

Great Western Operating Company, LLC

Location	Colorado	Slot	Slot 07 - Schneider HD 11-099HN
Field	Wattenburg	Well	Schneider HD 11-099HN
Installation	Schneider North	Wellbore	Schneider HD 11-099HN

Created by: mmount

Date plotted: 11-Nov-2019

Plot reference is Schneider HD 11-099HN.

Ref wellpath is Schneider HD 11-099HN (AWP#1).

Coordinates are in Feet reference Slot 07 - Schneider HD 11-099HN.

True Vertical Depths are reference Rig Datum.

Measured Depths are reference Rig Datum.

Rig Datum: Actual Datum #1

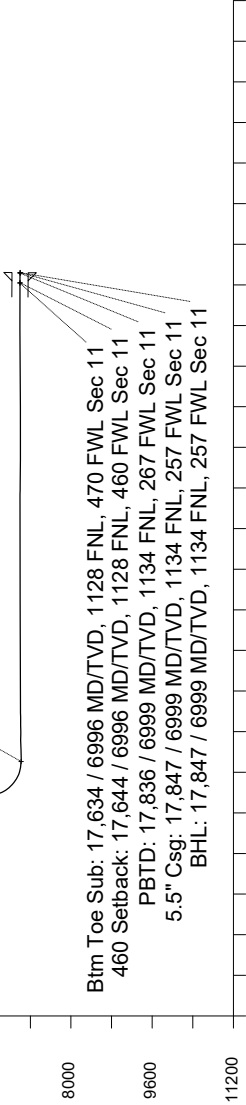
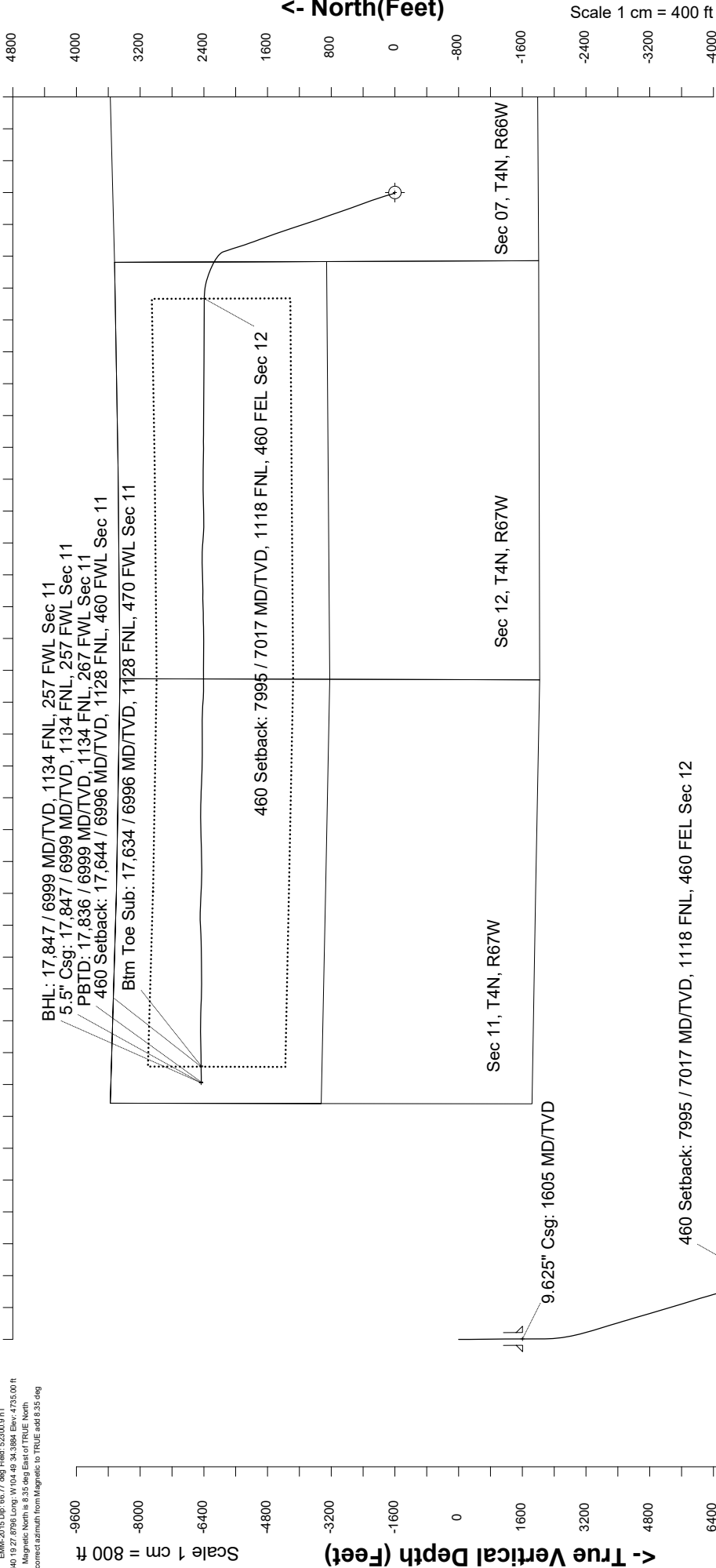
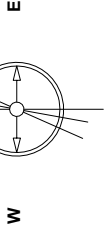
Rig Datum to Mean Sea Level: 4755.00 ft.

Plot North is aligned to TRUE North.

Scale 1 cm = 400 ft

East (Feet) ->

May-14-2018
EIMM-2018.Dwg: 08.7' deep 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
Azimuth 282.28 with reference 0.00 N, 0.00 E from Slot 07 - Schneider HD 11-099HN

Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-099HN
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-11-2019	Nov-11-2019	05-123-46414	20.00	Schneider HD 11-099HN

Slot Coordinates

Latitude	Longitude
40.32415500	-104.82663900

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	40.32415500	-104.82663900
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32415500	-104.82663900
96.00	0.13	114.79	96.00	-0.04	0.08	0.00	-0.09	40.32415489	-104.82663870
185.00	0.44	102.83	185.00	-0.16	0.51	0.00	-0.53	40.32415457	-104.82663717
273.00	0.35	346.20	273.00	0.03	0.77	0.00	-0.75	40.32415508	-104.82663622
365.00	0.97	318.61	364.99	0.89	0.19	0.00	0.00	40.32415743	-104.82663831
455.00	1.27	316.85	454.97	2.19	-0.99	0.00	1.44	40.32416100	-104.82664256
545.00	1.27	327.57	544.95	3.75	-2.21	0.00	2.96	40.32416531	-104.82664693
635.00	0.66	328.63	634.94	5.04	-3.01	0.00	4.02	40.32416883	-104.82664981
725.00	0.26	344.88	724.94	5.68	-3.34	0.00	4.47	40.32417059	-104.82665097
815.00	0.00	278.00	814.94	5.88	-3.39	0.00	4.56	40.32417113	-104.82665116
905.00	0.44	269.39	904.93	5.87	-3.74	0.00	4.90	40.32417112	-104.82665240
995.00	0.66	263.23	994.93	5.81	-4.60	0.00	5.73	40.32417094	-104.82665549
1085.00	0.53	333.11	1084.93	6.12	-5.30	0.00	6.48	40.32417179	-104.82665801
1175.00	1.19	337.15	1174.92	7.35	-5.85	0.00	7.28	40.32417518	-104.82665998
1265.00	1.27	348.75	1264.90	9.19	-6.41	0.00	8.22	40.32418022	-104.82666198
1355.00	1.19	329.68	1354.87	10.97	-7.07	0.00	9.25	40.32418512	-104.82666437
1445.00	0.88	343.48	1444.86	12.44	-7.74	0.00	10.21	40.32418916	-104.82666677
1535.00	0.04	18.11	1534.86	13.14	-7.93	0.00	10.54	40.32419106	-104.82666744
1556.00	0.09	62.49	1555.86	13.15	-7.91	0.00	10.53	40.32419110	-104.82666738
1625.00	0.51	307.55	1624.86	13.36	-8.11	0.00	10.76	40.32419168	-104.82666808
1715.00	0.60	253.99	1714.85	13.48	-8.88	0.00	11.54	40.32419199	-104.82667084
1805.00	0.75	198.25	1804.85	12.79	-9.52	0.00	12.02	40.32419010	-104.82667313
1894.00	1.03	162.01	1893.84	11.47	-9.45	0.00	11.68	40.32418649	-104.82667290
1984.00	1.03	169.01	1983.82	9.91	-9.05	0.00	10.95	40.32418220	-104.82667145
2074.00	0.24	243.99	2073.82	9.03	-9.06	0.00	10.78	40.32417980	-104.82667150
2163.00	0.74	338.16	2162.81	9.49	-9.44	0.00	11.25	40.32418104	-104.82667287
2253.00	4.48	341.10	2252.70	13.35	-10.80	0.00	13.39	40.32419165	-104.82667773
2343.00	7.59	340.08	2342.19	22.27	-13.96	0.00	18.38	40.32421612	-104.82668908
2433.00	9.92	338.37	2431.14	35.06	-18.85	0.00	25.87	40.32425125	-104.82670659
2522.00	12.59	340.18	2518.42	51.32	-24.96	0.00	35.31	40.32429587	-104.82672853
2612.00	15.82	343.96	2605.66	72.34	-31.68	0.00	46.34	40.32435357	-104.82675262
2702.00	18.91	345.53	2691.55	98.26	-38.72	0.00	58.73	40.32442472	-104.82677785
2791.00	20.95	346.32	2775.21	127.69	-46.08	0.00	72.18	40.32450549	-104.82680427
2881.00	22.51	344.29	2858.82	159.91	-54.55	0.00	87.31	40.32459393	-104.82683465
2971.00	24.67	343.46	2941.29	194.50	-64.57	0.00	104.45	40.32468889	-104.82687056
3060.00	26.19	338.81	3021.67	230.62	-76.96	0.00	124.24	40.32478805	-104.82691499
3150.00	26.17	338.66	3102.44	267.63	-91.36	0.00	146.18	40.32488962	-104.82696664
3240.00	27.77	339.86	3182.65	305.80	-105.80	0.00	168.41	40.32499440	-104.82701844
3329.00	29.18	339.74	3260.88	345.62	-120.45	0.00	191.20	40.32510371	-104.82707099
3419.00	29.40	340.51	3339.38	387.03	-135.42	0.00	214.63	40.32521737	-104.82712467
3509.00	29.37	340.53	3417.80	428.66	-150.15	0.00	237.87	40.32533165	-104.82717749
3599.00	29.07	339.94	3496.34	470.01	-165.00	0.00	261.18	40.32544515	-104.82723077
3688.00	29.37	341.26	3574.02	510.99	-179.43	0.00	283.99	40.32555763	-104.82728252
3778.00	30.30	340.93	3652.09	553.35	-193.94	0.00	307.18	40.32567390	-104.82733455
3868.00	29.87	340.09	3729.97	595.88	-208.99	0.00	330.93	40.32579064	-104.82738853
3957.00	30.24	339.94	3807.00	637.77	-224.22	0.00	354.72	40.32590563	-104.82744317
4047.00	29.98	341.43	3884.86	680.37	-239.16	0.00	378.38	40.32602257	-104.82749673
4137.00	30.15	341.40	3962.75	723.11	-253.53	0.00	401.51	40.32613988	-104.82754827
4226.00	29.39	340.61	4040.00	764.89	-267.91	0.00	424.44	40.32625458	-104.82759985
4316.00	29.72	340.27	4118.29	806.72	-282.77	0.00	447.86	40.32636940	-104.82765315
4406.00	29.67	340.37	4196.47	848.70	-297.79	0.00	471.46	40.32648463	-104.82770701
4496.00	29.57	340.48	4274.71	890.61	-312.69	0.00	494.94	40.32659967	-104.82776046
4585.00	29.56	341.08	4352.12	932.08	-327.15	0.00	517.88	40.32671349	-104.82781231
4675.00	30.07	341.14	4430.21	974.42	-341.63	0.00	541.04	40.32682971	-104.82786427
4765.00	29.51	340.91	4508.32	1016.70	-356.17	0.00	564.24	40.32694577	-104.82791641
4855.00	29.36	339.45	4586.70	1058.31	-371.17	0.00	587.74	40.32705998	-104.82797019
4944.00	29.49	342.25	4664.22	1099.60	-385.50	0.00	610.53	40.32717333	-104.82802162
5034.00	29.94	343.11	4742.39	1142.19	-398.78	0.00	632.56	40.32729024	-104.82806924
5124.00	29.83	342.25	4820.42	1185.00	-412.13	0.00	654.71	40.32740774	-104.82811712
5213.00	30.13	341.77	4897.51	1227.30	-425.87	0.00	677.13	40.32752385	-104.82816639
5303.00	29.17	341.73	4975.73	1269.58	-439.81	0.00	699.74	40.32763991	-104.82821640
5393.00	29.97	340.75	5054.00	1311.63	-454.10	0.00	722.65	40.32775534	-104.82826764
5483.00	30.07	341.32	5131.93	1354.22	-468.73	0.00	746.00	40.32787222	-104.82832013
5572.00	30.15	341.33	5208.92	1396.51	-483.03	0.00	768.96	40.32798833	-104.82837141
5662.00	29.64	341.18	5286.95	1438.99	-497.44	0.00	792.08	40.32810492	-104.82842311
5752.00	29.77	341.18	5365.12	1481.21	-511.83	0.00	815.12	40.32822080	-104.82847471

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5841.00	29.99	340.52	5442.29	1523.09	-526.37	0.00	838.24	40.32833577	-104.82852688
5931.00	29.72	340.64	5520.34	1565.34	-541.27	0.00	861.78	40.32845175	-104.82858032
6021.00	29.71	339.37	5598.51	1607.26	-556.52	0.00	885.60	40.32856682	-104.82863503
6111.00	29.43	340.67	5676.79	1649.00	-571.70	0.00	909.31	40.32868138	-104.82868946
6201.00	30.10	339.31	5754.92	1690.98	-586.99	0.00	933.18	40.32879661	-104.82874432
6290.00	30.13	340.54	5831.90	1732.92	-602.32	0.00	957.07	40.32891173	-104.82879929
6380.00	30.20	340.45	5909.72	1775.55	-617.42	0.00	980.89	40.32902874	-104.82885345
6470.00	30.09	340.28	5987.54	1818.12	-632.61	0.00	1004.78	40.32914559	-104.82890793
6559.00	29.97	340.59	6064.60	1860.09	-647.52	0.00	1028.28	40.32926079	-104.82896143
6649.00	30.05	342.29	6142.53	1902.75	-661.85	0.00	1051.35	40.32937791	-104.82901281
6739.00	30.15	342.08	6220.40	1945.73	-675.66	0.00	1073.99	40.32949586	-104.82906235
6829.00	30.06	342.29	6298.26	1988.70	-689.47	0.00	1096.62	40.32961383	-104.82911189
6918.00	30.12	342.00	6375.26	2031.18	-703.15	0.00	1119.02	40.32973042	-104.82916096
7008.00	30.03	341.91	6453.15	2074.06	-717.12	0.00	1141.79	40.32984813	-104.82921107
7097.00	29.88	342.24	6530.26	2116.34	-730.80	0.00	1164.15	40.32996419	-104.82926014
7130.00	29.98	342.70	6558.86	2132.04	-735.76	0.00	1172.33	40.33000728	-104.82927792
7187.00	32.08	334.70	6607.72	2159.34	-746.47	0.00	1188.60	40.33008221	-104.82931634
7277.00	36.15	317.39	6682.39	2200.60	-774.73	0.00	1225.00	40.33019546	-104.82941772
7367.00	40.56	304.06	6753.07	2236.60	-817.04	0.00	1273.99	40.33029429	-104.82956946
7456.00	46.92	299.18	6817.36	2268.70	-869.46	0.00	1332.04	40.33038238	-104.82975748
7546.00	52.47	295.28	6875.57	2299.99	-930.49	0.00	1398.32	40.33046828	-104.82997637
7636.00	58.68	291.52	6926.43	2329.37	-998.60	0.00	1471.13	40.33054891	-104.83022068
7725.00	66.37	287.44	6967.48	2355.58	-1073.00	0.00	1549.40	40.33062085	-104.83048752
7815.00	74.21	281.60	6997.83	2376.69	-1154.94	0.00	1633.95	40.33067880	-104.83078142
7905.00	84.38	275.66	7014.54	2389.86	-1242.22	0.00	1722.04	40.33071493	-104.83109449
7974.00	90.63	272.00	7017.54	2394.46	-1310.96	0.00	1790.18	40.33072754	-104.83134103
7994.00	90.48	272.04	7017.35	2395.17	-1330.95	0.00	1809.86	40.33072947	-104.83141271
8084.00	90.41	270.21	7016.65	2396.93	-1420.92	0.00	1898.16	40.33073431	-104.83173543
8174.00	90.41	269.53	7016.01	2396.73	-1510.92	0.00	1986.05	40.33073373	-104.83205822
8263.00	90.76	269.95	7015.10	2396.32	-1599.91	0.00	2072.92	40.33073261	-104.83237742
8353.00	90.52	269.94	7014.09	2396.24	-1689.91	0.00	2160.84	40.33073236	-104.83270020
8443.00	90.62	270.26	7013.20	2396.40	-1779.90	0.00	2248.81	40.33073277	-104.83302299
8533.00	90.58	270.19	7012.25	2396.75	-1869.90	0.00	2336.82	40.33073372	-104.83334577
8622.00	91.23	270.05	7010.85	2396.94	-1958.89	0.00	2423.82	40.33073422	-104.83366495
8712.00	90.34	270.20	7009.62	2397.13	-2048.88	0.00	2511.79	40.33073473	-104.83398772
8802.00	90.77	270.46	7008.74	2397.65	-2138.87	0.00	2599.83	40.33073614	-104.83431050
8892.00	90.71	270.57	7007.58	2398.46	-2228.86	0.00	2687.94	40.33073833	-104.83463326
8981.00	90.15	270.81	7006.91	2399.53	-2317.85	0.00	2775.12	40.33074125	-104.83495245
9071.00	90.39	270.77	7006.49	2400.77	-2407.84	0.00	2863.32	40.33074464	-104.83527522
9161.00	90.49	269.77	7005.80	2401.20	-2497.83	0.00	2951.34	40.33074578	-104.83559800
9250.00	90.03	270.05	7005.39	2401.06	-2586.83	0.00	3038.28	40.33074537	-104.83591721
9340.00	90.08	270.69	7005.31	2401.64	-2676.83	0.00	3126.34	40.33074694	-104.83624001
9430.00	90.14	270.99	7005.14	2402.96	-2766.82	0.00	3214.55	40.33075053	-104.83656278
9519.00	89.63	270.31	7005.31	2403.97	-2855.81	0.00	3301.72	40.33075327	-104.83688197
9609.00	89.66	269.22	7005.87	2403.60	-2945.81	0.00	3389.58	40.33075223	-104.83720476
9699.00	89.48	271.06	7006.55	2403.82	-3035.80	0.00	3477.56	40.33075281	-104.83752754
9789.00	89.48	270.34	7007.36	2404.92	-3125.79	0.00	3565.73	40.33075579	-104.83785031
9878.00	90.47	269.41	7007.40	2404.72	-3214.79	0.00	3652.65	40.33075523	-104.83816952
9968.00	91.75	271.17	7005.66	2405.18	-3304.77	0.00	3740.66	40.33075645	-104.83849223
10058.00	90.69	271.11	7003.74	2406.97	-3394.73	0.00	3828.95	40.33076133	-104.83881490
10148.00	90.50	270.79	7002.81	2408.46	-3484.71	0.00	3917.19	40.33076539	-104.83913764
10237.00	90.65	270.02	7001.92	2409.09	-3573.70	0.00	4004.28	40.33076708	-104.83945683
10327.00	90.93	269.73	7000.67	2408.89	-3663.69	0.00	4092.17	40.33076650	-104.83977960
10417.00	91.15	269.12	6999.04	2407.99	-3753.67	0.00	4179.90	40.33076399	-104.84010233
10506.00	89.99	270.04	6998.16	2407.34	-3842.66	0.00	4266.72	40.33076216	-104.84042152
10596.00	89.61	267.65	6998.47	2405.52	-3932.64	0.00	4354.25	40.33075714	-104.84074423
10686.00	89.85	267.79	6998.89	2401.94	-4022.57	0.00	4441.36	40.33074727	-104.84106677
10776.00	90.00	269.95	6999.01	2400.17	-4112.54	0.00	4528.90	40.33074236	-104.84138949
10865.00	89.94	271.85	6999.06	2401.57	-4201.53	0.00	4616.14	40.33074616	-104.84170866
10955.00	89.75	272.68	6999.30	2405.12	-4291.46	0.00	4704.77	40.33075588	-104.84203121
11045.00	90.26	274.95	6999.29	2411.11	-4381.25	0.00	4793.79	40.33077227	-104.84235328
11135.00	90.51	273.98	6998.69	2418.12	-4470.98	0.00	4882.95	40.33079146	-104.84267509
11224.00	90.38	271.18	6998.00	2422.12	-4559.87	0.00	4970.66	40.33080241	-104.84299395
11314.00	90.00	267.08	6997.70	2420.76	-4649.84	0.00	5058.29	40.33079861	-104.84331664
11404.00	88.94	268.85	6998.53	2417.56	-4739.78	0.00	5145.48	40.33078980	-104.84363921
11494.00	89.64	268.06	6999.65	2415.13	-4829.74	0.00	5232.87	40.33078309	-104.84396186
11583.00	90.21	270.45	6999.76	2413.98	-4918.72	0.00	5319.57	40.33077986	-104.84428103
11673.00	90.25	270.31	6999.40	2414.57	-5008.72	0.00	5407.64	40.33078145	-104.84460382
11763.00	90.05	267.77	6999.17	2413.07	-5098.70	0.00	5495.24	40.33077726	-104.84492655
11852.00	90.13	268.37	6999.03	2410.07	-5187.65	0.00	5581.52	40.33076898	-104.84524558
11942.00	90.06	268.67	6998.88	2407.74	-5277.62	0.00	5668.93	40.33076255	-104.84556828
12032.00	90.29	269.57	6998.60	2406.36	-5367.61	0.00	5756.57	40.33075870	-104.84589104
12121.00	89.58	267.97	6998.70	2404.45	-5456.58	0.00	5843.10	40.33075341	-104.84621017
12211.00	90.17	268.83	6998.90	2401.94	-5546.55	0.00	5930.47	40.33074645	-104.84653284
12301.00	90.48	270.83	6998.39	2401.67	-5636.54	0.00	6018.35	40.33074566	-104.84685562
12390.00	89.97	270.08	6998.04	2402.38	-5725.53	0.00	6105.46	40.33074755	-104.84717482
12480.00	90.19	271.13	6997.91	2403.33	-5815.53	0.00	6193.60	40.33075010	-104.84749760
12570.00	90.16	270.42	6997.64	2404.55	-5905.52	0.00	6281.79	40.33075338	-104.84782037
12660.00	89.90	269.41	6997.59	2404.41	-5995.52	0.00	6369.70	40.33075296	-104.84814317
12749.00	90.23	269.58	6997.49	2403.63	-6084.51	0.00	6456.50	40.33075074	-104.84846237
12839.00	90.24	270.39	6997.12	2403.60	-6174.51	0.00	6544.43	40.33075062	-104.84878517
12929.00	90.29	270.66	6996.71	2404.43	-6264.51	0.00	6632.54	40.33075282	-104.84910796
13018.00	90.07	272.82	6996.43	2407.13	-6353.46	0.00	6720.04	40.33076017	-104.84942701
13108.00	90.10	274.59	6996.29	2412.95	-6443.27	0.00	6809.03	40.33077607	-104.84974913
13198.00	89.47	272.46	6996.63	2418.48	-6533.09	0.00	6897.97	40.33079120	-104.85007131
13287.00	89.79	270.55	6997.21	2420.82	-6622.06	0.00	6985.40	40.33079755	-104.85039040
13377.00	89.27	269.06	6997.94	2420.51	-6712.05	0.00	7073.27	40.33079664	-104.85071318
13467.00	89.04	269.43	6999.27	2419.33	-6802.03	0.00	7160.94	40.33079332	-104.85103592
13557.00	89.13	270.36	7000.71	2419.16	-6892.02	0.00	7248.83	40.33079280	-104.85135867
13646.00	89.90	269.74	7001.46	2419.24	-6981.01	0.00	7335.81	40.33079294	-104.85167788

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
13736.00	89.94	270.96	7001.59	2419.79	-7071.01	0.00	7423.86	40.33079438	-104.85200067
13826.00	89.12	270.60	7002.33	2421.01	-7161.00	0.00	7512.05	40.33079767	-104.85232343
13915.00	89.40	272.10	7003.48	2423.11	-7249.96	0.00	7599.43	40.33080336	-104.85264252
14005.00	89.24	272.06	7004.54	2426.38	-7339.90	0.00	7688.00	40.33081225	-104.85296510
14095.00	89.20	272.13	7005.77	2429.67	-7429.83	0.00	7776.58	40.33082121	-104.85328766
14184.00	89.38	272.61	7006.87	2433.35	-7518.75	0.00	7864.24	40.33083123	-104.85360658
14274.00	89.81	270.94	7007.51	2436.13	-7608.70	0.00	7952.73	40.33083881	-104.85392921
14364.00	89.92	272.50	7007.72	2438.83	-7698.65	0.00	8041.20	40.33084615	-104.85425186
14453.00	90.62	269.59	7007.30	2440.46	-7787.63	0.00	8128.49	40.33085053	-104.85457099
14543.00	91.08	270.76	7005.96	2440.73	-7877.62	0.00	8216.47	40.33085120	-104.85489375
14633.00	89.44	267.32	7005.56	2439.22	-7967.59	0.00	8304.06	40.33084698	-104.85521644
14722.00	90.63	268.76	7005.50	2436.18	-8056.53	0.00	8390.33	40.33083855	-104.85553546
14812.00	90.57	268.81	7004.56	2434.27	-8146.50	0.00	8477.84	40.33083323	-104.85585817
14902.00	90.39	267.66	7003.81	2431.50	-8236.46	0.00	8565.14	40.33082554	-104.85618080
14991.00	90.46	268.62	7003.15	2428.61	-8325.41	0.00	8651.44	40.33081753	-104.85649983
15081.00	90.23	270.00	7002.60	2427.53	-8415.40	0.00	8739.14	40.33081447	-104.85682260
15171.00	90.23	270.47	7002.24	2427.90	-8505.40	0.00	8827.16	40.33081540	-104.85714540
15260.00	90.09	269.69	7001.99	2428.02	-8594.39	0.00	8914.15	40.33081566	-104.85746461
15350.00	90.33	271.71	7001.66	2429.12	-8684.38	0.00	9002.32	40.33081859	-104.85778737
15440.00	90.71	272.71	7000.85	2432.59	-8774.31	0.00	9090.92	40.33082803	-104.85810992
15530.00	89.59	274.45	7000.61	2438.21	-8864.13	0.00	9179.88	40.33084336	-104.85843209
15619.00	90.33	272.88	7000.67	2443.90	-8952.94	0.00	9267.88	40.33085889	-104.85875065
15709.00	89.95	270.42	7000.45	2446.49	-9042.90	0.00	9356.33	40.33086592	-104.85907329
15799.00	90.22	269.35	7000.32	2446.31	-9132.90	0.00	9444.23	40.33086533	-104.85939609
15888.00	90.19	265.73	7000.00	2442.49	-9221.80	0.00	9530.28	40.33085475	-104.85971495
15978.00	90.18	267.91	6999.71	2437.50	-9311.66	0.00	9617.02	40.33084096	-104.86003723
16068.00	90.23	268.24	6999.39	2434.48	-9401.60	0.00	9704.27	40.33083257	-104.86035985
16158.00	89.94	268.92	6999.26	2432.25	-9491.58	0.00	9791.71	40.33082635	-104.86068255
16247.00	90.21	269.93	6999.14	2431.35	-9580.57	0.00	9878.48	40.33082380	-104.86100174
16337.00	90.00	268.95	6998.97	2430.47	-9670.56	0.00	9966.23	40.33082129	-104.86132453
16427.00	90.05	268.70	6998.93	2428.63	-9760.55	0.00	10053.76	40.33081613	-104.86164726
16517.00	90.24	269.76	6998.71	2427.42	-9850.54	0.00	10141.43	40.33081271	-104.86197003
16606.00	90.26	269.85	6998.32	2427.11	-9939.53	0.00	10228.33	40.33081178	-104.86228924
16696.00	91.45	272.27	6996.98	2428.78	-10029.50	0.00	10316.59	40.33081625	-104.86261192
16786.00	90.34	272.52	6995.57	2432.54	-10119.41	0.00	10405.24	40.33082647	-104.86293441
16875.00	90.37	271.73	6995.02	2435.84	-10208.35	0.00	10492.85	40.33083543	-104.86325340
16965.00	90.86	271.92	6994.05	2438.71	-10298.29	0.00	10581.35	40.33084320	-104.86357603
17055.00	90.09	270.05	6993.31	2440.25	-10388.27	0.00	10669.60	40.33084734	-104.86389876
17145.00	90.23	270.45	6993.05	2440.65	-10478.27	0.00	10757.62	40.33084831	-104.86422156
17234.00	90.33	270.28	6992.62	2441.21	-10567.27	0.00	10844.70	40.33084977	-104.86454076
17324.00	90.20	268.42	6992.20	2440.19	-10657.26	0.00	10932.42	40.33084686	-104.86486353
17414.00	89.12	268.13	6992.74	2437.48	-10747.21	0.00	11019.74	40.33083931	-104.86518617
17504.00	89.22	269.32	6994.04	2435.48	-10837.18	0.00	11107.22	40.33083371	-104.86550885
17593.00	89.13	269.37	6995.32	2434.46	-10926.17	0.00	11193.96	40.33083081	-104.86582801
17683.00	89.08	269.39	6996.73	2433.49	-11016.15	0.00	11281.68	40.33082803	-104.86615076
17773.00	89.38	269.82	6997.94	2432.87	-11106.14	0.00	11369.47	40.33082621	-104.86647352
17824.00	89.49	270.55	6998.44	2433.03	-11157.14	0.00	11419.34	40.33082660	-104.86665643
17847.00	89.49	270.55	6998.65	2433.25	-11180.13	0.00	11441.86	40.33082718	-104.86673892

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
0.00	0.00	0.00	0.00	40.32415500	-104.82663900	Surface Location
1605.00	1604.86	13.27	-7.99	40.32419142	-104.82666766	9.625" Csg: 1605 MD/TVD
7995.15	7017.34	2395.21	-1332.10	40.33072958	-104.83141684	460 Setback: 7995 / 7017 MD/TVD, 1118 FNL, 460 FEL Sec 12
17633.86	6995.95	2434.02	-10967.02	40.33082954	-104.86597454	Btm Toe Sub: 17,634 / 6996 MD/TVD, 1128 FNL, 470 FWL Sec 11
17643.51	6996.10	2433.91	-10976.67	40.33082924	-104.86600915	460 Setback: 17,644 / 6996 MD/TVD, 1128 FNL, 460 FWL Sec 11
17836.12	6998.55	2433.15	-11169.26	40.33082691	-104.86669990	PBTD: 17,836 / 6999 MD/TVD, 1134 FNL, 267 FWL Sec 11
17847.00	6998.65	2433.25	-11180.13	40.33082718	-104.86673892	5.5" Csg: 17,847 / 6999 MD/TVD, 1134 FNL, 257 FWL Sec 11
17847.00	6998.65	2433.25	-11180.13	40.33082718	-104.86673892	BHL: 17,847 / 6999 MD/TVD, 1134 FNL, 257 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	1605.00	1604.86	13.27	-7.99
8.500	1605.00	1604.86	13.27	-7.99	17847.00	6998.65	2433.25	-11180.13

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	1605.00	1604.86	13.27	-7.99
5 1/2in Casing	0.00	0.00	0.00	0.00	17847.00	6998.65	2433.25	-11180.13

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
652188	Drilled - 20191111	17847.00	6998.65	WdW Rate Gyro

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 282.28 degrees
Bottom hole distance is 11441.86 Feet on azimuth 282.28 degrees from Wellhead
Survey calculation uses Minimum Curvature method