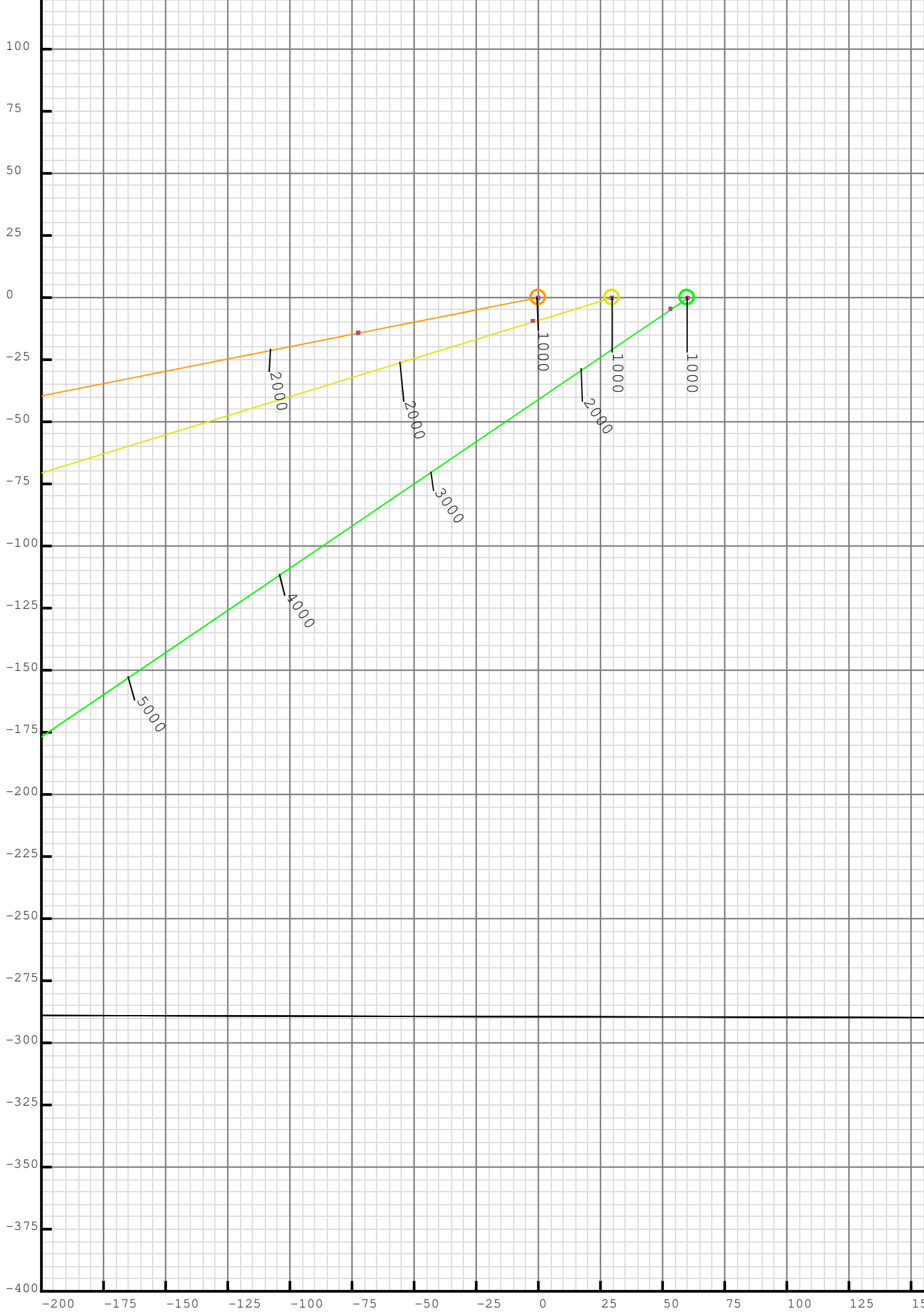
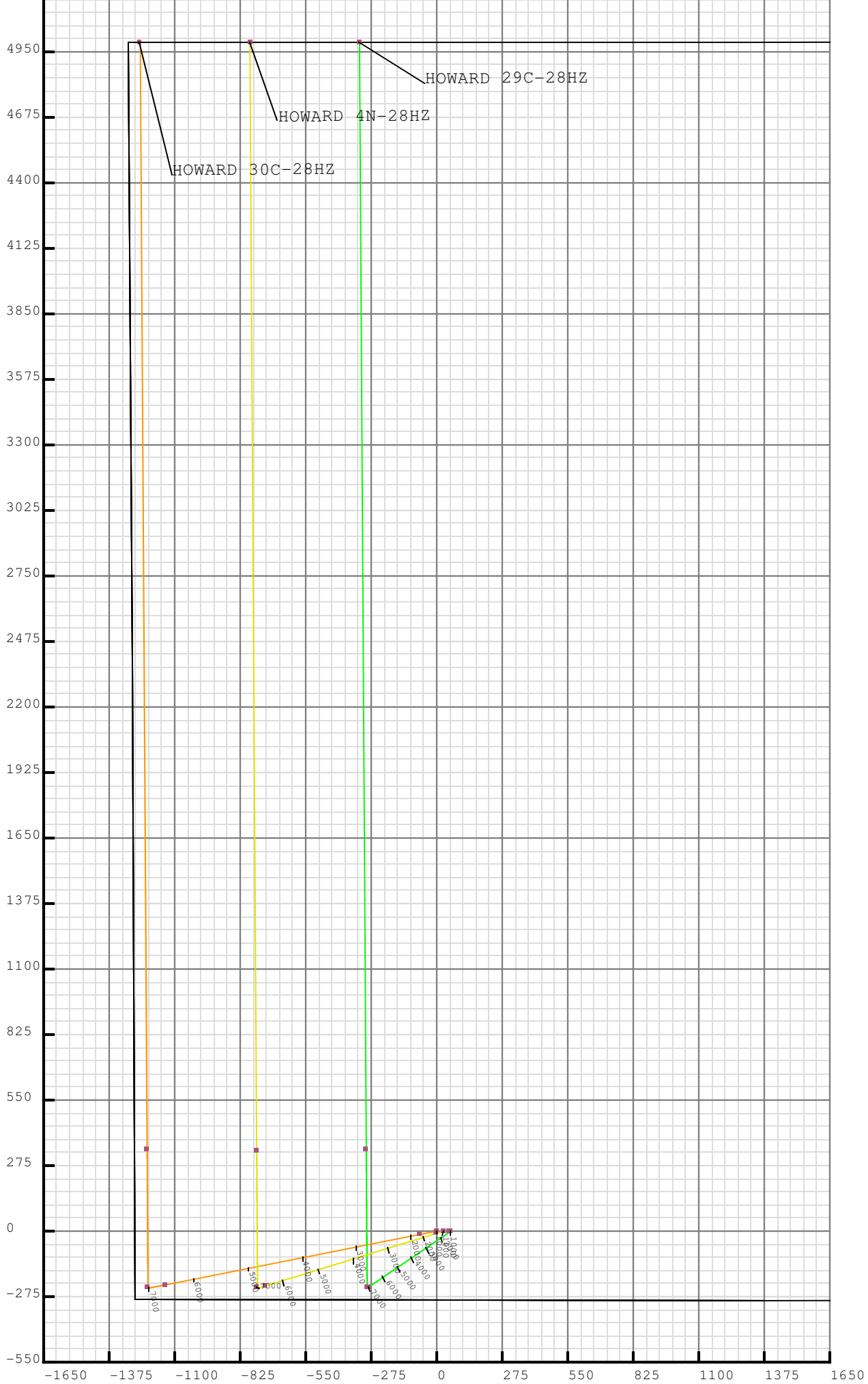


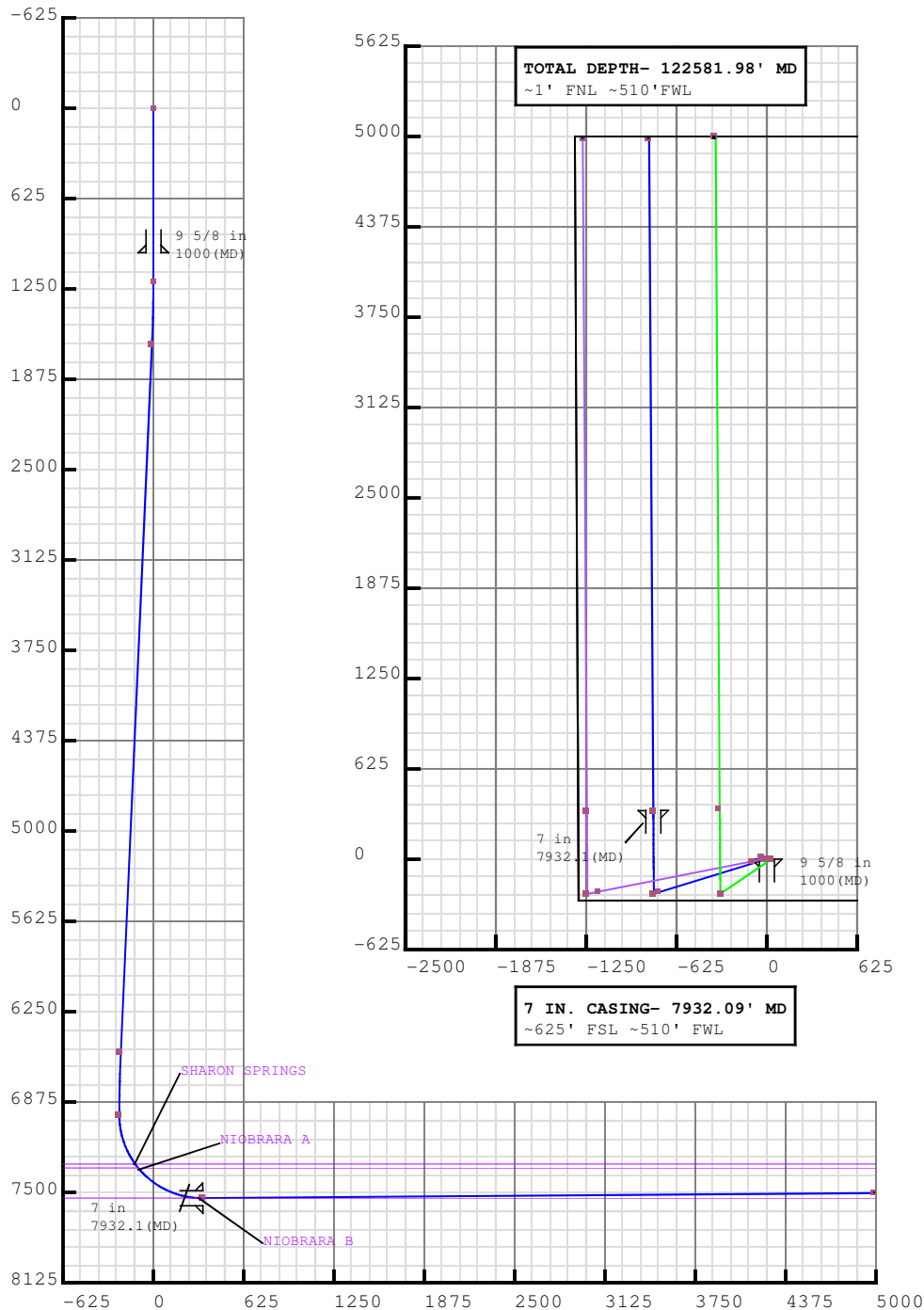
5D Plan Report**Anadarko Petroleum**

Field Name: *WATTENBERG_ANADARKO_NAD 83*
Site Name: *HOWARD 14W-28HZ*
Well Name: *HOWARD 4N-28HZ*
Plan: *WP01 PERMIT*









Plan Data for HOWARD 4N-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 4N-28HZ

Position:

Offset is from Site centre

+N/-S: -0.00USft Northing: 1249106.69USft Latitude: 40.015625°

+E/-W: 29.97USft Easting: 3167982.63USft Longitude: -104.900249°

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	0.00	0.0R
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	0.0R
1636.26	8.73	252.94	1634.58	-9.73	-31.69	-9.53	2.00	107.1L	
6591.52	8.73	252.94	6532.49	-230.27	-750.31	-225.69	0.00	0.0R	
7027.78	0.00	0.00	6967.06	-240.00	-782.00	-235.22	2.00	180.0L	
7932.09	90.43	359.65	7540.00	337.26	-785.57	342.05	10.00	0.4L	
12581.98	90.43	359.65	7505.00	4986.93	-814.35	4991.82	0.00	0.0R	

Plan Data for HOWARD 4N-28HZ

Formation Point Information:

Name	TVD	Elevation	MD
	(USft)	(USft)	(USft)
NIOBRARA C	N/A	N/A	N/A
FOX HILLS	1117.00	3908.00	1117.00
SUSSEX	4805.00	220.00	4843.80
SHARON SPRINGS	7305.00	-2280.00	7389.22
NIOBRARA A	7340.00	-2315.00	7433.87
NIOBRARA B	7540.00	-2515.00	7923.26

Plan Data for HOWARD 4N-28HZ

Casing Point Information:

Name	MD	TVD
	(USft)	(USft)
9 5/8 in	1000.00	1000.00
7 in	7932.10	7540.00

LINER TOP-6927.78' MD

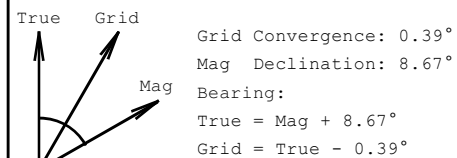
KOP-7027.78' MD

Plan Data for HOWARD 4N-28HZ

Target Set Information:

Name: 2

Name	TVD	Lat	Long	Shape
	(USft)	(°)	(°)	
PBHL	7505.00	40.029315	-104.903157	Cuboid





Plan Surveys for the HOWARD 4N-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 4N-28HZ	Position (Offsets relative to Site Centre)		
	+N / -S : -0.00 US ft	Northing : 1249106.69 US ft	Latitude : 40.015625
	+E / -W : 29.97 US ft	Easting : 3167982.63 US ft	Longitude : -104.900249
	Slot TVD Reference : Ground Elevation		
	Elevation above : 5008.00 US ft Comment :		
Well Name HOWARD 4N-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 : 5052.99 US ft	Closure Azimuth : 350.726°	
	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 : 2

Number of Targets : 1

Comment :

TargetName:	Position (Relative to centre)			
PBHL	+N / -S : 4986.93US ft		Northing : 1254088.00 US ft	
Shape:	+E / -W : -814.35 US ft		Easting : 3167134.58US ft	
	Longitude : -104°54'11.365200"			
Cuboid	TVD (Drill Floor) : 7505.00 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	-104.900249
7 in	7932.10	90.43	359.65	7540.00	337.27	-785.57	40.016551	-104.903054

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	1249106.69	3167982.63	0.00	0.00	0.00	BEGIN HOLD
1000.00	0.00	0.00	1000.00	0.00	0.00	1249106.69	3167982.63	0.00	0.00	0.00	9 5/8 in
1117.00	0.00	0.00	1117.00	0.00	0.00	1249106.69	3167982.63	0.00	0.00	0.00	FOX HILLS :
1200.00	0.00	0.00	1200.00	0.00	0.00	1249106.69	3167982.63	0.00	0.00	0.00	BEGIN NUDGE
1636.26	8.73	252.94	1634.58	-9.73	-31.69	1249096.75	3167951.00	2.00	252.94	-9.53	BEGIN HOLD
4843.80	8.73	252.94	4805.00	-152.49	-496.85	1248950.85	3167486.82	0.00	0.00	-149.45	SUSSEX :
6591.52	8.73	252.94	6532.49	-230.27	-750.31	1248871.35	3167233.90	0.00	0.00	-225.69	BEGIN DROP
7027.78	0.00	0.00	6967.06	-240.00	-782.00	1248861.41	3167202.27	2.00	180.00	-235.22	KOP
7389.22	36.14	359.65	7305.00	-129.73	-782.68	1248971.67	3167200.84	10.00	359.65	-124.95	SHARON SPRINGS :
7433.87	40.61	359.65	7340.00	-102.01	-782.86	1248999.39	3167200.48	10.00	0.00	-97.23	NIOBRARA A :
7923.26	89.55	359.65	7540.00	328.43	-785.52	1249429.80	3167194.91	10.00	0.00	333.22	NIOBRARA B :
7932.09	90.43	359.65	7540.00	337.26	-785.57	1249438.63	3167194.79	10.00	0.00	342.05	BEGIN HOLD
7932.10	90.43	359.65	7540.00	337.27	-785.57	1249438.64	3167194.79	0.00	0.00	342.06	7 in
12581.98	90.43	359.65	7505.00	4986.93	-814.35	1254088.00	3167134.58	0.00	0.00	4991.82	TD

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
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	BEGIN NUDGE
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
1300.00	2.00	252.94	1299.98	-0.51	-1.67	2.00	252.94	-0.50	
1400.00	4.00	252.94	1399.84	-2.05	-6.67	2.00	0.00	-2.01	
1500.00	6.00	252.94	1499.45	-4.60	-15.00	2.00	0.00	-4.51	
1600.00	8.00	252.94	1598.70	-8.18	-26.65	2.00	0.00	-8.02	
1636.26	8.73	252.94	1634.58	-9.73	-31.69	2.00	0.00	-9.53	
1700.00	8.73	252.94	1697.58	-12.56	-40.94	0.00	0.00	-12.31	
1800.00	8.73	252.94	1796.42	-17.01	-55.44	0.00	0.00	-16.68	
1900.00	8.73	252.94	1895.26	-21.47	-69.94	0.00	0.00	-21.04	BEGIN HOLD
2000.00	8.73	252.94	1994.11	-25.92	-84.44	0.00	0.00	-25.40	
2100.00	8.73	252.94	2092.95	-30.37	-98.95	0.00	0.00	-29.76	
2200.00	8.73	252.94	2191.79	-34.82	-113.45	0.00	0.00	-34.12	
2300.00	8.73	252.94	2290.63	-39.27	-127.95	0.00	0.00	-38.49	
2400.00	8.73	252.94	2389.48	-43.72	-142.45	0.00	0.00	-42.85	
2500.00	8.73	252.94	2488.32	-48.17	-156.95	0.00	0.00	-47.21	
2600.00	8.73	252.94	2587.16	-52.62	-171.46	0.00	0.00	-51.57	
2700.00	8.73	252.94	2686.01	-57.07	-185.96	0.00	0.00	-55.93	
2800.00	8.73	252.94	2784.85	-61.52	-200.46	0.00	0.00	-60.30	
2900.00	8.73	252.94	2883.69	-65.97	-214.96	0.00	0.00	-64.66	
3000.00	8.73	252.94	2982.53	-70.42	-229.46	0.00	0.00	-69.02	
3100.00	8.73	252.94	3081.38	-74.87	-243.97	0.00	0.00	-73.38	
3200.00	8.73	252.94	3180.22	-79.33	-258.47	0.00	0.00	-77.75	
3300.00	8.73	252.94	3279.06	-83.78	-272.97	0.00	0.00	-82.11	
3400.00	8.73	252.94	3377.90	-88.23	-287.47	0.00	0.00	-86.47	
3500.00	8.73	252.94	3476.75	-92.68	-301.97	0.00	0.00	-90.83	
3600.00	8.73	252.94	3575.59	-97.13	-316.48	0.00	0.00	-95.19	
3700.00	8.73	252.94	3674.43	-101.58	-330.98	0.00	0.00	-99.56	
3800.00	8.73	252.94	3773.28	-106.03	-345.48	0.00	0.00	-103.92	
3900.00	8.73	252.94	3872.12	-110.48	-359.98	0.00	0.00	-108.28	

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
4000.00	8.73	252.94	3970.96	-114.93	-374.49	0.00	0.00	-112.64	
4100.00	8.73	252.94	4069.80	-119.38	-388.99	0.00	0.00	-117.00	
4200.00	8.73	252.94	4168.65	-123.83	-403.49	0.00	0.00	-121.37	
4300.00	8.73	252.94	4267.49	-128.28	-417.99	0.00	0.00	-125.73	
4400.00	8.73	252.94	4366.33	-132.73	-432.49	0.00	0.00	-130.09	
4500.00	8.73	252.94	4465.17	-137.19	-447.00	0.00	0.00	-134.45	
4600.00	8.73	252.94	4564.02	-141.64	-461.50	0.00	0.00	-138.81	
4700.00	8.73	252.94	4662.86	-146.09	-476.00	0.00	0.00	-143.18	
4800.00	8.73	252.94	4761.70	-150.54	-490.50	0.00	0.00	-147.54	
4900.00	8.73	252.94	4860.54	-154.99	-505.00	0.00	0.00	-151.90	
5000.00	8.73	252.94	4959.39	-159.44	-519.51	0.00	0.00	-156.26	
5100.00	8.73	252.94	5058.23	-163.89	-534.01	0.00	0.00	-160.62	
5200.00	8.73	252.94	5157.07	-168.34	-548.51	0.00	0.00	-164.99	
5300.00	8.73	252.94	5255.92	-172.79	-563.01	0.00	0.00	-169.35	
5400.00	8.73	252.94	5354.76	-177.24	-577.51	0.00	0.00	-173.71	
5500.00	8.73	252.94	5453.60	-181.69	-592.02	0.00	0.00	-178.07	
5600.00	8.73	252.94	5552.44	-186.14	-606.52	0.00	0.00	-182.44	
5700.00	8.73	252.94	5651.29	-190.59	-621.02	0.00	0.00	-186.80	
5800.00	8.73	252.94	5750.13	-195.05	-635.52	0.00	0.00	-191.16	
5900.00	8.73	252.94	5848.97	-199.50	-650.02	0.00	0.00	-195.52	
6000.00	8.73	252.94	5947.81	-203.95	-664.53	0.00	0.00	-199.88	
6100.00	8.73	252.94	6046.66	-208.40	-679.03	0.00	0.00	-204.25	
6200.00	8.73	252.94	6145.50	-212.85	-693.53	0.00	0.00	-208.61	
6300.00	8.73	252.94	6244.34	-217.30	-708.03	0.00	0.00	-212.97	
6400.00	8.73	252.94	6343.19	-221.75	-722.53	0.00	0.00	-217.33	
6500.00	8.73	252.94	6442.03	-226.20	-737.04	0.00	0.00	-221.69	
6591.52	8.73	252.94	6532.49	-230.27	-750.31	0.00	0.00	-225.69	BEGIN DROP
6600.00	8.56	252.94	6540.87	-230.65	-751.53	2.00	180.00	-226.05	
6700.00	6.56	252.94	6640.00	-234.51	-764.10	2.00	180.00	-229.83	
6800.00	4.56	252.94	6739.52	-237.35	-773.35	2.00	180.00	-232.62	
6900.00	2.56	252.94	6839.33	-239.17	-779.28	2.00	180.00	-234.40	
7000.00	0.56	252.94	6939.29	-239.96	-781.87	2.00	180.00	-235.18	
7027.78	0.00	0.00	6967.06	-240.00	-782.00	2.00	180.00	-235.22	KOP
7100.00	7.22	359.65	7039.09	-235.45	-782.03	10.00	359.65	-230.67	
7200.00	17.22	359.65	7136.70	-214.31	-782.16	10.00	0.00	-209.53	
7300.00	27.22	359.65	7229.16	-176.54	-782.40	10.00	0.00	-171.76	
7400.00	37.22	359.65	7313.65	-123.29	-782.72	10.00	0.00	-118.50	
7500.00	47.22	359.65	7387.61	-56.17	-783.14	10.00	0.00	-51.39	
7600.00	57.22	359.65	7448.79	22.77	-783.63	10.00	0.00	27.55	
7700.00	67.22	359.65	7495.34	111.13	-784.18	10.00	0.00	115.92	
7800.00	77.22	359.65	7525.83	206.23	-784.76	10.00	0.00	211.02	

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
7900.00	87.22	359.65	7539.34	305.18	-785.38	10.00	0.00	309.97	BEGIN HOLD
7932.09	90.43	359.65	7540.00	337.26	-785.57	10.00	0.00	342.05	
8000.00	90.43	359.65	7539.49	405.17	-785.99	0.00	0.00	409.96	
8100.00	90.43	359.65	7538.74	505.16	-786.61	0.00	0.00	509.96	
8200.00	90.43	359.65	7537.98	605.16	-787.23	0.00	0.00	609.96	
8300.00	90.43	359.65	7537.23	705.15	-787.85	0.00	0.00	709.95	
8400.00	90.43	359.65	7536.48	805.15	-788.47	0.00	0.00	809.95	
8500.00	90.43	359.65	7535.73	905.14	-789.09	0.00	0.00	909.95	
8600.00	90.43	359.65	7534.97	1005.14	-789.71	0.00	0.00	1009.94	
8700.00	90.43	359.65	7534.22	1105.13	-790.33	0.00	0.00	1109.94	
8800.00	90.43	359.65	7533.47	1205.13	-790.95	0.00	0.00	1209.94	
8900.00	90.43	359.65	7532.72	1305.12	-791.56	0.00	0.00	1309.94	
9000.00	90.43	359.65	7531.96	1405.12	-792.18	0.00	0.00	1409.93	
9100.00	90.43	359.65	7531.21	1505.12	-792.80	0.00	0.00	1509.93	
9200.00	90.43	359.65	7530.46	1605.11	-793.42	0.00	0.00	1609.93	
9300.00	90.43	359.65	7529.70	1705.11	-794.04	0.00	0.00	1709.92	
9400.00	90.43	359.65	7528.95	1805.10	-794.66	0.00	0.00	1809.92	
9500.00	90.43	359.65	7528.20	1905.10	-795.28	0.00	0.00	1909.92	
9600.00	90.43	359.65	7527.45	2005.09	-795.90	0.00	0.00	2009.92	
9700.00	90.43	359.65	7526.69	2105.09	-796.51	0.00	0.00	2109.91	
9800.00	90.43	359.65	7525.94	2205.08	-797.13	0.00	0.00	2209.91	
9900.00	90.43	359.65	7525.19	2305.08	-797.75	0.00	0.00	2309.91	
10000.00	90.43	359.65	7524.44	2405.07	-798.37	0.00	0.00	2409.90	
10100.00	90.43	359.65	7523.68	2505.07	-798.99	0.00	0.00	2509.90	
10200.00	90.43	359.65	7522.93	2605.06	-799.61	0.00	0.00	2609.90	
10300.00	90.43	359.65	7522.18	2705.06	-800.23	0.00	0.00	2709.90	
10400.00	90.43	359.65	7521.42	2805.05	-800.85	0.00	0.00	2809.89	
10500.00	90.43	359.65	7520.67	2905.05	-801.46	0.00	0.00	2909.89	
10600.00	90.43	359.65	7519.92	3005.04	-802.08	0.00	0.00	3009.89	
10700.00	90.43	359.65	7519.17	3105.04	-802.70	0.00	0.00	3109.88	
10800.00	90.43	359.65	7518.41	3205.03	-803.32	0.00	0.00	3209.88	
10900.00	90.43	359.65	7517.66	3305.03	-803.94	0.00	0.00	3309.88	
11000.00	90.43	359.65	7516.91	3405.03	-804.56	0.00	0.00	3409.88	
11100.00	90.43	359.65	7516.16	3505.02	-805.18	0.00	0.00	3509.87	
11200.00	90.43	359.65	7515.40	3605.02	-805.80	0.00	0.00	3609.87	
11300.00	90.43	359.65	7514.65	3705.01	-806.41	0.00	0.00	3709.87	
11400.00	90.43	359.65	7513.90	3805.01	-807.03	0.00	0.00	3809.87	
11500.00	90.43	359.65	7513.14	3905.00	-807.65	0.00	0.00	3909.86	
11600.00	90.43	359.65	7512.39	4005.00	-808.27	0.00	0.00	4009.86	
11700.00	90.43	359.65	7511.64	4104.99	-808.89	0.00	0.00	4109.86	
11800.00	90.43	359.65	7510.89	4204.99	-809.51	0.00	0.00	4209.85	

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
11900.00	90.43	359.65	7510.13	4304.98	-810.13	0.00	0.00	4309.85	
12000.00	90.43	359.65	7509.38	4404.98	-810.75	0.00	0.00	4409.85	
12100.00	90.43	359.65	7508.63	4504.97	-811.36	0.00	0.00	4509.85	
12200.00	90.43	359.65	7507.88	4604.97	-811.98	0.00	0.00	4609.84	
12300.00	90.43	359.65	7507.12	4704.96	-812.60	0.00	0.00	4709.84	
12400.00	90.43	359.65	7506.37	4804.96	-813.22	0.00	0.00	4809.84	
12500.00	90.43	359.65	7505.62	4904.95	-813.84	0.00	0.00	4909.83	
12581.98	90.43	359.65	7505.00	4986.93	-814.35	0.00	0.00	4991.82	TD

Formation Points (Relative to centre, TVD relative to Drill Floor)		
Name	MD (US ft)	TVD (US ft)
NIOBRARA C	N/A	7615.00
FOX HILLS	1117.00	1117.00
SUSSEX	4843.80	4805.00
SHARON SPRINGS	7389.22	7305.00
NIOBRARA A	7433.87	7340.00
NIOBRARA B	7923.26	7540.00