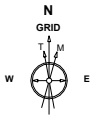
Cub Creek Energy, LLC

Location	**Weld County, CO**	**Slot**	**OLANDER 9**
Field	**WATTENBERG**	**Well**	**OLANDER 9**
Installation	**Olander Pad Rework 04-09-2019**	**Wellbore**	**OLANDER 9 (PWB)**



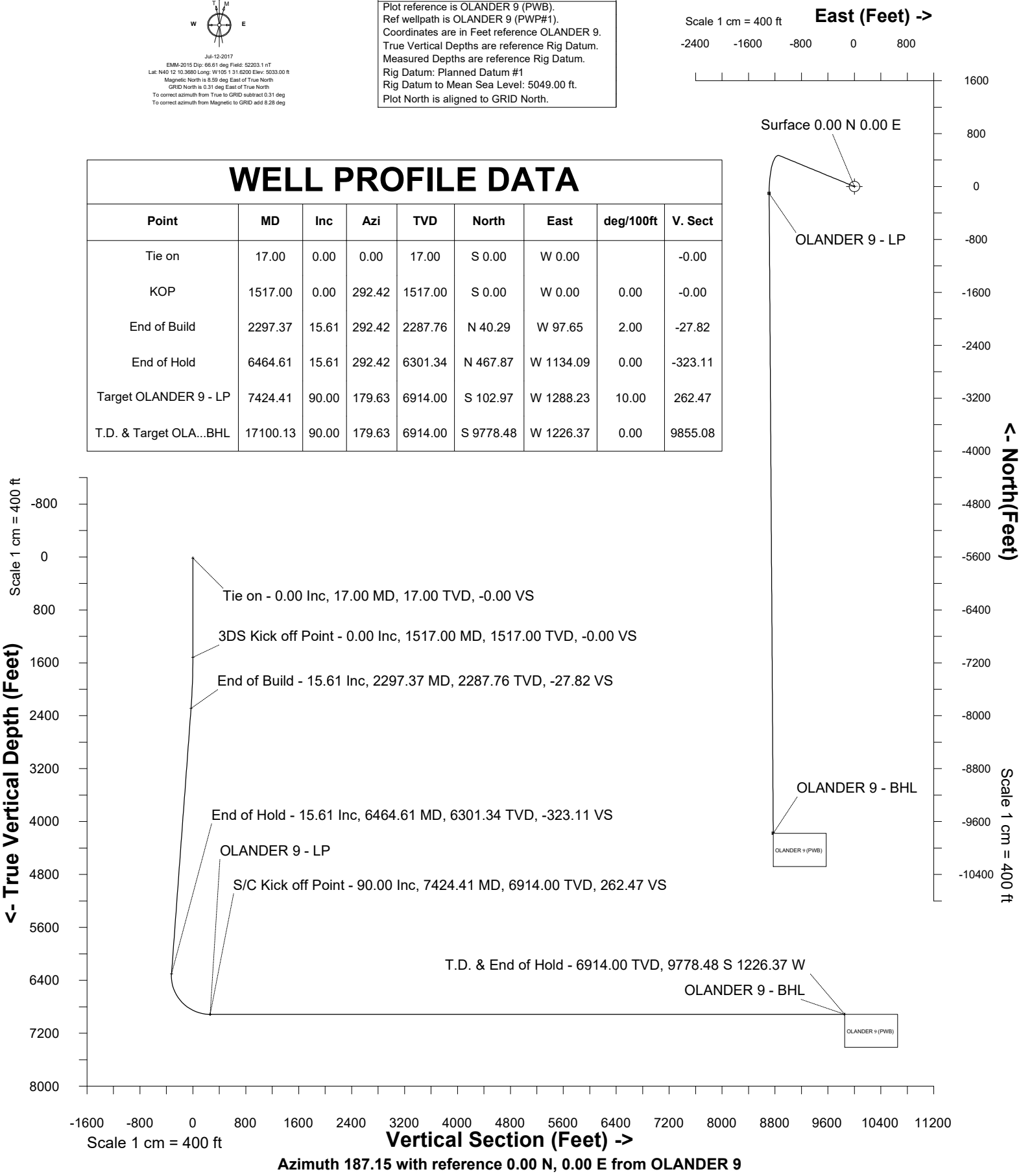
Jul-12-2017
EMM-2015 Dip: 66.61 deg Field: 52203.1 nT
Lat: N40 12 10.3680 Long: W105 1 31.6200 Elev: 5033.00 ft
Magnetic North is 8.59 deg East of True North
GRID North is 0.31 deg East of True North
To correct azimuth from True to GRID subtract 0.31 deg
To correct azimuth from Magnetic to GRID add 8.28 deg

Created by sean.dolfinger
Date plotted 11-Apr-2019

Plot reference is OLANDER 9 (PWB).
Ref wellpath is OLANDER 9 (PWP#1).
Coordinates are in Feet reference OLANDER 9.
True Vertical Depths are reference Rig Datum.
Measured Depths are reference Rig Datum.
Rig Datum: Planned Datum #1
Rig Datum to Mean Sea Level: 5049.00 ft.
Plot North is aligned to GRID North.

WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	17.00	0.00	0.00	17.00	S 0.00	W 0.00		-0.00
KOP	1517.00	0.00	292.42	1517.00	S 0.00	W 0.00	0.00	-0.00
End of Build	2297.37	15.61	292.42	2287.76	N 40.29	W 97.65	2.00	-27.82
End of Hold	6464.61	15.61	292.42	6301.34	N 467.87	W 1134.09	0.00	-323.11
Target OLANDER 9 - LP	7424.41	90.00	179.63	6914.00	S 102.97	W 1288.23	10.00	262.47
T.D. & Target OLA...BHL	17100.13	90.00	179.63	6914.00	S 9778.48	W 1226.37	0.00	9855.08



SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 9 (PWB)

Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
OLANDER 9	40.20288000	-105.02529000	1317106.5128	3132595.4377	0.24N	44.69E	0.00

Declination

Date	Source	Time
Jul-12-2017	EMM-2015	14:01

Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Olander Pad Rework 04-09-2019	40.20288000	-105.02545000	1317106.2735	3132550.7471	NAD83 Based Colorado State Planes, Northern Zone, US Feet	Grid

Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
17.00	0.00	0.00	17.00	-5032.00	0.00N	0.00E		0.00
1517.00	0.00	292.42	1517.00	-3532.00	0.00N	0.00E	==>	0.00
2297.37	15.61	292.42	2287.76	-2761.24	40.29N	97.65W	2.00	-27.82
6464.61	15.61	292.42	6301.34	1252.34	467.87N	1134.09W	==>	-323.11
7424.41	90.00	179.63	6914.00	1865.00	102.97S	1288.23W	10.00	262.47
17100.13	90.00	179.63	6914.00	1865.00	9778.48S	1226.37W	==>	9855.08

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	40.20288000	-105.02529000
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1517.00	0.00	292.42	1517.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02529000
1600.00	1.66	292.42	1599.99	0.46N	1.11W	2.00	-0.32	40.20288127	-105.02529397
1700.00	3.66	292.42	1699.88	2.23N	5.40W	2.00	-1.54	40.20288620	-105.02530929
1800.00	5.66	292.42	1799.54	5.33N	12.91W	2.00	-3.68	40.20289481	-105.02533612
1900.00	7.66	292.42	1898.86	9.75N	23.63W	2.00	-6.73	40.20290711	-105.02537441
2000.00	9.66	292.42	1997.71	15.49N	37.55W	2.00	-10.70	40.20292308	-105.02542413
2100.00	11.66	292.42	2095.98	22.55N	54.65W	2.00	-15.57	40.20294269	-105.02548521
2200.00	13.66	292.42	2193.55	30.90N	74.91W	2.00	-21.34	40.20296593	-105.02555757
2297.37	15.61	292.42	2287.76	40.29N	97.65W	2.00	-27.82	40.20299201	-105.02563880
2300.00	15.61	292.42	2290.29	40.55N	98.30W	==>	-28.01	40.20299276	-105.02564113
2400.00	15.61	292.42	2386.60	50.82N	123.17W	==>	-35.09	40.20302129	-105.02572997
2500.00	15.61	292.42	2482.91	61.08N	148.04W	==>	-42.18	40.20304982	-105.02581881
2600.00	15.61	292.42	2579.23	71.34N	172.92W	==>	-49.26	40.20307835	-105.02590765
2700.00	15.61	292.42	2675.54	81.60N	197.79W	==>	-56.35	40.20310688	-105.02599650
2800.00	15.61	292.42	2771.85	91.86N	222.66W	==>	-63.44	40.20313541	-105.02608534

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5049.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 187.15 degrees
Bottom hole distance is 9855.08 Feet on azimuth 187.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 9 (PWB)

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
2900.00	15.61	292.42	2868.16	102.12N	247.53W	==>	-70.52	40.20316394	-105.02617418
3000.00	15.61	292.42	2964.48	112.38N	272.40W	==>	-77.61	40.20319247	-105.02626302
3100.00	15.61	292.42	3060.79	122.64N	297.27W	==>	-84.69	40.20322100	-105.02635186
3200.00	15.61	292.42	3157.10	132.90N	322.14W	==>	-91.78	40.20324953	-105.02644070
3300.00	15.61	292.42	3253.42	143.16N	347.01W	==>	-98.87	40.20327806	-105.02652954
3400.00	15.61	292.42	3349.73	153.42N	371.88W	==>	-105.95	40.20330659	-105.02661838
3500.00	15.61	292.42	3446.04	163.68N	396.76W	==>	-113.04	40.20333512	-105.02670722
3600.00	15.61	292.42	3542.35	173.94N	421.63W	==>	-120.12	40.20336365	-105.02679606
3700.00	15.61	292.42	3638.67	184.20N	446.50W	==>	-127.21	40.20339218	-105.02688490
3800.00	15.61	292.42	3734.98	194.46N	471.37W	==>	-134.30	40.20342071	-105.02697374
3900.00	15.61	292.42	3831.29	204.72N	496.24W	==>	-141.38	40.20344924	-105.02706258
4000.00	15.61	292.42	3927.60	214.99N	521.11W	==>	-148.47	40.20347777	-105.02715143
4100.00	15.61	292.42	4023.92	225.25N	545.98W	==>	-155.55	40.20350630	-105.02724027
4200.00	15.61	292.42	4120.23	235.51N	570.85W	==>	-162.64	40.20353483	-105.02732911
4300.00	15.61	292.42	4216.54	245.77N	595.72W	==>	-169.72	40.20356335	-105.02741795
4400.00	15.61	292.42	4312.86	256.03N	620.60W	==>	-176.81	40.20359188	-105.02750679
4500.00	15.61	292.42	4409.17	266.29N	645.47W	==>	-183.90	40.20362041	-105.02759563
4600.00	15.61	292.42	4505.48	276.55N	670.34W	==>	-190.98	40.20364894	-105.02768447
4700.00	15.61	292.42	4601.79	286.81N	695.21W	==>	-198.07	40.20367747	-105.02777332
4800.00	15.61	292.42	4698.11	297.07N	720.08W	==>	-205.15	40.20370600	-105.02786216
4900.00	15.61	292.42	4794.42	307.33N	744.95W	==>	-212.24	40.20373453	-105.02795100
5000.00	15.61	292.42	4890.73	317.59N	769.82W	==>	-219.33	40.20376305	-105.02803984
5100.00	15.61	292.42	4987.05	327.85N	794.69W	==>	-226.41	40.20379158	-105.02812868
5200.00	15.61	292.42	5083.36	338.11N	819.56W	==>	-233.50	40.20382011	-105.02821753
5300.00	15.61	292.42	5179.67	348.37N	844.44W	==>	-240.58	40.20384864	-105.02830637
5400.00	15.61	292.42	5275.98	358.63N	869.31W	==>	-247.67	40.20387717	-105.02839521
5500.00	15.61	292.42	5372.30	368.89N	894.18W	==>	-254.76	40.20390570	-105.02848405
5600.00	15.61	292.42	5468.61	379.16N	919.05W	==>	-261.84	40.20393422	-105.02857290
5700.00	15.61	292.42	5564.92	389.42N	943.92W	==>	-268.93	40.20396275	-105.02866174
5800.00	15.61	292.42	5661.23	399.68N	968.79W	==>	-276.01	40.20399128	-105.02875058
5900.00	15.61	292.42	5757.55	409.94N	993.66W	==>	-283.10	40.20401981	-105.02883942
6000.00	15.61	292.42	5853.86	420.20N	1018.53W	==>	-290.18	40.20404833	-105.02892827
6100.00	15.61	292.42	5950.17	430.46N	1043.40W	==>	-297.27	40.20407686	-105.02901711
6200.00	15.61	292.42	6046.49	440.72N	1068.28W	==>	-304.36	40.20410539	-105.02910595
6300.00	15.61	292.42	6142.80	450.98N	1093.15W	==>	-311.44	40.20413392	-105.02919479
6400.00	15.61	292.42	6239.11	461.24N	1118.02W	==>	-318.53	40.20416244	-105.02928364
6464.61	15.61	292.42	6301.34	467.87N	1134.09W	==>	-323.11	40.20418087	-105.02934104
6500.00	14.64	279.34	6335.51	470.41N	1142.90W	10.00	-324.53	40.20418798	-105.02937256
6600.00	16.26	241.62	6432.13	465.79N	1167.76W	10.00	-316.86	40.20417567	-105.02946163
6700.00	22.59	217.88	6526.54	443.92N	1191.93W	10.00	-292.15	40.20411599	-105.02954858
6800.00	30.85	205.18	6615.85	405.46N	1214.69W	10.00	-251.15	40.20401075	-105.02963079
6900.00	39.85	197.60	6697.37	351.58N	1235.34W	10.00	-195.12	40.20386315	-105.02970574
7000.00	49.19	192.48	6768.61	283.92N	1253.26W	10.00	-125.76	40.20367767	-105.02977116
7100.00	58.70	188.64	6827.41	204.53N	1267.89W	10.00	-45.16	40.20345996	-105.02982506
7200.00	68.30	185.51	6871.98	115.82N	1278.81W	10.00	44.22	40.20321662	-105.02986581
7300.00	77.96	182.78	6900.97	20.49N	1285.66W	10.00	139.66	40.20295505	-105.02989217
7400.00	87.64	180.24	6913.50	78.56S	1288.26W	10.00	238.26	40.20268320	-105.02990333
7424.41	90.00	179.63	6914.00	102.97S	1288.23W	10.00	262.47	40.20261620	-105.02990370
7500.00	90.00	179.63	6914.00	178.55S	1287.75W	==>	337.41	40.20240872	-105.02990340
7600.00	90.00	179.63	6914.00	278.55S	1287.11W	==>	436.55	40.20213422	-105.02990301
7700.00	90.00	179.63	6914.00	378.55S	1286.47W	==>	535.69	40.20185972	-105.02990262
7800.00	90.00	179.63	6914.00	478.54S	1285.83W	==>	634.83	40.20158522	-105.02990223
7900.00	90.00	179.63	6914.00	578.54S	1285.19W	==>	733.97	40.20131072	-105.02990184
8000.00	90.00	179.63	6914.00	678.54S	1284.55W	==>	833.12	40.20103622	-105.02990145
8100.00	90.00	179.63	6914.00	778.54S	1283.91W	==>	932.26	40.20076172	-105.02990106
8200.00	90.00	179.63	6914.00	878.54S	1283.27W	==>	1031.40	40.20048723	-105.02990067
8300.00	90.00	179.63	6914.00	978.53S	1282.63W	==>	1130.54	40.20021273	-105.02990028
8400.00	90.00	179.63	6914.00	1078.53S	1281.99W	==>	1229.68	40.19993823	-105.02989989

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5049.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 187.15 degrees
Bottom hole distance is 9855.08 Feet on azimuth 187.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 9 (PWB)

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
8500.00	90.00	179.63	6914.00	1178.53S	1281.35W	==>	1328.82	40.19966373	-105.02989950
8600.00	90.00	179.63	6914.00	1278.53S	1280.71W	==>	1427.96	40.19938923	-105.02989911
8700.00	90.00	179.63	6914.00	1378.53S	1280.07W	==>	1527.10	40.19911473	-105.02989871
8800.00	90.00	179.63	6914.00	1478.52S	1279.44W	==>	1626.24	40.19884023	-105.02989832
8900.00	90.00	179.63	6914.00	1578.52S	1278.80W	==>	1725.39	40.19856573	-105.02989793
9000.00	90.00	179.63	6914.00	1678.52S	1278.16W	==>	1824.53	40.19829123	-105.02989754
9100.00	90.00	179.63	6914.00	1778.52S	1277.52W	==>	1923.67	40.19801673	-105.02989715
9200.00	90.00	179.63	6914.00	1878.52S	1276.88W	==>	2022.81	40.19774223	-105.02989676
9300.00	90.00	179.63	6914.00	1978.51S	1276.24W	==>	2121.95	40.19746773	-105.02989637
9400.00	90.00	179.63	6914.00	2078.51S	1275.60W	==>	2221.09	40.19719323	-105.02989598
9500.00	90.00	179.63	6914.00	2178.51S	1274.96W	==>	2320.23	40.19691873	-105.02989559
9600.00	90.00	179.63	6914.00	2278.51S	1274.32W	==>	2419.37	40.19664423	-105.02989520
9700.00	90.00	179.63	6914.00	2378.51S	1273.68W	==>	2518.51	40.19636974	-105.02989481
9800.00	90.00	179.63	6914.00	2478.50S	1273.04W	==>	2617.66	40.19609524	-105.02989442
9900.00	90.00	179.63	6914.00	2578.50S	1272.40W	==>	2716.80	40.19582074	-105.02989403
10000.00	90.00	179.63	6914.00	2678.50S	1271.76W	==>	2815.94	40.19554624	-105.02989364
10100.00	90.00	179.63	6914.00	2778.50S	1271.12W	==>	2915.08	40.19527174	-105.02989324
10200.00	90.00	179.63	6914.00	2878.49S	1270.49W	==>	3014.22	40.19499724	-105.02989285
10300.00	90.00	179.63	6914.00	2978.49S	1269.85W	==>	3113.36	40.19472274	-105.02989246
10400.00	90.00	179.63	6914.00	3078.49S	1269.21W	==>	3212.50	40.19444824	-105.02989207
10500.00	90.00	179.63	6914.00	3178.49S	1268.57W	==>	3311.64	40.19417374	-105.02989168
10600.00	90.00	179.63	6914.00	3278.49S	1267.93W	==>	3410.78	40.19389924	-105.02989129
10700.00	90.00	179.63	6914.00	3378.48S	1267.29W	==>	3509.93	40.19362474	-105.02989090
10800.00	90.00	179.63	6914.00	3478.48S	1266.65W	==>	3609.07	40.19335024	-105.02989051
10900.00	90.00	179.63	6914.00	3578.48S	1266.01W	==>	3708.21	40.19307574	-105.02989012
11000.00	90.00	179.63	6914.00	3678.48S	1265.37W	==>	3807.35	40.19280124	-105.02988973
11100.00	90.00	179.63	6914.00	3778.48S	1264.73W	==>	3906.49	40.19252674	-105.02988934
11200.00	90.00	179.63	6914.00	3878.47S	1264.09W	==>	4005.63	40.19225224	-105.02988895
11300.00	90.00	179.63	6914.00	3978.47S	1263.45W	==>	4104.77	40.19197774	-105.02988856
11400.00	90.00	179.63	6914.00	4078.47S	1262.81W	==>	4203.91	40.19170324	-105.02988817
11500.00	90.00	179.63	6914.00	4178.47S	1262.17W	==>	4303.06	40.19142874	-105.02988777
11600.00	90.00	179.63	6914.00	4278.47S	1261.53W	==>	4402.20	40.19115424	-105.02988738
11700.00	90.00	179.63	6914.00	4378.46S	1260.90W	==>	4501.34	40.19087974	-105.02988699
11800.00	90.00	179.63	6914.00	4478.46S	1260.26W	==>	4600.48	40.19060524	-105.02988660
11900.00	90.00	179.63	6914.00	4578.46S	1259.62W	==>	4699.62	40.19033075	-105.02988621
12000.00	90.00	179.63	6914.00	4678.46S	1258.98W	==>	4798.76	40.19005625	-105.02988582
12100.00	90.00	179.63	6914.00	4778.46S	1258.34W	==>	4897.90	40.18978175	-105.02988543
12200.00	90.00	179.63	6914.00	4878.45S	1257.70W	==>	4997.04	40.18950725	-105.02988504
12300.00	90.00	179.63	6914.00	4978.45S	1257.06W	==>	5096.18	40.18923275	-105.02988465
12400.00	90.00	179.63	6914.00	5078.45S	1256.42W	==>	5195.33	40.18895825	-105.02988426
12500.00	90.00	179.63	6914.00	5178.45S	1255.78W	==>	5294.47	40.18868375	-105.02988387
12600.00	90.00	179.63	6914.00	5278.45S	1255.14W	==>	5393.61	40.18840925	-105.02988348
12700.00	90.00	179.63	6914.00	5378.44S	1254.50W	==>	5492.75	40.18813475	-105.02988309
12800.00	90.00	179.63	6914.00	5478.44S	1253.86W	==>	5591.89	40.18786025	-105.02988270
12900.00	90.00	179.63	6914.00	5578.44S	1253.22W	==>	5691.03	40.18758575	-105.02988230
13000.00	90.00	179.63	6914.00	5678.44S	1252.58W	==>	5790.17	40.18731125	-105.02988191
13100.00	90.00	179.63	6914.00	5778.44S	1251.95W	==>	5889.31	40.18703675	-105.02988152
13200.00	90.00	179.63	6914.00	5878.43S	1251.31W	==>	5988.45	40.18676225	-105.02988113
13300.00	90.00	179.63	6914.00	5978.43S	1250.67W	==>	6087.60	40.18648775	-105.02988074
13400.00	90.00	179.63	6914.00	6078.43S	1250.03W	==>	6186.74	40.18621325	-105.02988035
13500.00	90.00	179.63	6914.00	6178.43S	1249.39W	==>	6285.88	40.18593875	-105.02987996
13600.00	90.00	179.63	6914.00	6278.43S	1248.75W	==>	6385.02	40.18566425	-105.02987957
13700.00	90.00	179.63	6914.00	6378.42S	1248.11W	==>	6484.16	40.18538975	-105.02987918
13800.00	90.00	179.63	6914.00	6478.42S	1247.47W	==>	6583.30	40.18511525	-105.02987879
13900.00	90.00	179.63	6914.00	6578.42S	1246.83W	==>	6682.44	40.18484075	-105.02987840
14000.00	90.00	179.63	6914.00	6678.42S	1246.19W	==>	6781.58	40.18456625	-105.02987801
14100.00	90.00	179.63	6914.00	6778.42S	1245.55W	==>	6880.72	40.18429175	-105.02987762
14200.00	90.00	179.63	6914.00	6878.41S	1244.91W	==>	6979.87	40.18401725	-105.02987723
14300.00	90.00	179.63	6914.00	6978.41S	1244.27W	==>	7079.01	40.18374275	-105.02987684

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5049.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 187.15 degrees
Bottom hole distance is 9855.08 Feet on azimuth 187.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 9 (PWB)

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
14400.00	90.00	179.63	6914.00	7078.41S	1243.63W	==>	7178.15	40.18346825	-105.02987645
14500.00	90.00	179.63	6914.00	7178.41S	1243.00W	==>	7277.29	40.18319375	-105.02987605
14600.00	90.00	179.63	6914.00	7278.40S	1242.36W	==>	7376.43	40.18291925	-105.02987566
14700.00	90.00	179.63	6914.00	7378.40S	1241.72W	==>	7475.57	40.18264475	-105.02987527
14800.00	90.00	179.63	6914.00	7478.40S	1241.08W	==>	7574.71	40.18237025	-105.02987488
14900.00	90.00	179.63	6914.00	7578.40S	1240.44W	==>	7673.85	40.18209575	-105.02987449
15000.00	90.00	179.63	6914.00	7678.40S	1239.80W	==>	7772.99	40.18182125	-105.02987410
15100.00	90.00	179.63	6914.00	7778.39S	1239.16W	==>	7872.14	40.18154675	-105.02987371
15200.00	90.00	179.63	6914.00	7878.39S	1238.52W	==>	7971.28	40.18127225	-105.02987332
15300.00	90.00	179.63	6914.00	7978.39S	1237.88W	==>	8070.42	40.18099775	-105.02987293
15400.00	90.00	179.63	6914.00	8078.39S	1237.24W	==>	8169.56	40.18072325	-105.02987254
15500.00	90.00	179.63	6914.00	8178.39S	1236.60W	==>	8268.70	40.18044875	-105.02987215
15600.00	90.00	179.63	6914.00	8278.38S	1235.96W	==>	8367.84	40.18017425	-105.02987176
15700.00	90.00	179.63	6914.00	8378.38S	1235.32W	==>	8466.98	40.17989975	-105.02987137
15800.00	90.00	179.63	6914.00	8478.38S	1234.68W	==>	8566.12	40.17962525	-105.02987098
15900.00	90.00	179.63	6914.00	8578.38S	1234.04W	==>	8665.26	40.17935075	-105.02987059
16000.00	90.00	179.63	6914.00	8678.38S	1233.41W	==>	8764.41	40.17907625	-105.02987020
16100.00	90.00	179.63	6914.00	8778.37S	1232.77W	==>	8863.55	40.17880175	-105.02986981
16200.00	90.00	179.63	6914.00	8878.37S	1232.13W	==>	8962.69	40.17852725	-105.02986942
16300.00	90.00	179.63	6914.00	8978.37S	1231.49W	==>	9061.83	40.17825275	-105.02986902
16400.00	90.00	179.63	6914.00	9078.37S	1230.85W	==>	9160.97	40.17797825	-105.02986863
16500.00	90.00	179.63	6914.00	9178.37S	1230.21W	==>	9260.11	40.17770375	-105.02986824
16600.00	90.00	179.63	6914.00	9278.36S	1229.57W	==>	9359.25	40.17742925	-105.02986785
16700.00	90.00	179.63	6914.00	9378.36S	1228.93W	==>	9458.39	40.17715475	-105.02986746
16800.00	90.00	179.63	6914.00	9478.36S	1228.29W	==>	9557.53	40.17688025	-105.02986707
16900.00	90.00	179.63	6914.00	9578.36S	1227.65W	==>	9656.68	40.17660575	-105.02986668
17000.00	90.00	179.63	6914.00	9678.36S	1227.01W	==>	9755.82	40.17633125	-105.02986629
17100.00	90.00	179.63	6914.00	9778.35S	1226.37W	==>	9854.96	40.17605675	-105.02986590
17100.13	90.00	179.63	6914.00	9778.48S	1226.37W	==>	9855.08	40.17605640	-105.02986590

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5049.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 187.15 degrees
Bottom hole distance is 9855.08 Feet on azimuth 187.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 9 (PWB)

Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
OLANDER 9 - LP	102.97S	1288.23W	6914.00	40.20261620	-105.02990370	1317003.55	3131307.27
OLANDER 9 - BHL	9778.48S	1226.37W	6914.00	40.17605640	-105.02986590	1307328.47	3131369.12

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
790930	Planned	1500.00	1500.00	WdW Rate Gyro	Standard
790929	Planned	17100.13	6914.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5049.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 187.15 degrees
Bottom hole distance is 9855.08 Feet on azimuth 187.15 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019