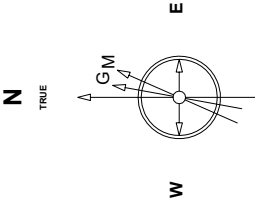


Great Western Operating Company, LLC

Location	Colorado	Slot	E-18 - B-Farm LD 18-389HN
Field	Wattenburg	Well	B-Farm LD 18-389HN
Installation	B-Farm	Wellbore	B-Farm LD 18-389HN (AWB)

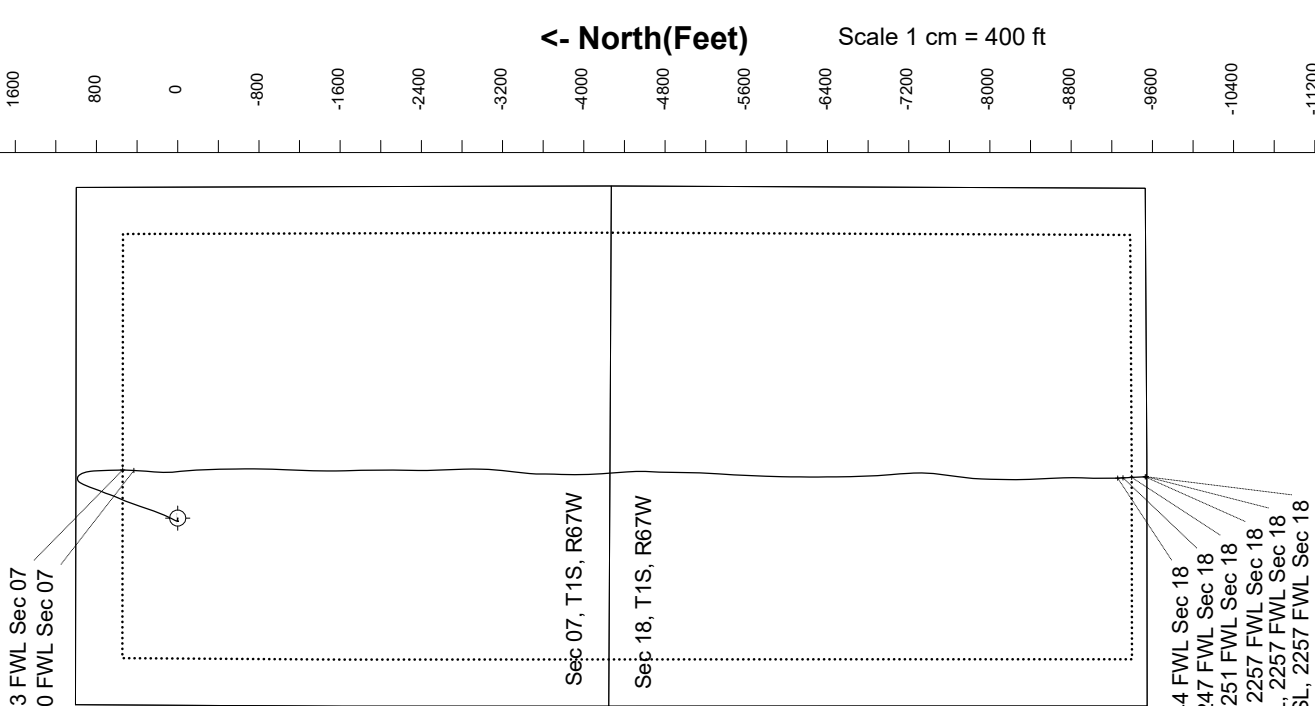
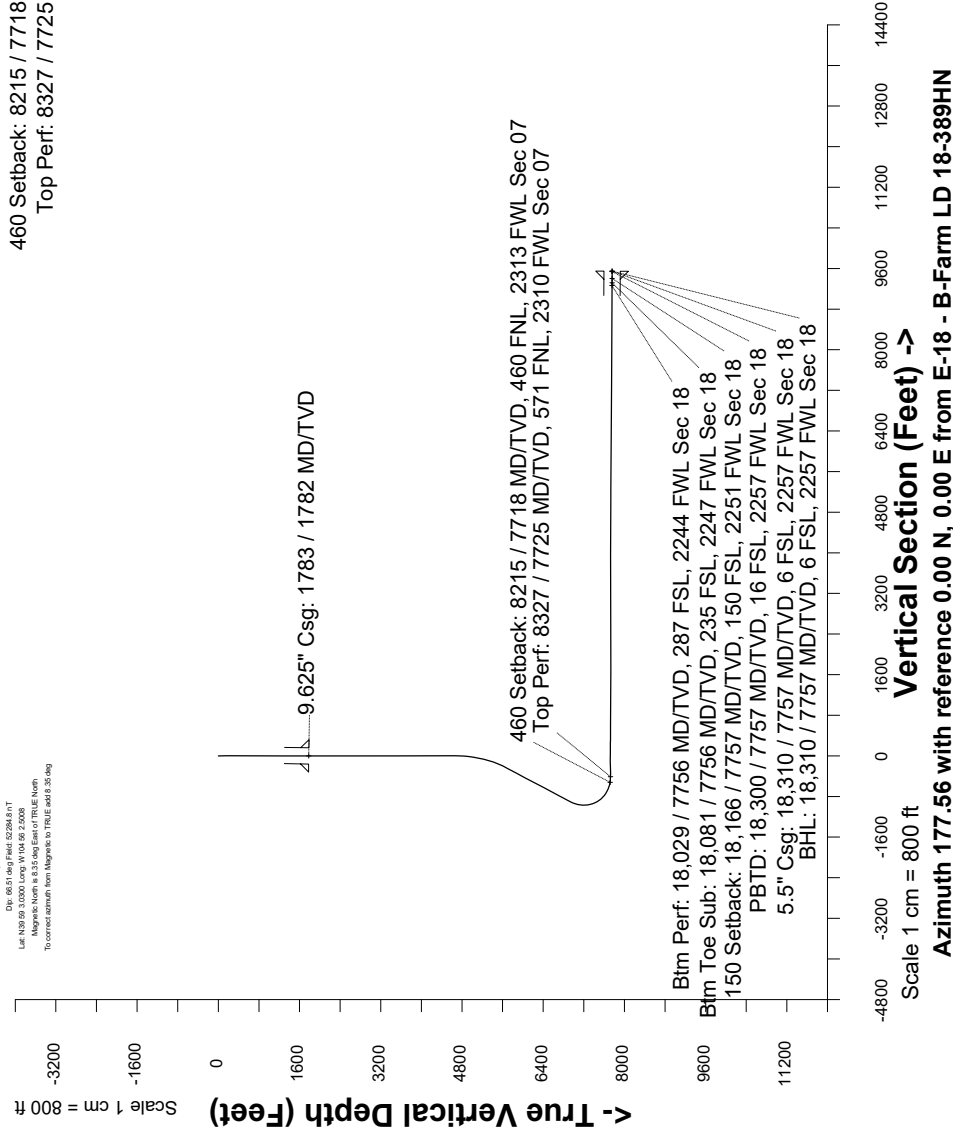
Created by	admin
Date plotted	4-Jun-2019
Plot reference is B-Farm LD 18-389HN (AWB).	
Ref wellpath is B-Farm LD 18-389HN (AWP#1).	
Coordinates are in Feet reference E-18 - B-Farm LD 18-389HN.	
True Vertical Depths are reference Rig Datum.	
Measured Depths are reference Rig Datum.	
Rig Datum: Actual Datum #1	
Rig Datum to Mean Sea Level: 5144.50 ft.	
Plot North is aligned to TRUE North.	



Scale 1 cm = 400 ft

East (Feet) ->

Step-5-2016
Dip: 48.51 deg / Field: 02264.6 m/T
Lat: N29.09 / 33000 Long: W104.09 / 22000 UTM North
To convert azimuth from Magnetic to TRUE add 0.35 deg



Great Western Operating Co, LLC
Directional Survey Report
Wellpath: B-Farm LD 18-389HN
MDs and TVDs are from Rig Floor 5144.5ft above Mean Sea Level

Wellbore Information

Date Created	Date Revised	API #	RKB above GL	Well Name
Mar-11-2019	Jun-4-2019	05-001-10262	20.00	B-Farm LD 18-389HN

Slot Coordinates

Latitude	Longitude
39.98359900	-104.93367200

Pad Information

Pad Name	Ground Elev.
B-Farm	5124.50

Field

Name
Wattenburg

Wellpath Report

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
0.00	0.00	0.000	0.00	0.00	0.00		0.00	39.98359900	-104.93367200
20.00	0.00	154.110	20.00	0.00	0.00	==>	0.00	39.98359900	-104.93367200
161.00	0.92	154.110	160.99	-1.02	0.49	0.65	1.04	39.98359620	-104.93367024
246.00	0.31	295.350	245.99	-1.53	0.58	1.39	1.56	39.98359479	-104.93366991
306.00	0.83	302.380	305.99	-1.23	0.07	0.87	1.23	39.98359562	-104.93367175
396.00	2.33	302.640	395.95	0.10	-2.02	1.67	-0.19	39.98359929	-104.93367921
486.00	2.81	288.140	485.86	1.78	-5.66	0.89	-2.02	39.98360388	-104.93369219
576.00	2.07	264.850	575.78	2.32	-9.37	1.36	-2.72	39.98360537	-104.93370545
666.00	1.71	242.260	665.73	1.55	-12.18	0.91	-2.07	39.98360325	-104.93371547
756.00	1.45	219.060	755.70	0.04	-14.09	0.76	-0.64	39.98359911	-104.93372227
846.00	0.26	289.810	845.69	-0.78	-15.00	1.54	0.14	39.98359687	-104.93372551
936.00	0.75	318.290	935.69	-0.27	-15.58	0.60	-0.40	39.98359827	-104.93372760
1026.00	1.45	301.320	1025.67	0.76	-16.94	0.85	-1.49	39.98360110	-104.93373247
1116.00	2.02	282.430	1115.63	1.70	-19.47	0.89	-2.53	39.98360366	-104.93374147
1206.00	2.72	279.000	1205.55	2.37	-23.12	0.79	-3.36	39.98360551	-104.93375452
1296.00	2.46	250.260	1295.46	2.05	-27.05	1.46	-3.21	39.98360464	-104.93376854
1386.00	1.23	188.210	1385.42	0.45	-29.01	2.42	-1.68	39.98360022	-104.93377552
1476.00	1.19	198.930	1475.40	-1.39	-29.45	0.26	0.14	39.98359517	-104.93377709
1566.00	1.01	246.660	1565.39	-2.59	-30.48	1.01	1.29	39.98359188	-104.93378077
1656.00	0.66	25.260	1655.38	-2.44	-30.99	1.74	1.11	39.98359231	-104.93378258
1732.00	1.01	33.260	1731.37	-1.48	-30.43	0.48	0.18	39.98359493	-104.93378060
1783.00	1.31	41.430	1782.36	-0.67	-29.80	0.68	-0.60	39.98359717	-104.93377834
1797.00	1.40	43.040	1796.36	-0.42	-29.58	0.68	-0.84	39.98359784	-104.93377755
1886.00	0.13	293.850	1885.35	0.41	-28.93	1.63	-1.65	39.98360013	-104.93377523
1976.00	0.58	276.370	1975.35	0.50	-29.47	0.51	-1.76	39.98360039	-104.93377718
2066.00	0.10	314.500	2065.35	0.61	-29.98	0.56	-1.89	39.98360068	-104.93377899
2155.00	0.11	169.420	2154.35	0.58	-30.02	0.23	-1.86	39.98360059	-104.93377914
2245.00	0.15	74.560	2244.35	0.53	-29.89	0.21	-1.80	39.98360045	-104.93377867
2335.00	0.32	256.140	2334.35	0.50	-30.02	0.52	-1.78	39.98360037	-104.93377914
2425.00	0.13	73.590	2424.35	0.47	-30.17	0.50	-1.75	39.98360028	-104.93377966
2514.00	0.07	79.670	2513.35	0.51	-30.02	0.07	-1.79	39.98360039	-104.93377912
2604.00	0.17	179.010	2603.35	0.38	-29.96	0.22	-1.66	39.98360005	-104.93377892
2694.00	0.07	327.880	2693.35	0.29	-29.99	0.26	-1.57	39.98359981	-104.93377902
2783.00	0.06	266.270	2782.35	0.34	-30.07	0.08	-1.62	39.98359993	-104.93377929
2873.00	0.07	216.840	2872.35	0.29	-30.15	0.06	-1.58	39.98359980	-104.93377957
2963.00	0.14	93.370	2962.35	0.24	-30.07	0.21	-1.52	39.98359966	-104.93377930
3052.00	0.36	249.280	3051.34	0.14	-30.22	0.55	-1.42	39.98359937	-104.93377985
3142.00	0.34	158.750	3141.34	-0.21	-30.39	0.55	-1.08	39.98359841	-104.93378044
3232.00	0.04	250.530	3231.34	-0.47	-30.32	0.38	-0.82	39.98359770	-104.93378020
3322.00	0.07	68.990	3321.34	-0.46	-30.30	0.12	-0.83	39.98359773	-104.93378013
3411.00	0.07	97.690	3410.34	-0.45	-30.20	0.04	-0.84	39.98359776	-104.93377975
3501.00	0.07	323.210	3500.34	-0.42	-30.17	0.14	-0.87	39.98359786	-104.93377968
3591.00	0.13	13.910	3590.34	-0.27	-30.18	0.11	-1.02	39.98359825	-104.93377971
3680.00	0.28	224.090	3679.34	-0.33	-30.31	0.45	-0.96	39.98359809	-104.93378016
3770.00	0.11	61.780	3769.34	-0.45	-30.39	0.43	-0.85	39.98359777	-104.93378043
3860.00	0.18	169.360	3859.34	-0.55	-30.28	0.26	-0.75	39.98359750	-104.93378007
3950.00	0.11	153.750	3949.34	-0.76	-30.22	0.09	-0.53	39.98359691	-104.93377984
4040.00	0.37	182.900	4039.34	-1.13	-30.20	0.31	-0.16	39.98359590	-104.93377976
4129.00	0.03	39.250	4128.34	-1.40	-30.20	0.44	0.11	39.98359516	-104.93377975
4219.00	0.12	230.940	4218.34	-1.44	-30.25	0.17	0.15	39.98359505	-104.93377996
4309.00	0.19	226.250	4308.34	-1.60	-30.44	0.08	0.30	39.98359460	-104.93378061
4399.00	0.40	236.280	4398.34	-1.88	-30.80	0.24	0.56	39.98359384	-104.93378193
4488.00	0.57	259.270	4487.34	-2.13	-31.50	0.29	0.79	39.98359314	-104.93378440
4578.00	0.24	234.750	4577.33	-2.33	-32.09	0.41	0.96	39.98359261	-104.93378652
4668.00	0.36	191.030	4667.33	-2.71	-32.30	0.28	1.33	39.98359155	-104.93378726
4757.00	2.09	14.070	4756.32	-1.41	-31.96	2.75	0.05	39.98359512	-104.93378604
4847.00	4.60	10.230	4846.15	3.73	-30.92	2.80	-5.05	39.98360924	-104.93378233
4937.00	7.70	20.620	4935.63	12.93	-28.15	3.65	-14.12	39.98363449	-104.93377247
5026.00	10.47	25.910	5023.51	25.79	-22.52	3.25	-26.72	39.98366978	-104.93375236
5116.00	12.33	25.410	5111.73	41.82	-14.82	2.07	-42.42	39.98371381	-104.93372489
5206.00	14.08	23.670	5199.34	60.53	-6.30	1.99	-60.74	39.98376516	-104.93369449
5296.00	16.66	25.540	5286.12	82.20	3.66	2.92	-81.97	39.98382465	-104.93365895
5385.00	19.85	27.390	5370.63	107.13	16.11	3.64	-106.35	39.98389310	-104.93361451
5475.00	22.75	27.330	5454.47	136.17	31.13	3.22	-134.72	39.98397279	-104.93356090
5565.00	25.42	21.280	5536.64	169.64	46.14	4.04	-167.52	39.98406467	-104.93350735
5655.00	28.53	17.620	5616.85	208.13	59.66	3.92	-205.40	39.98417035	-104.93345910
5744.00	30.08	19.710	5694.46	249.39	73.62	2.09	-246.03	39.98428360	-104.93340930
5834.00	30.03	21.490	5772.36	291.58	89.47	0.99	-287.50	39.98439941	-104.93335271
5924.00	29.99	19.560	5850.29	333.73	105.25	1.07	-328.94	39.98451512	-104.93329640
6014.00	29.81	18.320	5928.31	376.16	119.82	0.72	-370.71	39.98463160	-104.93324443
6103.00	30.04	16.710	6005.45	418.50	133.18	0.94	-412.44	39.98474782	-104.93319676

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
6193.00	29.51	18.120	6083.57	461.14	146.55	0.98	-454.48	39.98486488	-104.93314904
6283.00	30.08	21.100	6161.68	503.26	161.56	1.76	-495.91	39.98498048	-104.93309546
6373.00	29.47	25.280	6239.80	544.32	179.14	2.40	-536.19	39.98509321	-104.93303274
6462.00	30.21	25.440	6317.00	584.34	198.10	0.84	-575.36	39.98520306	-104.93296505
6552.00	30.16	21.340	6394.81	625.85	216.06	2.29	-616.07	39.98531701	-104.93290097
6642.00	30.16	18.100	6472.63	668.40	231.31	1.81	-657.93	39.98543382	-104.93284654
6731.00	29.63	20.370	6549.79	710.28	245.92	1.40	-699.15	39.98554878	-104.93279442
6821.00	30.09	22.760	6627.84	751.94	262.39	1.42	-740.07	39.98566314	-104.93273563
6911.00	30.21	20.580	6705.67	793.94	279.08	1.22	-781.32	39.98577845	-104.93267608
7000.00	30.25	19.730	6782.57	836.01	294.52	0.48	-822.69	39.98589392	-104.93262098
7090.00	30.02	22.470	6860.41	878.15	310.78	1.55	-864.10	39.98600961	-104.93256296
7180.00	30.11	22.900	6938.30	919.75	328.17	0.26	-904.92	39.98612380	-104.93250090
7270.00	23.38	29.350	7018.64	956.16	345.73	8.13	-940.55	39.98622375	-104.93243823
7359.00	15.82	51.630	7102.54	979.15	363.94	11.81	-962.74	39.98628685	-104.93237322
7449.00	12.25	83.960	7189.97	987.79	383.09	9.41	-970.55	39.98631056	-104.93230489
7539.00	15.49	113.920	7277.44	983.91	403.60	8.63	-965.81	39.98629992	-104.93223169
7628.00	21.51	138.680	7361.93	966.80	425.29	10.98	-947.78	39.98625294	-104.93215428
7718.00	29.01	160.370	7443.44	933.73	443.58	13.12	-913.97	39.98616218	-104.93208902
7808.00	38.40	169.170	7518.27	885.59	456.20	11.74	-865.33	39.98603001	-104.93204399
7897.00	47.90	175.630	7583.16	825.35	463.93	11.76	-804.82	39.98586465	-104.93201640
7987.00	57.33	177.580	7637.75	754.05	468.09	10.62	-733.40	39.98566892	-104.93200158
8077.00	66.72	178.150	7679.92	674.71	471.03	10.45	-654.01	39.98545112	-104.93199110
8166.00	75.82	178.980	7708.47	590.53	473.12	10.26	-569.82	39.98522006	-104.93198364
8215.15	80.93	180.430	7718.37	542.41	473.36	10.80	-521.73	39.98508796	-104.93198278
8256.00	85.19	181.610	7723.30	501.88	472.64	10.80	-481.27	39.98497668	-104.93198537
8301.00	89.88	183.110	7725.23	456.97	470.78	10.94	-436.48	39.98485341	-104.93199198
8327.00	89.97	183.270	7725.27	431.01	469.34	0.69	-410.61	39.98478215	-104.93199714
8346.00	90.03	183.380	7725.27	412.04	468.24	0.69	-391.70	39.98473008	-104.93200107
8436.00	90.71	183.750	7724.69	322.22	462.64	0.86	-302.20	39.98448351	-104.93202105
8525.00	90.00	185.070	7724.14	233.49	455.80	1.68	-213.84	39.98423993	-104.93204548
8615.00	90.15	182.200	7724.02	143.68	450.09	3.19	-124.35	39.98399339	-104.93206584
8705.00	89.97	176.310	7723.92	53.72	451.26	6.55	-34.43	39.98374647	-104.93206167
8794.00	90.03	173.590	7723.92	-34.92	459.10	3.06	54.47	39.98350312	-104.93203373
8884.00	89.97	173.970	7723.92	-124.39	468.85	0.43	144.27	39.98325752	-104.93199893
8974.00	89.48	177.560	7724.36	-214.13	475.49	4.03	234.21	39.98301118	-104.93197523
9063.00	89.78	179.210	7724.93	-303.09	478.00	1.88	323.20	39.98276697	-104.93196628
9153.00	89.51	178.530	7725.49	-393.07	479.77	0.81	413.17	39.98251997	-104.93195996
9243.00	89.69	178.770	7726.12	-483.04	481.89	0.33	503.15	39.98227299	-104.93195240
9332.00	89.29	178.820	7726.91	-572.02	483.77	0.45	592.13	39.98202874	-104.93194572
9422.00	89.48	179.570	7727.88	-662.01	485.03	0.86	682.08	39.98178172	-104.93194122
9512.00	89.51	180.950	7728.67	-752.00	484.62	1.53	771.98	39.98153468	-104.93194268
9602.00	89.51	181.150	7729.44	-841.98	482.97	0.22	861.81	39.98128767	-104.93194857
9691.00	89.57	180.970	7730.15	-930.96	481.33	0.21	950.64	39.98104341	-104.93195445
9781.00	89.66	182.400	7730.76	-1020.92	478.68	1.59	1040.40	39.98079647	-104.93196390
9871.00	89.72	182.690	7731.24	-1110.83	474.68	0.33	1130.06	39.98054965	-104.93197817
9960.00	89.85	181.880	7731.58	-1199.76	471.14	0.92	1218.75	39.98030554	-104.93199084
10050.00	89.75	181.860	7731.89	-1289.71	468.20	0.11	1308.50	39.98005861	-104.93200132
10140.00	89.78	181.210	7732.26	-1379.67	465.79	0.72	1398.28	39.97981165	-104.93200993
10230.00	90.15	180.310	7732.32	-1469.67	464.59	1.08	1488.14	39.97956461	-104.93201420
10319.00	90.15	179.270	7732.08	-1558.66	464.92	1.17	1577.07	39.97932031	-104.93201304
10409.00	90.28	178.400	7731.75	-1648.64	466.75	0.98	1667.05	39.97907330	-104.93200652
10499.00	90.28	178.750	7731.31	-1738.61	468.99	0.39	1757.03	39.97882632	-104.93199854
10588.00	90.18	178.970	7730.95	-1827.60	470.76	0.27	1846.01	39.97858206	-104.93199222
10678.00	90.06	179.010	7730.76	-1917.58	472.35	0.14	1935.98	39.97833504	-104.93198657
10768.00	90.03	179.820	7730.69	-2007.58	473.26	0.90	2025.93	39.97808800	-104.93198330
10858.00	90.12	180.340	7730.57	-2097.58	473.14	0.59	2115.84	39.97784094	-104.93198375
10947.00	90.22	180.590	7730.31	-2186.57	472.42	0.30	2204.73	39.97759663	-104.93198633
11037.00	90.25	181.160	7729.94	-2276.56	471.04	0.63	2294.57	39.97734961	-104.93199124
11127.00	90.34	181.060	7729.48	-2366.54	469.30	0.15	2384.40	39.97710260	-104.93199747
11217.00	90.03	178.910	7729.19	-2456.54	469.32	2.41	2474.31	39.97685555	-104.93199739
11306.00	90.00	177.880	7729.16	-2545.50	471.82	1.16	2563.30	39.97661134	-104.93198850
11396.00	89.97	176.970	7729.19	-2635.41	475.86	1.01	2653.30	39.97636453	-104.93197408
11486.00	90.03	178.470	7729.19	-2725.33	479.44	1.67	2743.30	39.97611768	-104.93196131
11575.00	90.15	178.590	7729.05	-2814.31	481.72	0.19	2832.29	39.97587344	-104.93195317
11665.00	89.82	179.580	7729.07	-2904.29	483.16	1.16	2922.25	39.97562642	-104.93194805
11755.00	89.88	182.440	7729.30	-2994.27	481.57	3.18	3012.08	39.97537942	-104.93195372
11844.00	89.88	183.170	7729.49	-3083.16	477.22	0.82	3100.71	39.97513541	-104.93196926
11934.00	89.97	184.520	7729.61	-3172.96	471.18	1.50	3190.16	39.97488891	-104.93199080
12024.00	89.94	186.570	7729.68	-3262.53	462.49	2.28	3279.28	39.97464302	-104.93202184
12113.00	89.94	188.180	7729.77	-3350.79	451.06	1.81	3366.98	39.97440074	-104.93206260
12203.00	90.12	185.470	7729.73	-3440.15	440.37	3.02	3455.79	39.97415545	-104.93210077
12293.00	89.88	181.300	7729.73	-3529.97	435.06	4.64	3545.31	39.97390888	-104.93211973
12383.00	89.75	180.110	7730.02	-3619.96	433.95	1.33	3635.17	39.97366184	-104.93212369
12472.00	89.75	181.120	7730.40	-3708.95	432.99	1.13	3724.04	39.97341755	-104.93212710
12562.00	90.22	181.940	7730.43	-3798.92	430.59	1.05	3813.82	39.97317058	-104.93213568
12652.00	90.37	180.780	7729.96	-3888.89	428.45	1.30	3903.62	39.97292360	-104.93214331
12742.00	90.31	179.290	7729.43	-3978.89	428.40	1.66	3993.54	39.97267655	-104.93214351
12831.00	90.15	177.280	7729.07	-4067.84	431.06	2.27	4082.52	39.97243236	-104.93213401
12921.00	90.09	176.470	7728.89	-4157.71	435.97	0.90	4172.52	39.97218567	-104.93211651
13011.00	90.22	176.110	7728.64	-4247.52	441.79	0.43	4262.49	39.97193913	-104.93209574
13101.00	90.09	175.760	7728.40	-4337.29	448.17	0.41	4352.46	39.97169270	-104.93207298
13190.00	89.85	175.690	7728.44	-4426.04	454.81	0.28	4441.41	39.97144906	-104.93204932
13280.00	89.60	177.860	7728.88	-4515.89	459.87	2.43	4531.40	39.97120241	-104.93203126
13370.00	89.60	181.380	7729.51	-4605.88	460.47	3.91	4621.32	39.97095540	-104.93202914
13459.00	89.69	183.240	7730.06	-4694.80	456.88	2.09	4710.01	39.97071130	-104.93204194
13549.00	89.82	182.590	7730.44	-4784.68	452.30	0.74	4799.61	39.97046457	-104.93205828
13639.00	89.85	181.610	7730.70	-4874.62	449.00	1.09	4889.33	39.97021768	-104.93207005
13729.00	89.78	179.170	7730.99	-4964.61	448.39	2.71	4979.21	39.96997065	-104.93207224
13818.00	89.51	181.010	7731.54	-5053.60	448.25	2.09	5068.12	39.96972635	-104.93207274
13908.00	89.69	182.500	7732.17	-5143.56	445.50	1.67	5157.87	39.96947942	-104.93208258
13998.00	89.60	183.590	7732.73	-5233.43	440.72	1.22	5247.46	39.96923272	-104.93209964
14087.00	89.78	183.250	7733.21	-5322.27	435.41	0.43	5335.99	39.96898884	-104.93211859
14177.00	89.88	183.110	7733.48	-5412.13	430.41	0.19	5425.56	39.96874216	-104.93213641
14267.00	89.75	183.340	7733.77	-5501.98	425.35	0.29	5515.12	39.96849550	-104.93215448

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
14357.00	89.78	182.580	7734.14	-5591.86	420.70	0.85	5604.72	39.96824877	-104.93217106
14446.00	89.75	182.540	7734.50	-5680.77	416.73	0.06	5693.38	39.96800470	-104.93218525
14536.00	89.57	182.040	7735.04	-5770.70	413.13	0.59	5783.07	39.96775785	-104.93219809
14626.00	89.45	181.450	7735.81	-5860.65	410.39	0.67	5872.82	39.96751091	-104.93220787
14715.00	89.57	181.410	7736.57	-5949.62	408.17	0.14	5961.62	39.96726669	-104.93221580
14805.00	89.45	180.920	7737.34	-6039.60	406.34	0.56	6051.43	39.96701969	-104.93222233
14895.00	89.45	180.210	7738.20	-6129.59	405.45	0.79	6141.31	39.96677265	-104.93222550
14985.00	89.78	180.260	7738.81	-6219.59	405.08	0.37	6231.20	39.96652560	-104.93222682
15074.00	89.75	179.660	7739.17	-6308.59	405.15	0.67	6320.13	39.96628129	-104.93222661
15164.00	89.51	179.770	7739.75	-6398.58	405.59	0.29	6410.06	39.96603424	-104.93222502
15254.00	89.48	179.750	7740.54	-6488.58	405.97	0.04	6499.99	39.96578719	-104.93222368
15343.00	89.42	178.930	7741.40	-6577.57	407.00	0.92	6588.94	39.96554291	-104.93222002
15433.00	89.51	178.370	7742.24	-6667.54	409.12	0.63	6678.92	39.96529593	-104.93221247
15523.00	89.66	177.970	7742.89	-6757.49	411.99	0.47	6768.91	39.96504900	-104.93220222
15613.00	89.48	176.690	7743.57	-6847.39	416.18	1.44	6858.91	39.96480222	-104.93218727
15702.00	89.48	176.180	7744.37	-6936.21	421.72	0.57	6947.89	39.96455839	-104.93216753
15792.00	89.51	175.350	7745.17	-7025.96	428.36	0.92	7037.84	39.96431202	-104.93214383
15882.00	89.57	175.570	7745.89	-7115.68	435.49	0.25	7127.78	39.96406574	-104.93211842
15971.00	89.48	177.690	7746.63	-7204.52	440.72	2.38	7216.76	39.96382187	-104.93209976
16061.00	89.54	178.280	7747.40	-7294.46	443.88	0.66	7306.75	39.96357498	-104.93208848
16151.00	89.66	182.650	7748.03	-7384.43	443.15	4.86	7396.61	39.96332799	-104.93209109
16241.00	89.66	185.720	7748.56	-7474.18	436.58	3.41	7486.00	39.96308163	-104.93211452
16330.00	89.69	187.710	7749.07	-7562.56	426.18	2.24	7573.85	39.96283901	-104.93215165
16420.00	89.66	189.200	7749.58	-7651.58	412.95	1.66	7662.23	39.96259464	-104.93219886
16510.00	89.60	187.330	7750.16	-7740.64	400.01	2.08	7750.65	39.96235017	-104.93224502
16600.00	89.60	184.070	7750.79	-7830.18	391.07	3.62	7839.73	39.96210437	-104.93227691
16689.00	89.97	182.190	7751.12	-7919.04	386.21	2.15	7928.31	39.96186043	-104.93229425
16779.00	89.88	182.050	7751.24	-8008.98	382.88	0.18	8018.02	39.96161354	-104.93230613
16869.00	89.88	180.790	7751.43	-8098.95	380.65	1.40	8107.82	39.96136656	-104.93231409
16959.00	89.75	180.150	7751.72	-8188.95	379.91	0.73	8197.70	39.96111952	-104.93231673
17048.00	89.91	179.660	7751.98	-8277.95	380.06	0.58	8286.62	39.96087520	-104.93231620
17138.00	89.85	178.930	7752.17	-8367.94	381.17	0.81	8376.58	39.96062817	-104.93231226
17228.00	89.88	176.940	7752.38	-8457.87	384.41	2.21	8466.57	39.96038128	-104.93230070
17318.00	89.69	176.750	7752.72	-8547.74	389.37	0.30	8556.57	39.96013460	-104.93228303
17407.00	89.72	177.130	7753.18	-8636.61	394.12	0.43	8645.56	39.95989063	-104.93226609
17497.00	89.82	178.720	7753.54	-8726.55	397.37	1.77	8735.55	39.95964375	-104.93225447
17587.00	89.78	180.180	7753.85	-8816.54	398.24	1.62	8825.50	39.95939671	-104.93225139
17676.00	89.75	181.980	7754.22	-8905.52	396.56	2.02	8914.33	39.95915245	-104.93225738
17766.00	89.72	181.520	7754.63	-8995.48	393.81	0.51	9004.09	39.95890551	-104.93226719
17856.00	89.75	180.000	7755.05	-9085.46	392.62	1.69	9093.94	39.95865848	-104.93227145
17946.00	89.72	180.060	7755.47	-9175.46	392.57	0.07	9183.86	39.95841142	-104.93227163
18029.00	89.66	177.770	7755.91	-9258.44	394.15	2.76	9266.83	39.95818364	-104.93226602
18035.00	89.66	177.600	7755.95	-9264.44	394.39	2.76	9272.83	39.95816718	-104.93226515
18080.61	89.69	177.170	7756.21	-9310.00	396.47	0.95	9318.44	39.95804211	-104.93225773
18125.00	89.72	176.750	7756.44	-9354.33	398.82	0.95	9362.82	39.95792043	-104.93224933
18166.07	89.71	177.010	7756.64	-9395.33	401.06	0.63	9403.89	39.95780786	-104.93224136
18215.00	89.69	177.320	7756.90	-9444.20	403.48	0.63	9452.82	39.95767370	-104.93223273
18286.00	89.69	178.100	7757.28	-9515.14	406.32	1.10	9523.82	39.95747896	-104.93222262
18300.15	89.69	178.100	7757.36	-9529.29	406.79	==>	9537.97	39.95744014	-104.93222094
18310.00	89.69	178.100	7757.41	-9539.13	407.11	==>	9547.81	39.95741312	-104.93221978

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
1783.00	1782.36	-0.67	-29.80	39.98359717	-104.93377834	9.625" Csg: 1783 / 1782 MD/TVD
8215.15	7718.37	542.41	473.36	39.98508796	-104.93198278	460 Setback: 8215 / 7718 MD/TVD, 460 FNL, 2313 FWL Sec 07
8327.00	7725.27	431.01	469.34	39.98478215	-104.93199714	Top Perf: 8327 / 7725 MD/TVD, 571 FNL, 2310 FWL Sec 07
18029.00	7755.91	-9258.44	394.15	39.95818364	-104.93226602	Btm Perf: 18,029 / 7756 MD/TVD, 287 FSL, 2244 FWL Sec 18
18080.61	7756.21	-9310.00	396.47	39.95804211	-104.93225773	Btm Toe Sub: 18,081 / 7756 MD/TVD, 235 FSL, 2247 FWL Sec 18
18166.07	7756.64	-9395.33	401.06	39.95780786	-104.93224136	150 Setback: 18,166 / 7757 MD/TVD, 150 FSL, 2251 FWL Sec 18
18300.15	7757.36	-9529.29	406.79	39.95744014	-104.93222094	PBTD: 18,300 / 7757 MD/TVD, 16 FSL, 2257 FWL Sec 18
18310.00	7757.41	-9539.13	407.11	39.95741312	-104.93221978	5.5" Csg: 18,310 / 7757 MD/TVD, 6 FSL, 2257 FWL Sec 18
18310.00	7757.41	-9539.13	407.11	39.95741312	-104.93221978	BHL: 18,310 / 7757 MD/TVD, 6 FSL, 2257 FWL Sec 18

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	1783.00	1782.36	-0.67	-29.80
8.500	1783.00	1782.36	-0.67	-29.80	18310.00	7757.41	-9539.13	407.11

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	1783.00	1782.36	-0.67	-29.80
5 1/2in Casing	0.00	0.00	0.00	0.00	18310.00	7757.41	-9539.13	407.11

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
534650	As Drilled - 20190312	18310.00	7757.41	MWD

Coordinates are from Slot
MD's and TVD's are from Rig Floor 5144.5ft above Mean Sea Level
Vertical Section is from 0.00 0.00 on azimuth 177.560 degrees
Bottom hole distance is 9547.81 Feet on azimuth 177.56 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Great Western Operating Co.
Date Printed: