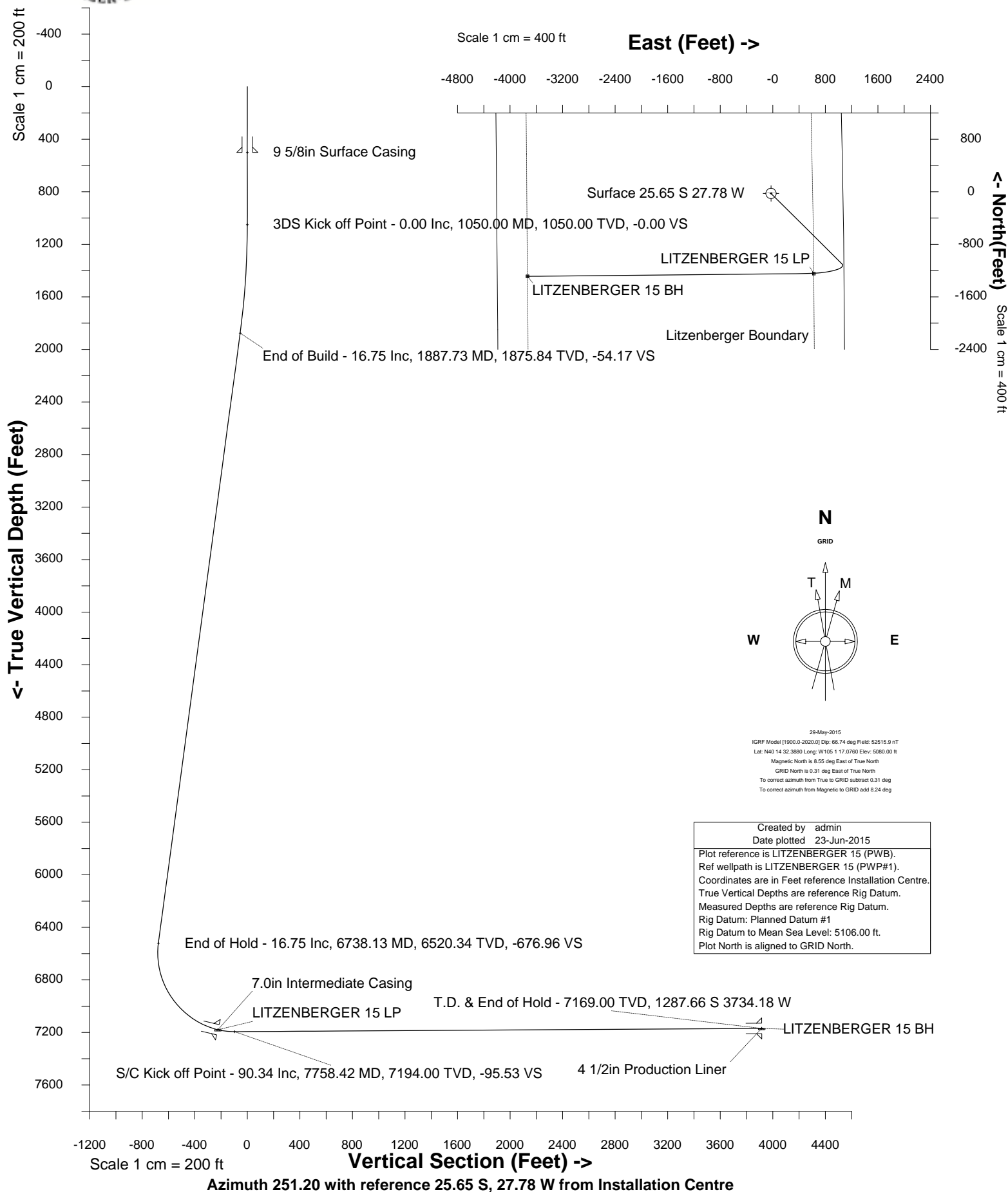




Cub Creek Energy, LLC

Location	Weld County, CO	Slot	LITZENBERGER 15
Field	WATTENBERG	Well	LITZENBERGER 15
Installation	Litzenberger Pad - Finalized	Wellbore	LITZENBERGER 15 (PWB)





SYSDRILL
Well Design Combined Report
Wellbore: LITZENBERGER 15 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
LITZENBERGER 15	40.24226000	-105.02151000	1331457.5021	3133573.8445	25.65S	27.78W	0.00

Declination		
Date	Source	Time
29-May-2015	IGRF Model [1900.0-2020.0]	11:25

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Litzenberger Pad - Finalized	40.24233000	-105.02141000	1331483.1524	3133601.6223	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
25.00	0.00	0.000	25.00	0.00N	0.00E		0.00	1331457.50	3133573.84
11981.61	90.34	269.440	7169.00	1262.01S	3706.40W	==>	3915.37	1330195.55	3129867.61

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	Rig Datum Slot Datum
25.00	0.00	0.000	25.00	0.00N	0.00E	==>	0.00	
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	9 5/8in Surface Casing
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	
1100.00	1.00	134.750	1100.00	0.31S	0.31E	2.00	-0.19	
1200.00	3.00	134.750	1199.93	2.76S	2.79E	2.00	-1.75	
1300.00	5.00	134.750	1299.68	7.67S	7.74E	2.00	-4.86	
1400.00	7.00	134.750	1399.13	15.03S	15.17E	2.00	-9.51	
1500.00	9.00	134.750	1498.15	24.83S	25.05E	2.00	-15.71	
1600.00	11.00	134.750	1596.63	37.05S	37.38E	2.00	-23.44	
1700.00	13.00	134.750	1694.44	51.69S	52.15E	2.00	-32.70	
1800.00	15.00	134.750	1791.46	68.72S	69.33E	2.00	-43.48	
1900.00	16.75	134.750	1887.59	88.10S	88.89E	==>	-55.74	
2000.00	16.75	134.750	1983.35	108.40S	109.36E	==>	-68.58	
2100.00	16.75	134.750	2079.10	128.69S	129.83E	==>	-81.42	
2200.00	16.75	134.750	2174.86	148.99S	150.31E	==>	-94.26	
2300.00	16.75	134.750	2270.61	169.28S	170.78E	==>	-107.10	
2400.00	16.75	134.750	2366.37	189.57S	191.26E	==>	-119.94	
2500.00	16.75	134.750	2462.12	209.87S	211.73E	==>	-132.78	
2600.00	16.75	134.750	2557.87	230.16S	232.20E	==>	-145.62	
2700.00	16.75	134.750	2653.63	250.45S	252.68E	==>	-158.46	
2800.00	16.75	134.750	2749.38	270.75S	273.15E	==>	-171.30	
2900.00	16.75	134.750	2845.14	291.04S	293.62E	==>	-184.14	
3000.00	16.75	134.750	2940.89	311.33S	314.10E	==>	-196.98	
3100.00	16.75	134.750	3036.65	331.63S	334.57E	==>	-209.82	
3200.00	16.75	134.750	3132.40	351.92S	355.05E	==>	-222.66	
3300.00	16.75	134.750	3228.16	372.22S	375.52E	==>	-235.50	
3400.00	16.75	134.750	3323.91	392.51S	395.99E	==>	-248.34	
3500.00	16.75	134.750	3419.67	412.80S	416.47E	==>	-261.18	

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Vertical Section is from 0.00N 0.00E on azimuth 251.200 degrees
Bottom hole distance is 3915.37 Feet on azimuth 251.20 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Integrated Petroleum Technologies, Inc.
Date Printed: 23-Jun-2015



SYSDRILL
Well Design Combined Report
Wellbore: LITZENBERGER 15 (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
3600.00	16.75	134.750	3515.42	433.10S	436.94E	==>	-274.02	
3700.00	16.75	134.750	3611.18	453.39S	457.41E	==>	-286.86	
3800.00	16.75	134.750	3706.93	473.68S	477.89E	==>	-299.70	
3900.00	16.75	134.750	3802.69	493.98S	498.36E	==>	-312.54	
4000.00	16.75	134.750	3898.44	514.27S	518.84E	==>	-325.38	
4100.00	16.75	134.750	3994.20	534.57S	539.31E	==>	-338.22	
4200.00	16.75	134.750	4089.95	554.86S	559.78E	==>	-351.06	
4300.00	16.75	134.750	4185.71	575.15S	580.26E	==>	-363.90	
4400.00	16.75	134.750	4281.46	595.45S	600.73E	==>	-376.74	
4500.00	16.75	134.750	4377.22	615.74S	621.20E	==>	-389.58	
4600.00	16.75	134.750	4472.97	636.03S	641.68E	==>	-402.42	
4700.00	16.75	134.750	4568.73	656.33S	662.15E	==>	-415.26	
4800.00	16.75	134.750	4664.48	676.62S	682.63E	==>	-428.10	
4900.00	16.75	134.750	4760.24	696.91S	703.10E	==>	-440.94	
5000.00	16.75	134.750	4855.99	717.21S	723.57E	==>	-453.78	
5100.00	16.75	134.750	4951.75	737.50S	744.05E	==>	-466.62	
5200.00	16.75	134.750	5047.50	757.80S	764.52E	==>	-479.46	
5300.00	16.75	134.750	5143.26	778.09S	785.00E	==>	-492.30	
5400.00	16.75	134.750	5239.01	798.38S	805.47E	==>	-505.14	
5500.00	16.75	134.750	5334.77	818.68S	825.94E	==>	-517.98	
5600.00	16.75	134.750	5430.52	838.97S	846.42E	==>	-530.82	
5700.00	16.75	134.750	5526.28	859.26S	866.89E	==>	-543.66	
5800.00	16.75	134.750	5622.03	879.56S	887.36E	==>	-556.50	
5900.00	16.75	134.750	5717.78	899.85S	907.84E	==>	-569.34	
6000.00	16.75	134.750	5813.54	920.14S	928.31E	==>	-582.18	
6100.00	16.75	134.750	5909.29	940.44S	948.79E	==>	-595.02	
6200.00	16.75	134.750	6005.05	960.73S	969.26E	==>	-607.86	
6300.00	16.75	134.750	6100.80	981.03S	989.73E	==>	-620.70	
6400.00	16.75	134.750	6196.56	1001.32S	1010.21E	==>	-633.54	
6500.00	16.75	134.750	6292.31	1021.61S	1030.68E	==>	-646.38	
6600.00	16.75	134.750	6388.07	1041.91S	1051.15E	==>	-659.22	
6700.00	16.75	134.750	6483.82	1062.20S	1071.63E	==>	-672.06	
6800.00	13.27	154.700	6580.12	1082.65S	1088.81E	10.00	-681.74	
6900.00	12.90	199.970	6677.78	1103.56S	1089.91E	10.00	-676.03	
7000.00	18.80	230.360	6774.09	1124.38S	1073.64E	10.00	-653.93	
7100.00	27.16	244.680	6866.14	1144.48S	1040.52E	10.00	-616.09	
7200.00	36.31	252.410	6951.13	1163.24S	991.53E	10.00	-563.68	
7300.00	45.78	257.330	7026.48	1180.09S	928.18E	10.00	-498.28	
7400.00	55.41	260.870	7089.90	1194.52S	852.39E	10.00	-421.88	
7500.00	65.11	263.660	7139.46	1206.09S	766.45E	10.00	-336.80	
7600.00	74.86	266.040	7173.65	1214.45S	672.99E	10.00	-245.63	
7623.00	77.10	266.550	7179.22	1215.89S	650.72E	10.00	-224.08	
7700.00	84.63	268.210	7191.44	1219.35S	574.84E	10.00	-151.13	7.0in Intermediate Casing
7800.00	90.34	269.440	7193.75	1220.96S	474.93E	==>	-56.04	
7900.00	90.34	269.440	7193.16	1221.94S	374.94E	==>	38.93	
8000.00	90.34	269.440	7192.57	1222.92S	274.95E	==>	133.90	
8100.00	90.34	269.440	7191.98	1223.90S	174.95E	==>	228.88	
8200.00	90.34	269.440	7191.39	1224.88S	74.96E	==>	323.85	
8300.00	90.34	269.440	7190.79	1225.87S	25.04W	==>	418.82	
8400.00	90.34	269.440	7190.20	1226.85S	125.03W	==>	513.80	
8500.00	90.34	269.440	7189.61	1227.83S	225.02W	==>	608.77	
8600.00	90.34	269.440	7189.02	1228.81S	325.02W	==>	703.74	
8700.00	90.34	269.440	7188.43	1229.79S	425.01W	==>	798.72	
8800.00	90.34	269.440	7187.83	1230.77S	525.00W	==>	893.69	
8900.00	90.34	269.440	7187.24	1231.76S	625.00W	==>	988.66	
9000.00	90.34	269.440	7186.65	1232.74S	724.99W	==>	1083.64	
9100.00	90.34	269.440	7186.06	1233.72S	824.98W	==>	1178.61	
9200.00	90.34	269.440	7185.47	1234.70S	924.98W	==>	1273.58	
9300.00	90.34	269.440	7184.87	1235.68S	1024.97W	==>	1368.55	
9400.00	90.34	269.440	7184.28	1236.66S	1124.96W	==>	1463.53	

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Date Printed: 23-Jun-2015



SYSDRILL
Well Design Combined Report
Wellbore: LITZENBERGER 15 (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
9500.00	90.34	269.440	7183.69	1237.65S	1224.96W	==>	1558.50	
9600.00	90.34	269.440	7183.10	1238.63S	1324.95W	==>	1653.47	
9700.00	90.34	269.440	7182.51	1239.61S	1424.94W	==>	1748.45	
9800.00	90.34	269.440	7181.91	1240.59S	1524.94W	==>	1843.42	
9900.00	90.34	269.440	7181.32	1241.57S	1624.93W	==>	1938.39	
10000.00	90.34	269.440	7180.73	1242.56S	1724.92W	==>	2033.37	
10100.00	90.34	269.440	7180.14	1243.54S	1824.92W	==>	2128.34	
10200.00	90.34	269.440	7179.55	1244.52S	1924.91W	==>	2223.31	
10300.00	90.34	269.440	7178.95	1245.50S	2024.90W	==>	2318.29	
10400.00	90.34	269.440	7178.36	1246.48S	2124.90W	==>	2413.26	
10500.00	90.34	269.440	7177.77	1247.46S	2224.89W	==>	2508.23	
10600.00	90.34	269.440	7177.18	1248.45S	2324.88W	==>	2603.21	
10700.00	90.34	269.440	7176.59	1249.43S	2424.88W	==>	2698.18	
10800.00	90.34	269.440	7175.99	1250.41S	2524.87W	==>	2793.15	
10900.00	90.34	269.440	7175.40	1251.39S	2624.86W	==>	2888.13	
11000.00	90.34	269.440	7174.81	1252.37S	2724.86W	==>	2983.10	
11100.00	90.34	269.440	7174.22	1253.35S	2824.85W	==>	3078.07	
11200.00	90.34	269.440	7173.63	1254.34S	2924.84W	==>	3173.05	
11300.00	90.34	269.440	7173.03	1255.32S	3024.84W	==>	3268.02	
11400.00	90.34	269.440	7172.44	1256.30S	3124.83W	==>	3362.99	
11500.00	90.34	269.440	7171.85	1257.28S	3224.82W	==>	3457.97	
11600.00	90.34	269.440	7171.26	1258.26S	3324.82W	==>	3552.94	
11700.00	90.34	269.440	7170.67	1259.24S	3424.81W	==>	3647.91	
11800.00	90.34	269.440	7170.08	1260.23S	3524.81W	==>	3742.89	
11900.00	90.34	269.440	7169.48	1261.21S	3624.80W	==>	3837.86	
11981.61	90.34	269.440	7169.00	1262.01S	3706.40W	==>	3915.37	4 1/2in Production Liner

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SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: LITZENBERGER 15 (PWB)



Ellipse separations are reported ONLY if BOTH wells have uncertainty data
Only Depth and Magnetic Reference Field error terms are correlated across tie points
Scan limit is calculated on CENTRE to CENTRE distance
Summary data uses Closest Approach clearance calculation for all minima
Hole size/Casings ARE included
Hole size/Casings are NOT subtracted from Centre-Centre distance
Confidence limit of 95.00% / 2.80 SD.

Wellbore		
Name	Created	Last Revised
LITZENBERGER 15 (PWB)	19-Jun-2015	19-Jun-2015

Well		
Name	Government ID	Last Revised
LITZENBERGER 15		16-Jun-2015

Slot						
Name	Latitude	Longitude	Grid Northing	Grid Easting	North	East
LITZENBERGER 15	40.24226000	-105.02151000	1331457.5021	3133573.8445	25.65S	27.78W

Installation						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Easting	Northing	Coord System Name	North Alignment
Litzenberger Pad - Finalized	40.24233000	-105.02141000	3133601.6223	1331483.1524	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

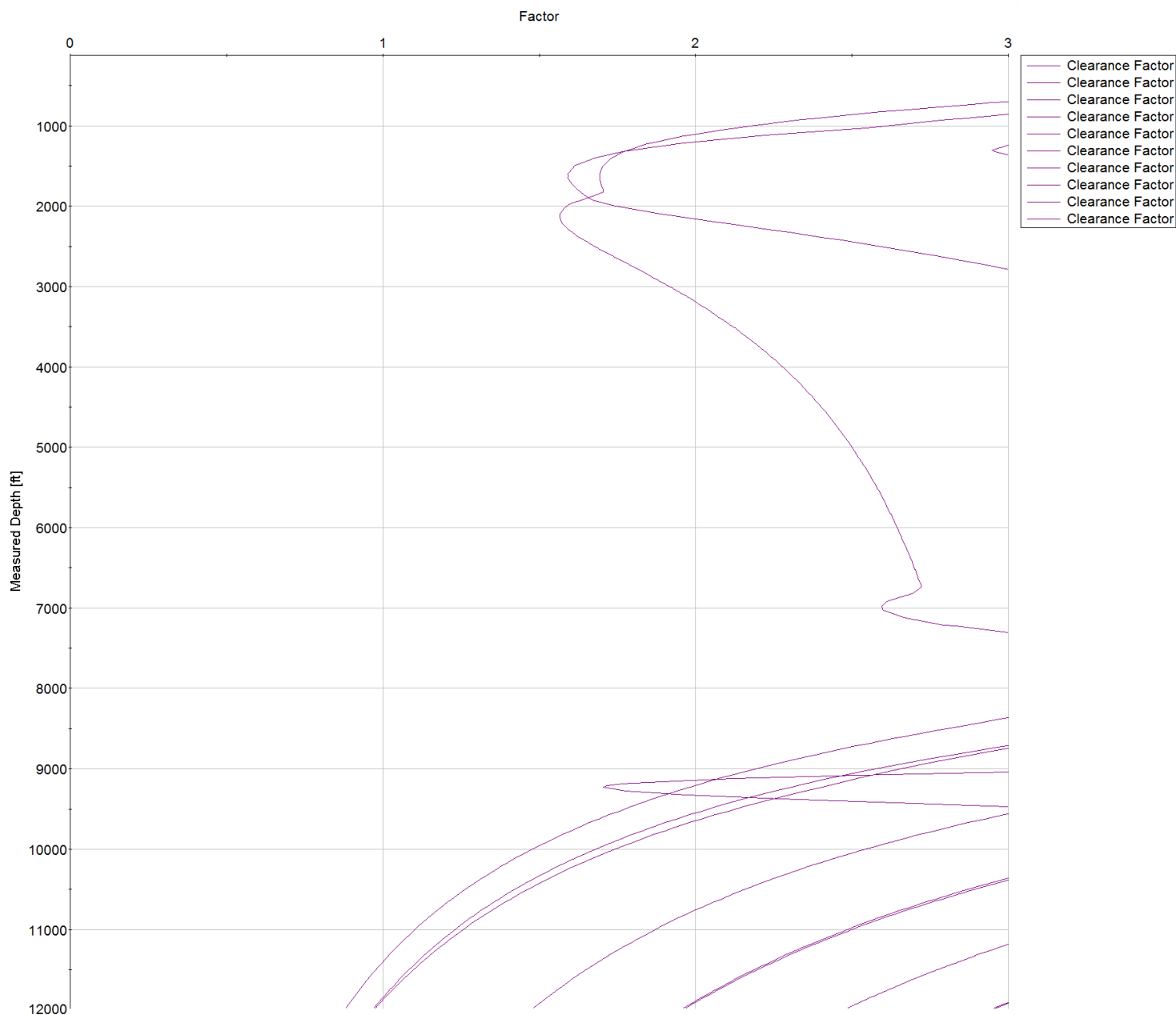
Clearance Summary							
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
LITZENBERGER 14	13.96	1050.01	7758.42	-33.75	11981.61	0.88	11981.61
LITZENBERGER 16	14.73	1337.34	11981.61	-9.07	11981.61	0.97	11981.61
LITZENBERGER 12	23.19	845.69	11934.45	17.61	861.61	1.97	11981.61
LITZENBERGER 17	23.60	1215.75	7758.42	15.78	1238.91	1.48	11981.61
LITZENBERGER 9	27.32	928.40	11981.61	21.25	943.64	3.94	11981.61
LITZENBERGER 11	29.07	550.00	550.00	25.06	625.00	2.49	11981.61
LITZENBERGER 13	30.14	1227.32	1227.32	-10.48	11981.61	0.97	11981.61
LITZENBERGER 8	36.07	1144.80	1144.80	28.70	1173.29	4.35	11981.61
LITZENBERGER 10	37.81	500.72	500.72	34.16	484.32	2.96	11981.61
LITZENBERGER 18	39.23	1238.91	11981.61	31.27	1271.72	1.96	11981.61
LITZENBERGER 7	48.05	1173.29	1173.29	40.61	1173.29	4.93	11981.61
LITZENBERGER 19	56.04	1206.10	1206.10	48.25	1238.91	2.95	11981.61
LITZENBERGER 6	59.11	1140.49	1140.49	51.77	1156.89	5.96	11981.61
Kintz #2	65.94	1751.40	9189.51	53.89	1763.85	1.70	9227.76
LITZENBERGER 20	66.23	1189.70	11981.61	58.51	1206.10	3.27	11981.61
LITZENBERGER 5	70.25	1140.49	11981.61	62.90	1156.89	6.24	11981.61
LITZENBERGER 21	80.64	1140.49	11981.61	73.19	1173.29	3.91	11981.61
LITZENBERGER 4	82.04	1130.52	1130.52	74.70	1140.49	6.92	11981.61
LITZENBERGER 22	98.44	1101.92	1101.92	91.24	1125.00	4.93	11981.61
LITZENBERGER 3	99.18	1107.68	1107.68	92.00	1107.68	7.93	11981.61
LITZENBERGER 23	107.48	1091.27	1091.27	100.21	1107.68	5.07	11981.61



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: LITZENBERGER 15 (PWB)



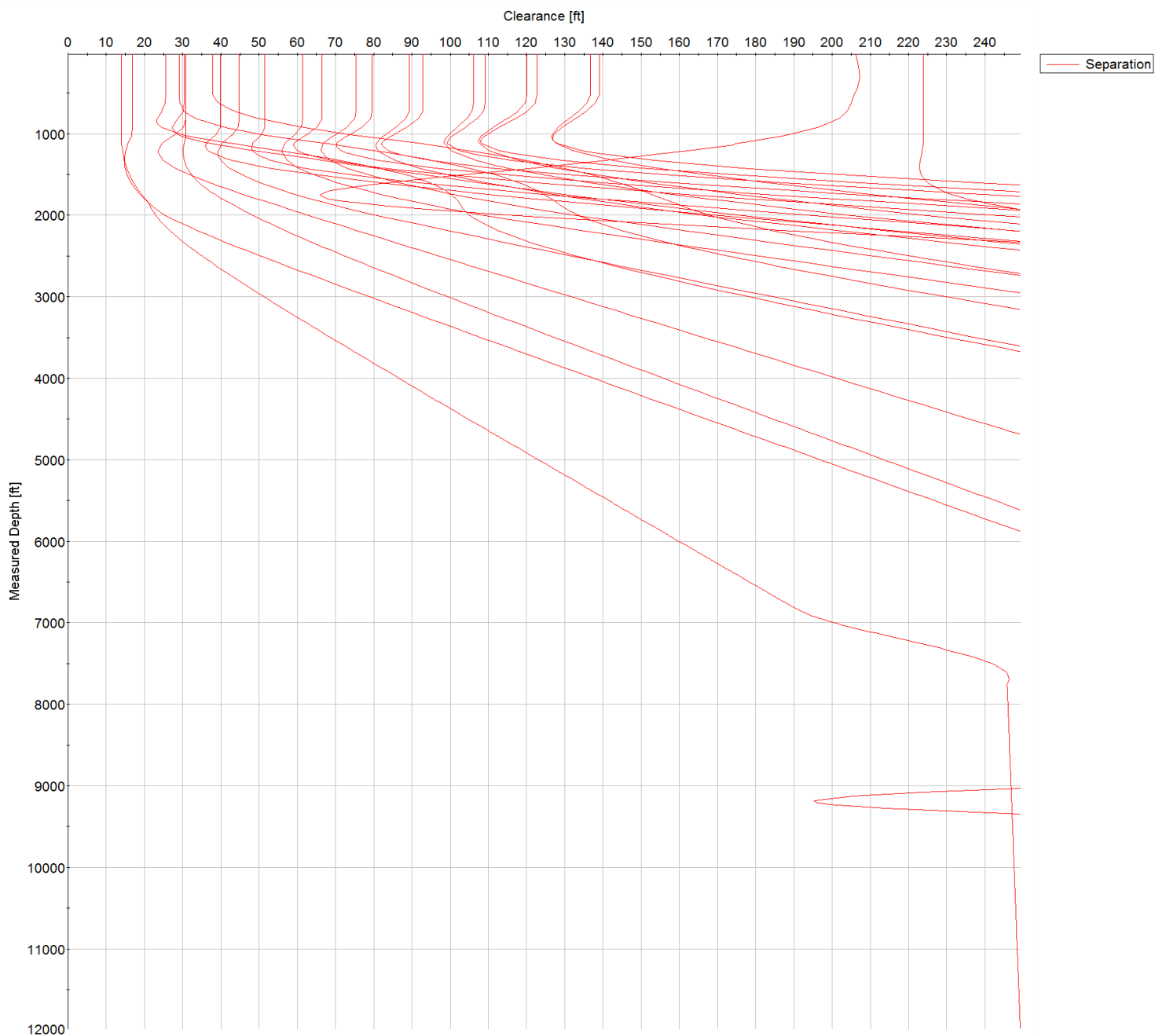
Clearance Summary							
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
LITZENBERGER 2	107.95	1091.27	11981.61	100.73	1107.68	8.07	11981.61
LITZENBERGER 24	126.60	1042.06	11981.61	119.58	1058.46	5.86	11981.61
LITZENBERGER 1	126.76	1058.46	11934.45	119.65	1074.87	8.89	11981.61
Kintz #1	222.88	1402.95	8089.22	207.56	1484.97	13.04	1862.27
Billings #2A-18H	2186.94	10219.07	10219.07	1791.60	10244.82	5.53	10244.82
Billings #2B-18H	2531.47	11981.61	11981.61	2138.28	11965.97	6.43	10366.09



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SYSDRILL
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Wellbore: LITZENBERGER 15 (PWB)



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