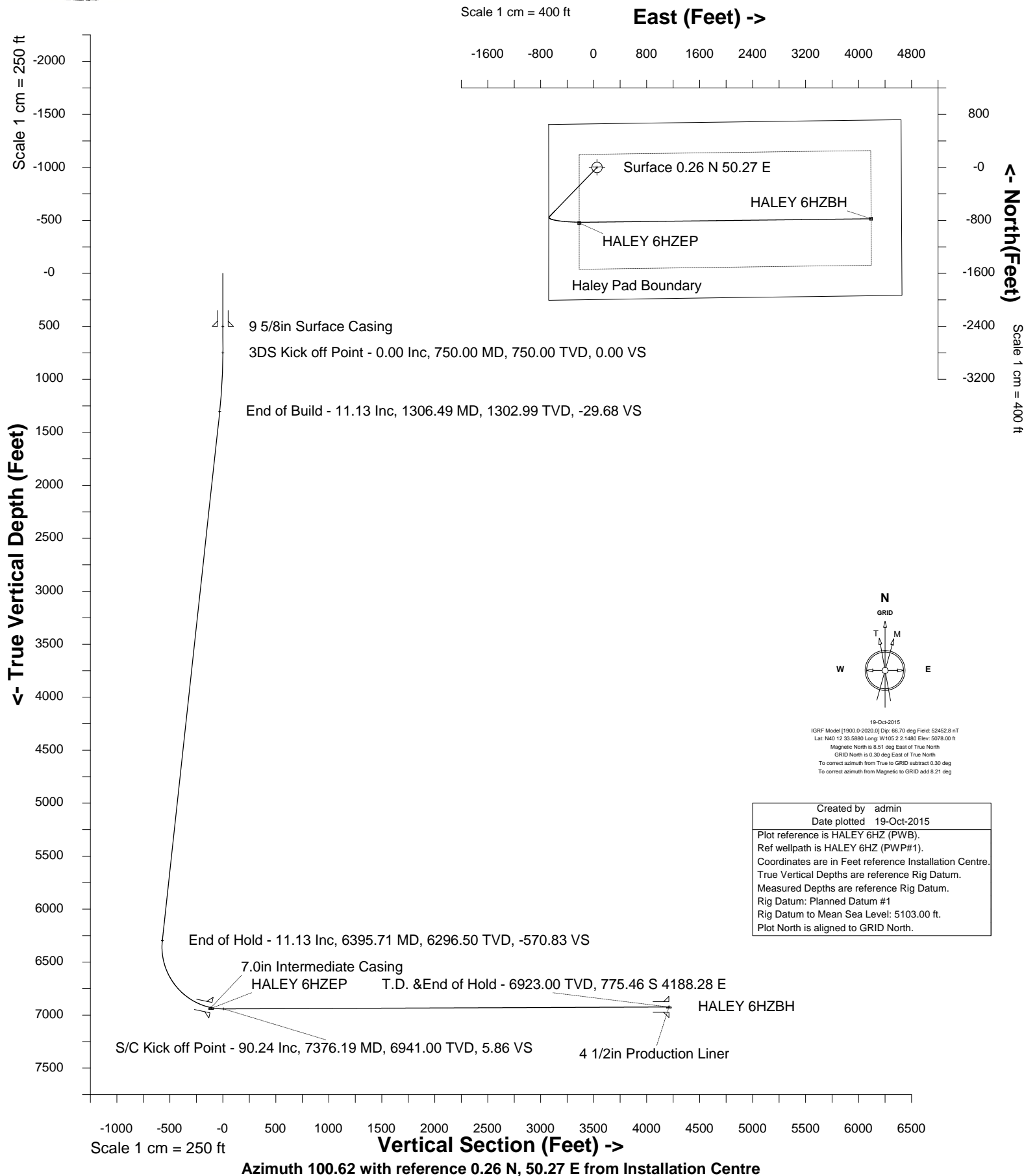




Cub Creek Energy, LLC

Location Weld County, CO
Field WATTENBERG
Installation Haley

Slot HALEY 6HZ
Well HALEY 6HZ
Wellbore HALEY 6HZ (PWB)





SYSDRILL
Well Design Combined Report
Wellbore: HALEY 6HZ (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
HALEY 6HZ	40.20933000	-105.03375000	1319443.5714	3130220.0682	0.26N	50.27E	0.00

Declination		
Date	Source	Time
19-Oct-2015	IGRF Model [1900.0-2020.0]	09:07

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Haley	40.20933000	-105.03393000	1319443.3072	3130169.7961	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	1319443.57	3130220.07
11663.87	90.24	89.300	6923.00	775.73S	4138.00E	==>	4210.08	1318667.88	3134357.88

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	1.00	224.040	800.00	0.31S	0.30W	2.00	-0.24	
900.00	3.00	224.040	899.93	2.82S	2.73W	2.00	-2.16	
1000.00	5.00	224.040	999.68	7.84S	7.58W	2.00	-6.01	
1100.00	7.00	224.040	1099.13	15.35S	14.85W	2.00	-11.76	
1200.00	9.00	224.040	1198.15	25.35S	24.52W	2.00	-19.43	
1300.00	11.00	224.040	1296.63	37.83S	36.59W	2.00	-28.99	
1400.00	11.13	224.040	1394.75	51.70S	50.01W	==>	-39.62	
1500.00	11.13	224.040	1492.87	65.58S	63.43W	==>	-50.26	
1600.00	11.13	224.040	1590.99	79.45S	76.85W	==>	-60.89	
1700.00	11.13	224.040	1689.11	93.33S	90.26W	==>	-71.52	
1800.00	11.13	224.040	1787.23	107.21S	103.68W	==>	-82.16	
1900.00	11.13	224.040	1885.34	121.08S	117.10W	==>	-92.79	
2000.00	11.13	224.040	1983.46	134.96S	130.52W	==>	-103.42	
2100.00	11.13	224.040	2081.58	148.83S	143.94W	==>	-114.06	
2200.00	11.13	224.040	2179.70	162.71S	157.36W	==>	-124.69	
2300.00	11.13	224.040	2277.82	176.58S	170.78W	==>	-135.32	
2400.00	11.13	224.040	2375.94	190.46S	184.20W	==>	-145.96	
2500.00	11.13	224.040	2474.06	204.33S	197.62W	==>	-156.59	
2600.00	11.13	224.040	2572.18	218.21S	211.04W	==>	-167.22	
2700.00	11.13	224.040	2670.30	232.08S	224.46W	==>	-177.86	
2800.00	11.13	224.040	2768.42	245.96S	237.88W	==>	-188.49	
2900.00	11.13	224.040	2866.54	259.83S	251.30W	==>	-199.12	
3000.00	11.13	224.040	2964.66	273.71S	264.72W	==>	-209.76	
3100.00	11.13	224.040	3062.78	287.58S	278.14W	==>	-220.39	
3200.00	11.13	224.040	3160.89	301.46S	291.56W	==>	-231.02	
3300.00	11.13	224.040	3259.01	315.34S	304.98W	==>	-241.65	
3400.00	11.13	224.040	3357.13	329.21S	318.40W	==>	-252.29	
3500.00	11.13	224.040	3455.25	343.09S	331.82W	==>	-262.92	
3600.00	11.13	224.040	3553.37	356.96S	345.24W	==>	-273.55	

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Vertical Section is from 0.00N 0.00E on azimuth 100.620 degrees
Bottom hole distance is 4210.08 Feet on azimuth 100.62 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Integrated Petroleum Technologies, Inc.
Date Printed: 19-Oct-2015



SYSDRILL
Well Design Combined Report
Wellbore: HALEY 6HZ (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
3700.00	11.13	224.040	3651.49	370.84S	358.66W	==>	-284.19	
3800.00	11.13	224.040	3749.61	384.71S	372.08W	==>	-294.82	
3900.00	11.13	224.040	3847.73	398.59S	385.50W	==>	-305.45	
4000.00	11.13	224.040	3945.85	412.46S	398.92W	==>	-316.09	
4100.00	11.13	224.040	4043.97	426.34S	412.34W	==>	-326.72	
4200.00	11.13	224.040	4142.09	440.21S	425.75W	==>	-337.35	
4300.00	11.13	224.040	4240.21	454.09S	439.17W	==>	-347.99	
4400.00	11.13	224.040	4338.33	467.96S	452.59W	==>	-358.62	
4500.00	11.13	224.040	4436.45	481.84S	466.01W	==>	-369.25	
4600.00	11.13	224.040	4534.56	495.71S	479.43W	==>	-379.89	
4700.00	11.13	224.040	4632.68	509.59S	492.85W	==>	-390.52	
4800.00	11.13	224.040	4730.80	523.47S	506.27W	==>	-401.15	
4900.00	11.13	224.040	4828.92	537.34S	519.69W	==>	-411.79	
5000.00	11.13	224.040	4927.04	551.22S	533.11W	==>	-422.42	
5100.00	11.13	224.040	5025.16	565.09S	546.53W	==>	-433.05	
5200.00	11.13	224.040	5123.28	578.97S	559.95W	==>	-443.69	
5300.00	11.13	224.040	5221.40	592.84S	573.37W	==>	-454.32	
5400.00	11.13	224.040	5319.52	606.72S	586.79W	==>	-464.95	
5500.00	11.13	224.040	5417.64	620.59S	600.21W	==>	-475.59	
5600.00	11.13	224.040	5515.76	634.47S	613.63W	==>	-486.22	
5700.00	11.13	224.040	5613.88	648.34S	627.05W	==>	-496.85	
5800.00	11.13	224.040	5712.00	662.22S	640.47W	==>	-507.49	
5900.00	11.13	224.040	5810.12	676.09S	653.89W	==>	-518.12	
6000.00	11.13	224.040	5908.23	689.97S	667.31W	==>	-528.75	
6100.00	11.13	224.040	6006.35	703.84S	680.73W	==>	-539.39	
6200.00	11.13	224.040	6104.47	717.72S	694.15W	==>	-550.02	
6300.00	11.13	224.040	6202.59	731.60S	707.57W	==>	-560.65	
6400.00	10.84	222.410	6300.71	745.47S	720.97W	10.00	-571.27	
6500.00	8.38	161.020	6399.54	759.33S	724.95W	10.00	-572.63	
6600.00	14.89	121.060	6497.58	772.89S	711.54W	10.00	-556.95	
6700.00	23.91	107.710	6591.85	785.71S	681.15W	10.00	-524.72	
6800.00	33.48	101.540	6679.48	797.42S	634.70W	10.00	-476.91	
6900.00	43.22	97.890	6757.82	807.66S	573.61W	10.00	-414.98	
7000.00	53.04	95.370	6824.49	816.12S	499.73W	10.00	-340.80	
7100.00	62.91	93.430	6877.45	822.54S	415.30W	10.00	-256.63	
7200.00	72.80	91.810	6915.11	826.72S	322.89W	10.00	-165.04	
7256.00	78.34	90.980	6929.06	828.04S	268.70W	10.00	-111.53	7.0in Intermediate Casing
7300.00	82.69	90.360	6936.31	828.55S	225.31W	10.00	-68.79	
7400.00	90.24	89.300	6940.90	828.02S	125.51W	==>	29.20	
7500.00	90.24	89.300	6940.48	826.80S	25.52W	==>	127.26	
7600.00	90.24	89.300	6940.06	825.57S	74.47E	==>	225.31	
7700.00	90.24	89.300	6939.64	824.34S	174.46E	==>	323.36	
7800.00	90.24	89.300	6939.22	823.12S	274.45E	==>	421.42	
7900.00	90.24	89.300	6938.80	821.89S	374.44E	==>	519.47	
8000.00	90.24	89.300	6938.38	820.66S	474.44E	==>	617.52	
8100.00	90.24	89.300	6937.96	819.44S	574.43E	==>	715.58	
8200.00	90.24	89.300	6937.54	818.21S	674.42E	==>	813.63	
8300.00	90.24	89.300	6937.12	816.99S	774.41E	==>	911.68	
8400.00	90.24	89.300	6936.70	815.76S	874.40E	==>	1009.74	
8500.00	90.24	89.300	6936.28	814.53S	974.39E	==>	1107.79	
8600.00	90.24	89.300	6935.86	813.31S	1074.38E	==>	1205.84	
8700.00	90.24	89.300	6935.44	812.08S	1174.38E	==>	1303.90	
8800.00	90.24	89.300	6935.02	810.85S	1274.37E	==>	1401.95	
8900.00	90.24	89.300	6934.60	809.63S	1374.36E	==>	1500.01	
9000.00	90.24	89.300	6934.18	808.40S	1474.35E	==>	1598.06	
9100.00	90.24	89.300	6933.76	807.17S	1574.34E	==>	1696.11	
9200.00	90.24	89.300	6933.34	805.95S	1674.33E	==>	1794.17	
9300.00	90.24	89.300	6932.92	804.72S	1774.33E	==>	1892.22	
9400.00	90.24	89.300	6932.50	803.49S	1874.32E	==>	1990.27	
9500.00	90.24	89.300	6932.08	802.27S	1974.31E	==>	2088.33	

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SYSDRILL
Well Design Combined Report
Wellbore: HALEY 6HZ (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
9600.00	90.24	89.300	6931.66	801.04S	2074.30E	==>	2186.38	
9700.00	90.24	89.300	6931.24	799.81S	2174.29E	==>	2284.43	
9800.00	90.24	89.300	6930.82	798.59S	2274.28E	==>	2382.49	
9900.00	90.24	89.300	6930.40	797.36S	2374.28E	==>	2480.54	
10000.00	90.24	89.300	6929.99	796.13S	2474.27E	==>	2578.60	
10100.00	90.24	89.300	6929.57	794.91S	2574.26E	==>	2676.65	
10200.00	90.24	89.300	6929.15	793.68S	2674.25E	==>	2774.70	
10300.00	90.24	89.300	6928.73	792.45S	2774.24E	==>	2872.76	
10400.00	90.24	89.300	6928.31	791.23S	2874.23E	==>	2970.81	
10500.00	90.24	89.300	6927.89	790.00S	2974.23E	==>	3068.86	
10600.00	90.24	89.300	6927.47	788.77S	3074.22E	==>	3166.92	
10700.00	90.24	89.300	6927.05	787.55S	3174.21E	==>	3264.97	
10800.00	90.24	89.300	6926.63	786.32S	3274.20E	==>	3363.02	
10900.00	90.24	89.300	6926.21	785.09S	3374.19E	==>	3461.08	
11000.00	90.24	89.300	6925.79	783.87S	3474.18E	==>	3559.13	
11100.00	90.24	89.300	6925.37	782.64S	3574.17E	==>	3657.19	
11200.00	90.24	89.300	6924.95	781.41S	3674.17E	==>	3755.24	
11300.00	90.24	89.300	6924.53	780.19S	3774.16E	==>	3853.29	
11400.00	90.24	89.300	6924.11	778.96S	3874.15E	==>	3951.35	
11500.00	90.24	89.300	6923.69	777.74S	3974.14E	==>	4049.40	
11600.00	90.24	89.300	6923.27	776.51S	4074.13E	==>	4147.45	
11663.87	90.24	89.300	6923.00	775.73S	4138.00E	==>	4210.08	4 1/2in Production Liner

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SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: HALEY 6HZ (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
HALEY 6HZ (PWB)	19-Oct-2015	19-Oct-2015

Well		
Name	Government ID	Last Revised
HALEY 6HZ		19-Oct-2015

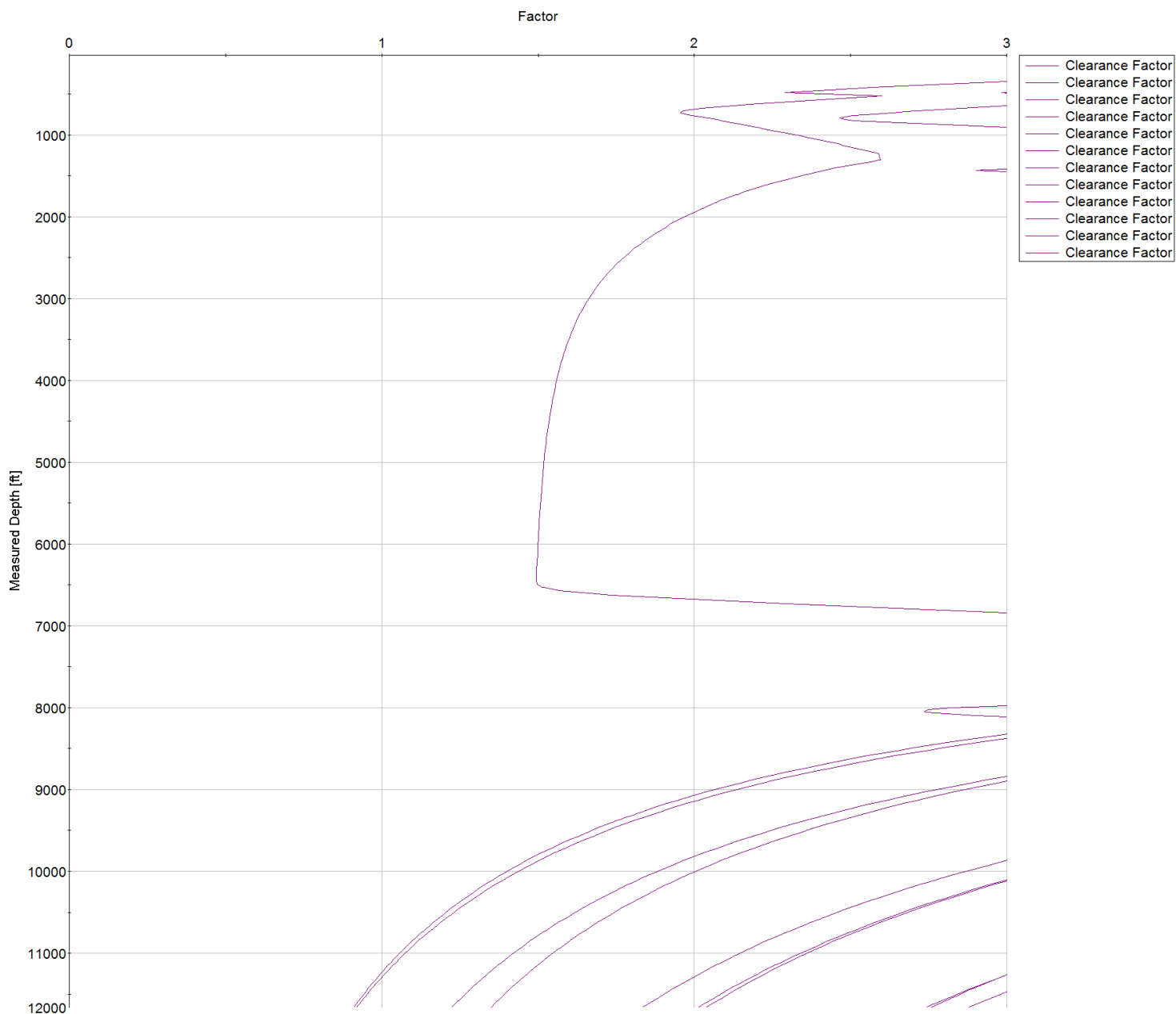
Slot						
Name	Latitude	Longitude	Grid Northing	Grid Easting	North	East
HALEY 6HZ	40.20933000	-105.03375000	1319443.5714	3130220.0682	0.26N	50.27E

Installation						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Easting	Northing	Coord System Name	North Alignment
Haley	40.20933000	-105.03393000	3130169.7961	1319443.3072	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]
HALEY 5HZ	8.38	675.00	11662.20	4.17	697.57	1.35	11663.87
HALEY 12HZ	10.93	750.00	750.00	6.58	763.19	2.46	796.00
HALEY 11HZ	13.77	749.00	11663.87	9.48	779.59	2.88	11663.87
HALEY 4HZ	19.55	650.00	11661.61	-29.41	11663.87	0.92	11663.87
HALEY 10HZ	22.40	674.00	674.00	18.50	697.57	2.76	11663.87
Haley #3	24.91	1435.77	8052.34	16.33	1435.77	2.74	8046.65
HALEY 9HZ	29.99	644.00	644.00	26.02	681.17	2.01	11663.87
HALEY 3HZ	30.72	525.00	11659.32	27.07	484.32	1.83	11663.87
HALEY 2HZ	39.10	625.00	625.00	35.16	664.76	2.04	11663.87
HALEY 8HZ	40.60	439.00	1468.57	37.19	467.91	1.22	11663.87
HALEY 1HZ	50.28	500.72	11657.08	46.54	500.00	2.74	11663.87
HALEY 7HZ	51.45	424.00	1895.08	-32.57	11663.87	0.91	11663.87
Haley #10	73.45	25.00	6471.85	72.36	41.40	21.73	6570.28
HALEY #2	76.44	1199.65	8713.84	69.26	1199.65	4.29	8834.06
HALEY #1	82.28	1290.68	7441.41	68.46	1306.49	5.80	1386.55

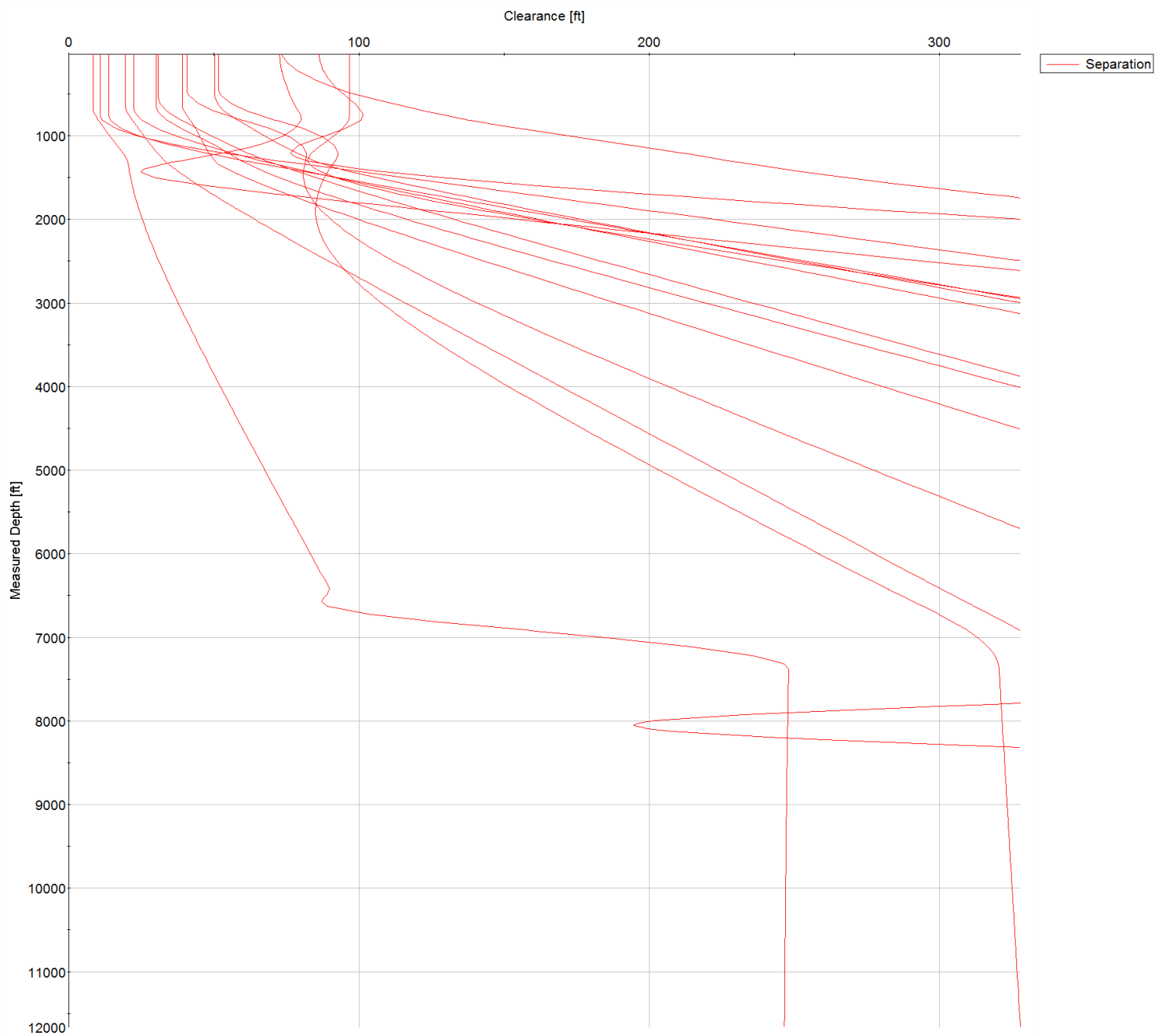


SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: HALEY 6HZ (PWB)





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