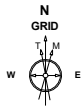


Cub Creek Energy, LLC

Location	Weld County, CO	Slot	OLANDER 13
Field	WATTENBERG	Well	OLANDER 13
Installation	Olander Pad Rework 04-09-2019	Wellbore	OLANDER 13 (PWB)

N GRID

 Jul-13-2017
 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 13 (PWB).
 Ref wellpath is OLANDER 13 (PWP#1).
 Coordinates are in Feet reference OLANDER 13.
 True Vertical Depths are reference Rig Datum.
 Measured Depths are reference Rig Datum. Rig Datum: Planned Datum #1
 Rig Datum to Mean Sea Level: 5050.00 ft. Plot North is aligned to GRID North.

Scale 1 cm = 400 ft

East (Feet) ->

-1600 -800 -0 800

Surface 0.00 N 0.00 E

OLANDER 13 - LP

1600

800

0

-800

-1600

-2400

-3200

-4000

-4800

-5600

-6400

-7200

-8000

-8800

-9600

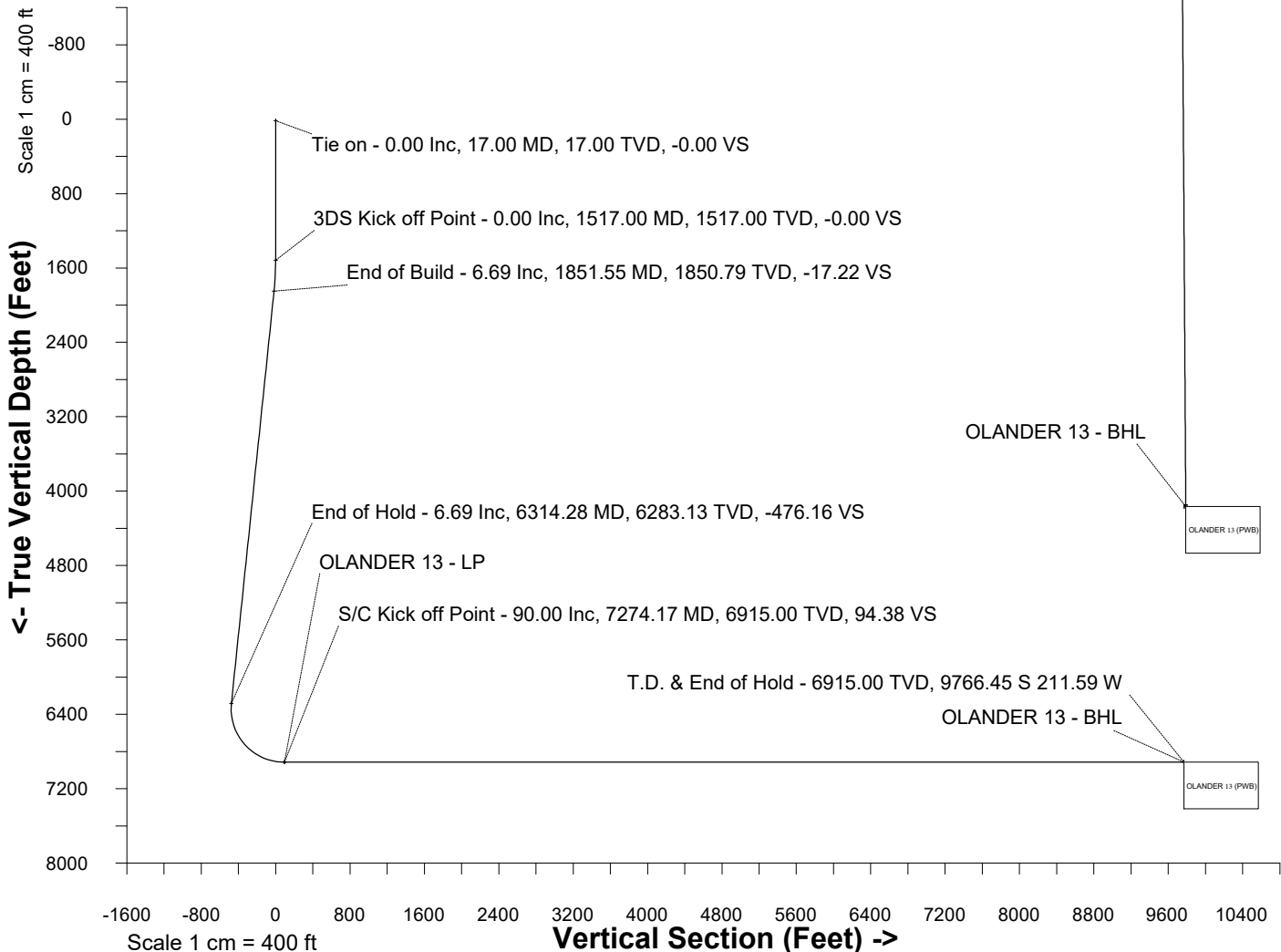
-10400

<- North(Feet)

Scale 1 cm = 400 ft

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	333.20	1517.00	S 0.00	W 0.00	0.00	-0.00
End of Build	1851.55	6.69	333.20	1850.79	N 17.42	W 8.80	2.00	-17.22
End of Hold	6314.28	6.69	333.20	6283.13	N 481.54	W 243.25	0.00	-476.16
Target OLANDER 13 - LP	7274.17	90.00	179.64	6915.00	S 88.49	W 272.66	10.00	94.38
T.D. & Target OLA...BHL	16952.32	90.00	179.64	6915.00	S 9766.45	W 211.59	0.00	9768.74



SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 13 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
OLANDER 13	40.20288000	-105.02519000	1317106.6623	3132623.3693	0.39N	72.63E	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	-5033.00	0.00N	0.00E		0.00
1517.00	0.00	333.20	1517.00	-3533.00	0.00N	0.00E	==>	0.00
1851.55	6.69	333.20	1850.79	-3199.21	17.42N	8.80W	2.00	-17.22
6314.28	6.69	333.20	6283.13	1233.13	481.54N	243.25W	==>	-476.16
7274.17	90.00	179.64	6915.00	1865.00	88.49S	272.66W	10.00	94.38
16952.32	90.00	179.64	6915.00	1865.00	9766.45S	211.59W	==>	9768.74

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	-105.02519000
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1517.00	0.00	333.20	1517.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02519000
1600.00	1.66	333.20	1599.99	1.07N	0.54W	2.00	-1.06	40.20288295	-105.02519192
1700.00	3.66	333.20	1699.88	5.22N	2.63W	2.00	-5.16	40.20289435	-105.02519933
1800.00	5.66	333.20	1799.54	12.47N	6.30W	2.00	-12.33	40.20291431	-105.02521231
1851.55	6.69	333.20	1850.79	17.42N	8.80W	2.00	-17.22	40.20292794	-105.02522116
1900.00	6.69	333.20	1898.91	22.45N	11.34W	==>	-22.20	40.20294180	-105.02523018
2000.00	6.69	333.20	1998.23	32.85N	16.60W	==>	-32.49	40.20297043	-105.02524879
2100.00	6.69	333.20	2097.55	43.25N	21.85W	==>	-42.77	40.20299905	-105.02526739
2200.00	6.69	333.20	2196.87	53.65N	27.10W	==>	-53.06	40.20302768	-105.02528600
2300.00	6.69	333.20	2296.19	64.05N	32.36W	==>	-63.34	40.20305630	-105.02530461
2400.00	6.69	333.20	2395.50	74.45N	37.61W	==>	-73.62	40.20308493	-105.02532322
2500.00	6.69	333.20	2494.82	84.85N	42.87W	==>	-83.91	40.20311355	-105.02534183
2600.00	6.69	333.20	2594.14	95.25N	48.12W	==>	-94.19	40.20314218	-105.02536044
2700.00	6.69	333.20	2693.46	105.65N	53.37W	==>	-104.47	40.20317080	-105.02537904
2800.00	6.69	333.20	2792.78	116.05N	58.63W	==>	-114.76	40.20319942	-105.02539765

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5050.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 181.24 degrees
Bottom hole distance is 9768.74 Feet on azimuth 181.24 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 13 (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	6.69	333.20	2892.10	126.45N	63.88W	==>	-125.04	40.20322805	-105.02541626
3000.00	6.69	333.20	2991.42	136.85N	69.13W	==>	-135.32	40.20325667	-105.02543487
3100.00	6.69	333.20	3090.74	147.25N	74.39W	==>	-145.61	40.20328530	-105.02545348
3200.00	6.69	333.20	3190.06	157.65N	79.64W	==>	-155.89	40.20331392	-105.02547209
3300.00	6.69	333.20	3289.37	168.05N	84.89W	==>	-166.18	40.20334255	-105.02549069
3400.00	6.69	333.20	3388.69	178.45N	90.15W	==>	-176.46	40.20337117	-105.02550930
3500.00	6.69	333.20	3488.01	188.85N	95.40W	==>	-186.74	40.20339980	-105.02552791
3600.00	6.69	333.20	3587.33	199.25N	100.66W	==>	-197.03	40.20342842	-105.02554652
3700.00	6.69	333.20	3686.65	209.65N	105.91W	==>	-207.31	40.20345705	-105.02556513
3800.00	6.69	333.20	3785.97	220.05N	111.16W	==>	-217.59	40.20348567	-105.02558374
3900.00	6.69	333.20	3885.29	230.45N	116.42W	==>	-227.88	40.20351429	-105.02560234
4000.00	6.69	333.20	3984.61	240.85N	121.67W	==>	-238.16	40.20354292	-105.02562095
4100.00	6.69	333.20	4083.93	251.25N	126.92W	==>	-248.45	40.20357154	-105.02563956
4200.00	6.69	333.20	4183.24	261.65N	132.18W	==>	-258.73	40.20360017	-105.02565817
4300.00	6.69	333.20	4282.56	272.05N	137.43W	==>	-269.01	40.20362879	-105.02567678
4400.00	6.69	333.20	4381.88	282.45N	142.68W	==>	-279.30	40.20365742	-105.02569539
4500.00	6.69	333.20	4481.20	292.85N	147.94W	==>	-289.58	40.20368604	-105.02571400
4600.00	6.69	333.20	4580.52	303.25N	153.19W	==>	-299.86	40.20371467	-105.02573260
4700.00	6.69	333.20	4679.84	313.65N	158.45W	==>	-310.15	40.20374329	-105.02575121
4800.00	6.69	333.20	4779.16	324.05N	163.70W	==>	-320.43	40.20377191	-105.02576982
4900.00	6.69	333.20	4878.48	334.45N	168.95W	==>	-330.71	40.20380054	-105.02578843
5000.00	6.69	333.20	4977.80	344.85N	174.21W	==>	-341.00	40.20382916	-105.02580704
5100.00	6.69	333.20	5077.11	355.25N	179.46W	==>	-351.28	40.20385779	-105.02582565
5200.00	6.69	333.20	5176.43	365.65N	184.71W	==>	-361.57	40.20388641	-105.02584426
5300.00	6.69	333.20	5275.75	376.05N	189.97W	==>	-371.85	40.20391504	-105.02586287
5400.00	6.69	333.20	5375.07	386.45N	195.22W	==>	-382.13	40.20394366	-105.02588147
5500.00	6.69	333.20	5474.39	396.85N	200.47W	==>	-392.42	40.20397229	-105.02590008
5600.00	6.69	333.20	5573.71	407.25N	205.73W	==>	-402.70	40.20400091	-105.02591869
5700.00	6.69	333.20	5673.03	417.65N	210.98W	==>	-412.98	40.20402953	-105.02593730
5800.00	6.69	333.20	5772.35	428.05N	216.23W	==>	-423.27	40.20405816	-105.02595591
5900.00	6.69	333.20	5871.67	438.45N	221.49W	==>	-433.55	40.20408678	-105.02597452
6000.00	6.69	333.20	5970.98	448.85N	226.74W	==>	-443.84	40.20411541	-105.02599313
6100.00	6.69	333.20	6070.30	459.25N	232.00W	==>	-454.12	40.20414403	-105.02601174
6200.00	6.69	333.20	6169.62	469.65N	237.25W	==>	-464.40	40.20417266	-105.02603034
6300.00	6.69	333.20	6268.94	480.05N	242.50W	==>	-474.69	40.20420128	-105.02604895
6314.28	6.69	333.20	6283.13	481.54N	243.25W	==>	-476.16	40.20420537	-105.02605161
6400.00	3.95	228.78	6368.61	484.05N	247.73W	10.00	-478.57	40.20421234	-105.02606761
6500.00	12.93	192.79	6467.47	470.84N	252.82W	10.00	-465.26	40.20417615	-105.02608605
6600.00	22.77	186.79	6562.55	440.64N	257.59W	10.00	-434.96	40.20409332	-105.02610372
6700.00	32.70	184.30	6650.95	394.37N	261.92W	10.00	-388.60	40.20396637	-105.02612009
6800.00	42.67	182.89	6729.99	333.43N	265.66W	10.00	-327.60	40.20379915	-105.02613466
6900.00	52.64	181.92	6797.27	259.68N	268.71W	10.00	-253.79	40.20359674	-105.02614699
7000.00	62.62	181.19	6850.73	175.35N	270.97W	10.00	-169.44	40.20336531	-105.02615670
7100.00	72.61	180.58	6888.77	83.01N	272.37W	10.00	-77.09	40.20311187	-105.02616349
7200.00	82.59	180.03	6910.21	14.53S	272.88W	10.00	20.44	40.20284413	-105.02616716
7274.17	90.00	179.64	6915.00	88.49S	272.66W	10.00	94.38	40.20264110	-105.02616780
7300.00	90.00	179.64	6915.00	114.32S	272.50W	==>	120.20	40.20257019	-105.02616771
7400.00	90.00	179.64	6915.00	214.32S	271.87W	==>	220.16	40.20229569	-105.02616736
7500.00	90.00	179.64	6915.00	314.32S	271.24W	==>	320.12	40.20202120	-105.02616702
7600.00	90.00	179.64	6915.00	414.32S	270.61W	==>	420.08	40.20174670	-105.02616667
7700.00	90.00	179.64	6915.00	514.31S	269.98W	==>	520.04	40.20147220	-105.02616633
7800.00	90.00	179.64	6915.00	614.31S	269.34W	==>	620.00	40.20119770	-105.02616598
7900.00	90.00	179.64	6915.00	714.31S	268.71W	==>	719.96	40.20092320	-105.02616563
8000.00	90.00	179.64	6915.00	814.31S	268.08W	==>	819.92	40.20064870	-105.02616529
8100.00	90.00	179.64	6915.00	914.31S	267.45W	==>	919.88	40.20037420	-105.02616494
8200.00	90.00	179.64	6915.00	1014.30S	266.82W	==>	1019.84	40.20009970	-105.02616459
8300.00	90.00	179.64	6915.00	1114.30S	266.19W	==>	1119.81	40.19982520	-105.02616425
8400.00	90.00	179.64	6915.00	1214.30S	265.56W	==>	1219.77	40.19955070	-105.02616390

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5050.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 181.24 degrees
Bottom hole distance is 9768.74 Feet on azimuth 181.24 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 13 (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	179.64	6915.00	1314.30S	264.93W	==>	1319.73	40.19927620	-105.02616356
8600.00	90.00	179.64	6915.00	1414.30S	264.30W	==>	1419.69	40.19900170	-105.02616321
8700.00	90.00	179.64	6915.00	1514.29S	263.66W	==>	1519.65	40.19872720	-105.02616286
8800.00	90.00	179.64	6915.00	1614.29S	263.03W	==>	1619.61	40.19845270	-105.02616252
8900.00	90.00	179.64	6915.00	1714.29S	262.40W	==>	1719.57	40.19817821	-105.02616217
9000.00	90.00	179.64	6915.00	1814.29S	261.77W	==>	1819.53	40.19790371	-105.02616182
9100.00	90.00	179.64	6915.00	1914.29S	261.14W	==>	1919.49	40.19762921	-105.02616148
9200.00	90.00	179.64	6915.00	2014.28S	260.51W	==>	2019.45	40.19735471	-105.02616113
9300.00	90.00	179.64	6915.00	2114.28S	259.88W	==>	2119.41	40.19708021	-105.02616079
9400.00	90.00	179.64	6915.00	2214.28S	259.25W	==>	2219.38	40.19680571	-105.02616044
9500.00	90.00	179.64	6915.00	2314.28S	258.62W	==>	2319.34	40.19653121	-105.02616009
9600.00	90.00	179.64	6915.00	2414.28S	257.98W	==>	2419.30	40.19625671	-105.02615975
9700.00	90.00	179.64	6915.00	2514.27S	257.35W	==>	2519.26	40.19598221	-105.02615940
9800.00	90.00	179.64	6915.00	2614.27S	256.72W	==>	2619.22	40.19570771	-105.02615905
9900.00	90.00	179.64	6915.00	2714.27S	256.09W	==>	2719.18	40.19543321	-105.02615871
10000.00	90.00	179.64	6915.00	2814.27S	255.46W	==>	2819.14	40.19515871	-105.02615836
10100.00	90.00	179.64	6915.00	2914.27S	254.83W	==>	2919.10	40.19488421	-105.02615802
10200.00	90.00	179.64	6915.00	3014.26S	254.20W	==>	3019.06	40.19460971	-105.02615767
10300.00	90.00	179.64	6915.00	3114.26S	253.57W	==>	3119.02	40.19433521	-105.02615732
10400.00	90.00	179.64	6915.00	3214.26S	252.94W	==>	3218.98	40.19406071	-105.02615698
10500.00	90.00	179.64	6915.00	3314.26S	252.31W	==>	3318.95	40.19378621	-105.02615663
10600.00	90.00	179.64	6915.00	3414.26S	251.67W	==>	3418.91	40.19351171	-105.02615628
10700.00	90.00	179.64	6915.00	3514.25S	251.04W	==>	3518.87	40.19323721	-105.02615594
10800.00	90.00	179.64	6915.00	3614.25S	250.41W	==>	3618.83	40.19296271	-105.02615559
10900.00	90.00	179.64	6915.00	3714.25S	249.78W	==>	3718.79	40.19268822	-105.02615525
11000.00	90.00	179.64	6915.00	3814.25S	249.15W	==>	3818.75	40.19241372	-105.02615490
11100.00	90.00	179.64	6915.00	3914.25S	248.52W	==>	3918.71	40.19213922	-105.02615455
11200.00	90.00	179.64	6915.00	4014.24S	247.89W	==>	4018.67	40.19186472	-105.02615421
11300.00	90.00	179.64	6915.00	4114.24S	247.26W	==>	4118.63	40.19159022	-105.02615386
11400.00	90.00	179.64	6915.00	4214.24S	246.63W	==>	4218.59	40.19131572	-105.02615352
11500.00	90.00	179.64	6915.00	4314.24S	245.99W	==>	4318.55	40.19104122	-105.02615317
11600.00	90.00	179.64	6915.00	4414.24S	245.36W	==>	4418.51	40.19076672	-105.02615282
11700.00	90.00	179.64	6915.00	4514.23S	244.73W	==>	4518.48	40.19049222	-105.02615248
11800.00	90.00	179.64	6915.00	4614.23S	244.10W	==>	4618.44	40.19021772	-105.02615213
11900.00	90.00	179.64	6915.00	4714.23S	243.47W	==>	4718.40	40.18994322	-105.02615178
12000.00	90.00	179.64	6915.00	4814.23S	242.84W	==>	4818.36	40.18966872	-105.02615144
12100.00	90.00	179.64	6915.00	4914.23S	242.21W	==>	4918.32	40.18939422	-105.02615109
12200.00	90.00	179.64	6915.00	5014.22S	241.58W	==>	5018.28	40.18911972	-105.02615075
12300.00	90.00	179.64	6915.00	5114.22S	240.95W	==>	5118.24	40.18884522	-105.02615040
12400.00	90.00	179.64	6915.00	5214.22S	240.31W	==>	5218.20	40.18857072	-105.02615005
12500.00	90.00	179.64	6915.00	5314.22S	239.68W	==>	5318.16	40.18829622	-105.02614971
12600.00	90.00	179.64	6915.00	5414.22S	239.05W	==>	5418.12	40.18802172	-105.02614936
12700.00	90.00	179.64	6915.00	5514.21S	238.42W	==>	5518.08	40.18774722	-105.02614902
12800.00	90.00	179.64	6915.00	5614.21S	237.79W	==>	5618.05	40.18747272	-105.02614867
12900.00	90.00	179.64	6915.00	5714.21S	237.16W	==>	5718.01	40.18719822	-105.02614832
13000.00	90.00	179.64	6915.00	5814.21S	236.53W	==>	5817.97	40.18692372	-105.02614798
13100.00	90.00	179.64	6915.00	5914.21S	235.90W	==>	5917.93	40.18664922	-105.02614763
13200.00	90.00	179.64	6915.00	6014.20S	235.27W	==>	6017.89	40.18637472	-105.02614729
13300.00	90.00	179.64	6915.00	6114.20S	234.64W	==>	6117.85	40.18610022	-105.02614694
13400.00	90.00	179.64	6915.00	6214.20S	234.00W	==>	6217.81	40.18582572	-105.02614659
13500.00	90.00	179.64	6915.00	6314.20S	233.37W	==>	6317.77	40.18555122	-105.02614625
13600.00	90.00	179.64	6915.00	6414.20S	232.74W	==>	6417.73	40.18527672	-105.02614590
13700.00	90.00	179.64	6915.00	6514.19S	232.11W	==>	6517.69	40.18500222	-105.02614555
13800.00	90.00	179.64	6915.00	6614.19S	231.48W	==>	6617.65	40.18472772	-105.02614521
13900.00	90.00	179.64	6915.00	6714.19S	230.85W	==>	6717.62	40.18445322	-105.02614486
14000.00	90.00	179.64	6915.00	6814.19S	230.22W	==>	6817.58	40.18417872	-105.02614452
14100.00	90.00	179.64	6915.00	6914.19S	229.59W	==>	6917.54	40.18390422	-105.02614417
14200.00	90.00	179.64	6915.00	7014.18S	228.96W	==>	7017.50	40.18362972	-105.02614382
14300.00	90.00	179.64	6915.00	7114.18S	228.32W	==>	7117.46	40.18335522	-105.02614348

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Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 13 (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	179.64	6915.00	7214.18S	227.69W	==>	7217.42	40.18308072	-105.02614313
14500.00	90.00	179.64	6915.00	7314.18S	227.06W	==>	7317.38	40.18280622	-105.02614279
14600.00	90.00	179.64	6915.00	7414.18S	226.43W	==>	7417.34	40.18253172	-105.02614244
14700.00	90.00	179.64	6915.00	7514.17S	225.80W	==>	7517.30	40.18225722	-105.02614209
14800.00	90.00	179.64	6915.00	7614.17S	225.17W	==>	7617.26	40.18198272	-105.02614175
14900.00	90.00	179.64	6915.00	7714.17S	224.54W	==>	7717.22	40.18170822	-105.02614140
15000.00	90.00	179.64	6915.00	7814.17S	223.91W	==>	7817.18	40.18143372	-105.02614106
15100.00	90.00	179.64	6915.00	7914.17S	223.28W	==>	7917.15	40.18115922	-105.02614071
15200.00	90.00	179.64	6915.00	8014.16S	222.64W	==>	8017.11	40.18088472	-105.02614036
15300.00	90.00	179.64	6915.00	8114.16S	222.01W	==>	8117.07	40.18061022	-105.02614002
15400.00	90.00	179.64	6915.00	8214.16S	221.38W	==>	8217.03	40.18033572	-105.02613967
15500.00	90.00	179.64	6915.00	8314.16S	220.75W	==>	8316.99	40.18006122	-105.02613933
15600.00	90.00	179.64	6915.00	8414.16S	220.12W	==>	8416.95	40.17978672	-105.02613898
15700.00	90.00	179.64	6915.00	8514.15S	219.49W	==>	8516.91	40.17951222	-105.02613863
15800.00	90.00	179.64	6915.00	8614.15S	218.86W	==>	8616.87	40.17923772	-105.02613829
15900.00	90.00	179.64	6915.00	8714.15S	218.23W	==>	8716.83	40.17896322	-105.02613794
16000.00	90.00	179.64	6915.00	8814.15S	217.60W	==>	8816.79	40.17868872	-105.02613760
16100.00	90.00	179.64	6915.00	8914.15S	216.97W	==>	8916.75	40.17841422	-105.02613725
16200.00	90.00	179.64	6915.00	9014.14S	216.33W	==>	9016.72	40.17813972	-105.02613690
16300.00	90.00	179.64	6915.00	9114.14S	215.70W	==>	9116.68	40.17786522	-105.02613656
16400.00	90.00	179.64	6915.00	9214.14S	215.07W	==>	9216.64	40.17759072	-105.02613621
16500.00	90.00	179.64	6915.00	9314.14S	214.44W	==>	9316.60	40.17731622	-105.02613587
16600.00	90.00	179.64	6915.00	9414.14S	213.81W	==>	9416.56	40.17704172	-105.02613552
16700.00	90.00	179.64	6915.00	9514.13S	213.18W	==>	9516.52	40.17676722	-105.02613517
16800.00	90.00	179.64	6915.00	9614.13S	212.55W	==>	9616.48	40.17649272	-105.02613483
16900.00	90.00	179.64	6915.00	9714.13S	211.92W	==>	9716.44	40.17621822	-105.02613448
16952.32	90.00	179.64	6915.00	9766.45S	211.59W	==>	9768.74	40.17607460	-105.02613430

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Wellbore: OLANDER 13 (PWB)



Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
OLANDER 13 - LP	88.49S	272.66W	6915.00	40.20264110	-105.02616780	1317018.18	3132350.72
OLANDER 13 - BHL	9766.45S	211.59W	6915.00	40.17607460	-105.02613430	1307340.65	3132411.79

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
791025	Planned	1500.00	1500.00	WdW Rate Gyro	Standard
791024	Planned	16952.32	6915.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

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