

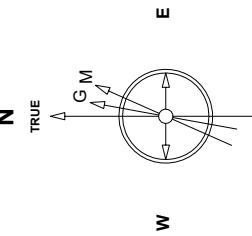
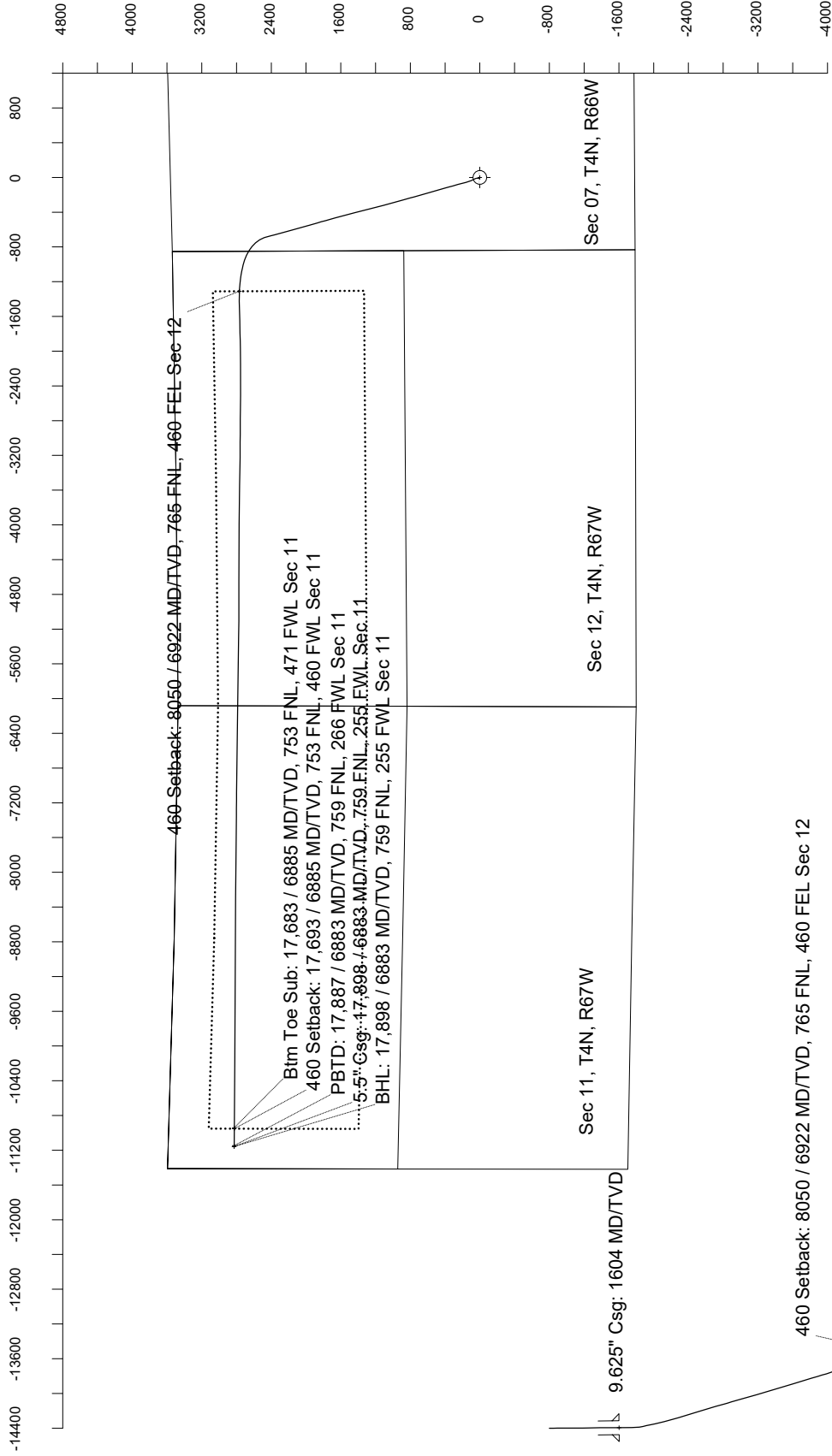
Great Western Operating Company, LLC

Location Colorado Slot Slot 05 - Schneider HD 11-059HNX
 Field Wattenburg Well Schneider HD 11-059HNX
 Installation Schneider North Wellbore Schneider HD 11-059HNX (AWB)

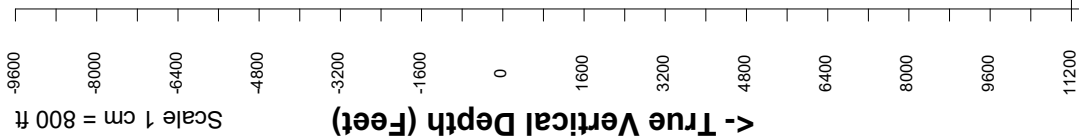
Created by imount
 Date plotted 25-Nov-2019
 Plot reference is Schneider HD 11-059HNX (AWB)
 Ref wellpath is Schneider HD 11-059HNX (AWP#1)
 Coordinates are in Feet reference Slot 05 - Schneider HD 11-059HNX.
 True Vertical Depths are reference Rig Datum.
 Measured Depths are reference Rig Datum.
 Rig 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
 ENM-2015.Dwg: 687.7.dwg Filed: 52300.9.mt
 Lat: N40 19.27 8796 Long: W 104 49 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



Btm Toe Sub: 17,683 / 6885 MD/TVD, 753 FNL, 471 FWL Sec 11
 460 Setback: 17,693 / 6885 MD/TVD, 753 FNL, 460 FWL Sec 11
 PBTD: 17,887 / 6883 MD/TVD, 759 FNL, 266 FWL Sec 11
 5.5" Csg: 17,898 / 6883 MD/TVD, 759 FNL, 255 FWL Sec 11
 BHL: 17,898 / 6883 MD/TVD, 759 FNL, 255 FWL Sec 11

Scale 1 cm = 800 ft

Vertical Section (Feet) ->

Azimuth 284.22 with reference 0.00 N, 0.00 E from Slot 05 - Schneider HD 11-059HNX

Great Western Operating Co, LLC
 Directional Survey Report
 Wellpath: Schneider HD 11-059HNX
 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
Nov-25-2019	Nov-25-2019	05-123-46410	20.00	Schneider HD 11-059HNX

Slot Coordinates

Latitude	Longitude
40.32410400	-104.82672400

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	40.32410400	-104.82672400
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32410400	-104.82672400
96.00	0.26	267.45	96.00	-0.01	-0.19	0.32	0.18	40.32410398	-104.82672467
185.00	0.40	219.11	185.00	-0.26	-0.58	0.34	0.50	40.32410329	-104.82672609
273.00	0.35	22.24	273.00	-0.25	-0.68	0.84	0.59	40.32410332	-104.82672642
365.00	0.97	346.91	364.99	0.77	-0.75	0.78	0.91	40.32410612	-104.82672667
455.00	0.92	344.36	454.98	2.21	-1.11	0.07	1.62	40.32411006	-104.82672799
545.00	0.26	50.89	544.97	3.03	-1.15	0.95	1.86	40.32411233	-104.82672812
635.00	0.66	351.04	634.97	3.67	-1.07	0.64	1.94	40.32411408	-104.82672784
725.00	1.14	295.14	724.96	4.57	-1.96	1.05	3.02	40.32411653	-104.82673104
815.00	1.10	310.26	814.95	5.50	-3.43	0.33	4.68	40.32411911	-104.82673631
905.00	0.83	323.97	904.93	6.59	-4.48	0.39	5.96	40.32412209	-104.82674005
995.00	1.14	312.54	994.92	7.72	-5.52	0.41	7.25	40.32412520	-104.82674379
1085.00	1.27	333.55	1084.90	9.22	-6.62	0.51	8.68	40.32412931	-104.82674775
1175.00	0.88	313.51	1174.88	10.59	-7.57	0.60	9.94	40.32413307	-104.82675114
1265.00	0.18	308.23	1264.88	11.15	-8.18	0.78	10.67	40.32413462	-104.82675334
1355.00	0.48	137.46	1354.88	10.96	-8.04	0.73	10.48	40.32413409	-104.82675282
1445.00	0.18	322.47	1444.88	10.80	-7.87	0.73	10.28	40.32413364	-104.82675222
1555.00	0.70	306.21	1554.87	11.33	-8.51	0.48	11.04	40.32413510	-104.82675454
1681.00	0.80	293.47	1680.86	12.14	-9.94	0.15	12.62	40.32413731	-104.82675966
1713.00	0.96	292.40	1712.86	12.33	-10.40	0.50	13.11	40.32413784	-104.82676128
1803.00	2.60	14.07	1802.82	14.60	-10.60	2.93	13.86	40.32414406	-104.82676200
1893.00	6.11	10.55	1892.55	21.29	-9.22	3.91	14.17	40.32416243	-104.82675708
1982.00	9.20	359.35	1980.75	33.06	-8.44	3.84	16.30	40.32419475	-104.82675425
2072.00	14.40	337.25	2068.86	50.60	-12.85	7.56	24.88	40.32424288	-104.82677009
2162.00	17.16	330.89	2155.47	72.52	-23.64	3.61	40.73	40.32430307	-104.82680878
2251.00	22.03	335.84	2239.29	99.24	-36.87	5.78	60.12	40.32437641	-104.82685622
2341.00	21.67	344.76	2322.85	130.68	-48.15	3.71	78.77	40.32446271	-104.82689667
2431.00	21.53	343.40	2406.53	162.54	-57.23	0.58	95.41	40.32455016	-104.82692926
2520.00	21.84	346.22	2489.24	194.27	-65.84	1.22	111.54	40.32463726	-104.82696014
2610.00	25.92	344.66	2571.51	229.51	-75.04	4.59	129.11	40.32473400	-104.82699311
2700.00	28.11	345.04	2651.69	268.97	-85.72	2.44	149.16	40.32484231	-104.82703141
2790.00	29.52	343.86	2730.54	310.76	-97.35	1.69	170.70	40.32495701	-104.82707315
2879.00	30.89	344.62	2807.46	353.85	-109.51	1.60	193.07	40.32507529	-104.82711674
2969.00	31.49	345.26	2884.45	398.86	-121.62	0.76	215.86	40.32519884	-104.82716017
3059.00	32.10	343.11	2960.95	444.47	-134.55	1.43	239.60	40.32532405	-104.82720654
3148.00	31.69	343.44	3036.51	489.51	-148.08	0.50	263.78	40.32544766	-104.82725507
3238.00	31.42	343.21	3113.20	534.63	-161.59	0.33	287.96	40.32557151	-104.82730354
3328.00	31.48	344.99	3189.98	579.78	-174.46	1.03	311.52	40.32569546	-104.82734967
3417.00	30.70	343.89	3266.20	624.06	-186.78	1.08	334.35	40.32581699	-104.82739387
3507.00	30.86	344.74	3343.52	668.40	-199.23	0.51	357.31	40.32593870	-104.82743852
3597.00	30.12	344.68	3421.07	712.44	-211.27	0.82	379.80	40.32605961	-104.82748171
3687.00	30.24	343.91	3498.88	756.00	-223.52	0.45	402.37	40.32617917	-104.82752564
3776.00	30.80	344.88	3575.54	799.53	-235.67	0.84	424.84	40.32629866	-104.82756923
3866.00	30.81	344.33	3652.85	843.97	-247.91	0.31	447.62	40.32642063	-104.82761312
3956.00	30.54	345.33	3730.25	888.28	-259.92	0.64	470.15	40.32654227	-104.82765622
4045.00	30.73	344.57	3806.83	932.07	-271.70	0.48	492.33	40.32666248	-104.82769845
4135.00	30.80	345.12	3884.17	976.51	-283.74	0.32	514.91	40.32678445	-104.82774162
4225.00	30.20	344.70	3961.71	1020.61	-295.63	0.71	537.27	40.32690551	-104.82778427
4315.00	30.60	343.74	4039.34	1064.44	-308.01	0.70	560.04	40.32702581	-104.82782869
4404.00	31.23	344.64	4115.70	1108.43	-320.47	0.88	582.92	40.32714657	-104.82787336
4494.00	31.05	345.75	4192.73	1153.43	-332.36	0.67	605.50	40.32727008	-104.82791602
4584.00	30.65	344.57	4270.00	1198.04	-344.18	0.81	627.91	40.32739253	-104.82795841
4673.00	30.88	345.03	4346.47	1241.97	-356.11	0.37	650.27	40.32751312	-104.82800121
4763.00	30.78	346.55	4423.75	1286.68	-367.44	0.87	672.23	40.32763584	-104.82804183
4853.00	30.95	344.73	4501.01	1331.40	-378.89	1.05	694.32	40.32775861	-104.82808290
4943.00	31.33	344.85	4578.04	1376.32	-391.10	0.43	717.19	40.32788189	-104.82812670
5032.00	30.46	345.64	4654.41	1420.50	-402.74	1.08	739.33	40.32800318	-104.82816845
5122.00	31.15	347.73	4731.72	1465.35	-413.35	1.41	760.62	40.32812628	-104.82820649
5212.00	31.15	345.93	4808.74	1510.68	-423.95	1.03	782.04	40.32825070	-104.82824454
5301.00	31.36	346.15	4884.82	1555.49	-435.09	0.27	803.84	40.32837371	-104.82828449
5391.00	30.22	345.29	4962.14	1600.14	-446.45	1.36	825.82	40.32849626	-104.82832523
5481.00	31.32	343.70	5039.47	1644.50	-458.77	1.52	848.66	40.32861803	-104.82836941
5571.00	31.25	343.76	5116.38	1689.36	-471.86	0.09	872.37	40.32874118	-104.82841638
5660.00	30.95	343.78	5192.59	1733.50	-484.71	0.34	895.67	40.32886234	-104.82846246
5750.00	31.37	344.15	5269.61	1778.26	-497.57	0.51	919.13	40.32898519	-104.82850860
5840.00	31.24	344.85	5346.50	1823.32	-510.07	0.43	942.31	40.32910888	-104.82855342

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5929.00	31.16	342.70	5422.63	1867.58	-522.95	1.25	965.67	40.32923038	-104.82859962
6019.00	30.84	343.78	5499.78	1911.97	-536.32	0.71	989.53	40.32935220	-104.82864757
6109.00	31.40	345.17	5576.83	1956.78	-548.76	1.01	1012.60	40.32947522	-104.82869221
6199.00	31.35	344.43	5653.67	2002.00	-561.05	0.43	1035.62	40.32959934	-104.82873627
6288.00	31.04	344.61	5729.80	2046.42	-573.35	0.36	1058.46	40.32972128	-104.82878041
6378.00	31.40	344.22	5806.77	2091.36	-585.88	0.46	1081.64	40.32984462	-104.82882537
6468.00	31.49	344.14	5883.55	2136.53	-598.68	0.11	1105.15	40.32996862	-104.82887128
6557.00	31.20	344.61	5959.56	2181.12	-611.15	0.43	1128.19	40.33009100	-104.82891601
6647.00	31.46	344.64	6036.44	2226.24	-623.56	0.29	1151.30	40.33021486	-104.82896051
6737.00	31.44	344.57	6113.21	2271.51	-636.03	0.05	1174.50	40.33033913	-104.82900523
6826.00	31.24	343.90	6189.23	2316.06	-648.60	0.45	1197.63	40.33046141	-104.82905034
6916.00	31.26	345.76	6266.17	2361.12	-660.82	1.07	1220.54	40.33058509	-104.82909416
7006.00	31.02	345.53	6343.20	2406.21	-672.36	0.30	1242.81	40.33070885	-104.82913555
7095.00	31.06	344.67	6419.46	2450.55	-684.16	0.50	1265.14	40.33083058	-104.82917788
7185.00	33.04	340.34	6495.75	2496.06	-698.55	3.37	1290.27	40.33095549	-104.82922952
7275.00	36.71	324.73	6569.72	2541.23	-722.40	10.69	1324.48	40.33107949	-104.82931504
7364.00	42.31	316.44	6638.41	2584.72	-758.45	8.63	1370.11	40.33119886	-104.82944437
7454.00	47.47	310.27	6702.18	2628.16	-804.68	7.50	1425.60	40.33131809	-104.82961019
7544.00	51.10	300.10	6760.96	2667.23	-860.39	9.46	1489.19	40.33142533	-104.82980999
7633.00	54.90	290.68	6814.59	2697.51	-924.53	9.46	1558.80	40.33150844	-104.83004004
7723.00	61.83	284.78	6861.80	2720.67	-997.46	9.51	1635.19	40.33157202	-104.83030165
7813.00	71.47	281.02	6897.44	2739.00	-1077.92	11.37	1717.68	40.33162231	-104.83059022
7903.00	81.62	278.06	6918.36	2753.44	-1164.12	11.72	1804.79	40.33166193	-104.83089941
7992.00	91.85	274.76	6923.42	2763.33	-1252.29	12.07	1892.69	40.33168907	-104.83121567
8082.00	90.15	270.77	6921.85	2767.67	-1342.15	4.82	1980.87	40.33170097	-104.83153797
8172.00	90.44	269.00	6921.39	2767.49	-1432.15	1.99	2068.06	40.33170046	-104.83186076
8261.00	90.48	268.61	6920.67	2765.63	-1521.12	0.44	2153.85	40.33169535	-104.83217990
8351.00	90.32	269.01	6920.04	2763.76	-1611.10	0.48	2240.62	40.33169020	-104.83250263
8441.00	90.49	268.57	6919.41	2761.86	-1701.08	0.52	2327.37	40.33168497	-104.83282536
8531.00	90.30	268.41	6918.79	2759.49	-1791.05	0.28	2414.00	40.33167844	-104.83314805
8620.00	90.12	268.44	6918.46	2757.05	-1880.01	0.21	2499.64	40.33167171	-104.83346714
8710.00	90.32	269.00	6918.11	2755.04	-1969.99	0.66	2586.36	40.33166617	-104.83378987
8800.00	90.88	269.97	6917.17	2754.23	-2059.98	1.24	2673.40	40.33166393	-104.83411264
8889.00	90.85	270.07	6915.83	2754.26	-2148.97	0.12	2759.67	40.33166400	-104.83443182
8979.00	90.98	269.79	6914.39	2754.15	-2238.96	0.34	2846.87	40.33166367	-104.83475459
9069.00	90.88	269.18	6912.93	2753.34	-2328.94	0.69	2933.90	40.33166143	-104.83507734
9158.00	90.80	270.22	6911.63	2752.87	-2417.93	1.17	3020.05	40.33166013	-104.83539652
9248.00	90.75	270.43	6910.41	2753.38	-2507.92	0.24	3107.41	40.33166150	-104.83571929
9338.00	91.32	270.67	6908.78	2754.25	-2597.90	0.69	3194.84	40.33166385	-104.83604203
9428.00	90.93	271.00	6907.02	2755.56	-2687.87	0.57	3282.38	40.33166742	-104.83636474
9517.00	90.86	270.10	6905.63	2756.41	-2776.86	1.01	3368.85	40.33166974	-104.83668391
9607.00	91.03	270.43	6904.14	2756.83	-2866.84	0.41	3456.18	40.33167086	-104.83700667
9697.00	90.41	270.21	6903.01	2757.33	-2956.83	0.73	3543.54	40.33167221	-104.83732944
9787.00	90.58	270.80	6902.23	2758.12	-3046.83	0.68	3630.97	40.33167435	-104.83765223
9876.00	90.57	269.79	6901.34	2758.58	-3135.82	1.13	3717.35	40.33167558	-104.83797142
9966.00	90.75	270.67	6900.30	2758.94	-3225.81	1.00	3804.67	40.33167654	-104.83829420
10056.00	90.81	271.31	6899.08	2760.50	-3315.79	0.71	3892.28	40.33168078	-104.83861693
10145.00	90.52	271.18	6898.04	2762.43	-3404.76	0.36	3979.00	40.33168605	-104.83893606
10235.00	90.49	271.01	6897.25	2764.15	-3494.74	0.19	4066.64	40.33169074	-104.83925880
10325.00	90.42	270.38	6896.54	2765.24	-3584.73	0.70	4154.14	40.33169370	-104.83958157
10415.00	91.06	271.56	6895.37	2766.77	-3674.71	1.49	4241.74	40.33169784	-104.83990430
10504.00	90.67	270.89	6894.03	2768.67	-3763.68	0.87	4328.45	40.33170303	-104.84022341
10594.00	90.26	269.39	6893.30	2768.89	-3853.67	1.73	4415.74	40.33170359	-104.84054620
10684.00	90.34	270.46	6892.83	2768.77	-3943.67	1.19	4502.95	40.33170323	-104.84086899
10774.00	90.30	270.25	6892.33	2769.33	-4033.67	0.24	4590.33	40.33170472	-104.84119179
10863.00	90.06	270.34	6892.05	2769.79	-4122.67	0.29	4676.71	40.33170594	-104.84151101
10953.00	89.79	270.36	6892.16	2770.34	-4212.66	0.30	4764.09	40.33170741	-104.84183381
11043.00	89.73	270.84	6892.54	2771.28	-4302.66	0.54	4851.56	40.33170995	-104.84215660
11132.00	89.81	270.34	6892.90	2772.20	-4391.65	0.57	4938.05	40.33171242	-104.84247580
11222.00	89.77	270.44	6893.23	2772.81	-4481.65	0.12	5025.44	40.33171406	-104.84279860
11312.00	89.44	269.58	6893.85	2772.82	-4571.65	1.02	5112.68	40.33171406	-104.84312139
11402.00	89.90	270.42	6894.37	2772.82	-4661.64	1.06	5199.92	40.33171401	-104.84344419
11491.00	89.33	269.99	6894.97	2773.14	-4750.64	0.80	5286.27	40.33171484	-104.84376340
11581.00	89.42	269.56	6895.95	2772.79	-4840.63	0.49	5373.42	40.33171382	-104.84408619
11671.00	89.59	270.10	6896.73	2772.52	-4930.63	0.63	5460.60	40.33171304	-104.84440898
11760.00	89.27	269.37	6897.61	2772.11	-5019.62	0.90	5546.76	40.33171186	-104.84472818
11850.00	89.84	271.43	6898.31	2772.74	-5109.61	2.37	5634.15	40.33171354	-104.84505095
11940.00	90.23	270.52	6898.25	2774.27	-5199.60	1.10	5721.75	40.33171769	-104.84537371
12030.00	90.06	270.75	6898.03	2775.27	-5289.59	0.32	5809.24	40.33172037	-104.84569650
12119.00	90.27	270.16	6897.77	2775.98	-5378.59	0.70	5895.68	40.33172226	-104.84601571
12209.00	89.88	271.35	6897.65	2777.16	-5468.58	1.39	5983.20	40.33172546	-104.84633848
12299.00	90.11	271.21	6897.66	2779.17	-5558.56	0.30	6070.92	40.33173093	-104.84666121
12388.00	90.05	270.48	6897.54	2780.48	-5647.55	0.82	6157.50	40.33173447	-104.84698040
12478.00	89.75	270.47	6897.69	2781.23	-5737.54	0.33	6244.93	40.33173646	-104.84730320
12568.00	90.15	271.23	6897.77	2782.57	-5827.53	0.95	6332.49	40.33174007	-104.84762597
12657.00	90.10	271.74	6897.58	2784.87	-5916.50	0.58	6419.30	40.33174634	-104.84794508
12747.00	90.38	270.99	6897.20	2787.02	-6006.48	0.89	6507.04	40.33175217	-104.84826779
12837.00	89.82	270.29	6897.04	2788.02	-6096.47	1.00	6594.52	40.33175487	-104.84859058
12927.00	90.16	271.14	6897.06	2789.14	-6186.46	1.02	6682.03	40.33175789	-104.84891336
13016.00	89.97	270.35	6896.96	2790.30	-6275.45	0.91	6768.58	40.33176100	-104.84923255
13106.00	90.09	270.41	6896.91	2790.90	-6365.45	0.15	6855.97	40.33176258	-104.84955536
13196.00	89.68	270.11	6897.09	2791.31	-6455.45	0.56	6943.31	40.33176364	-104.84987816
13285.00	90.61	270.35	6896.87	2791.66	-6544.45	1.08	7029.67	40.33176455	-104.85019737
13375.00	90.12	270.39	6896.29	2792.24	-6634.44	0.55	7117.05	40.33176608	-104.85052017
13465.00	90.28	271.29	6895.98	2793.56	-6724.43	1.02	7204.61	40.33176964	-104.85084294
13555.00	90.46	270.93	6895.40	2795.31	-6814.41	0.45	7292.26	40.33177436	-104.85116568
13644.00	90.25	271.09	6894.85	2796.88	-6903.40	0.30	7378.90	40.33177859	-104.85148485
13734.00	90.43	270.59	6894.31	2798.20	-6993.39	0.59	7466.46	40.33178215	-104.85180762
13824.00	89.20	270.21	6894.60	2798.82	-7083.38	1.43	7553.85	40.33178380	-104.85213041
13913.00	89.39	271.38	6895.70	2800.06	-7172.37	1.33	7640.41	40.33178712	-104.85244957

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
14003.00	88.77	269.74	6897.14	2800.94	-7262.35	1.95	7727.85	40.33178946	-104.85277231
14093.00	88.63	269.96	6899.19	2800.70	-7352.32	0.29	7815.01	40.33178874	-104.85309504
14182.00	89.75	270.74	6900.44	2801.25	-7441.31	1.53	7901.41	40.33179016	-104.85341421
14272.00	89.56	270.88	6900.99	2802.52	-7531.30	0.26	7988.95	40.33179358	-104.85373698
14362.00	89.83	270.89	6901.46	2803.91	-7621.29	0.30	8076.53	40.33179732	-104.85405975
14451.00	89.64	269.47	6901.88	2804.19	-7710.28	1.61	8162.86	40.33179801	-104.85437896
14541.00	89.77	271.22	6902.34	2804.73	-7800.28	1.95	8250.23	40.33179942	-104.85470175
14631.00	89.85	270.59	6902.64	2806.15	-7890.26	0.71	8337.81	40.33180324	-104.85502451
14720.00	90.86	270.32	6902.09	2806.86	-7979.26	1.17	8424.26	40.33180511	-104.85534372
14810.00	90.94	270.54	6900.67	2807.53	-8069.25	0.26	8511.65	40.33180688	-104.85566648
14900.00	90.69	270.14	6899.39	2808.07	-8159.23	0.52	8599.01	40.33180826	-104.85598925
14989.00	90.84	271.07	6898.20	2809.01	-8248.22	1.06	8685.50	40.33181076	-104.85630842
15079.00	90.13	269.83	6897.44	2809.71	-8338.21	1.59	8772.91	40.33181262	-104.85663120
15169.00	90.60	270.95	6896.87	2810.33	-8428.21	1.35	8860.30	40.33181422	-104.85695399
15258.00	90.93	270.59	6895.68	2811.52	-8517.19	0.55	8946.85	40.33181742	-104.85727315
15348.00	90.52	270.99	6894.54	2812.76	-8607.17	0.64	9034.38	40.33182074	-104.85759591
15438.00	90.13	270.46	6894.03	2813.90	-8697.16	0.73	9121.90	40.33182378	-104.85791868
15527.00	90.66	271.15	6893.42	2815.15	-8786.15	0.98	9208.47	40.33182712	-104.85823787
15617.00	90.52	269.29	6892.49	2815.50	-8876.14	2.07	9295.78	40.33182798	-104.85856064
15707.00	90.68	270.16	6891.55	2815.07	-8966.14	0.98	9382.91	40.33182671	-104.85888342
15797.00	90.46	270.68	6890.65	2815.73	-9056.13	0.63	9470.31	40.33182843	-104.85920621
15886.00	89.99	270.37	6890.30	2816.54	-9145.12	0.63	9556.78	40.33183058	-104.85952541
15976.00	89.54	269.08	6890.67	2816.11	-9235.12	1.52	9643.91	40.33182930	-104.85984821
16066.00	90.42	270.43	6890.70	2815.73	-9325.12	1.79	9731.06	40.33182815	-104.86017100
16156.00	90.44	270.19	6890.03	2816.21	-9415.11	0.27	9818.42	40.33182939	-104.86049380
16245.00	90.48	270.02	6889.31	2816.38	-9504.11	0.20	9904.73	40.33182975	-104.86081301
16335.00	90.05	269.83	6888.90	2816.26	-9594.11	0.52	9991.94	40.33182933	-104.86113581
16425.00	90.33	269.73	6888.60	2815.91	-9684.11	0.33	10079.10	40.33182828	-104.86145862
16514.00	90.26	270.36	6888.14	2815.98	-9773.11	0.71	10165.38	40.33182838	-104.86177783
16604.00	90.36	270.98	6887.65	2817.03	-9863.10	0.70	10252.88	40.33183117	-104.86210062
16694.00	90.29	270.16	6887.14	2817.93	-9953.09	0.91	10340.33	40.33183353	-104.86242340
16784.00	89.99	270.65	6886.92	2818.57	-10043.09	0.64	10427.73	40.33183517	-104.86274620
16873.00	89.78	270.21	6887.10	2819.23	-10132.09	0.55	10514.16	40.33183691	-104.86306541
16963.00	90.43	270.69	6886.94	2819.94	-10222.08	0.90	10601.58	40.33183875	-104.86338821
17053.00	90.21	269.58	6886.44	2820.15	-10312.08	1.26	10688.87	40.33183923	-104.86371101
17142.00	89.69	270.33	6886.51	2820.08	-10401.08	1.03	10775.12	40.33183893	-104.86403023
17232.00	90.03	270.74	6886.73	2820.92	-10491.07	0.59	10862.57	40.33184113	-104.86435302
17322.00	90.29	270.33	6886.48	2821.76	-10581.07	0.54	10950.01	40.33184334	-104.86467581
17412.00	89.97	270.93	6886.28	2822.75	-10671.06	0.76	11037.49	40.33184595	-104.86499860
17502.00	90.39	270.74	6885.99	2824.06	-10761.05	0.51	11125.05	40.33184944	-104.86532138
17591.00	90.39	270.90	6885.39	2825.34	-10850.04	0.18	11211.62	40.33185283	-104.865644056
17681.00	90.45	270.87	6884.73	2826.73	-10940.03	0.07	11299.19	40.33185654	-104.86596332
17771.00	90.47	269.72	6884.01	2827.19	-11030.02	1.28	11386.55	40.33185770	-104.86628611
17860.00	90.45	269.88	6883.29	2826.88	-11119.02	0.18	11472.74	40.33185674	-104.86660532
17878.00	89.93	270.59	6883.23	2826.95	-11137.02	4.89	11490.21	40.33185692	-104.86666988
17898.00	89.93	270.59	6883.26	2827.16	-11157.02	0.00	11509.64	40.33185746	-104.86674162

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
0.00	0.00	0.00	0.00	40.32410400	-104.82672400	Surface Location
1604.00	1603.87	11.67	-9.03	40.32413603	-104.82675637	9.625" Csg: 1604 MD/TVD
8049.62	6922.11	2766.83	-1309.78	40.33169867	-104.83142188	460 Setback: 8050 / 6922 MD/TVD, 765 FNL, 460 FWL Sec 12
17682.64	6884.72	2826.75	-10941.67	40.33185660	-104.86596921	Btm Toe Sub: 17,683 / 6885 MD/TVD, 753 FNL, 471 FWL Sec 11
17693.22	6884.63	2826.90	-10952.25	40.33185698	-104.86600715	460 Setback: 17,693 / 6885 MD/TVD, 753 FNL, 460 FWL Sec 11
17887.22	6883.24	2827.05	-11146.24	40.33185716	-104.86670295	PBTD: 17,887 / 6883 MD/TVD, 759 FNL, 266 FWL Sec 11
17898.00	6883.26	2827.16	-11157.02	40.33185746	-104.86674162	5.5" Csg: 17,898 / 6883 MD/TVD, 759 FNL, 255 FWL Sec 11
17898.00	6883.26	2827.16	-11157.02	40.33185746	-104.86674162	BHL: 17,898 / 6883 MD/TVD, 759 FNL, 255 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	1604.00	1603.87	11.67	-9.03
8.500	1604.00	1603.87	11.67	-9.03	17898.00	6883.26	2827.16	-11157.02

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	1604.00	1603.87	11.67	-9.03
5 1/2in Casing	0.00	0.00	0.00	0.00	17898.00	6883.26	2827.16	-11157.02

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
658594	As Drilled - 20191125	17898.00	6883.26	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 284.22 degrees
Bottom hole distance is 11509.64 Feet on azimuth 284.22 degrees from Wellhead
Survey calculation uses Minimum Curvature method