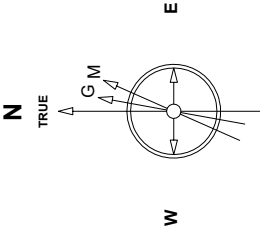


Great Western Operating Company, LLC

Location	Colorado	Slot	Slot 11 - Schneider HD 11-142HN
Field	Wattenburg	Well	Schneider HD 11-142HN
Installation	Schneider North	Wellbore	Schneider HD 11-142HN (AWB)

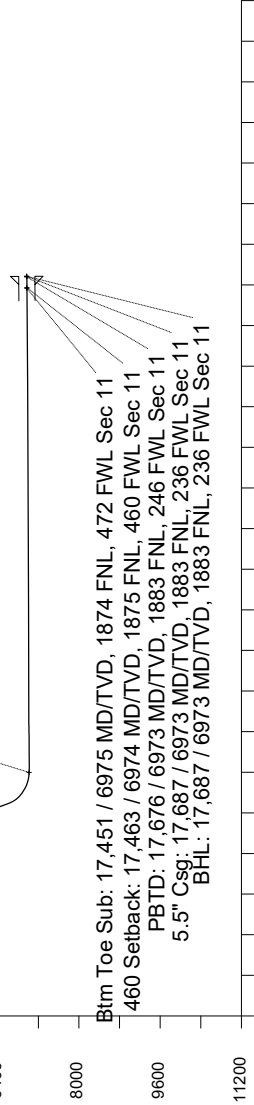
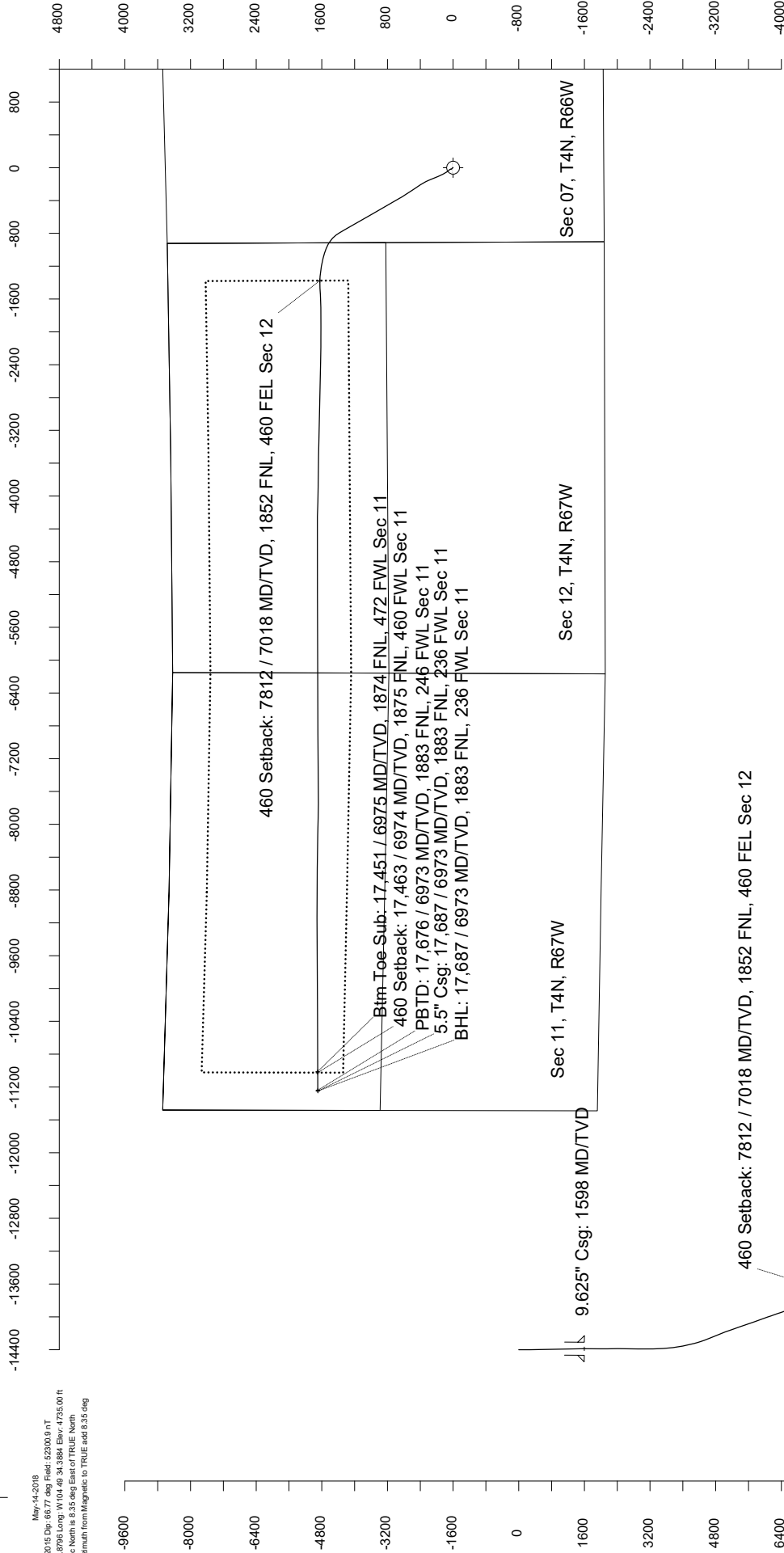
Created by	mmount
Date plotted	25-Oct-2019
Plot reference is	Schneider HD 11-142HN (AWB).
Ref wellpath is	Schneider HD 11-142HN (AWP#1).
Coordinates are in	Feet reference Slot 11 - Schneider HD 11-142HN.
True Vertical Depths are	reference Rig Datum.
Measured Depths are	reference Rig Datum.
Rig Datum	Actual Datum #1
Rig Datum to Mean Sea Level:	4755.00 ft.
Plot North is aligned to	TRUE North.



EMA-2015 Dec 08 7 deg Field: 52300.9 mT
Lat: N40 19 27.8766 Long: W 104 40 34.3884 Elev: 4735.00 ft
Magnetic North is 8.35 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 8.35 deg

Scale 1 cm = 400 ft

East (Feet) ->



Scale 1 cm = 800 ft
Azimuth 278.34 with reference 0.00 N, 0.00 E from Slot 11 - Schneider HD 11-142HN

Vertical Section (Feet) ->

Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-142HN
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-24-2019	Oct-25-2019	052-123-46418	20.00	Schneider HD 11-142HN

Slot Coordinates

Latitude	Longitude
40.32425600	-104.82647300

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	40.32425600	-104.82647300
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32425600	-104.82647300
96.00	0.48	50.89	96.00	0.22	0.27	0.00	-0.23	40.32425659	-104.82647204
185.00	0.44	52.74	185.00	0.66	0.83	0.00	-0.72	40.32425781	-104.82647003
273.00	0.48	13.27	272.99	1.22	1.18	0.00	-0.99	40.32425935	-104.82646876
365.00	1.36	322.65	364.98	2.47	0.61	0.00	-0.24	40.32426277	-104.82647082
455.00	1.36	319.57	454.96	4.13	-0.73	0.00	1.32	40.32426733	-104.82647563
545.00	1.36	311.49	544.93	5.65	-2.23	0.00	3.02	40.32427150	-104.82648098
635.00	1.36	308.67	634.91	7.02	-3.86	0.00	4.84	40.32427528	-104.82648684
725.00	1.49	308.94	724.88	8.43	-5.60	0.00	6.77	40.32427913	-104.82649310
815.00	1.98	300.15	814.84	9.94	-7.86	0.00	9.22	40.32428329	-104.82650118
905.00	1.41	325.02	904.80	11.63	-9.84	0.00	11.42	40.32428792	-104.82650828
995.00	1.58	338.56	994.77	13.69	-10.93	0.00	12.80	40.32429358	-104.82651218
1085.00	2.37	325.72	1084.71	16.38	-12.43	0.00	14.67	40.32430097	-104.82651757
1175.00	1.85	322.12	1174.65	19.07	-14.37	0.00	16.98	40.32430834	-104.82652453
1265.00	2.20	331.96	1264.60	21.74	-16.07	0.00	19.05	40.32431568	-104.82653064
1355.00	1.32	325.90	1354.55	24.12	-17.47	0.00	20.78	40.32432222	-104.82653564
1445.00	0.83	319.75	1444.54	25.48	-18.47	0.00	21.97	40.32432594	-104.82653923
1535.00	0.09	58.98	1534.53	26.01	-18.83	0.00	22.40	40.32432740	-104.82654052
1549.00	0.35	83.15	1548.53	26.02	-18.78	0.00	22.35	40.32432743	-104.82654034
1626.00	0.36	80.64	1625.53	26.09	-18.30	0.00	21.89	40.32432762	-104.82653865
1716.00	0.18	284.63	1715.53	26.17	-18.16	0.00	21.76	40.32432784	-104.82653814
1806.00	0.20	82.42	1805.53	26.23	-18.14	0.00	21.75	40.32432800	-104.82653807
1896.00	0.07	306.02	1895.53	26.28	-18.03	0.00	21.65	40.32432814	-104.82653767
1985.00	0.01	60.30	1984.53	26.32	-18.07	0.00	21.69	40.32432824	-104.82653780
2075.00	0.07	153.79	2074.53	26.27	-18.04	0.00	21.66	40.32432812	-104.82653769
2165.00	0.14	311.80	2164.53	26.30	-18.10	0.00	21.72	40.32432818	-104.82653790
2254.00	0.11	251.74	2253.53	26.34	-18.26	0.00	21.88	40.32432831	-104.82653848
2344.00	0.03	186.66	2343.53	26.29	-18.34	0.00	21.96	40.32432817	-104.82653878
2434.00	0.12	356.03	2433.53	26.36	-18.35	0.00	21.98	40.32432836	-104.82653882
2524.00	0.18	143.51	2523.53	26.34	-18.27	0.00	21.90	40.32432831	-104.82653854
2613.00	0.11	346.84	2612.53	26.31	-18.21	0.00	21.83	40.32432823	-104.82653831
2703.00	0.16	172.22	2702.53	26.27	-18.21	0.00	21.83	40.32432812	-104.82653832
2793.00	0.05	81.30	2792.53	26.16	-18.16	0.00	21.76	40.32432779	-104.82653812
2882.00	0.26	318.60	2881.53	26.31	-18.25	0.00	21.87	40.32432823	-104.82653846
2972.00	0.18	98.73	2971.53	26.44	-18.25	0.00	21.89	40.32432859	-104.82653844
3062.00	0.13	242.99	3061.53	26.38	-18.20	0.00	21.83	40.32432840	-104.82653827
3151.00	0.05	261.63	3150.53	26.32	-18.33	0.00	21.95	40.32432826	-104.82653873
3241.00	0.20	84.96	3240.53	26.33	-18.21	0.00	21.84	40.32432828	-104.82653831
3331.00	0.04	192.77	3330.53	26.32	-18.06	0.00	21.68	40.32432824	-104.82653777
3420.00	2.65	9.67	3419.50	28.31	-17.72	0.00	21.64	40.32433372	-104.82653656
3510.00	4.36	338.53	3509.33	33.55	-18.62	0.00	23.29	40.32434809	-104.82653979
3600.00	7.09	323.54	3598.88	41.20	-23.18	0.00	28.91	40.32436910	-104.82655613
3689.00	10.11	320.28	3686.87	51.63	-31.44	0.00	38.59	40.32439772	-104.82658574
3779.00	12.81	321.69	3775.07	65.54	-42.67	0.00	51.72	40.32443590	-104.82662603
3869.00	15.40	326.19	3862.35	83.30	-55.51	0.00	67.00	40.32448465	-104.82667207
3959.00	17.72	331.69	3948.62	105.29	-68.66	0.00	83.20	40.32454502	-104.82671923
4048.00	18.68	332.36	4033.16	129.84	-81.69	0.00	99.65	40.32461241	-104.82676598
4138.00	20.45	335.16	4117.97	156.88	-94.98	0.00	116.72	40.32468663	-104.82681365
4228.00	23.82	337.27	4201.32	187.92	-108.61	0.00	134.71	40.32477183	-104.82686254
4317.00	26.30	337.31	4281.94	222.69	-123.17	0.00	154.15	40.32486728	-104.82691473
4407.00	29.40	338.56	4361.50	261.66	-138.94	0.00	175.40	40.32497424	-104.82697128
4497.00	31.78	335.53	4438.98	303.80	-156.83	0.00	199.22	40.32508992	-104.82703546
4587.00	31.48	330.63	4515.62	345.86	-178.18	0.00	226.44	40.32520536	-104.82711202
4676.00	31.27	330.08	4591.61	386.13	-201.10	0.00	254.95	40.32531590	-104.82719421
4766.00	31.27	325.17	4668.55	425.56	-226.09	0.00	285.40	40.32542412	-104.82728386
4856.00	31.02	325.78	4745.57	463.90	-252.47	0.00	317.06	40.32552938	-104.82737848
4945.00	31.03	326.60	4821.84	502.02	-278.00	0.00	347.84	40.32563400	-104.82747002
5035.00	31.16	327.31	4898.91	540.98	-303.34	0.00	378.57	40.32574095	-104.82756093
5125.00	31.20	327.11	4975.91	580.15	-328.58	0.00	409.22	40.32584847	-104.82765143
5215.00	30.02	329.67	5053.37	619.16	-352.61	0.00	438.65	40.32595555	-104.82773761
5304.00	30.38	330.06	5130.29	657.88	-375.08	0.00	466.50	40.32606183	-104.82781822
5394.00	29.35	329.79	5208.34	696.66	-397.54	0.00	494.34	40.32616828	-104.82789876
5484.00	29.01	330.10	5286.92	734.64	-419.52	0.00	521.59	40.32627253	-104.82797758

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5574.00	29.10	329.91	5365.59	772.50	-441.37	0.00	548.70	40.32637644	-104.82805595
5663.00	29.31	329.86	5443.28	810.06	-463.16	0.00	575.71	40.32647955	-104.82813410
5753.00	29.67	330.24	5521.62	848.45	-485.27	0.00	603.15	40.32658492	-104.82821343
5843.00	29.08	330.47	5600.04	886.82	-507.11	0.00	630.32	40.32669024	-104.82829175
5932.00	29.48	329.77	5677.67	924.56	-528.80	0.00	657.25	40.32679383	-104.82836953
6022.00	29.74	330.32	5755.92	963.09	-551.00	0.00	684.81	40.32689959	-104.82844916
6112.00	29.60	329.96	5834.12	1001.72	-573.18	0.00	712.35	40.32700564	-104.82852872
6202.00	29.55	329.93	5912.39	1040.17	-595.43	0.00	739.94	40.32711118	-104.82860851
6291.00	29.83	329.90	5989.71	1078.31	-617.53	0.00	767.33	40.32721588	-104.82868777
6381.00	29.58	330.39	6067.88	1116.99	-639.73	0.00	794.91	40.32732205	-104.82876740
6471.00	29.67	329.83	6146.12	1155.56	-661.90	0.00	822.44	40.32742792	-104.82884692
6560.00	29.12	329.84	6223.66	1193.33	-683.85	0.00	849.63	40.32753159	-104.82892565
6650.00	29.51	330.61	6302.14	1231.58	-705.73	0.00	876.83	40.32763657	-104.82900413
6740.00	29.51	330.42	6380.46	1270.17	-727.55	0.00	904.01	40.32774250	-104.82908239
6830.00	28.69	330.22	6459.10	1308.20	-749.22	0.00	930.97	40.32784688	-104.82916012
6919.00	29.64	330.15	6536.81	1345.83	-770.79	0.00	957.76	40.32795017	-104.82923747
7009.00	30.36	330.38	6614.76	1384.90	-793.10	0.00	985.51	40.32805743	-104.82931752
7099.00	37.79	323.87	6689.28	1427.02	-820.65	0.00	1018.87	40.32817303	-104.82941632
7188.00	43.56	312.23	6756.85	1469.75	-859.52	0.00	1063.53	40.32829033	-104.82955575
7278.00	48.33	302.35	6819.49	1508.65	-910.98	0.00	1120.08	40.32839711	-104.82974030
7368.00	53.98	293.88	6875.98	1541.44	-972.78	0.00	1185.97	40.32848709	-104.82996194
7457.00	59.72	287.22	6924.66	1567.43	-1042.51	0.00	1258.74	40.32855842	-104.83021204
7547.00	66.74	282.96	6965.19	1588.24	-1120.04	0.00	1338.47	40.32861553	-104.83049013
7637.00	75.46	279.45	6994.32	1604.70	-1203.48	0.00	1423.41	40.32866070	-104.83078940
7726.00	82.37	276.94	7011.43	1617.11	-1289.87	0.00	1510.69	40.32869478	-104.83109925
7816.00	88.66	272.52	7018.46	1624.49	-1379.22	0.00	1600.17	40.32871502	-104.83141973
7906.00	89.23	264.95	7020.12	1622.51	-1469.12	0.00	1688.83	40.32870955	-104.83174215
7995.00	90.36	267.71	7020.44	1616.81	-1557.93	0.00	1775.87	40.32869390	-104.83206067
8085.00	89.88	267.81	7020.25	1613.29	-1647.86	0.00	1864.34	40.32868423	-104.83238321
8175.00	90.22	269.15	7020.18	1610.91	-1737.83	0.00	1953.01	40.32867766	-104.83270588
8264.00	90.42	270.27	7019.68	1610.45	-1826.82	0.00	2041.00	40.32867641	-104.83302508
8354.00	90.33	269.90	7019.09	1610.59	-1916.82	0.00	2130.07	40.32867676	-104.83334786
8444.00	90.62	270.56	7018.34	1610.95	-2006.82	0.00	2219.17	40.32867773	-104.83367064
8533.00	91.07	270.36	7017.03	1611.66	-2095.80	0.00	2307.32	40.32867967	-104.83398980
8623.00	90.67	270.10	7015.66	1612.03	-2185.79	0.00	2396.41	40.32868064	-104.83431255
8713.00	91.10	271.05	7014.27	1612.93	-2275.77	0.00	2485.57	40.32868309	-104.83463529
8803.00	90.11	270.23	7013.32	1613.93	-2365.76	0.00	2574.75	40.32868583	-104.83495804
8892.00	90.02	270.90	7013.22	1614.81	-2454.76	0.00	2662.94	40.32868822	-104.83527723
8982.00	89.97	271.66	7013.23	1616.82	-2544.73	0.00	2752.25	40.32869371	-104.83559994
9072.00	90.22	272.29	7013.08	1619.92	-2634.68	0.00	2841.70	40.32870220	-104.83592254
9162.00	90.48	271.90	7012.53	1623.21	-2724.62	0.00	2931.16	40.32871120	-104.83624511
9251.00	90.44	271.70	7011.82	1626.01	-2813.57	0.00	3019.58	40.32871885	-104.83656415
9341.00	89.75	270.51	7011.67	1627.74	-2903.55	0.00	3108.86	40.32872358	-104.83688688
9431.00	90.11	270.55	7011.78	1628.58	-2993.55	0.00	3198.03	40.32872584	-104.83720966
9520.00	89.83	271.33	7011.82	1630.04	-3082.53	0.00	3286.29	40.32872982	-104.83752882
9610.00	89.83	270.94	7012.09	1631.82	-3172.52	0.00	3375.58	40.32873468	-104.83785155
9700.00	90.08	271.17	7012.16	1633.48	-3262.50	0.00	3464.85	40.32873920	-104.83817429
9790.00	90.29	271.51	7011.87	1635.58	-3352.48	0.00	3554.18	40.32874494	-104.83849700
9879.00	90.21	271.62	7011.48	1638.01	-3441.44	0.00	3642.56	40.32875158	-104.83881608
9969.00	90.33	270.84	7011.06	1639.94	-3531.42	0.00	3731.87	40.32875685	-104.83913880
10059.00	90.14	270.76	7010.69	1641.20	-3621.41	0.00	3821.09	40.32876026	-104.83946156
10148.00	90.37	270.94	7010.29	1642.52	-3710.40	0.00	3909.33	40.32876385	-104.83978073
10238.00	90.00	270.75	7010.00	1643.85	-3800.39	0.00	3998.56	40.32876745	-104.84010349
10328.00	90.20	270.68	7009.85	1644.97	-3890.38	0.00	4087.77	40.32877050	-104.84042625
10418.00	90.41	270.81	7009.37	1646.14	-3980.37	0.00	4176.98	40.32877367	-104.84074902
10507.00	90.19	271.64	7008.90	1648.04	-4069.35	0.00	4265.29	40.32877885	-104.84106815
10597.00	90.28	271.71	7008.53	1650.67	-4159.31	0.00	4354.68	40.32878603	-104.84139080
10687.00	90.40	271.30	7008.00	1653.04	-4249.28	0.00	4444.04	40.32879248	-104.84171348
10776.00	90.22	269.66	7007.52	1653.78	-4338.27	0.00	4532.20	40.32879448	-104.84203266
10866.00	90.51	269.81	7006.94	1653.37	-4428.27	0.00	4621.19	40.32879330	-104.84235544
10956.00	90.17	270.37	7006.41	1653.51	-4518.27	0.00	4710.25	40.32879364	-104.84267823
11046.00	90.48	269.69	7005.90	1653.56	-4608.26	0.00	4799.31	40.32879372	-104.84300102
11135.00	91.09	270.28	7004.68	1653.53	-4697.25	0.00	4887.35	40.32879361	-104.84332019
11225.00	90.15	270.03	7003.70	1653.78	-4787.25	0.00	4976.43	40.32879423	-104.84364296
11315.00	89.40	269.64	7004.06	1653.52	-4877.25	0.00	5065.44	40.32879348	-104.84396575
11405.00	89.76	270.39	7004.72	1653.54	-4967.24	0.00	5154.49	40.32879349	-104.84428853
11494.00	89.74	269.79	7005.11	1653.68	-5056.24	0.00	5242.57	40.32879382	-104.84460774
11584.00	90.22	269.59	7005.14	1653.19	-5146.24	0.00	5331.55	40.32879244	-104.84493052
11674.00	89.20	269.89	7005.59	1652.79	-5236.24	0.00	5420.53	40.32879126	-104.84525331
11764.00	90.49	269.68	7005.84	1652.45	-5326.23	0.00	5509.53	40.32879028	-104.84557609
11853.00	89.89	269.88	7005.54	1652.11	-5415.23	0.00	5597.54	40.32878929	-104.84589529
11943.00	90.20	270.21	7005.47	1652.18	-5505.23	0.00	5686.60	40.32878943	-104.84621809
12033.00	90.48	270.12	7004.94	1652.44	-5595.23	0.00	5775.68	40.32879009	-104.84654087
12122.00	90.46	269.46	7004.21	1652.11	-5684.23	0.00	5863.69	40.32878914	-104.84686007
12212.00	90.22	270.00	7003.67	1651.69	-5774.22	0.00	5952.68	40.32878792	-104.84718285
12302.00	89.83	269.43	7003.63	1651.24	-5864.22	0.00	6041.66	40.32878663	-104.84750564
12391.00	90.56	270.26	7003.33	1651.00	-5953.22	0.00	6129.68	40.32878591	-104.84782484
12481.00	90.50	270.30	7002.50	1651.44	-6043.21	0.00	6218.79	40.32878706	-104.84814761
12571.00	89.72	269.43	7002.33	1651.22	-6133.21	0.00	6307.81	40.32878641	-104.84847040
12661.00	90.39	269.19	7002.24	1650.14	-6223.20	0.00	6396.69	40.32878338	-104.84879317
12750.00	90.16	269.58	7001.81	1649.19	-6312.20	0.00	6484.61	40.32878069	-104.84911235
12840.00	89.90	269.44	7001.76	1648.42	-6402.19	0.00	6573.54	40.32877852	-104.84943513
12930.00	89.86	270.11	7001.95	1648.06	-6492.19	0.00	6662.54	40.32877748	-104.84975792
13019.00	90.31	269.56	7001.82	1647.81	-6581.19	0.00	6750.56	40.32877671	-104.85007713
13109.00	90.19	269.49	7001.43	1647.06	-6671.19	0.00	6839.49	40.32877460	-104.85039991
13199.00	90.43	270.28	7000.94	1646.88	-6761.19	0.00	6928.52	40.32877404	-104.85072269
13288.00	90.06	269.83	7000.56	1646.96	-6850.18	0.00	7016.59	40.32877420	-104.85104190

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
13378.00	89.96	269.28	7000.54	1646.27	-6940.18	0.00	7105.53	40.32877222	-104.85136468
13468.00	90.48	269.88	7000.20	1645.61	-7030.18	0.00	7194.48	40.32877034	-104.85168746
13558.00	89.92	270.34	6999.89	1645.78	-7120.18	0.00	7283.55	40.32877074	-104.85201025
13647.00	90.37	269.74	6999.66	1645.84	-7209.18	0.00	7371.62	40.32877084	-104.85232945
13737.00	90.27	269.44	6999.16	1645.20	-7299.17	0.00	7460.57	40.32876900	-104.85265223
13827.00	90.30	269.40	6998.71	1644.29	-7389.17	0.00	7549.48	40.32876643	-104.85297500
13916.00	90.62	269.98	6998.00	1643.80	-7478.16	0.00	7637.47	40.32876503	-104.85329419
14006.00	90.27	270.18	6997.30	1643.93	-7568.16	0.00	7726.53	40.32876530	-104.85361698
14096.00	90.43	267.90	6996.75	1642.42	-7658.14	0.00	7815.34	40.32876109	-104.85393970
14185.00	90.85	271.00	6995.75	1641.57	-7747.12	0.00	7903.26	40.32875866	-104.85425883
14275.00	90.38	270.86	6994.79	1643.03	-7837.10	0.00	7992.50	40.32876260	-104.85458156
14365.00	90.49	271.24	6994.10	1644.68	-7927.08	0.00	8081.77	40.32876704	-104.85490430
14454.00	90.69	270.69	6993.19	1646.18	-8016.06	0.00	8170.03	40.32877108	-104.85522344
14544.00	90.25	271.17	6992.45	1647.64	-8106.05	0.00	8259.28	40.32877501	-104.85554618
14634.00	90.37	271.24	6991.96	1649.53	-8196.03	0.00	8348.58	40.32878012	-104.85586890
14724.00	89.71	270.89	6991.90	1651.20	-8286.01	0.00	8437.86	40.32878463	-104.85619164
14813.00	90.38	271.11	6991.83	1652.76	-8375.00	0.00	8526.13	40.32878881	-104.85651080
14903.00	90.51	270.78	6991.13	1654.24	-8464.98	0.00	8615.38	40.32879280	-104.85683354
14992.00	90.68	270.75	6990.20	1655.43	-8553.97	0.00	8703.60	40.32879598	-104.85715271
15082.00	89.95	270.39	6989.71	1656.32	-8643.96	0.00	8792.77	40.32879835	-104.85747548
15172.00	89.78	270.81	6989.92	1657.27	-8733.96	0.00	8881.95	40.32880085	-104.85779825
15262.00	89.84	270.34	6990.22	1658.17	-8823.95	0.00	8971.12	40.32880324	-104.85812103
15351.00	90.10	270.39	6990.27	1658.74	-8912.95	0.00	9059.26	40.32880471	-104.85844023
15441.00	89.84	270.68	6990.31	1659.58	-9002.95	0.00	9148.43	40.32880693	-104.85876301
15531.00	90.03	269.02	6990.42	1659.34	-9092.94	0.00	9237.44	40.32880619	-104.85908579
15620.00	90.44	269.63	6990.05	1658.29	-9181.94	0.00	9325.34	40.32880322	-104.85940497
15710.00	90.35	270.13	6989.43	1658.10	-9271.93	0.00	9414.36	40.32880261	-104.85972776
15800.00	90.36	270.19	6988.87	1658.36	-9361.93	0.00	9503.45	40.32880321	-104.86005055
15889.00	90.49	269.50	6988.21	1658.11	-9450.93	0.00	9591.47	40.32880246	-104.86036974
15979.00	90.46	269.04	6987.47	1656.97	-9540.92	0.00	9680.34	40.32879922	-104.86069250
16069.00	90.54	269.20	6986.68	1655.59	-9630.90	0.00	9769.17	40.32879533	-104.86101524
16158.00	90.45	269.86	6985.91	1654.86	-9719.90	0.00	9857.12	40.32879323	-104.86133442
16248.00	90.63	269.10	6985.06	1654.04	-9809.89	0.00	9946.04	40.32879089	-104.86165718
16338.00	90.45	270.38	6984.22	1653.63	-9899.88	0.00	10035.03	40.32878967	-104.86197995
16428.00	90.33	269.11	6983.60	1653.23	-9989.88	0.00	10124.01	40.32878847	-104.86230273
16517.00	90.58	270.11	6982.90	1652.62	-10078.87	0.00	10211.98	40.32878671	-104.86262191
16607.00	90.51	269.77	6982.04	1652.53	-10168.87	0.00	10301.01	40.32878635	-104.86294469
16697.00	90.63	269.87	6981.15	1652.25	-10258.86	0.00	10390.01	40.32878547	-104.86326747
16787.00	90.47	270.17	6980.28	1652.28	-10348.86	0.00	10479.06	40.32878545	-104.86359025
16876.00	90.49	270.33	6979.54	1652.67	-10437.85	0.00	10567.18	40.32878642	-104.86390944
16966.00	90.53	269.17	6978.73	1652.27	-10527.85	0.00	10656.16	40.32878523	-104.86423222
17056.00	90.49	270.31	6977.93	1651.87	-10617.84	0.00	10745.15	40.32878401	-104.86455499
17145.00	90.44	269.59	6977.21	1651.79	-10706.84	0.00	10833.19	40.32878369	-104.86487418
17235.00	90.36	269.55	6976.58	1651.11	-10796.83	0.00	10922.14	40.32878173	-104.86519696
17325.00	90.54	269.62	6975.88	1650.46	-10886.83	0.00	11011.09	40.32877983	-104.86551973
17415.00	90.60	270.19	6974.98	1650.31	-10976.82	0.00	11100.11	40.32877931	-104.86584251
17504.00	90.63	269.20	6974.03	1649.84	-11065.81	0.00	11188.09	40.32877790	-104.86616169
17594.00	90.30	269.41	6973.30	1648.75	-11155.80	0.00	11276.97	40.32877479	-104.86648445
17664.00	90.35	269.88	6972.90	1648.31	-11225.80	0.00	11346.17	40.32877352	-104.86673550
17687.00	90.35	269.88	6972.76	1648.26	-11248.80	0.00	11368.92	40.32877335	-104.86681799

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
1598.00	1597.53	26.06	-18.48	40.32432754	-104.82653927	9.625" Csg: 1598 MD/TVD
7812.47	7018.37	1624.33	-1375.70	40.32871458	-104.83140708	460 Setback: 7812 / 7018 MD/TVD, 1852 FNL, 460 FEL Sec 12
17450.54	6974.61	1650.31	-11012.36	40.32877925	-104.86596997	Btm Toe Sub: 17,451 / 6975 MD/TVD, 1874 FNL, 472 FWL Sec 11
17462.58	6974.48	1650.25	-11024.40	40.32877908	-104.86601315	460 Setback: 17,463 / 6974 MD/TVD, 1875 FNL, 460 FWL Sec 11
17676.21	6972.82	1648.29	-11238.01	40.32877343	-104.86677929	PBTD: 17,676 / 6973 MD/TVD, 1883 FNL, 246 FWL Sec 11
17687.00	6972.76	1648.26	-11248.80	40.32877335	-104.86681799	5.5" Csg: 17,687 / 6973 MD/TVD, 1883 FNL, 236 FWL Sec 11
17687.00	6972.76	1648.26	-11248.80	40.32877335	-104.86681799	BHL: 17,687 / 6973 MD/TVD, 1883 FNL, 236 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	1598.00	1597.53	26.06	-18.48
8.500	1598.00	1597.53	26.06	-18.48	17687.00	6972.76	1648.26	-11248.80

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	1598.00	1597.53	26.06	-18.48
5 1/2in Casing	0.00	0.00	0.00	0.00	17687.00	6972.76	1648.26	-11248.80

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
637100	As Drilled - 20191024	17687.00	6972.76	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 278.34 degrees
Bottom hole distance is 11368.92 Feet on azimuth 278.34 degrees from Wellhead
Survey calculation uses Minimum Curvature method