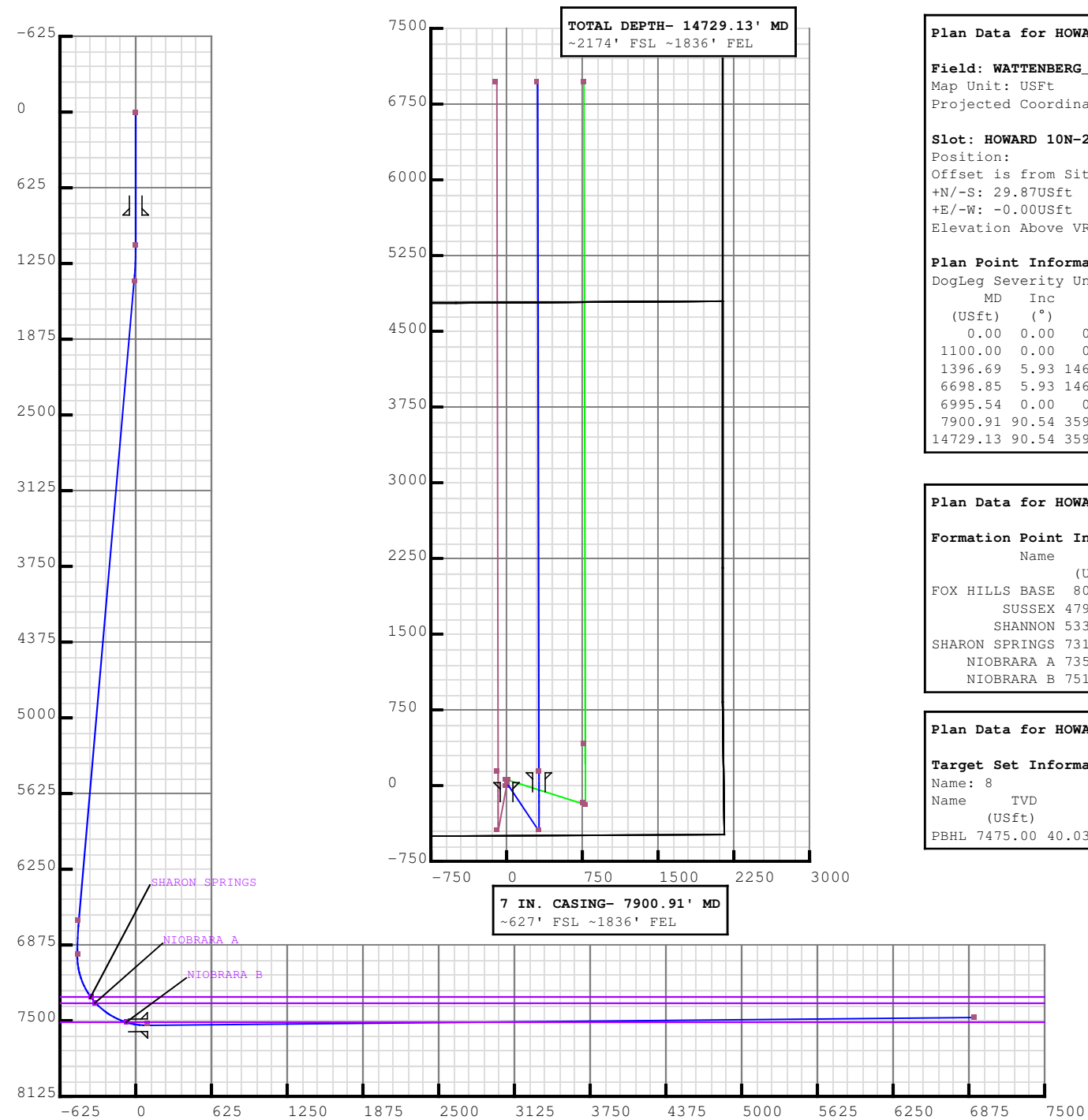


**5D Plan Report****Anadarko Petroleum**

Field Name: *WATTENBERG_ANADARKO_NAD 83*
Site Name: *HOWARD 15-27HZ*
Well Name: *HOWARD 10N-22HZ*
Plan: *WP01 PERMIT*





Plan Data for HOWARD 10N-22HZ

Field: WATTENBERG_ANADARKO_NAD 83

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

Slot: HOWARD 10N-22HZ

Position:

Offset is from Site centre

+N/-S: 29.87USft Northing: 1249403.73USft Latitude: 40.016306°

+E/-W: -0.00USft Easting: 3175072.01USft Longitude: -104.874931°

Elevation Above VRD: 5033.00USft

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
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.0R
1396.69	5.93	146.20	1396.16	-12.76	8.54	-12.77	2.00	146.2R
6698.85	5.93	146.20	6669.92	-468.25	313.46	-468.85	0.00	0.0R
6995.54	0.00	0.00	6966.07	-481.00	322.00	-481.62	2.00	180.0L
7900.91	90.54	359.89	7539.00	97.32	320.91	96.71	10.00	0.1L
14729.13	90.54	359.89	7475.00	6925.23	308.01	6924.63	0.00	0.0R

Plan Data for HOWARD 10N-22HZ

Formation Point Information:

Name	TVD	Elevation	MD
	(USft)	(USft)	(USft)
FOX HILLS BASE	808.00	4250.00	808.00
SUSSEX	4798.00	260.00	4816.86
SHANNON	5338.00	-280.00	5359.76
SHARON SPRINGS	7314.00	-2256.00	7369.45
NIOBRARA A	7357.00	-2299.00	7425.78
NIOBRARA B	7515.00	-2457.00	7729.02

Plan Data for HOWARD 10N-22HZ

Casing Point Information:

Name	MD	TVD
	(USft)	(USft)
9 5/8 in	850.00	850.00
7 in	7900.91	7539.00

LINER TOP- 6895.54' MD

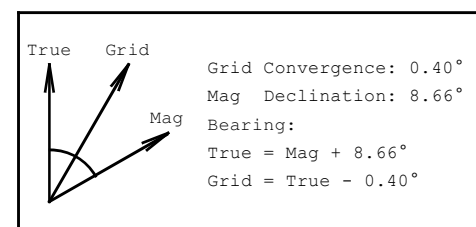
KOP- 6995.54' MD

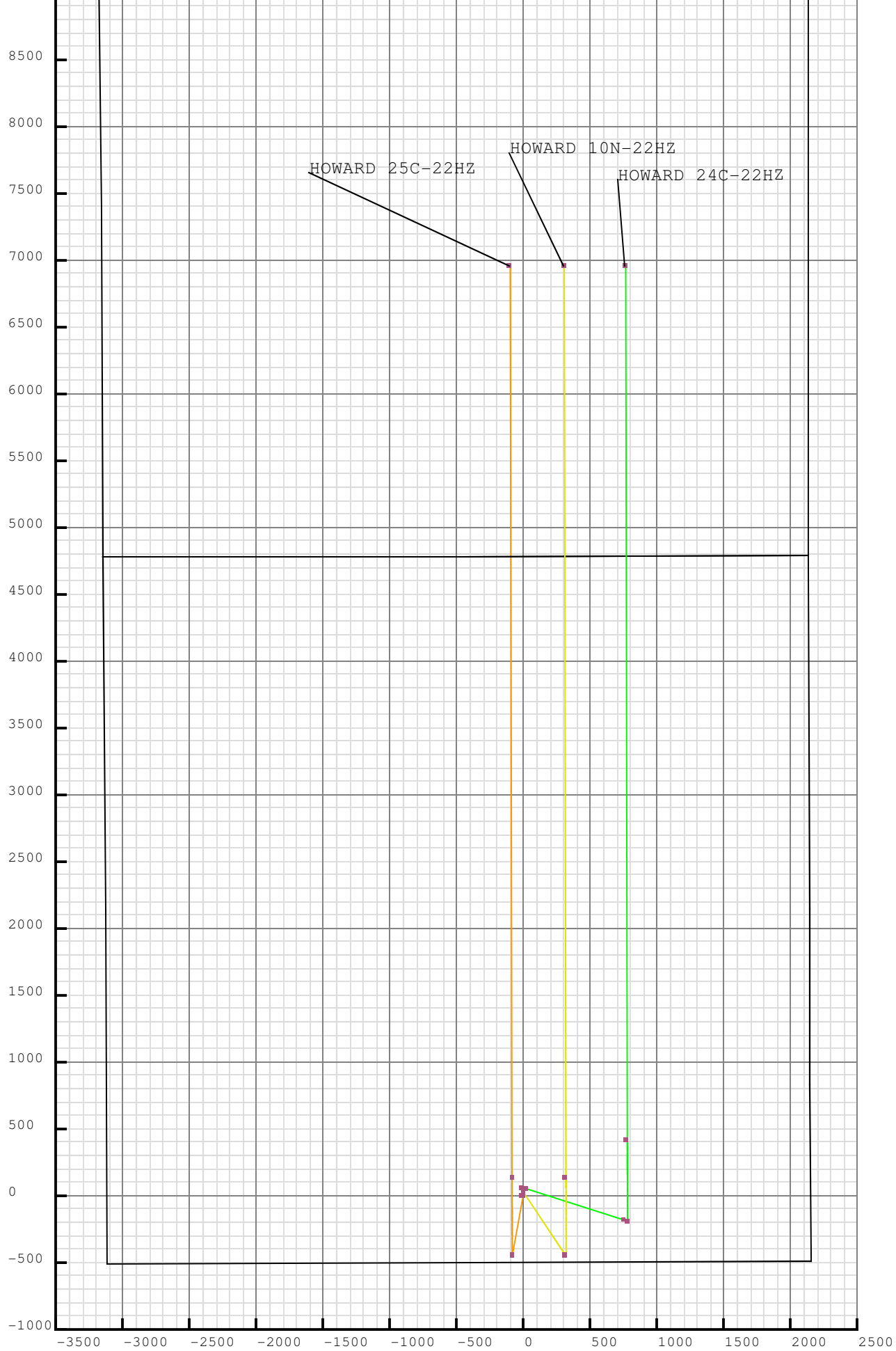
Plan Data for HOWARD 10N-22HZ

Target Set Information:

Name: 8

Name	TVD	Lat	Long	Shape
	(USft)	(°)	(°)	
PBHL	7475.00	40.035317	-104.873831	Cuboid





Spider Plot - Top

Site: HOWARD 15-27HZ



Weatherford®



Plan Surveys for the HOWARD 10N-22HZ

Site Name HOWARD 15-27HZ	Units : US ft	North Reference : True	Convergence Angle : 0.40
	Position	Northing : 1249373.86 US ft	Latitude : 40.016224
		Easting : 3175072.22 US ft	Longitude : -104.874931
	Elevation above: 5033.00 US ft Comment :		
Slot Name HOWARD 10N-22HZ	Position (Offsets relative to Site Centre)		
	+N / -S : 29.87 US ft	Northing : 1249403.73 US ft	Latitude : 40.016306
	+E / -W : -0.00 US ft	Easting : 3175072.01 US ft	Longitude : -104.874931
	Slot TVD Reference : Ground Elevation Elevation above : 5033.00 US ft Comment :		
Well Name HOWARD 10N-22HZ	Type : Main well	UWI :	Plan : WP01 PERMIT
	Rig Height Drill Floor : 25.00 US ft	Comment :	
	Relative to : 5058.00 US ft		
	Closure Distance : 6932.08 US ft	Closure Azimuth : 2.54664°	Az : 359.89°
	Vertical Section (Position of Origin Relative to Slot)	+E / -W : 0.00 US ft	
	+N / -S : 0.00 US ft	Dec : 8.66°	Dip : 66.65°
Magnetic Parameters		Date : 22/May/2013	
Model : BGGM	Field Strength : 52687.0nT		

Target Set**Name :** 8**Number of Targets :** 1**Comment :**

TargetName:	Position (Relative to centre)			
PBHL	+N / -S : 6925.23US ft +E / -W : 308.01 US ft TVD (Drill Floor) : 7475.00 US ft			
Shape:	Northing : 1256330.96 US ft Easting : 3175331.20US ft Latitude : 40°2'7.141200" Longitude : -104°52'25.791600"			
Cuboid				
Orientation	Azimuth : 0.00°			
Dimensions	Inclination : 0.00° 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	850.00	0.00	0.00	850.00	0.00	0.00	40.016306	-104.874931
7 in	7900.91	90.54	359.89	7539.00	97.32	320.91	40.016573	-104.873785

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	1249403.73	3175072.01	0.00	0.00	0.00	SURFACE
808.00	0.00	0.00	808.00	0.00	0.00	1249403.73	3175072.01	0.00	0.00	0.00	FOX HILLS BASE :
850.00	0.00	0.00	850.00	0.00	0.00	1249403.73	3175072.01	0.00	0.00	0.00	9 5/8 in
1100.00	0.00	0.00	1100.00	0.00	0.00	1249403.73	3175072.01	0.00	0.00	0.00	BEGIN NUDGE
1396.69	5.93	146.20	1396.16	-12.76	8.54	1249391.04	3175080.64	2.00	146.20	-12.77	BEGIN HOLD
4816.86	5.93	146.20	4798.00	-306.57	205.23	1249098.61	3175279.40	0.00	0.00	-306.96	SUSSEX :
5359.76	5.93	146.20	5338.00	-353.21	236.45	1249052.19	3175310.95	0.00	0.00	-353.66	SHANNON :
6698.85	5.93	146.20	6669.92	-468.25	313.46	1248937.70	3175388.77	0.00	0.00	-468.85	BEGIN DROP
6995.54	0.00	0.00	6966.07	-481.00	322.00	1248925.01	3175397.39	2.00	180.00	-481.62	KOP
7369.45	37.39	359.89	7314.00	-363.27	321.78	1249042.74	3175396.34	10.00	359.89	-363.88	SHARON SPRINGS :
7425.78	43.02	359.89	7357.00	-326.92	321.71	1249079.09	3175396.02	10.00	0.00	-327.53	NIOBRARA A :
7729.02	73.35	359.89	7515.00	-72.23	321.23	1249333.77	3175393.74	10.00	0.00	-72.85	NIOBRARA B :
7900.91	90.54	359.89	7539.00	97.32	320.91	1249503.31	3175392.23	10.00	0.00	96.71	BEGIN HOLD; 7 in
14729.13	90.54	359.89	7475.00	6925.23	308.01	1256330.96	3175331.20	0.00	0.00	6924.63	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	SURFACE
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	2.00	146.20	1199.98	-1.45	0.97	2.00	146.20	-1.45	BEGIN HOLD
1300.00	4.00	146.20	1299.84	-5.80	3.88	2.00	0.00	-5.81	
1396.69	5.93	146.20	1396.16	-12.76	8.54	2.00	0.00	-12.77	
1400.00	5.93	146.20	1399.45	-13.04	8.73	0.00	0.00	-13.06	
1500.00	5.93	146.20	1498.92	-21.63	14.48	0.00	0.00	-21.66	
1600.00	5.93	146.20	1598.38	-30.22	20.23	0.00	0.00	-30.26	
1700.00	5.93	146.20	1697.84	-38.81	25.98	0.00	0.00	-38.86	
1800.00	5.93	146.20	1797.31	-47.40	31.73	0.00	0.00	-47.46	
1900.00	5.93	146.20	1896.77	-55.99	37.48	0.00	0.00	-56.06	
2000.00	5.93	146.20	1996.24	-64.58	43.23	0.00	0.00	-64.67	
2100.00	5.93	146.20	2095.70	-73.17	48.99	0.00	0.00	-73.27	
2200.00	5.93	146.20	2195.17	-81.77	54.74	0.00	0.00	-81.87	
2300.00	5.93	146.20	2294.63	-90.36	60.49	0.00	0.00	-90.47	
2400.00	5.93	146.20	2394.09	-98.95	66.24	0.00	0.00	-99.07	
2500.00	5.93	146.20	2493.56	-107.54	71.99	0.00	0.00	-107.68	
2600.00	5.93	146.20	2593.02	-116.13	77.74	0.00	0.00	-116.28	
2700.00	5.93	146.20	2692.49	-124.72	83.49	0.00	0.00	-124.88	
2800.00	5.93	146.20	2791.95	-133.31	89.24	0.00	0.00	-133.48	
2900.00	5.93	146.20	2891.42	-141.90	94.99	0.00	0.00	-142.08	
3000.00	5.93	146.20	2990.88	-150.49	100.74	0.00	0.00	-150.68	
3100.00	5.93	146.20	3090.34	-159.08	106.50	0.00	0.00	-159.29	
3200.00	5.93	146.20	3189.81	-167.67	112.25	0.00	0.00	-167.89	
3300.00	5.93	146.20	3289.27	-176.26	118.00	0.00	0.00	-176.49	
3400.00	5.93	146.20	3388.74	-184.85	123.75	0.00	0.00	-185.09	
3500.00	5.93	146.20	3488.20	-193.44	129.50	0.00	0.00	-193.69	
3600.00	5.93	146.20	3587.66	-202.03	135.25	0.00	0.00	-202.29	
3700.00	5.93	146.20	3687.13	-210.63	141.00	0.00	0.00	-210.90	
3800.00	5.93	146.20	3786.59	-219.22	146.75	0.00	0.00	-219.50	
3900.00	5.93	146.20	3886.06	-227.81	152.50	0.00	0.00	-228.10	

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	5.93	146.20	3985.52	-236.40	158.25	0.00	0.00	-236.70	
4100.00	5.93	146.20	4084.99	-244.99	164.00	0.00	0.00	-245.30	
4200.00	5.93	146.20	4184.45	-253.58	169.76	0.00	0.00	-253.90	
4300.00	5.93	146.20	4283.91	-262.17	175.51	0.00	0.00	-262.51	
4400.00	5.93	146.20	4383.38	-270.76	181.26	0.00	0.00	-271.11	
4500.00	5.93	146.20	4482.84	-279.35	187.01	0.00	0.00	-279.71	
4600.00	5.93	146.20	4582.31	-287.94	192.76	0.00	0.00	-288.31	
4700.00	5.93	146.20	4681.77	-296.53	198.51	0.00	0.00	-296.91	
4800.00	5.93	146.20	4781.23	-305.12	204.26	0.00	0.00	-305.51	
4900.00	5.93	146.20	4880.70	-313.71	210.01	0.00	0.00	-314.12	
5000.00	5.93	146.20	4980.16	-322.30	215.76	0.00	0.00	-322.72	
5100.00	5.93	146.20	5079.63	-330.90	221.51	0.00	0.00	-331.32	
5200.00	5.93	146.20	5179.09	-339.49	227.27	0.00	0.00	-339.92	
5300.00	5.93	146.20	5278.56	-348.08	233.02	0.00	0.00	-348.52	
5400.00	5.93	146.20	5378.02	-356.67	238.77	0.00	0.00	-357.13	
5500.00	5.93	146.20	5477.48	-365.26	244.52	0.00	0.00	-365.73	
5600.00	5.93	146.20	5576.95	-373.85	250.27	0.00	0.00	-374.33	
5700.00	5.93	146.20	5676.41	-382.44	256.02	0.00	0.00	-382.93	
5800.00	5.93	146.20	5775.88	-391.03	261.77	0.00	0.00	-391.53	
5900.00	5.93	146.20	5875.34	-399.62	267.52	0.00	0.00	-400.13	
6000.00	5.93	146.20	5974.81	-408.21	273.27	0.00	0.00	-408.74	
6100.00	5.93	146.20	6074.27	-416.80	279.02	0.00	0.00	-417.34	
6200.00	5.93	146.20	6173.73	-425.39	284.77	0.00	0.00	-425.94	
6300.00	5.93	146.20	6273.20	-433.98	290.53	0.00	0.00	-434.54	
6400.00	5.93	146.20	6372.66	-442.57	296.28	0.00	0.00	-443.14	
6500.00	5.93	146.20	6472.13	-451.16	302.03	0.00	0.00	-451.74	
6600.00	5.93	146.20	6571.59	-459.76	307.78	0.00	0.00	-460.35	
6698.85	5.93	146.20	6669.92	-468.25	313.46	0.00	0.00	-468.85	BEGIN DROP
6700.00	5.91	146.20	6671.05	-468.35	313.53	2.00	180.00	-468.95	
6800.00	3.91	146.20	6770.68	-475.46	318.29	2.00	180.00	-476.07	
6900.00	1.91	146.20	6870.55	-479.68	321.12	2.00	180.00	-480.29	
6995.54	0.00	0.00	6966.07	-481.00	322.00	2.00	180.00	-481.62	KOP
7000.00	0.45	359.89	6970.53	-480.99	322.00	10.00	359.89	-481.60	
7100.00	10.45	359.89	7069.95	-471.51	321.98	10.00	0.00	-472.12	
7200.00	20.45	359.89	7166.22	-444.91	321.93	10.00	0.00	-445.52	
7300.00	30.45	359.89	7256.40	-402.00	321.85	10.00	0.00	-402.61	
7400.00	40.45	359.89	7337.77	-344.08	321.74	10.00	0.00	-344.69	
7500.00	50.45	359.89	7407.84	-272.91	321.61	10.00	0.00	-273.52	
7600.00	60.45	359.89	7464.48	-190.65	321.45	10.00	0.00	-191.27	
7700.00	70.45	359.89	7505.98	-99.81	321.28	10.00	0.00	-100.43	
7800.00	80.45	359.89	7531.08	-3.14	321.10	10.00	0.00	-3.76	

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	90.45	359.89	7539.01	96.41	320.91	10.00	0.00	95.80	BEGIN HOLD
7900.91	90.54	359.89	7539.00	97.32	320.91	10.00	0.00	96.71	
8000.00	90.54	359.89	7538.07	196.41	320.72	0.00	0.00	195.79	
8100.00	90.54	359.89	7537.14	296.41	320.53	0.00	0.00	295.79	
8200.00	90.54	359.89	7536.20	396.40	320.34	0.00	0.00	395.79	
8300.00	90.54	359.89	7535.26	496.40	320.16	0.00	0.00	495.78	
8400.00	90.54	359.89	7534.32	596.39	319.97	0.00	0.00	595.78	
8500.00	90.54	359.89	7533.39	696.39	319.78	0.00	0.00	695.77	
8600.00	90.54	359.89	7532.45	796.38	319.59	0.00	0.00	795.77	
8700.00	90.54	359.89	7531.51	896.38	319.40	0.00	0.00	895.76	
8800.00	90.54	359.89	7530.58	996.37	319.21	0.00	0.00	995.76	
8900.00	90.54	359.89	7529.64	1096.37	319.02	0.00	0.00	1095.75	
9000.00	90.54	359.89	7528.70	1196.36	318.83	0.00	0.00	1195.75	
9100.00	90.54	359.89	7527.76	1296.36	318.64	0.00	0.00	1295.75	
9200.00	90.54	359.89	7526.83	1396.36	318.46	0.00	0.00	1395.74	
9300.00	90.54	359.89	7525.89	1496.35	318.27	0.00	0.00	1495.74	
9400.00	90.54	359.89	7524.95	1596.35	318.08	0.00	0.00	1595.73	
9500.00	90.54	359.89	7524.01	1696.34	317.89	0.00	0.00	1695.73	
9600.00	90.54	359.89	7523.08	1796.34	317.70	0.00	0.00	1795.72	
9700.00	90.54	359.89	7522.14	1896.33	317.51	0.00	0.00	1895.72	
9800.00	90.54	359.89	7521.20	1996.33	317.32	0.00	0.00	1995.72	
9900.00	90.54	359.89	7520.26	2096.32	317.13	0.00	0.00	2095.71	
10000.00	90.54	359.89	7519.33	2196.32	316.94	0.00	0.00	2195.71	
10100.00	90.54	359.89	7518.39	2296.31	316.76	0.00	0.00	2295.70	
10200.00	90.54	359.89	7517.45	2396.31	316.57	0.00	0.00	2395.70	
10300.00	90.54	359.89	7516.52	2496.31	316.38	0.00	0.00	2495.69	
10400.00	90.54	359.89	7515.58	2596.30	316.19	0.00	0.00	2595.69	
10500.00	90.54	359.89	7514.64	2696.30	316.00	0.00	0.00	2695.68	
10600.00	90.54	359.89	7513.70	2796.29	315.81	0.00	0.00	2795.68	
10700.00	90.54	359.89	7512.77	2896.29	315.62	0.00	0.00	2895.68	
10800.00	90.54	359.89	7511.83	2996.28	315.43	0.00	0.00	2995.67	
10900.00	90.54	359.89	7510.89	3096.28	315.24	0.00	0.00	3095.67	
11000.00	90.54	359.89	7509.95	3196.27	315.05	0.00	0.00	3195.66	
11100.00	90.54	359.89	7509.02	3296.27	314.87	0.00	0.00	3295.66	
11200.00	90.54	359.89	7508.08	3396.26	314.68	0.00	0.00	3395.65	
11300.00	90.54	359.89	7507.14	3496.26	314.49	0.00	0.00	3495.65	
11400.00	90.54	359.89	7506.20	3596.25	314.30	0.00	0.00	3595.64	
11500.00	90.54	359.89	7505.27	3696.25	314.11	0.00	0.00	3695.64	
11600.00	90.54	359.89	7504.33	3796.25	313.92	0.00	0.00	3795.64	
11700.00	90.54	359.89	7503.39	3896.24	313.73	0.00	0.00	3895.63	
11800.00	90.54	359.89	7502.46	3996.24	313.54	0.00	0.00	3995.63	

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	90.54	359.89	7501.52	4096.23	313.35	0.00	0.00	4095.62	
12000.00	90.54	359.89	7500.58	4196.23	313.17	0.00	0.00	4195.62	
12100.00	90.54	359.89	7499.64	4296.22	312.98	0.00	0.00	4295.61	
12200.00	90.54	359.89	7498.71	4396.22	312.79	0.00	0.00	4395.61	
12300.00	90.54	359.89	7497.77	4496.21	312.60	0.00	0.00	4495.61	
12400.00	90.54	359.89	7496.83	4596.21	312.41	0.00	0.00	4595.60	
12500.00	90.54	359.89	7495.89	4696.20	312.22	0.00	0.00	4695.60	
12600.00	90.54	359.89	7494.96	4796.20	312.03	0.00	0.00	4795.59	
12700.00	90.54	359.89	7494.02	4896.20	311.84	0.00	0.00	4895.59	
12800.00	90.54	359.89	7493.08	4996.19	311.65	0.00	0.00	4995.58	
12900.00	90.54	359.89	7492.14	5096.19	311.47	0.00	0.00	5095.58	
13000.00	90.54	359.89	7491.21	5196.18	311.28	0.00	0.00	5195.57	
13100.00	90.54	359.89	7490.27	5296.18	311.09	0.00	0.00	5295.57	
13200.00	90.54	359.89	7489.33	5396.17	310.90	0.00	0.00	5395.57	
13300.00	90.54	359.89	7488.40	5496.17	310.71	0.00	0.00	5495.56	
13400.00	90.54	359.89	7487.46	5596.16	310.52	0.00	0.00	5595.56	
13500.00	90.54	359.89	7486.52	5696.16	310.33	0.00	0.00	5695.55	
13600.00	90.54	359.89	7485.58	5796.15	310.14	0.00	0.00	5795.55	
13700.00	90.54	359.89	7484.65	5896.15	309.95	0.00	0.00	5895.54	
13800.00	90.54	359.89	7483.71	5996.15	309.77	0.00	0.00	5995.54	
13900.00	90.54	359.89	7482.77	6096.14	309.58	0.00	0.00	6095.53	
14000.00	90.54	359.89	7481.83	6196.14	309.39	0.00	0.00	6195.53	
14100.00	90.54	359.89	7480.90	6296.13	309.20	0.00	0.00	6295.53	
14200.00	90.54	359.89	7479.96	6396.13	309.01	0.00	0.00	6395.52	
14300.00	90.54	359.89	7479.02	6496.12	308.82	0.00	0.00	6495.52	
14400.00	90.54	359.89	7478.09	6596.12	308.63	0.00	0.00	6595.51	
14500.00	90.54	359.89	7477.15	6696.11	308.44	0.00	0.00	6695.51	
14600.00	90.54	359.89	7476.21	6796.11	308.25	0.00	0.00	6795.50	
14700.00	90.54	359.89	7475.27	6896.10	308.07	0.00	0.00	6895.50	
14729.13	90.54	359.89	7475.00	6925.23	308.01	0.00	0.00	6924.63	TD

Formation Points (Relative to centre, TVD relative to Drill Floor)		
Name	MD (US ft)	TVD (US ft)
FOX HILLS BASE	808.00	808.00
SUSSEX	4816.86	4798.00
SHANNON	5359.76	5338.00
SHARON SPRINGS	7369.45	7314.00
NIOBRARA A	7425.78	7357.00
NIOBRARA B	7729.02	7515.00