871713
5915.00	33.32	343.84	5370.57	1853.45	-558.07	0.11	1008.98	40.32916558	-104.82876659
6004.00	33.47	345.03	5444.87	1900.64	-571.21	0.75	1033.64	40.32929510	-104.82881374
6094.00	33.71	344.17	5519.84	1948.64	-584.44	0.59	1058.58	40.32942687	-104.82886117
6183.00	33.33	346.11	5594.04	1996.14	-597.04	1.28	1082.80	40.32955725	-104.82890639
6273.00	33.68	345.28	5669.09	2044.28	-609.32	0.64	1106.86	40.32968938	-104.82895042
6362.00	33.54	342.18	5743.22	2091.56	-623.12	1.93	1132.17	40.32981916	-104.82899991
6451.00	33.36	342.34	5817.48	2138.28	-638.07	0.23	1158.45	40.32994741	-104.82905353
6541.00	33.39	342.83	5892.63	2185.52	-652.88	0.30	1184.75	40.33007709	-104.82910668
6630.00	33.23	343.38	5967.01	2232.29	-667.09	0.38	1210.32	40.33020545	-104.82915763
6720.00	32.93	343.64	6042.42	2279.39	-681.03	0.37	1235.73	40.3303475	-104.82920765
6809.00	33.52	343.04	6116.88	2326.11	-695.01	0.76	1261.08	40.33046298	-104.82925780
6899.00	33.27	343.81	6192.02	2373.58	-709.15	0.55	1286.77	40.33059330	-104.82930849
6988.00	33.68	342.19	6266.25	2420.52	-723.50	1.10	1312.54	40.33072215	-104.82935999
7077.00	33.17	343.93	6340.54	2467.42	-737.79	1.22	1338.23	40.33085086	-104.82941124
7167.00	33.29	344.44	6415.82	2514.87	-751.23	0.34	1363.24	40.33098111	-104.82945945
7257.00	32.12	343.96	6491.55	2561.66	-764.47	1.33	1387.89	40.33110955	-104.82950693
7346.00	32.71	344.26	6566.68	2607.54	-777.53	0.69	1412.14	40.33123550	-104.82955379
7435.00	32.99	344.34	6641.45	2654.02	-790.59	0.32	1436.54	40.33136307	-104.82960065
7525.00	33.38	344.31	6716.77	2701.45	-803.90	0.43	1461.42	40.33149326	-104.82964839
7615.00	33.65	344.51	6791.81	2749.31	-817.26	0.32	1486.45	40.33162465	-104.82969630
7704.00	37.04	333.87	6864.46	2797.20	-835.67	7.88	1516.39	40.33175610	-104.82976235
7793.00	37.90	319.86	6935.23	2842.25	-865.15	9.61	1556.31	40.33187975	-104.82986810
7883.00	43.16	304.30	7003.79	2880.86	-908.54	12.63	1608.06	40.33198571	-104.83002374
7972.00	50.67	293.87	7064.63	2912.03	-965.33	12.00	1670.89	40.33207127	-104.83022743
8062.00	57.92	289.36	7117.14	2938.80	-1033.25	9.02	1743.37	40.33214475	-104.83047104
8152.00	66.27	292.54	7159.23	2967.29	-1107.42	9.79	1822.33	40.33222293	-104.83073706
8241.00	74.13	287.64	7189.37	2995.93	-1186.00	10.24	1905.61	40.33230156	-104.83101893
8330.00	82.69	279.47	7207.26	3016.24	-1270.62	13.16	1992.61	40.33235728	-104.83132246
8400.00	87.65	273.85	7213.16	3024.31	-1339.85	10.68	2061.63	40.33237942	-104.83157078
8500.00	89.09	269.69	7216.00	3027.39	-1439.74	4.40	2159.05	40.33238788	-104.83192905
8600.00	89.80	269.52	7216.97	3026.70	-1539.73	0.73	2255.61	40.33238597	-104.83228771
8700.00	90.27	269.10	7216.91	3025.50	-1639.73	0.63	2352.04	40.33238265	-104.83264636
8800.00	90.04	268.52	7216.64	3023.42	-1739.70	0.62	2448.24	40.33237693	-104.83300496
8900.00	90.15	268.38	7216.48	3020.72	-1839.67	0.18	2544.27	40.33236948	-104.83336350
9000.00	90.26	268.87	7216.12	3018.32	-1939.64	0.50	2640.37	40.33236287	-104.83372207
9100.00	90.46	268.84	7215.49	3016.32	-2039.61	0.20	2736.59	40.33235737	-104.83408067
9200.00	90.35	267.79	7214.78	3013.38	-2139.57	1.06	2832.55	40.33234927	-104.83443918
9300.00	90.20	267.12	7214.30	3008.94	-2239.47	0.69	2928.07	40.33233706	-104.83479750
9400.00	90.22	266.99	7213.94	3003.80	-2339.33	0.13	3023.39	40.33232293	-104.83515570
9500.00	89.69	267.85	7214.01	2999.30	-2439.23	1.01	3118.89	40.33231055	-104.83551401
9600.00	89.56	271.95	7214.67	2999.13	-2539.21	4.10	3215.57	40.33231004	-104.83587261
9700.00	90.11	273.75	7214.96	3004.10	-2639.08	1.88	3313.45	40.33232366	-104.83623083
9800.00	90.16	274.03	7214.72	3010.88	-2738.85	0.28	3411.69	40.33234225	-104.83658868
9900.00	90.22	273.58	7214.39	3017.52	-2838.63	0.45	3509.90	40.33236044	-104.83694657
10000.00	90.19	271.02	7214.03	3021.53	-2938.54	2.56	3607.57	40.33237142	-104.83730493
10100.00	90.46	268.78	7213.47	3021.36	-3038.53	2.26	3704.26	40.33237091	-104.83766358
10200.00	89.26	267.21	7213.71	3017.86	-3138.46	1.98	3800.06	40.33236127	-104.83802202
10300.00	89.25	267.91	7215.01	3013.60	-3238.36	0.70	3895.63	40.33234955	-104.83838034
10400.00	88.69	269.23	7216.81	3011.11	-3338.31	1.43	3991.69	40.33234267	-104.83873884
10500.00	90.30	270.01	7217.69	3010.44	-3438.30	1.79	4088.26	40.33234081	-104.83909748
10600.00	90.12	270.31	7217.32	3010.72	-3538.30	0.35	4185.07	40.33234154	-104.83945615
10700.00	90.28	270.05	7216.97	3011.04	-3638.30	0.31	4281.90	40.33234236	-104.83981483
10800.00	89.31	267.35	7217.33	3008.77	-3738.26	2.87	4378.03	40.33233609	-104.84017337
10900.00	90.09	265.65	7217.85	3002.66	-3838.07	1.87	4473.04	40.33231929	-104.84053136
11000.00	89.42	265.80	7218.28	2995.21	-3937.79	0.69	4567.63	40.33229879	-104.84088903
11100.00	89.26	268.40	7219.43	2990.15	-4037.65	2.60	4662.96	40.33228486	-104.84124719
11200.00	89.35	270.48	7220.65	2989.17	-4137.63	2.08	4759.44	40.33228213	-104.84160581
11300.00	89.44	271.09	7221.70	2990.54	-4237.62	0.62	4856.51	40.33228584	-104.84196443
11400.00	89.61	270.68	7222.53	2992.09	-4337.60	0.44	4953.63	40.33229004	-104.84232306
11500.00	89.70	266.31	7223.13	2989.46	-4437.54	4.37	5049.65	40.33228278	-104.84268152
11600.00	89.39	266.04	7223.93	2982.79	-4537.31	0.41	5144.49	40.33226442	-104.84303938
11700.00	89.72	265.94	7224.71	2975.80	-4637.07	0.34	5239.23	40.33224517	-104.84339717
11800.00	90.36	265.72	7224.64	2968.53	-4736.80	0.68	5333.87	40.33222516	-104.84375489
11900.00	89.97	265.14	7224.35	2960.56	-4836.48	0.70	5428.29	40.33220324	-104.84411242
12000.00	90.08	269.32	7224.30	2955.73	-4936.34	4.18	5523.68	40.33218992	-104.84447059
12100.00	90.21	271.34	7224.05	2956.30	-5036.33	2.02	5620.56	40.33219145	-104.84482925
12200.00	89.92	274.76	7223.94	2961.62	-5136.18	3.43	5718.50	40.33220599	-104.84518737
12300.00	90.33	274.26	7223.72	2969.49	-5235.87	0.65	5816.94	40.33222752	-104.84554494
12400.00	90.51	270.13	7222.99	2973.32	-5335.77	4.13	5914.56	40.33223797	-104.84590327
12500.00	90.10	270.88	7222.45	2974.20	-5435.76	0.85	6011.52	40.33224033	-104.84626192
12600.00	89.93	270.58	7222.43	2975.47	-5535.76	0.34	6108.58	40.33224377	-104.84662057
12700.00	89.88	271.37	7222.59	2977.17	-5635.74	0.79	6205.74	40.33224838	-104.84697920
12800.00	90.04	271.50	7222.66	2979.68	-5735.71	0.21	6303.09	40.33225519	-104.84733777
12900.00	89.94	269.11	7222.68	2980.21	-5835.70	2.39	6399.96	40.33225659	-104.84769642
13000.00	90.70	267.71	7222.12	2977.44	-5935.66	1.59	6495.96	40.33224890	-104.84805494
13100.00	89.94	266.28	7221.56	2972.19	-6035.51	1.62	6591.24	40.33223445	-104.84841310
13200.00	89.79	266.55	7221.80	2965.94	-6135.32	0.31	6686.21	40.33221722	-104.84877107
13300.00	89.92	266.14	7222.05	2959.57	-6235.11	0.43	6781.14	40.33219965	-104.84912901
13400.00	89.67	266.67	7222.41	2953.30	-6334.92	0.59	6876.11	40.33218237	-104.84948697
13500.00	89.67	267.86	7222.99	2948.52	-6434.80	1.19	6971.53	40.33216920	-104.84984523
13600.00	89.91	267.17	7223.35	2944.19	-6534.70	0.73	7067.09	40.33215723	-104.85020356
13700.00	89.76	266.24	7223.64	2938.44	-6634.54	0.94	7162.22	40.33214138	-104.85056163
13800.00	90.51	269.52	7223.40	2934.74	-6734.45	3.36	7257.94	40.33213115	-104.85092001
13900.00	90.15	273.42	7222.83	2937.31	-6834.40	3.92	7355.28	40.33213812	-104.85127850
14000.00	90.53	272.21	7222.24	2942.22	-6934.28	1.27	7453.15	40.33215152	-104.85163673

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
14100.00	90.41	269.35	7221.41	2943.58	-7034.25	2.86	7550.22	40.33215518	-104.85199533
14200.00	90.30	267.46	7220.80	2940.80	-7134.21	1.89	7646.21	40.33214746	-104.85235384
14300.00	90.60	268.77	7220.01	2937.51	-7234.15	1.34	7742.07	40.33213835	-104.85271230
14400.00	90.52	271.13	7219.03	2937.42	-7334.14	2.36	7838.78	40.33213803	-104.85307094
14500.00	90.67	274.18	7217.99	2942.05	-7434.01	3.05	7936.58	40.33215066	-104.85342918
14600.00	90.53	273.15	7216.95	2948.44	-7533.80	1.04	8034.73	40.33216812	-104.85378710
14700.00	90.11	271.39	7216.39	2952.40	-7633.72	1.81	8132.40	40.33217891	-104.85414548
14800.00	90.45	271.28	7215.90	2954.73	-7733.69	0.36	8229.71	40.33218522	-104.85450406
14900.00	90.46	269.62	7215.10	2955.52	-7833.68	1.66	8326.64	40.33218729	-104.85486271
15000.00	90.83	266.73	7213.98	2952.33	-7933.61	2.91	8422.51	40.33217846	-104.85522114
15100.00	90.06	265.90	7213.20	2945.91	-8033.40	1.13	8517.43	40.33216073	-104.85557905
15200.00	90.20	266.16	7212.98	2938.98	-8133.16	0.30	8612.19	40.33214164	-104.85593686
15300.00	89.60	266.18	7213.15	2932.30	-8232.93	0.60	8707.02	40.33212321	-104.85629473
15400.00	89.60	267.63	7213.85	2926.90	-8332.78	1.45	8802.26	40.33210830	-104.85665286
15500.00	89.34	267.98	7214.77	2923.07	-8432.71	0.44	8897.95	40.33209770	-104.85701125
15600.00	89.15	268.39	7216.09	2919.91	-8532.65	0.45	8993.84	40.33208891	-104.85736971
15700.00	89.58	270.18	7217.20	2918.66	-8632.63	1.84	9090.25	40.33208539	-104.85772832
15800.00	90.97	270.53	7216.72	2919.28	-8732.62	1.43	9187.15	40.33208699	-104.85808698
15900.00	90.29	271.13	7215.62	2920.73	-8832.60	0.91	9284.24	40.33209087	-104.85844560
16000.00	89.67	271.57	7215.65	2923.08	-8932.58	0.76	9381.55	40.33209724	-104.85880418
16100.00	89.99	269.27	7215.95	2923.82	-9032.57	2.32	9478.48	40.33209915	-104.85916282
16200.00	89.52	264.78	7216.38	2918.63	-9132.40	4.51	9573.75	40.33208481	-104.85952091
16300.00	90.03	265.40	7216.77	2910.07	-9232.04	0.80	9667.97	40.33206122	-104.85987826
16400.00	90.00	266.49	7216.75	2903.00	-9331.78	1.09	9762.68	40.33204170	-104.86023602
16500.00	90.27	266.03	7216.51	2896.48	-9431.57	0.53	9857.57	40.33202369	-104.86059392
16600.00	90.05	268.81	7216.23	2891.97	-9531.46	2.79	9953.07	40.33201123	-104.86095219
16700.00	89.69	271.57	7216.46	2892.31	-9631.45	2.78	10049.89	40.33201204	-104.86131083
16800.00	89.69	270.78	7217.00	2894.36	-9731.42	0.79	10147.13	40.33201756	-104.86166943
16900.00	89.37	271.21	7217.82	2896.09	-9831.41	0.54	10244.29	40.33202222	-104.86202804
17000.00	90.31	272.08	7218.10	2898.96	-9931.36	1.28	10341.72	40.33202999	-104.86238657
17100.00	89.97	270.24	7217.85	2900.99	-10031.34	1.87	10438.95	40.33203543	-104.86274516
17200.00	90.27	265.59	7217.64	2897.35	-10131.24	4.66	10534.69	40.33202534	-104.86310349
17300.00	89.82	266.07	7217.57	2890.08	-10230.98	0.66	10629.33	40.33200526	-104.86346121
17400.00	90.17	268.90	7217.57	2885.69	-10330.87	2.85	10724.86	40.33199311	-104.86381950
17500.00	90.26	270.89	7217.20	2885.51	-10430.87	1.99	10821.56	40.33199249	-104.86417815
17600.00	90.11	271.52	7216.88	2887.61	-10530.84	0.65	10918.81	40.33199814	-104.86453675
17700.00	90.16	272.27	7216.64	2890.92	-10630.79	0.75	11016.34	40.33200710	-104.86489523
17800.00	90.29	272.52	7216.25	2895.10	-10730.70	0.28	11114.06	40.33201846	-104.86525360
17881.00	90.23	272.64	7215.88	2898.74	-10811.62	0.17	11193.26	40.33202837	-104.86554384
17907.00	90.11	273.37	7215.80	2900.11	-10837.58	2.85	11218.72	40.33203208	-104.86563697
18086.00	90.25	274.58	7215.24	2912.51	-11016.14	0.68	11394.62	40.33206592	-104.86627746
18210.00	90.37	272.00	7214.57	2919.63	-11139.93	2.08	11516.17	40.33208530	-104.86672145
18234.00	90.37	272.00	7214.42	2920.47	-11163.91	0.00	11539.59	40.33208757	-104.86680748

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
0.00	0.00	0.00	0.00	40.32407800	-104.82676500	Surface Location
1611.00	1610.52	-1.36	5.92	40.32407427	-104.82674378	9.625" Csg: 1611 MD/TVD
8359.18	7210.45	3020.42	-1299.32	40.33236875	-104.83142539	460 Setback: 8359 / 7210 MD/TVD, 521 FNL, 460 FEL Sec 12
17997.84	7215.57	2905.93	-10928.23	40.33204796	-104.86596212	Btm Toe Sub: 17,998 / 7216 MD/TVD, 684 FNL, 472 FWL Sec 11
18010.32	7215.53	2906.81	-10940.68	40.33205035	-104.86600678	460 Setback: 18,010 / 7216 MD/TVD, 683 FNL, 460 FWL Sec 11
18223.20	7214.48	2920.09	-11153.12	40.33208655	-104.86676877	PBTD: 18,223 / 7214 MD/TVD, 676 FNL, 248 FWL Sec 11
18234.00	7214.42	2920.47	-11163.91	40.33208757	-104.86680748	5.5" Csg: 18,234 / 7214 MD/TVD, 676 FNL, 237 FWL Sec 11
18234.00	7214.42	2920.47	-11163.91	40.33208757	-104.86680748	BHL: 18,234 / 7214 MD/TVD, 676 FNL, 237 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	1611.00	1610.52	-1.36	5.92
8.500	1611.00	1610.52	-1.36	5.92	18234.00	7214.42	2920.47	-11163.91

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	1611.00	1610.52	-1.36	5.92
5 1/2in Casing	0.00	0.00	0.00	0.00	18234.00	7214.42	2920.47	-11163.91

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
647386	MWD to 8330	8330.00	7207.26	MWD
647385	Gyro to 17,881	17881.00	7215.88	Gyro
647384	MWD to 18,234 TD	18234.00	7214.42	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 284.66 degrees

Bottom hole distance is 11539.59 Feet on azimuth 284.66 degrees from Wellhead

Survey calculation uses Minimum Curvature method