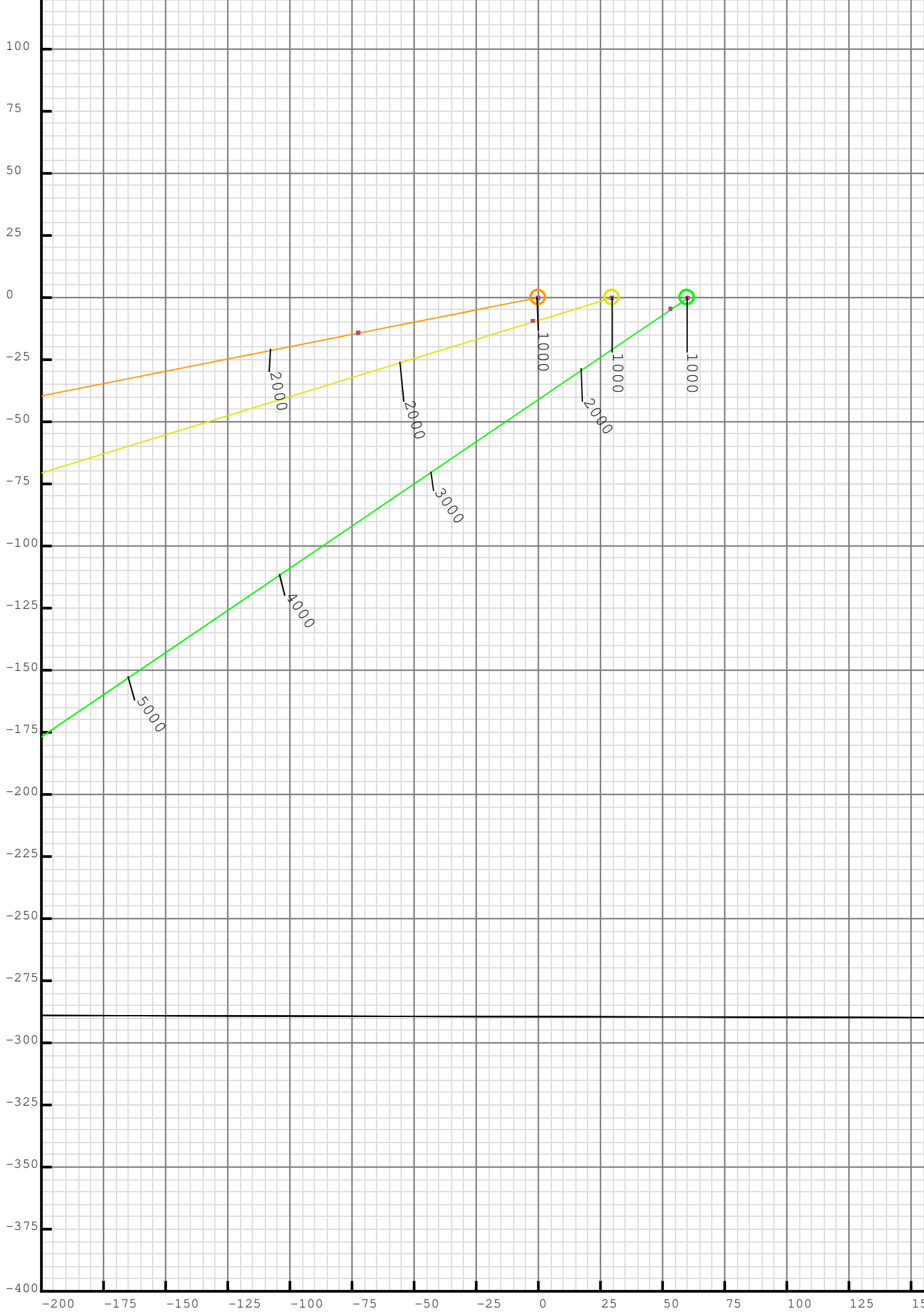
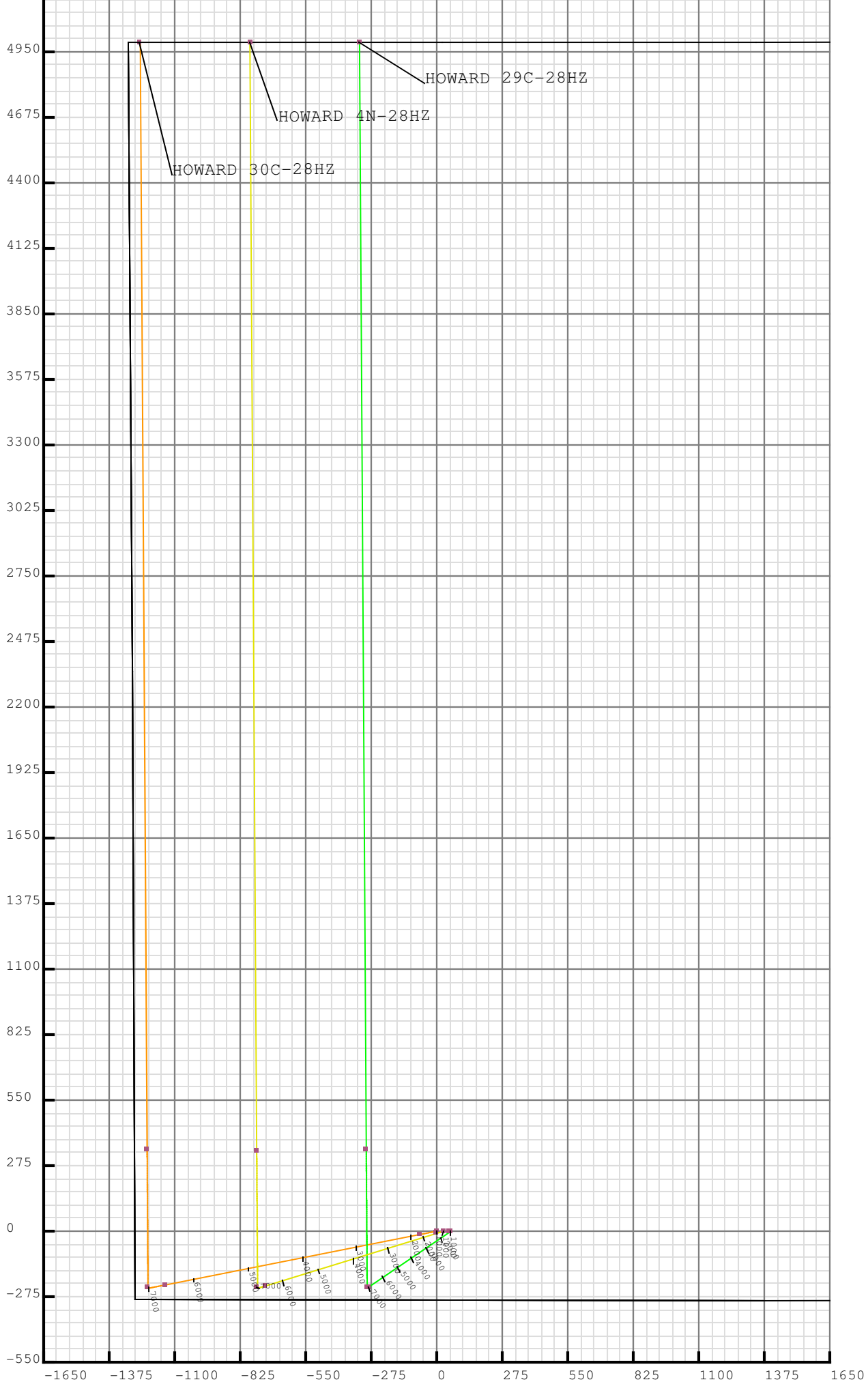


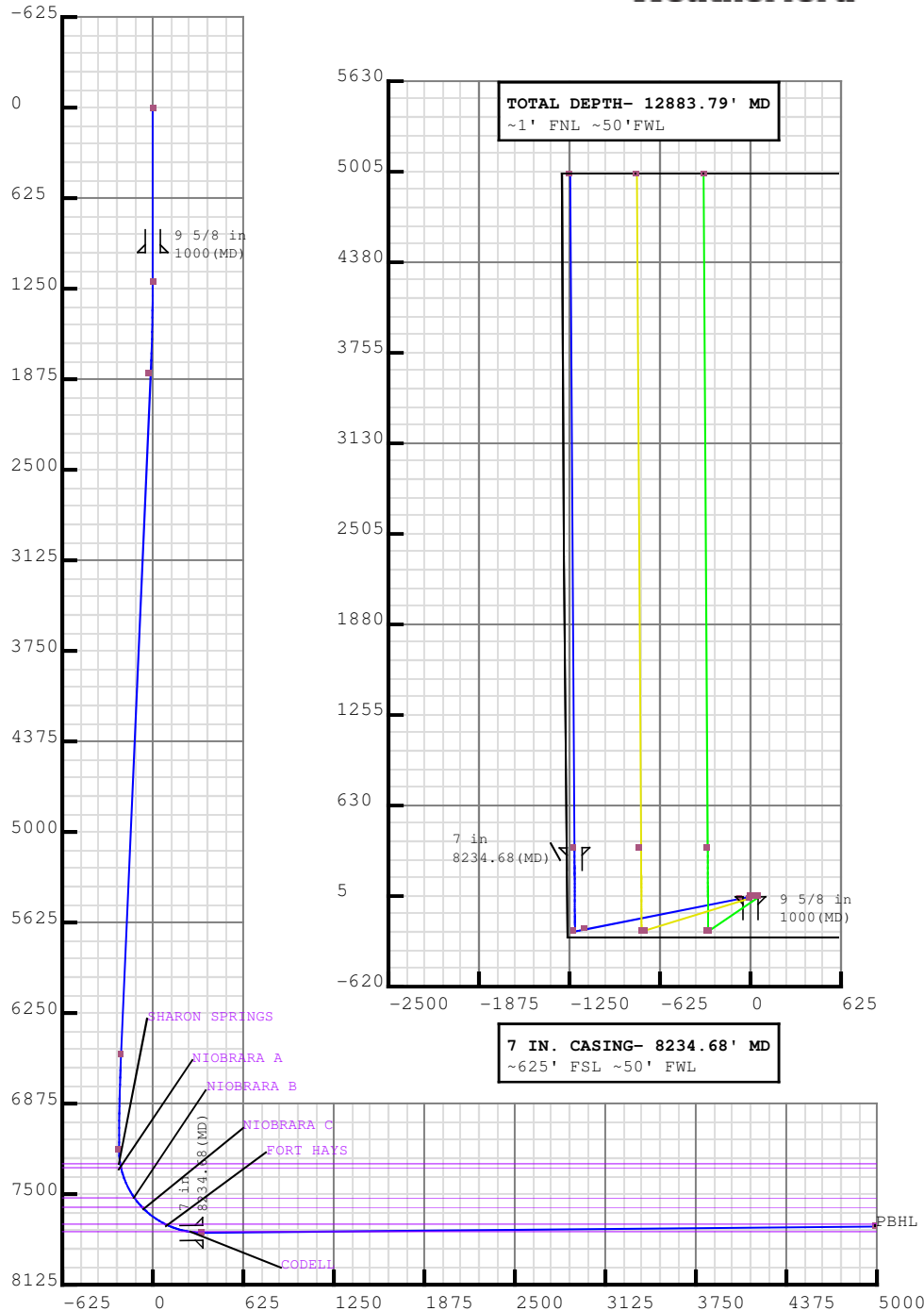
5D Plan Report**Anadarko Petroleum**

Field Name: *WATTENBERG_ANADARKO_NAD 83*
Site Name: *HOWARD 14W-28HZ*
Well Name: *HOWARD 30C-28HZ*
Plan: *WP01 PERMIT*









Plan Data for HOWARD 30C-28HZ

Field: WATTENBERG_ANADARKO_NAD 83

Map Unit: USft Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / Colorado North (ftUS)

Slot: HOWARD 30C-28HZ

Position:

Offset is from Site centre

+N/-S: 0.00USft Northing: 1249106.49USft Latitude: 40.015625°

+E/-W: 0.00USft Easting: 3167952.66USft Longitude: -104.900356°

Elevation Above VRD: 5008.00USft

Plan Point Information:

DogLeg Severity Unit: °/100.00ft Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(DLSU)	(°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0R
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.0R
1851.39	13.03	258.80	1845.79	-14.32	-72.33	-13.88	2.00	101.2L
6678.11	13.03	258.80	6548.28	-225.68	-1139.67	-218.71	0.00	0.0R
7329.50	0.00	0.00	7194.07	-240.00	-1212.00	-232.59	2.00	180.0R
8234.68	90.52	359.65	7767.00	338.12	-1215.56	345.54	10.00	0.4L
12883.79	90.52	359.65	7725.00	4986.95	-1244.19	4994.46	0.00	0.0R

Plan Data for HOWARD 30C-28HZ

Formation Point Information:

Name	TVD	Elevation	MD
	(USft)	(USft)	(USft)
FOX HILLS	1117.00	3908.00	1117.00
SUSSEX	4805.00	220.00	4888.78
SHARON SPRINGS	7294.00	-2269.00	7429.95
NIOBRARA A	7330.00	-2305.00	7466.74
NIOBRARA B	7530.00	-2505.00	7688.46
NIOBRARA C	7602.00	-2577.00	7783.46
FORT HAYS	7717.00	-2692.00	7988.29
CODELL	7762.00	-2737.00	8153.54

Plan Data for HOWARD 30C-28HZ

Casing Point Information:

Name	MD	TVD
	(USft)	(USft)
9 5/8 in 1000.00	1000.00	1000.00
7 in 8234.68	7767.00	

LINER TOP-7229.5' MD

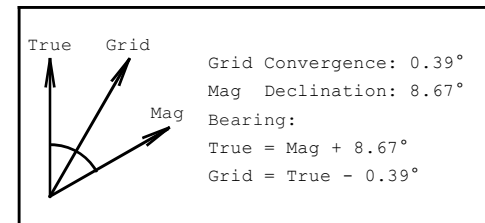
KOP-7329.5' MD

Plan Data for HOWARD 30C-28HZ

Target Set Information:

Name: 1

Name	TVD	Lat	Long	Shape
	(USft)	(°)	(°)	
PBHL	7725.00	40.029315	-104.904799	Cuboid





Plan Surveys for the HOWARD 30C-28HZ

Site Name HOWARD 14W-28HZ	Units : US ft	North Reference : True	Convergence Angle : 0.39
	Position	Northing : 1249106.49 US ft	Latitude : 40.015625
		Easting : 3167952.66 US ft	Longitude : -104.900356
	Elevation above: 5008.00 US ft Comment :		
Slot Name HOWARD 30C-28HZ	Position (Offsets relative to Site Centre)		
	+N / -S : 0.00 US ft	Northing : 1249106.49 US ft	Latitude : 40.015625
	+E / -W : 0.00 US ft	Easting : 3167952.66 US ft	Longitude : -104.900356
	Slot TVD Reference : Ground Elevation		
	Elevation above : 5008.00 US ft Comment :		
Well Name HOWARD 30C-28HZ	Type : Main well	UWI :	Plan : WP01 PERMIT
	Rig Height <i>Drill Floor</i> : 17.00 US ft	Comment :	
	Relative to : 5025.00 US ft		
	Closure Distance : 5139.81 US ft	Closure Azimuth : 345.991°	
	Vertical Section (Position of Origin Relative to Slot)		
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft	Az : 359.65°
	Magnetic Parameters		
	Model : BGGM	Field Strength : 52684.0nT	Dec : 8.67°
			Dip : 66.64°
			Date : 22/May/2013

Target Set

Name : 1

Number of Targets : 1

Comment :

TargetName:	Position (Relative to centre)			
PBHL	+N / -S : 4986.95US ft	Northing : 1254084.91 US ft	Latitude : 40°1'45.534000"	
Shape:	+E / -W : -1244.19 US ft	Easting : 3166674.77US ft	Longitude : -104°54'17.276400"	
Cuboid	TVD (Drill Floor) : 7725.00 US ft			
	Orientation	Azimuth : 0.00°	Inclination : 0.00°	
	Dimensions	Length : 1.00 US ft	Breadth : 1.00 US ft	Height : 1.00 US ft

Casing Points (Relative to centre, TVD relative to Drill Floor)								
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (°)	Longitude (°)
9 5/8 in	1000.00	0.00	0.00	1000.00	0.00	0.00	40.015625	-104.900356
7 in	8234.68	90.52	359.65	7767.00	338.12	-1215.56	40.016553	-104.904696

Well path created using minimum curvature

Salient Points (Relative to centre, TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	1249106.49	3167952.66	0.00	0.00	0.00	BEGIN HOLD
1000.00	0.00	0.00	1000.00	0.00	0.00	1249106.49	3167952.66	0.00	0.00	0.00	9 5/8 in
1117.00	0.00	0.00	1117.00	0.00	0.00	1249106.49	3167952.66	0.00	0.00	0.00	FOX HILLS :
1200.00	0.00	0.00	1200.00	0.00	0.00	1249106.49	3167952.66	0.00	0.00	0.00	BEGIN NUDGE
1851.39	13.03	258.80	1845.79	-14.32	-72.33	1249091.68	3167880.43	2.00	258.80	-13.88	BEGIN HOLD
4888.78	13.03	258.80	4805.00	-147.32	-743.99	1248954.14	3167209.68	0.00	0.00	-142.78	SUSSEX :
6678.11	13.03	258.80	6548.28	-225.68	-1139.67	1248873.11	3166814.55	0.00	0.00	-218.71	BEGIN DROP
7329.50	0.00	0.00	7194.07	-240.00	-1212.00	1248858.30	3166742.31	2.00	180.00	-232.59	KOP
7429.95	10.04	359.65	7294.00	-231.22	-1212.05	1248867.08	3166742.20	10.00	359.65	-223.81	SHARON SPRINGS :
7466.74	13.72	359.65	7330.00	-223.64	-1212.10	1248874.66	3166742.10	10.00	0.00	-216.23	NIOBRARA A :
7688.46	35.90	359.65	7530.00	-131.19	-1212.67	1248967.10	3166740.90	10.00	0.00	-123.78	NIOBRARA B :
7783.46	45.40	359.65	7602.00	-69.38	-1213.05	1249028.91	3166740.11	10.00	0.00	-61.97	NIOBRARA C :
7988.29	65.88	359.65	7717.00	98.80	-1214.09	1249197.08	3166737.93	10.00	0.00	106.22	FORT HAYS :
8153.54	82.40	359.65	7762.00	257.21	-1215.06	1249355.48	3166735.89	10.00	0.00	264.63	CODELL :
8234.68	90.52	359.65	7767.00	338.12	-1215.56	1249436.39	3166734.84	10.00	0.00	345.54	BEGIN HOLD; 7 in

5D Plan Report

Salient Points (Relative to centre, TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
12883.79	90.52	359.65	7725.00	4986.95	-1244.19	1254084.91	3166674.77	0.00	0.00	4994.46	TD

Interpolated Points (Relative to centre, TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	BEGIN HOLD		
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00			
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00			
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00			
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00			
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00			
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00			
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00			
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00			
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00			
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00			
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	BEGIN NUDGE		
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00			
1300.00	2.00	258.80	1299.98	-0.34	-1.71	2.00	258.80	-0.33			
1400.00	4.00	258.80	1399.84	-1.36	-6.85	2.00	0.00	-1.31			
1500.00	6.00	258.80	1499.45	-3.05	-15.39	2.00	0.00	-2.95			
1600.00	8.00	258.80	1598.70	-5.42	-27.35	2.00	0.00	-5.25			
1700.00	10.00	258.80	1697.47	-8.45	-42.69	2.00	0.00	-8.19			
1800.00	12.00	258.80	1795.62	-12.16	-61.41	2.00	0.00	-11.79			
1851.39	13.03	258.80	1845.79	-14.32	-72.33	2.00	0.00	-13.88			
1900.00	13.03	258.80	1893.15	-16.45	-83.08	0.00	0.00	-15.94	BEGIN HOLD		
2000.00	13.03	258.80	1990.58	-20.83	-105.20	0.00	0.00	-20.19			
2100.00	13.03	258.80	2088.00	-25.21	-127.31	0.00	0.00	-24.43			
2200.00	13.03	258.80	2185.43	-29.59	-149.42	0.00	0.00	-28.68			
2300.00	13.03	258.80	2282.85	-33.97	-171.53	0.00	0.00	-32.92			
2400.00	13.03	258.80	2380.28	-38.35	-193.65	0.00	0.00	-37.16			
2500.00	13.03	258.80	2477.71	-42.72	-215.76	0.00	0.00	-41.41			
2600.00	13.03	258.80	2575.13	-47.10	-237.87	0.00	0.00	-45.65			
2700.00	13.03	258.80	2672.56	-51.48	-259.99	0.00	0.00	-49.89			
2800.00	13.03	258.80	2769.99	-55.86	-282.10	0.00	0.00	-54.14			
2900.00	13.03	258.80	2867.41	-60.24	-304.21	0.00	0.00	-58.38			
3000.00	13.03	258.80	2964.84	-64.62	-326.33	0.00	0.00	-62.62			
3100.00	13.03	258.80	3062.26	-69.00	-348.44	0.00	0.00	-66.87			
3200.00	13.03	258.80	3159.69	-73.38	-370.55	0.00	0.00	-71.11			
3300.00	13.03	258.80	3257.12	-77.76	-392.66	0.00	0.00	-75.36			
3400.00	13.03	258.80	3354.54	-82.13	-414.78	0.00	0.00	-79.60			
3500.00	13.03	258.80	3451.97	-86.51	-436.89	0.00	0.00	-83.84			

5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
3600.00	13.03	258.80	3549.39	-90.89	-459.00	0.00	0.00	-88.09	
3700.00	13.03	258.80	3646.82	-95.27	-481.12	0.00	0.00	-92.33	
3800.00	13.03	258.80	3744.25	-99.65	-503.23	0.00	0.00	-96.57	
3900.00	13.03	258.80	3841.67	-104.03	-525.34	0.00	0.00	-100.82	
4000.00	13.03	258.80	3939.10	-108.41	-547.46	0.00	0.00	-105.06	
4100.00	13.03	258.80	4036.52	-112.79	-569.57	0.00	0.00	-109.30	
4200.00	13.03	258.80	4133.95	-117.16	-591.68	0.00	0.00	-113.55	
4300.00	13.03	258.80	4231.38	-121.54	-613.79	0.00	0.00	-117.79	
4400.00	13.03	258.80	4328.80	-125.92	-635.91	0.00	0.00	-122.04	
4500.00	13.03	258.80	4426.23	-130.30	-658.02	0.00	0.00	-126.28	
4600.00	13.03	258.80	4523.65	-134.68	-680.13	0.00	0.00	-130.52	
4700.00	13.03	258.80	4621.08	-139.06	-702.25	0.00	0.00	-134.77	
4800.00	13.03	258.80	4718.51	-143.44	-724.36	0.00	0.00	-139.01	
4900.00	13.03	258.80	4815.93	-147.82	-746.47	0.00	0.00	-143.25	
5000.00	13.03	258.80	4913.36	-152.20	-768.59	0.00	0.00	-147.50	
5100.00	13.03	258.80	5010.78	-156.57	-790.70	0.00	0.00	-151.74	
5200.00	13.03	258.80	5108.21	-160.95	-812.81	0.00	0.00	-155.98	
5300.00	13.03	258.80	5205.64	-165.33	-834.92	0.00	0.00	-160.23	
5400.00	13.03	258.80	5303.06	-169.71	-857.04	0.00	0.00	-164.47	
5500.00	13.03	258.80	5400.49	-174.09	-879.15	0.00	0.00	-168.72	
5600.00	13.03	258.80	5497.92	-178.47	-901.26	0.00	0.00	-172.96	
5700.00	13.03	258.80	5595.34	-182.85	-923.38	0.00	0.00	-177.20	
5800.00	13.03	258.80	5692.77	-187.23	-945.49	0.00	0.00	-181.45	
5900.00	13.03	258.80	5790.19	-191.60	-967.60	0.00	0.00	-185.69	
6000.00	13.03	258.80	5887.62	-195.98	-989.72	0.00	0.00	-189.93	
6100.00	13.03	258.80	5985.05	-200.36	-1011.83	0.00	0.00	-194.18	
6200.00	13.03	258.80	6082.47	-204.74	-1033.94	0.00	0.00	-198.42	
6300.00	13.03	258.80	6179.90	-209.12	-1056.05	0.00	0.00	-202.66	
6400.00	13.03	258.80	6277.32	-213.50	-1078.17	0.00	0.00	-206.91	
6500.00	13.03	258.80	6374.75	-217.88	-1100.28	0.00	0.00	-211.15	
6600.00	13.03	258.80	6472.18	-222.26	-1122.39	0.00	0.00	-215.40	
6678.11	13.03	258.80	6548.28	-225.68	-1139.67	0.00	0.00	-218.71	BEGIN DROP
6700.00	12.59	258.80	6569.62	-226.62	-1144.43	2.00	180.00	-219.62	
6800.00	10.59	258.80	6667.58	-230.52	-1164.13	2.00	180.00	-223.41	
6900.00	8.59	258.80	6766.17	-233.76	-1180.48	2.00	180.00	-226.54	
7000.00	6.59	258.80	6865.29	-236.32	-1193.43	2.00	180.00	-229.03	
7100.00	4.59	258.80	6964.81	-238.22	-1202.99	2.00	180.00	-230.86	
7200.00	2.59	258.80	7064.61	-239.43	-1209.13	2.00	180.00	-232.04	
7300.00	0.59	258.80	7164.57	-239.97	-1211.85	2.00	180.00	-232.56	
7329.50	0.00	0.00	7194.07	-240.00	-1212.00	2.00	180.00	-232.59	KOP
7400.00	7.05	359.65	7264.39	-235.67	-1212.03	10.00	359.65	-228.26	

5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
7500.00	17.05	359.65	7362.06	-214.82	-1212.16	10.00	0.00	-207.41	
7600.00	27.05	359.65	7454.63	-177.33	-1212.39	10.00	0.00	-169.92	
7700.00	37.05	359.65	7539.28	-124.33	-1212.71	10.00	0.00	-116.92	
7800.00	47.05	359.65	7613.44	-57.44	-1213.12	10.00	0.00	-50.03	
7900.00	57.05	359.65	7674.86	21.31	-1213.61	10.00	0.00	28.73	
8000.00	67.05	359.65	7721.67	109.54	-1214.15	10.00	0.00	116.95	
8100.00	77.05	359.65	7752.45	204.55	-1214.74	10.00	0.00	211.96	
8200.00	87.05	359.65	7766.27	303.46	-1215.35	10.00	0.00	310.88	
8234.68	90.52	359.65	7767.00	338.12	-1215.56	10.00	0.00	345.54	BEGIN HOLD
8300.00	90.52	359.65	7766.41	403.44	-1215.96	0.00	0.00	410.86	
8400.00	90.52	359.65	7765.51	503.43	-1216.58	0.00	0.00	510.86	
8500.00	90.52	359.65	7764.61	603.43	-1217.19	0.00	0.00	610.85	
8600.00	90.52	359.65	7763.70	703.42	-1217.81	0.00	0.00	710.85	
8700.00	90.52	359.65	7762.80	803.42	-1218.43	0.00	0.00	810.84	
8800.00	90.52	359.65	7761.90	903.41	-1219.04	0.00	0.00	910.84	
8900.00	90.52	359.65	7760.99	1003.40	-1219.66	0.00	0.00	1010.84	
9000.00	90.52	359.65	7760.09	1103.40	-1220.27	0.00	0.00	1110.83	
9100.00	90.52	359.65	7759.19	1203.39	-1220.89	0.00	0.00	1210.83	
9200.00	90.52	359.65	7758.28	1303.39	-1221.51	0.00	0.00	1310.82	
9300.00	90.52	359.65	7757.38	1403.38	-1222.12	0.00	0.00	1410.82	
9400.00	90.52	359.65	7756.48	1503.37	-1222.74	0.00	0.00	1510.82	
9500.00	90.52	359.65	7755.57	1603.37	-1223.35	0.00	0.00	1610.81	
9600.00	90.52	359.65	7754.67	1703.36	-1223.97	0.00	0.00	1710.81	
9700.00	90.52	359.65	7753.77	1803.36	-1224.58	0.00	0.00	1810.80	
9800.00	90.52	359.65	7752.86	1903.35	-1225.20	0.00	0.00	1910.80	
9900.00	90.52	359.65	7751.96	2003.34	-1225.82	0.00	0.00	2010.79	
10000.00	90.52	359.65	7751.05	2103.34	-1226.43	0.00	0.00	2110.79	
10100.00	90.52	359.65	7750.15	2203.33	-1227.05	0.00	0.00	2210.79	
10200.00	90.52	359.65	7749.25	2303.33	-1227.66	0.00	0.00	2310.78	
10300.00	90.52	359.65	7748.34	2403.32	-1228.28	0.00	0.00	2410.78	
10400.00	90.52	359.65	7747.44	2503.31	-1228.90	0.00	0.00	2510.77	
10500.00	90.52	359.65	7746.54	2603.31	-1229.51	0.00	0.00	2610.77	
10600.00	90.52	359.65	7745.63	2703.30	-1230.13	0.00	0.00	2710.77	
10700.00	90.52	359.65	7744.73	2803.30	-1230.74	0.00	0.00	2810.76	
10800.00	90.52	359.65	7743.83	2903.29	-1231.36	0.00	0.00	2910.76	
10900.00	90.52	359.65	7742.92	3003.28	-1231.97	0.00	0.00	3010.75	
11000.00	90.52	359.65	7742.02	3103.28	-1232.59	0.00	0.00	3110.75	
11100.00	90.52	359.65	7741.12	3203.27	-1233.21	0.00	0.00	3210.75	
11200.00	90.52	359.65	7740.21	3303.27	-1233.82	0.00	0.00	3310.74	
11300.00	90.52	359.65	7739.31	3403.26	-1234.44	0.00	0.00	3410.74	
11400.00	90.52	359.65	7738.41	3503.25	-1235.05	0.00	0.00	3510.73	

5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
11500.00	90.52	359.65	7737.50	3603.25	-1235.67	0.00	0.00	3610.73	
11600.00	90.52	359.65	7736.60	3703.24	-1236.29	0.00	0.00	3710.73	
11700.00	90.52	359.65	7735.70	3803.24	-1236.90	0.00	0.00	3810.72	
11800.00	90.52	359.65	7734.79	3903.23	-1237.52	0.00	0.00	3910.72	
11900.00	90.52	359.65	7733.89	4003.22	-1238.13	0.00	0.00	4010.71	
12000.00	90.52	359.65	7732.98	4103.22	-1238.75	0.00	0.00	4110.71	
12100.00	90.52	359.65	7732.08	4203.21	-1239.36	0.00	0.00	4210.71	
12200.00	90.52	359.65	7731.18	4303.21	-1239.98	0.00	0.00	4310.70	
12300.00	90.52	359.65	7730.27	4403.20	-1240.60	0.00	0.00	4410.70	
12400.00	90.52	359.65	7729.37	4503.19	-1241.21	0.00	0.00	4510.69	
12500.00	90.52	359.65	7728.47	4603.19	-1241.83	0.00	0.00	4610.69	
12600.00	90.52	359.65	7727.56	4703.18	-1242.44	0.00	0.00	4710.68	
12700.00	90.52	359.65	7726.66	4803.18	-1243.06	0.00	0.00	4810.68	
12800.00	90.52	359.65	7725.76	4903.17	-1243.68	0.00	0.00	4910.68	
12883.79	90.52	359.65	7725.00	4986.95	-1244.19	0.00	0.00	4994.46	TD

Formation Points (Relative to centre, TVD relative to Drill Floor)		
Name	MD (US ft)	TVD (US ft)
FOX HILLS	1117.00	1117.00
SUSSEX	4888.78	4805.00
SHARON SPRINGS	7429.95	7294.00
NIOBRARA A	7466.74	7330.00
NIOBRARA B	7688.46	7530.00
NIOBRARA C	7783.46	7602.00
FORT HAYS	7988.29	7717.00
CODELL	8153.54	7762.00