

Great Western Operating Company, LLC

Location

Field

Installation

Colorado

Wattenburg

Schneider North

Slot

Well

Wellbore

Slot 17 - Schneider HD 11-222HN

Schneider HD 11-222HN

Schneider HD 11-222HN (AWB)

Created by

Date plotted

mmount

11-Oct-2019

Plot reference is

Ref wellpath is

Schneider HD 11-222HN (AWB).

Schneider HD 11-222HN (AWP#1).

Coordinates are in Feet

True Vertical Depths are reference

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.

East (Feet) ->

Scale 1 cm = 400 ft

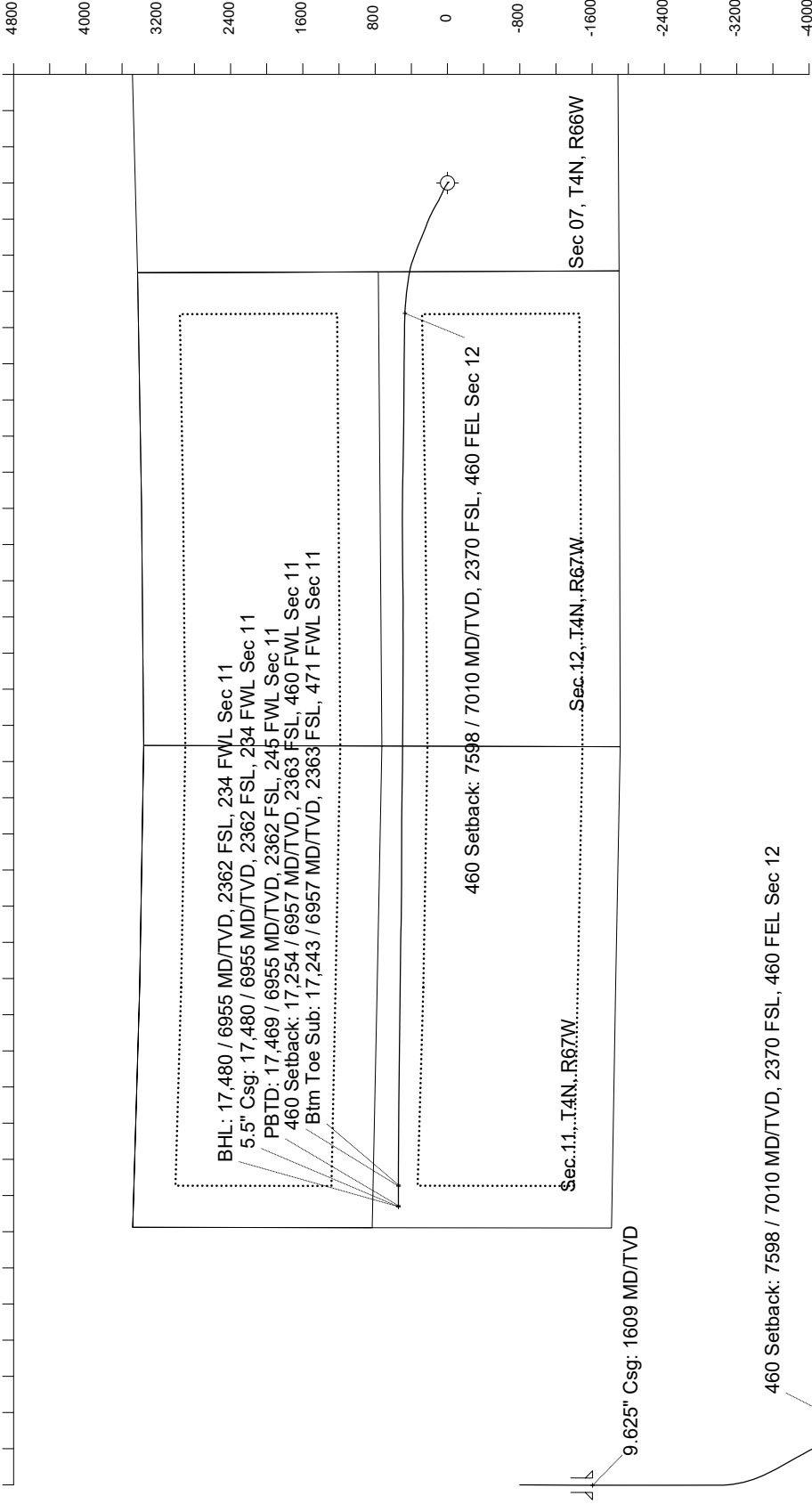
May-14-2018  
EIMM-2015.Dwg: 08.7 deg Field: 52300.9 nT  
Lat: N40 19.27 8796 Long: W 104.40 34.3884 Elev: 4735.00 ft  
Magnetic North is 9.35 deg East of TRUE North  
To correct azimuth from Magnetic to TRUE add 8.35 deg

<- True Vertical Depth (Feet)

Scale 1 cm = 800 ft

<- North(Feet)

Scale 1 cm = 400 ft



Btm Toe Sub: 17,243 / 6957 MD/TV, 2363 FSL, 471 FWL Sec 11  
460 Setback: 17,254 / 6957 MD/TV, 2363 FSL, 460 FWL Sec 11  
PBTD: 17,469 / 6955 MD/TV, 2362 FSL, 245 FWL Sec 11  
5.5" Csg: 17,480 / 6955 MD/TV, 2362 FSL, 234 FWL Sec 11  
BHL: 17,480 / 6955 MD/TV, 2362 FSL, 234 FWL Sec 11

Vertical Section (Feet) ->

Scale 1 cm = 800 ft

Azimuth 272.75 with reference 0.00 N, 0.00 E from Slot 17 - Schneider HD 11-222HN

Great Western Operating Co, LLC  
Directional Survey Report  
Wellpath: Schneider HD 11-222HN  
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-11-2019	Oct-11-2019	05-123-46405	20.00	Schneider HD 11-222HN

**Slot Coordinates**

Latitude	Longitude
40.32441000	-104.82622100

**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	40.32441000	-104.82622100
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32441000	-104.82622100
96.00	0.26	27.51	96.00	0.17	0.09	0.32	-0.08	40.32441045	-104.82622069
186.00	0.22	157.24	186.00	0.19	0.25	0.48	-0.24	40.32441051	-104.82622011
273.00	0.66	164.80	273.00	-0.45	0.44	0.51	-0.46	40.32440876	-104.82621941
366.00	0.97	145.99	365.99	-1.62	1.02	0.44	-1.10	40.32440555	-104.82621733
455.00	0.88	142.30	454.98	-2.79	1.86	0.12	-1.99	40.32440235	-104.82621432
545.00	0.75	135.44	544.97	-3.75	2.70	0.18	-2.88	40.32439970	-104.82621132
635.00	0.48	127.00	634.96	-4.40	3.41	0.32	-3.62	40.32439793	-104.82620876
725.00	0.44	132.37	724.96	-4.86	3.97	0.07	-4.20	40.32439666	-104.82620676
815.00	0.40	136.41	814.96	-5.32	4.44	0.06	-4.69	40.32439540	-104.82620507
905.00	0.44	133.95	904.95	-5.79	4.91	0.05	-5.18	40.32439412	-104.82620340
995.00	0.44	152.14	994.95	-6.33	5.32	0.15	-5.61	40.32439262	-104.82620193
1085.00	0.83	147.57	1084.95	-7.19	5.83	0.44	-6.17	40.32439027	-104.82620010
1175.00	0.79	156.54	1174.94	-8.31	6.43	0.15	-6.82	40.32438720	-104.82619796
1265.00	0.83	163.65	1264.93	-9.50	6.86	0.12	-7.30	40.32438392	-104.82619641
1355.00	0.44	116.28	1354.92	-10.28	7.35	0.69	-7.83	40.32438178	-104.82619464
1445.00	0.88	132.19	1444.92	-10.90	8.17	0.53	-8.68	40.32438009	-104.82619170
1535.00	0.44	177.01	1534.91	-11.71	8.70	0.72	-9.25	40.32437787	-104.82618980
1560.00	0.31	189.23	1559.91	-11.87	8.70	0.61	-9.25	40.32437742	-104.82618982
1628.00	0.43	154.76	1627.91	-12.28	8.77	0.36	-9.35	40.32437629	-104.82618953
1807.00	0.09	264.71	1806.91	-12.90	8.92	0.26	-9.53	40.32437459	-104.82618901
1897.00	0.10	44.54	1896.91	-12.85	8.91	0.20	-9.51	40.32437472	-104.82618906
1987.00	0.03	226.35	1986.91	-12.81	8.94	0.14	-9.55	40.32437483	-104.82618892
2076.00	0.13	305.48	2075.91	-12.77	8.84	0.14	-9.45	40.32437495	-104.82618928
2166.00	0.14	214.70	2165.91	-12.80	8.70	0.21	-9.30	40.32437486	-104.82618980
2256.00	0.10	197.84	2255.91	-12.97	8.61	0.06	-9.22	40.32437441	-104.82619011
2346.00	0.10	337.99	2345.91	-12.97	8.56	0.21	-9.17	40.32437440	-104.82619031
2435.00	0.13	111.81	2434.91	-12.93	8.62	0.24	-9.23	40.32437450	-104.82619007
2525.00	0.15	31.71	2524.91	-12.87	8.78	0.20	-9.39	40.32437467	-104.82618951
2615.00	0.06	344.70	2614.91	-12.73	8.83	0.13	-9.43	40.32437507	-104.82618933
2704.00	0.03	147.73	2703.91	-12.70	8.83	0.10	-9.43	40.32437514	-104.82618933
2794.00	0.08	13.44	2793.91	-12.66	8.86	0.11	-9.45	40.32437525	-104.82618924
2884.00	0.04	39.03	2883.91	-12.57	8.89	0.05	-9.48	40.32437549	-104.82618911
2973.00	0.08	242.87	2972.91	-12.58	8.86	0.13	-9.45	40.32437547	-104.82618924
3063.00	0.11	282.26	3062.91	-12.59	8.72	0.08	-9.31	40.32437545	-104.82618974
3153.00	0.10	245.57	3152.91	-12.60	8.56	0.07	-9.15	40.32437541	-104.82619030
3242.00	0.11	30.98	3241.91	-12.56	8.53	0.23	-9.12	40.32437552	-104.82619040
3332.00	0.05	323.99	3331.91	-12.46	8.55	0.11	-9.14	40.32437581	-104.82619032
3422.00	0.07	174.60	3421.91	-12.48	8.54	0.13	-9.12	40.32437575	-104.82619039
3511.00	0.06	86.49	3510.91	-12.53	8.59	0.10	-9.18	40.32437561	-104.82619020
3601.00	0.11	277.40	3600.91	-12.52	8.55	0.19	-9.14	40.32437565	-104.82619034
3691.00	0.14	102.91	3690.91	-12.53	8.57	0.28	-9.16	40.32437561	-104.82619026
3781.00	0.12	312.84	3780.91	-12.49	8.61	0.28	-9.20	40.32437572	-104.82619013
3870.00	0.07	209.81	3869.90	-12.47	8.51	0.17	-9.10	40.32437576	-104.82619047
3960.00	0.12	8.54	3959.90	-12.43	8.50	0.21	-9.09	40.32437589	-104.82619052
4050.00	0.11	176.27	4049.90	-12.42	8.52	0.25	-9.11	40.32437591	-104.82619045
4139.00	0.10	288.93	4138.90	-12.48	8.45	0.20	-9.04	40.32437574	-104.82619069
4229.00	0.06	64.63	4228.90	-12.44	8.42	0.17	-9.01	40.32437587	-104.82619080
4319.00	0.12	13.01	4318.90	-12.32	8.48	0.11	-9.06	40.32437617	-104.82619057
4408.00	0.17	274.66	4407.90	-12.22	8.37	0.25	-8.95	40.32437645	-104.82619097
4498.00	3.11	320.56	4497.86	-10.33	6.69	3.33	-7.18	40.32438166	-104.82619701
4588.00	6.08	310.86	4587.56	-5.32	1.53	3.40	-1.78	40.32439540	-104.82621551
4678.00	8.15	303.61	4676.86	1.33	-7.39	2.50	7.44	40.32441365	-104.82624749
4767.00	11.14	306.11	4764.60	9.89	-19.59	3.39	20.04	40.32443715	-104.82629126
4857.00	13.47	304.25	4852.52	20.92	-35.28	2.63	36.24	40.32446741	-104.82634753
4947.00	14.55	297.62	4939.85	32.06	-53.96	2.15	55.44	40.32449800	-104.82641453
5037.00	16.32	293.63	5026.60	42.37	-75.57	2.29	77.51	40.32452630	-104.82649201
5126.00	18.35	293.19	5111.56	52.90	-99.90	2.29	102.33	40.32455520	-104.82657929
5216.00	20.72	295.62	5196.37	65.36	-127.29	2.78	130.27	40.32458942	-104.82667750
5306.00	21.44	296.01	5280.35	79.46	-156.43	0.82	160.06	40.32462811	-104.82678200
5396.00	27.11	296.92	5362.36	95.97	-189.52	6.31	193.90	40.32467343	-104.82690069
5485.00	29.79	301.35	5440.61	116.66	-226.49	3.83	231.83	40.32473022	-104.82703329
5575.00	29.30	299.05	5518.91	138.99	-264.84	1.37	271.20	40.32479151	-104.82717082

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5665.00	29.75	297.02	5597.22	159.83	-303.98	1.22	311.30	40.32484871	-104.82731121
5754.00	30.58	295.55	5674.17	179.62	-344.08	1.25	352.30	40.32490304	-104.82745501
5844.00	31.07	295.86	5751.46	199.63	-385.63	0.57	394.76	40.32495795	-104.82760404
5934.00	30.81	290.16	5828.67	217.70	-428.18	3.27	438.13	40.32500757	-104.82775662
6024.00	30.39	290.26	5906.14	233.53	-471.17	0.47	481.83	40.32505101	-104.82791081
6113.00	30.29	291.17	5982.95	249.43	-513.22	0.53	524.59	40.32509466	-104.82806162
6203.00	30.02	292.61	6060.77	266.28	-555.17	0.86	567.30	40.32514091	-104.82821207
6293.00	30.49	293.78	6138.51	284.15	-596.85	0.84	609.79	40.32518994	-104.82836155
6382.00	30.88	292.94	6215.05	302.15	-638.54	0.65	652.30	40.32523936	-104.82851108
6472.00	29.91	292.11	6292.68	319.60	-680.60	1.17	695.15	40.32528726	-104.82866193
6562.00	30.59	290.61	6370.42	336.11	-722.83	1.13	738.11	40.32533256	-104.82881336
6652.00	29.96	289.56	6448.15	351.69	-765.44	0.91	781.42	40.32537534	-104.82896619
6741.00	30.26	289.54	6525.14	366.63	-807.51	0.34	824.16	40.32541635	-104.82911708
6831.00	30.85	289.69	6602.64	381.99	-850.61	0.66	867.95	40.32545850	-104.82927165
6921.00	30.43	289.84	6680.08	397.50	-893.77	0.47	911.81	40.32550107	-104.82942646
7010.00	35.58	282.37	6754.72	410.71	-940.32	7.37	958.93	40.32553733	-104.82959338
7100.00	43.37	279.60	6824.14	421.49	-996.45	8.87	1015.52	40.32556692	-104.82979471
7190.00	53.83	279.45	6883.58	432.64	-1062.94	11.62	1082.46	40.32559751	-104.83003317
7279.00	60.48	277.61	6931.83	443.68	-1136.85	7.67	1156.81	40.32562780	-104.83029823
7369.00	70.05	275.95	6969.44	453.27	-1217.92	10.76	1238.26	40.32565413	-104.83058901
7459.00	78.98	274.83	6993.45	461.39	-1304.19	9.99	1324.81	40.32567640	-104.83089839
7548.00	84.40	273.78	7006.31	468.00	-1391.97	6.20	1412.81	40.32569452	-104.83121322
7638.00	90.14	272.01	7010.59	472.53	-1481.71	6.67	1502.67	40.32570695	-104.83153507
7728.00	89.72	270.31	7010.70	474.35	-1571.69	1.95	1592.63	40.32571194	-104.83185777
7817.00	90.17	271.29	7010.79	475.60	-1660.68	1.21	1681.58	40.32571533	-104.83217693
7907.00	89.89	270.10	7010.74	476.69	-1750.67	1.36	1771.52	40.32571831	-104.83249968
7997.00	90.42	271.14	7010.50	477.66	-1840.66	1.30	1861.45	40.32572096	-104.83282244
8086.00	90.02	270.44	7010.15	478.89	-1929.65	0.91	1950.40	40.32572431	-104.83314159
8176.00	91.00	269.94	7009.35	479.19	-2019.65	1.22	2040.30	40.32572511	-104.83346436
8266.00	90.83	271.02	7007.92	479.94	-2109.63	1.21	2130.22	40.32572716	-104.83378708
8356.00	90.36	270.18	7006.98	480.88	-2199.62	1.07	2220.15	40.32572973	-104.83410982
8445.00	90.71	270.58	7006.15	481.47	-2288.62	0.60	2309.07	40.32573133	-104.83442899
8535.00	90.54	270.27	7005.17	482.14	-2378.61	0.39	2398.99	40.32573313	-104.83475174
8625.00	90.75	271.05	7004.16	483.18	-2468.60	0.90	2488.93	40.32573596	-104.83507448
8714.00	90.26	270.39	7003.37	484.30	-2557.58	0.92	2577.87	40.32573900	-104.83539363
8804.00	89.51	270.20	7003.55	484.76	-2647.58	0.86	2667.78	40.32574025	-104.83571640
8894.00	89.40	270.25	7004.41	485.11	-2737.58	0.13	2757.69	40.32574119	-104.83603917
8984.00	90.06	270.52	7004.83	485.72	-2827.57	0.79	2847.61	40.32574282	-104.83636193
9073.00	90.05	271.13	7004.75	487.00	-2916.56	0.69	2936.56	40.32574631	-104.83668109
9163.00	90.26	271.50	7004.50	489.07	-3006.54	0.47	3026.53	40.32575195	-104.83700379
9253.00	90.27	271.33	7004.09	491.29	-3096.51	0.19	3116.51	40.32575802	-104.83732647
9342.00	90.04	270.96	7003.85	493.07	-3185.49	0.49	3205.47	40.32576287	-104.83764559
9432.00	89.08	270.99	7004.54	494.60	-3275.48	1.07	3295.43	40.32576704	-104.83796832
9522.00	89.00	269.95	7006.05	495.34	-3365.46	1.16	3385.34	40.32576904	-104.83829104
9612.00	89.43	271.30	7007.28	496.32	-3455.44	1.57	3475.27	40.32577170	-104.83861376
9701.00	89.21	270.51	7008.33	497.72	-3544.43	0.92	3564.22	40.32577552	-104.83893289
9791.00	89.40	270.91	7009.43	498.84	-3634.41	0.49	3654.15	40.32577855	-104.83925562
9881.00	89.27	270.51	7010.47	499.95	-3724.40	0.47	3744.09	40.32578157	-104.83957835
9970.00	90.25	270.94	7010.84	501.08	-3813.39	1.20	3833.03	40.32578462	-104.83989751
10060.00	89.99	268.42	7010.66	500.58	-3903.38	2.81	3922.89	40.32578321	-104.84022026
10150.00	90.07	269.03	7010.61	498.57	-3993.36	0.68	4012.67	40.32577767	-104.84054296
10240.00	90.11	269.22	7010.47	497.20	-4083.35	0.22	4102.49	40.32577386	-104.84086570
10329.00	90.29	269.89	7010.16	496.51	-4172.34	0.78	4191.35	40.32577192	-104.84118488
10419.00	90.60	269.46	7009.46	496.00	-4262.34	0.59	4281.22	40.32577047	-104.84150764
10509.00	89.20	267.45	7009.61	493.57	-4352.30	2.72	4370.96	40.32576377	-104.84183028
10598.00	90.46	269.29	7009.88	491.04	-4441.26	2.51	4459.69	40.32575678	-104.84214932
10688.00	90.79	270.31	7008.90	490.73	-4531.25	1.19	4549.57	40.32575587	-104.84247207
10778.00	91.05	270.46	7007.45	491.33	-4621.24	0.33	4639.48	40.32575749	-104.84279480
10868.00	90.58	269.67	7006.17	491.43	-4711.23	1.02	4729.37	40.32575772	-104.84311755
10957.00	90.92	270.46	7005.01	491.53	-4800.22	0.97	4818.27	40.32575795	-104.84343671
11047.00	90.86	269.72	7003.61	491.68	-4890.21	0.82	4908.16	40.32575829	-104.84375945
11137.00	90.51	270.04	7002.53	491.49	-4980.20	0.53	4998.04	40.32575772	-104.84408221
11227.00	90.88	269.42	7001.44	491.06	-5070.19	0.80	5087.91	40.32575651	-104.84440496
11316.00	90.63	270.22	7000.27	490.78	-5159.18	0.94	5176.78	40.32575569	-104.84472412
11406.00	90.67	269.07	6999.25	490.23	-5249.17	1.28	5266.64	40.32575411	-104.84504686
11496.00	90.25	269.92	6998.52	489.43	-5339.17	1.05	5356.49	40.32575188	-104.84536962
11586.00	90.48	271.74	6997.95	490.74	-5429.15	2.04	5446.44	40.32575540	-104.84569234
11675.00	90.22	270.34	6997.41	492.35	-5518.13	1.60	5535.39	40.32575978	-104.84601147
11765.00	90.21	271.14	6997.07	493.51	-5608.12	0.89	5625.34	40.32576292	-104.84633422
11855.00	90.19	268.05	6996.76	492.88	-5698.11	3.43	5715.19	40.32576111	-104.84665695
11944.00	90.29	271.23	6996.38	492.32	-5787.10	3.57	5804.05	40.32575952	-104.84697609
12034.00	90.31	271.20	6995.91	494.23	-5877.07	0.04	5894.01	40.32576470	-104.84729880
12124.00	90.26	270.42	6995.46	495.50	-5967.06	0.87	5983.96	40.32576814	-104.84762154
12213.00	90.15	269.86	6995.15	495.72	-6056.06	0.64	6072.87	40.32576867	-104.84794073
12303.00	89.79	270.10	6995.19	495.69	-6146.06	0.48	6162.76	40.32576853	-104.84826351
12393.00	90.26	271.30	6995.15	496.78	-6236.05	1.43	6252.70	40.32577148	-104.84858626
12483.00	90.24	270.60	6994.76	498.28	-6326.04	0.78	6342.66	40.32577552	-104.84890899
12572.00	90.08	270.23	6994.51	498.92	-6415.04	0.45	6431.58	40.32577722	-104.84922817
12662.00	90.03	270.06	6994.43	499.15	-6505.04	0.20	6521.49	40.32577778	-104.84955095
12752.00	90.02	270.61	6994.39	499.68	-6595.03	0.61	6611.41	40.32577916	-104.84987373
12841.00	90.50	271.32	6993.98	501.17	-6684.02	0.96	6700.36	40.32578321	-104.85019287
12931.00	90.03	269.99	6993.57	502.20	-6774.01	1.57	6790.30	40.32578597	-104.85051562
13021.00	90.26	271.87	6993.34	503.66	-6863.99	2.10	6880.25	40.32578991	-104.85083834
13110.00	90.43	270.66	6992.80	505.63	-6952.97	1.37	6969.22	40.32579523	-104.85115745
13200.00	90.69	269.84	6991.92	506.02	-7042.96	0.96	7059.13	40.32579624	-104.85148021
13289.00	90.65	270.63	6990.88	506.39	-7131.96	0.89	7148.03	40.32579717	-104.85179937
13379.00	90.81	269.70	6989.74	506.65	-7221.95	1.05	7237.93	40.32579781	-104.85212212

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
13469.00	90.46	270.58	6988.74	506.87	-7311.94	1.05	7327.83	40.32579834	-104.85244488
13558.00	90.48	270.34	6988.01	507.58	-7400.93	0.27	7416.76	40.32580023	-104.85276405
13648.00	90.88	270.03	6986.94	507.87	-7490.93	0.56	7506.66	40.32580096	-104.85308681
13738.00	90.80	270.03	6985.62	507.92	-7580.92	0.09	7596.55	40.32580101	-104.85340955
13828.00	90.88	269.88	6984.30	507.85	-7670.91	0.19	7686.44	40.32580074	-104.85373230
13917.00	90.45	270.54	6983.27	508.17	-7759.90	0.89	7775.34	40.32580156	-104.85405147
14007.00	90.83	269.51	6982.26	508.21	-7849.89	1.22	7865.23	40.32580159	-104.85437422
14097.00	90.40	269.89	6981.30	507.74	-7939.89	0.64	7955.10	40.32580022	-104.85469698
14186.00	89.88	271.70	6981.08	508.98	-8028.87	2.12	8044.04	40.32580353	-104.85501613
14276.00	90.73	271.04	6980.60	511.13	-8118.85	1.20	8134.02	40.32580935	-104.85533881
14366.00	90.11	271.90	6979.94	513.44	-8208.81	1.18	8223.99	40.32581561	-104.85566147
14455.00	90.61	271.14	6979.38	515.80	-8297.78	1.02	8312.97	40.32582201	-104.85598055
14545.00	90.56	270.45	6978.46	517.05	-8387.76	0.77	8402.91	40.32582535	-104.85630328
14635.00	90.59	270.80	6977.56	518.03	-8477.75	0.39	8492.84	40.32582796	-104.85662602
14724.00	90.56	271.05	6976.67	519.46	-8566.74	0.28	8581.79	40.32583182	-104.85694516
14780.00	90.72	270.92	6976.04	520.43	-8622.73	0.37	8637.76	40.32583441	-104.85714596
14814.00	90.42	270.53	6975.70	520.86	-8656.72	1.45	8671.74	40.32583556	-104.85726788
14904.00	90.63	270.16	6974.88	521.40	-8746.72	0.47	8761.66	40.32583696	-104.85759064
14993.00	90.48	270.31	6974.02	521.76	-8835.71	0.24	8850.57	40.32583787	-104.85790982
15083.00	90.52	270.95	6973.23	522.75	-8925.70	0.71	8940.50	40.32584050	-104.85823257
15173.00	90.46	270.58	6972.46	523.96	-9015.69	0.42	9030.44	40.32584371	-104.85855531
15262.00	90.52	270.12	6971.70	524.50	-9104.69	0.52	9119.36	40.32584511	-104.85887449
15352.00	90.46	271.16	6970.93	525.50	-9194.68	1.16	9209.30	40.32584778	-104.85919723
15442.00	90.39	271.50	6970.26	527.59	-9284.65	0.39	9299.27	40.32585342	-104.85951992
15531.00	90.83	270.44	6969.31	529.10	-9373.63	1.29	9388.22	40.32585747	-104.85983905
15621.00	90.26	270.79	6968.46	530.07	-9463.62	0.74	9478.15	40.32586002	-104.86016179
15711.00	90.54	270.34	6967.83	530.95	-9553.61	0.59	9568.08	40.32586237	-104.86048455
15801.00	90.05	271.46	6967.37	532.37	-9643.60	1.36	9658.03	40.32586615	-104.86080728
15890.00	90.33	271.21	6967.07	534.44	-9732.57	0.42	9747.00	40.32587175	-104.86112639
15980.00	90.03	271.69	6966.79	536.72	-9822.54	0.63	9836.98	40.32587790	-104.86144907
16070.00	90.18	269.25	6966.62	537.46	-9912.53	2.72	9926.90	40.32587983	-104.86177181
16159.00	90.00	271.20	6966.48	537.81	-10001.53	2.20	10015.81	40.32588069	-104.86209099
16249.00	90.46	270.89	6966.12	539.45	-10091.51	0.62	10105.77	40.32588509	-104.86241371
16339.00	90.02	269.39	6965.75	539.67	-10181.51	1.74	10195.67	40.32588560	-104.86273648
16429.00	90.11	270.33	6965.64	539.45	-10271.51	1.05	10285.56	40.32588489	-104.86305926
16518.00	90.07	269.40	6965.50	539.24	-10360.51	1.05	10374.45	40.32588421	-104.86337845
16608.00	90.70	269.72	6964.90	538.55	-10450.50	0.79	10464.30	40.32588221	-104.86370121
16698.00	90.88	270.95	6963.66	539.07	-10540.49	1.38	10554.21	40.32588355	-104.86402394
16788.00	90.84	270.01	6962.31	539.83	-10630.47	1.05	10644.13	40.32588551	-104.86434668
16877.00	90.64	270.90	6961.16	540.53	-10719.46	1.02	10733.05	40.32588735	-104.86466583
16967.00	90.59	270.85	6960.19	541.91	-10809.45	0.08	10823.00	40.32589101	-104.86498856
17057.00	90.68	269.72	6959.19	542.35	-10899.44	1.26	10912.91	40.32589213	-104.86531131
17146.00	90.69	269.32	6958.13	541.61	-10988.43	0.45	11001.76	40.32588998	-104.86563047
17236.00	90.76	269.85	6956.99	540.96	-11078.42	0.59	11091.62	40.32588808	-104.86595321
17326.00	90.38	270.97	6956.10	541.60	-11168.41	1.31	11181.53	40.32588974	-104.86627596
17416.00	90.46	270.44	6955.44	542.71	-11258.40	0.60	11271.47	40.32589266	-104.86659871
17457.00	90.72	270.92	6955.01	543.20	-11299.40	1.33	11312.45	40.32589395	-104.86674574
17480.00	90.72	270.92	6954.72	543.56	-11322.39	0.00	11335.43	40.32589493	-104.86682821

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
1609.00	1608.91	-12.16	8.72	40.32437663	-104.82618971	9.625" Csg: 1609 MD/TVD
7598.19	7009.81	470.87	-1441.95	40.32570238	-104.83139246	460 Setback: 7598 / 7010 MD/TVD, 2370 FSL, 460 FEL Sec 12
17243.25	6956.90	540.94	-11085.67	40.32588803	-104.86597921	Btm Toe Sub: 17,243 / 6957 MD/TVD, 2363 FSL, 471 FWL Sec 11
17254.10	6956.76	540.95	-11096.52	40.32588802	-104.86601812	460 Setback: 17,254 / 6957 MD/TVD, 2363 FSL, 460 FWL Sec 11
17469.21	6954.86	543.39	-11311.60	40.32589447	-104.86678952	PBTD: 17,469 / 6955 MD/TVD, 2362 FSL, 245 FWL Sec 11
17480.00	6954.72	543.56	-11322.39	40.32589493	-104.86682821	5.5" Csg: 17,480 / 6955 MD/TVD, 2362 FSL, 234 FWL Sec 11
17480.00	6954.72	543.56	-11322.39	40.32589493	-104.86682821	BHL: 17,480 / 6955 MD/TVD, 2362 FSL, 234 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	1609.00	1608.91	-12.16	8.72
8.500	1609.00	1608.91	-12.16	8.72	17480.00	6954.72	543.56	-11322.39

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	1609.00	1608.91	-12.16	8.72
5 1/2in Casing	0.00	0.00	0.00	0.00	17480.00	6954.72	543.56	-11322.39

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
631606	As Drilled - 20191011	17480.00	6954.72	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 272.75 degrees Bottom hole distance is 11335.43 Feet on azimuth 272.75 degrees from Wellhead Survey calculation uses Minimum Curvature method
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