

**5D Plan Report**

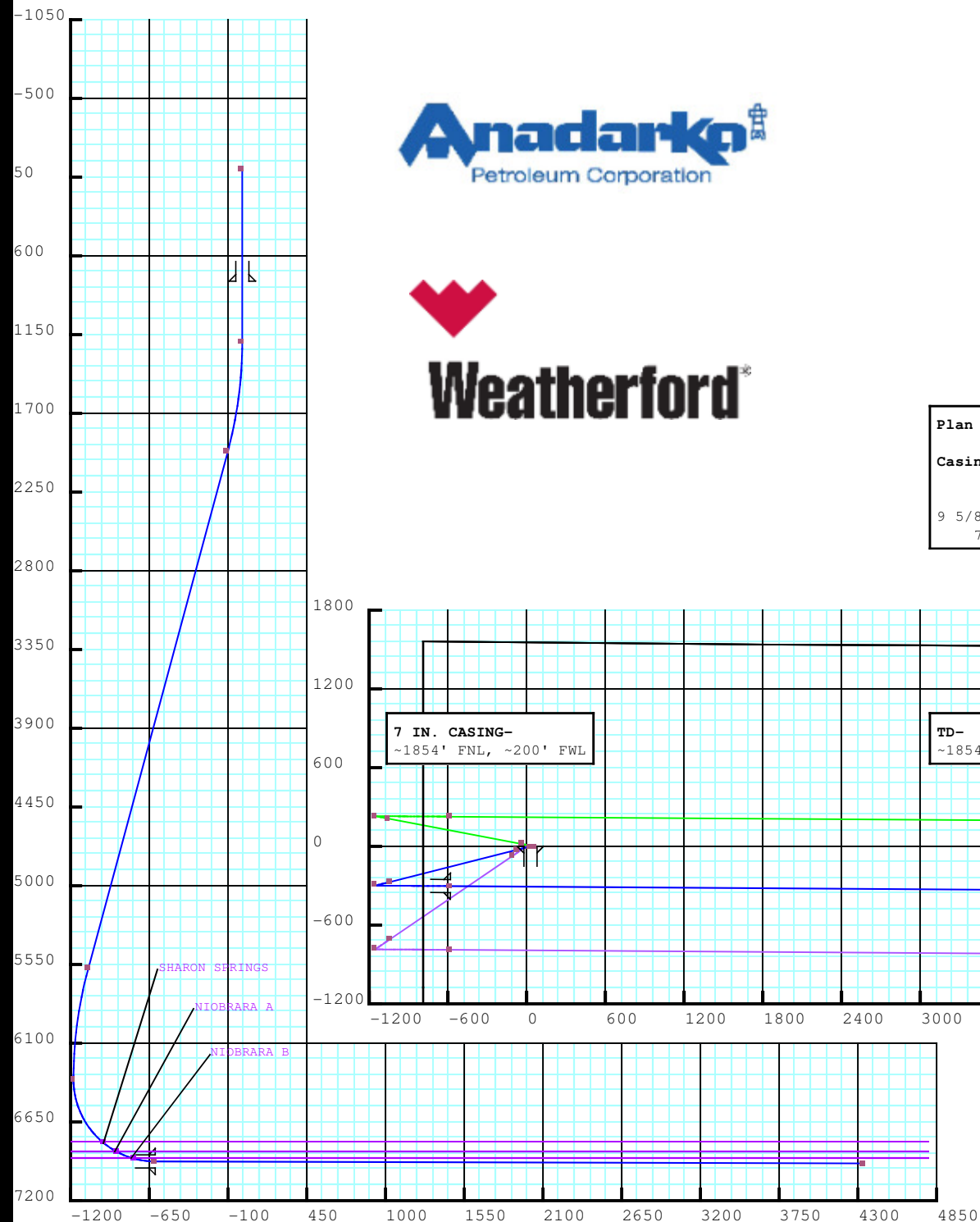
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**Anadarko Petroleum**

**Field Name:** *WATTENBERG\_ANADARKO\_NAD 83*  
**Site Name:** *ELLIOTT STATE 5-17HZ PAD*  
**Well Name:** *ELLIOTT STATE 8N-17HZ*  
**Plan:** *WP01 PERMIT*

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# Plan Data for ELLIOTT STATE 8N-17HZ

Field: WATTENBERG\_ANADARKO\_NAD 83

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

Slot: ELLIOTT STATE 8N-17HZ

Position:

Offset is from Site centre

+N/-S: -0.00USft Northing: 1326761.78USft Latitude: 40.228907°

+E/-W: 29.87USft Easting: 3161842.57USft Longitude: -104.920358°

Elevation Above VRD: 4812.00USft

## 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
1979.09	15.58	255.80	1969.53	-25.83	-102.07	-101.90	2.00	104.2L	
5730.97	15.58	255.80	5583.51	-273.09	-1079.08	-1077.25	0.00	0.0R	
6510.07	0.00	0.00	6353.04	-298.92	-1181.15	-1179.14	2.00	180.0R	
7408.44	89.84	90.38	6926.00	-302.75	-609.83	-607.81	10.00	90.4R	
12351.29	89.84	90.38	6940.00	-335.85	4332.89	4335.02	0.00	0.0R	

## Plan Data for ELLIOTT STATE 8N-17HZ

### Casing Point Information:

Name	MD	TVD
	(USft)	(USft)
9 5/8 in	776.00	776.00
7 in	7408.44	6926.00

## Plan Data for ELLIOTT STATE 8N-17HZ

### Target Set Information:

Name: 22				
Name	TVD	Lat	Long	Shape
	(USft)	(°)	(°)	
HEEL	6926.00	40.228076	-104.922542	Cuboid
PBHL	6940.00	40.227984	-104.904840	Cuboid

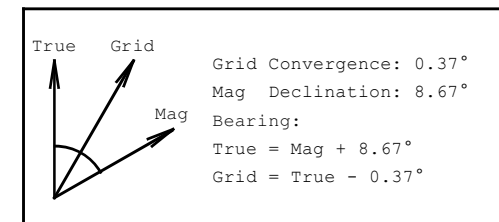
## Plan Data for ELLIOTT STATE 8N-17HZ

### Formation Point Information:

Name	TVD	Elevation	MD
	(USft)	(USft)	(USft)
FOX HILLS BASE	726.00	4103.00	726.00
PARKMAN	3521.00	1308.00	3589.76
SUSSEX	3984.00	845.00	4070.43
SHARON SPRINGS	6798.00	-1969.00	7019.57
NIOBRARA A	6857.00	-2028.00	7125.98
NIOBRARA B	6904.00	-2075.00	7250.79

KOP- 6510.07' MD

LINER TOP- 6410.07' MD



WP01 PERMIT 8/22/13

BY: JA UNDERWOOD



# Weatherford®



## Plan Surveys for the ELLIOTT STATE 8N-17HZ

<b>Site Name</b>  ELLIOTT STATE 5-17HZ PAD	<b>Units :</b> US ft	<b>North Reference :</b> True	<b>Convergence Angle :</b> 0.37
	<b>Position</b>	<b>Northing :</b> 1326761.59 US ft	<b>Latitude :</b> 40.228907
		<b>Easting :</b> 3161812.70 US ft	<b>Longitude :</b> -104.920465
	<b>Elevation above:</b> 4812.00 US ft <b>Comment :</b>		
<b>Slot Name</b>  ELLIOTT STATE 8N-17HZ	<b>Position (Offsets relative to Site Centre)</b>		
	<b>+N / -S :</b> -0.00 US ft	<b>Northing :</b> 1326761.78 US ft	<b>Latitude :</b> 40.228907
	<b>+E / -W :</b> 29.87 US ft	<b>Easting :</b> 3161842.57 US ft	<b>Longitude :</b> -104.920358
	<b>Slot TVD Reference :</b> Ground Elevation <b>Elevation above :</b> 4812.00 US ft <b>Comment :</b>		
<b>Well Name</b>  ELLIOTT STATE 8N-17HZ	<b>Type :</b> Main well	<b>UWI :</b>	<b>Plan :</b> WP01 PERMIT
	<b>Rig Height</b> <b>Drill Floor :</b> 17.00 US ft	<b>Comment :</b>	
	<b>Relative to :</b> 4829.00 US ft		
	<b>Closure Distance :</b> 4345.89 US ft	<b>Closure Azimuth :</b> 94.4322°	
	<b>Vertical Section (Position of Origin Relative to Slot )</b>		
	<b>+N / -S :</b> 0.00 US ft	<b>+E / -W :</b> 0.00 US ft	<b>Az :</b> 90.38°
	<b>Magnetic Parameters</b>		
	<b>Model :</b> BGGM	<b>Field Strength :</b> 52684.0nT	<b>Dec :</b> 8.67°
		<b>Dip :</b> 66.64°	<b>Date :</b> 22/May/2013

Target Set				
Name : 22		Number of Targets : 2		
Comment :				
TargetName:  HEEL  Shape:  Cuboid	Position (Relative to centre)			
	+N / -S : -302.71US ft		Northing : 1326455.09 US ft	
	+E / -W : -609.81 US ft		Easting : 3161234.75US ft	
	Latitude : 40°13'41.073600"			
	Longitude : -104°55'21.151200"			
TargetName:  PBHL  Shape:  Cuboid	TVD (Drill Floor) : 6926.00 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	
TargetName:  PBHL  Shape:  Cuboid	Position (Relative to centre)			
	+N / -S : -335.85US ft		Northing : 1326454.25 US ft	
	+E / -W : 4332.89 US ft		Easting : 3166177.56US ft	
	Latitude : 40°13'40.742400"			
	Longitude : -104°54'17.424000"			
TargetName:  PBHL  Shape:  Cuboid	TVD (Drill Floor) : 6940.00 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	776.00	0.00	0.00	776.00	0.00	0.00	40.228907	-104.920358
7 in	7408.44	89.84	90.38	6926.00	-302.75	-609.83	40.228076	-104.922542

## 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	1326761.78	3161842.57	0.00	0.00	-0.00	SURFACE
776.00	0.00	0.00	776.00	0.00	0.00	1326761.78	3161842.57	0.00	0.00	-0.00	9 5/8 in
1200.00	0.00	0.00	1200.00	0.00	0.00	1326761.78	3161842.57	0.00	0.00	-0.00	BEGIN NUDGE
1979.09	15.58	255.80	1969.53	-25.83	-102.07	1326735.28	3161740.67	2.00	255.80	-101.90	
5730.97	15.58	255.80	5583.51	-273.09	-1079.08	1326481.64	3160765.30	0.00	0.00	-1077.25	

## 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
6510.07	0.00	0.00	6353.04	-298.92	-1181.15	1326455.15	3160663.40	2.00	180.00	-1179.14	KOP
7408.44	89.84	90.38	6926.00	-302.75	-609.83	1326455.05	3161234.73	10.00	90.38	-607.81	7 in
7408.44	89.84	90.38	6926.00	-302.75	-609.83	1326455.05	3161234.73	0.00	0.00	-607.81	
12351.29	89.84	90.38	6940.00	-335.85	4332.89	1326454.25	3166177.56	0.00	0.00	4335.02	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	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			
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	BEGIN NUDGE		
1300.00	2.00	255.80	1299.98	-0.43	-1.69	2.00	255.80	-1.69			
1400.00	4.00	255.80	1399.84	-1.71	-6.77	2.00	0.00	-6.75			
1500.00	6.00	255.80	1499.45	-3.85	-15.21	2.00	0.00	-15.19			
1600.00	8.00	255.80	1598.70	-6.84	-27.03	2.00	0.00	-26.98			
1700.00	10.00	255.80	1697.47	-10.68	-42.19	2.00	0.00	-42.12			
1800.00	12.00	255.80	1795.62	-15.36	-60.69	2.00	0.00	-60.59			
1900.00	14.00	255.80	1893.06	-20.88	-82.50	2.00	0.00	-82.36			
1979.09	15.58	255.80	1969.53	-25.83	-102.07	2.00	0.00	-101.90			
2000.00	15.58	255.80	1989.66	-27.21	-107.51	0.00	0.00	-107.33			
2100.00	15.58	255.80	2085.99	-33.80	-133.55	0.00	0.00	-133.33			
2200.00	15.58	255.80	2182.31	-40.39	-159.60	0.00	0.00	-159.32			
2300.00	15.58	255.80	2278.64	-46.98	-185.64	0.00	0.00	-185.32			
2400.00	15.58	255.80	2374.96	-53.57	-211.68	0.00	0.00	-211.32			
2500.00	15.58	255.80	2471.29	-60.16	-237.72	0.00	0.00	-237.31			
2600.00	15.58	255.80	2567.61	-66.75	-263.76	0.00	0.00	-263.31			
2700.00	15.58	255.80	2663.94	-73.34	-289.80	0.00	0.00	-289.31			
2800.00	15.58	255.80	2760.26	-79.93	-315.84	0.00	0.00	-315.30			
2900.00	15.58	255.80	2856.59	-86.52	-341.88	0.00	0.00	-341.30			
3000.00	15.58	255.80	2952.91	-93.11	-367.92	0.00	0.00	-367.29			
3100.00	15.58	255.80	3049.24	-99.70	-393.96	0.00	0.00	-393.29			
3200.00	15.58	255.80	3145.56	-106.29	-420.00	0.00	0.00	-419.29			

## 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
3300.00	15.58	255.80	3241.89	-112.88	-446.04	0.00	0.00	-445.28	
3400.00	15.58	255.80	3338.21	-119.47	-472.08	0.00	0.00	-471.28	
3500.00	15.58	255.80	3434.53	-126.06	-498.12	0.00	0.00	-497.28	
3600.00	15.58	255.80	3530.86	-132.65	-524.16	0.00	0.00	-523.27	
3700.00	15.58	255.80	3627.18	-139.24	-550.20	0.00	0.00	-549.27	
3800.00	15.58	255.80	3723.51	-145.83	-576.24	0.00	0.00	-575.26	
3900.00	15.58	255.80	3819.83	-152.42	-602.28	0.00	0.00	-601.26	
4000.00	15.58	255.80	3916.16	-159.01	-628.33	0.00	0.00	-627.26	
4100.00	15.58	255.80	4012.48	-165.60	-654.37	0.00	0.00	-653.25	
4200.00	15.58	255.80	4108.81	-172.19	-680.41	0.00	0.00	-679.25	
4300.00	15.58	255.80	4205.13	-178.78	-706.45	0.00	0.00	-705.25	
4400.00	15.58	255.80	4301.46	-185.37	-732.49	0.00	0.00	-731.24	
4500.00	15.58	255.80	4397.78	-191.96	-758.53	0.00	0.00	-757.24	
4600.00	15.58	255.80	4494.11	-198.55	-784.57	0.00	0.00	-783.23	
4700.00	15.58	255.80	4590.43	-205.15	-810.61	0.00	0.00	-809.23	
4800.00	15.58	255.80	4686.76	-211.74	-836.65	0.00	0.00	-835.23	
4900.00	15.58	255.80	4783.08	-218.33	-862.69	0.00	0.00	-861.22	
5000.00	15.58	255.80	4879.41	-224.92	-888.73	0.00	0.00	-887.22	
5100.00	15.58	255.80	4975.73	-231.51	-914.77	0.00	0.00	-913.22	
5200.00	15.58	255.80	5072.06	-238.10	-940.81	0.00	0.00	-939.21	
5300.00	15.58	255.80	5168.38	-244.69	-966.85	0.00	0.00	-965.21	
5400.00	15.58	255.80	5264.71	-251.28	-992.89	0.00	0.00	-991.20	
5500.00	15.58	255.80	5361.03	-257.87	-1018.93	0.00	0.00	-1017.20	
5600.00	15.58	255.80	5457.35	-264.46	-1044.97	0.00	0.00	-1043.20	
5700.00	15.58	255.80	5553.68	-271.05	-1071.01	0.00	0.00	-1069.19	
5730.97	15.58	255.80	5583.51	-273.09	-1079.08	0.00	0.00	-1077.25	
5800.00	14.20	255.80	5650.22	-277.44	-1096.28	2.00	180.00	-1094.41	
5900.00	12.20	255.80	5747.57	-283.04	-1118.41	2.00	180.00	-1116.51	
6000.00	10.20	255.80	5845.66	-287.81	-1137.25	2.00	180.00	-1135.31	
6100.00	8.20	255.80	5944.37	-291.73	-1152.75	2.00	180.00	-1150.79	
6200.00	6.20	255.80	6043.58	-294.81	-1164.90	2.00	180.00	-1162.92	
6300.00	4.20	255.80	6143.16	-297.03	-1173.69	2.00	180.00	-1171.69	
6400.00	2.20	255.80	6243.00	-298.40	-1179.10	2.00	180.00	-1177.10	
6500.00	0.20	255.80	6342.97	-298.92	-1181.13	2.00	180.00	-1179.12	
6510.07	0.00	0.00	6353.04	-298.92	-1181.15	2.00	180.00	-1179.14	KOP
6600.00	8.99	90.38	6442.60	-298.97	-1174.11	10.00	90.38	-1172.10	
6700.00	18.99	90.38	6539.51	-299.13	-1149.96	10.00	0.00	-1147.95	
6800.00	28.99	90.38	6630.76	-299.40	-1109.35	10.00	0.00	-1107.34	
6900.00	38.99	90.38	6713.56	-299.77	-1053.51	10.00	0.00	-1051.50	
7000.00	48.99	90.38	6785.41	-300.24	-984.14	10.00	0.00	-982.13	
7100.00	58.99	90.38	6844.13	-300.78	-903.35	10.00	0.00	-901.34	

## 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
7200.00	68.99	90.38	6887.92	-301.38	-813.59	10.00	0.00	-811.58	
7300.00	78.99	90.38	6915.46	-302.02	-717.59	10.00	0.00	-715.57	
7400.00	88.99	90.38	6925.91	-302.69	-618.27	10.00	0.00	-616.25	
7408.44	89.84	90.38	6926.00	-302.75	-609.83	10.00	0.00	-607.81	
7500.00	89.84	90.38	6926.25	-303.36	-518.27	0.00	0.00	-516.25	
7600.00	89.84	90.38	6926.54	-304.03	-418.28	0.00	0.00	-416.25	
7700.00	89.84	90.38	6926.82	-304.70	-318.28	0.00	0.00	-316.25	
7800.00	89.84	90.38	6927.10	-305.37	-218.28	0.00	0.00	-216.25	
7900.00	89.84	90.38	6927.39	-306.04	-118.28	0.00	0.00	-116.25	
8000.00	89.84	90.38	6927.67	-306.71	-18.29	0.00	0.00	-16.25	
8100.00	89.84	90.38	6927.95	-307.38	81.71	0.00	0.00	83.75	
8200.00	89.84	90.38	6928.24	-308.05	181.71	0.00	0.00	183.75	
8300.00	89.84	90.38	6928.52	-308.72	281.70	0.00	0.00	283.75	
8400.00	89.84	90.38	6928.80	-309.39	381.70	0.00	0.00	383.75	
8500.00	89.84	90.38	6929.09	-310.06	481.70	0.00	0.00	483.74	
8600.00	89.84	90.38	6929.37	-310.73	581.70	0.00	0.00	583.74	
8700.00	89.84	90.38	6929.65	-311.40	681.69	0.00	0.00	683.74	
8800.00	89.84	90.38	6929.94	-312.07	781.69	0.00	0.00	783.74	
8900.00	89.84	90.38	6930.22	-312.74	881.69	0.00	0.00	883.74	
9000.00	89.84	90.38	6930.50	-313.41	981.69	0.00	0.00	983.74	
9100.00	89.84	90.38	6930.79	-314.08	1081.68	0.00	0.00	1083.74	
9200.00	89.84	90.38	6931.07	-314.74	1181.68	0.00	0.00	1183.74	
9300.00	89.84	90.38	6931.35	-315.41	1281.68	0.00	0.00	1283.74	
9400.00	89.84	90.38	6931.64	-316.08	1381.68	0.00	0.00	1383.74	
9500.00	89.84	90.38	6931.92	-316.75	1481.67	0.00	0.00	1483.74	
9600.00	89.84	90.38	6932.20	-317.42	1581.67	0.00	0.00	1583.74	
9700.00	89.84	90.38	6932.49	-318.09	1681.67	0.00	0.00	1683.74	
9800.00	89.84	90.38	6932.77	-318.76	1781.66	0.00	0.00	1783.74	
9900.00	89.84	90.38	6933.05	-319.43	1881.66	0.00	0.00	1883.74	
10000.00	89.84	90.38	6933.34	-320.10	1981.66	0.00	0.00	1983.74	
10100.00	89.84	90.38	6933.62	-320.77	2081.66	0.00	0.00	2083.74	
10200.00	89.84	90.38	6933.90	-321.44	2181.65	0.00	0.00	2183.74	
10300.00	89.84	90.38	6934.19	-322.11	2281.65	0.00	0.00	2283.74	
10400.00	89.84	90.38	6934.47	-322.78	2381.65	0.00	0.00	2383.74	
10500.00	89.84	90.38	6934.75	-323.45	2481.65	0.00	0.00	2483.74	
10600.00	89.84	90.38	6935.04	-324.12	2581.64	0.00	0.00	2583.74	
10700.00	89.84	90.38	6935.32	-324.79	2681.64	0.00	0.00	2683.74	
10800.00	89.84	90.38	6935.60	-325.46	2781.64	0.00	0.00	2783.74	
10900.00	89.84	90.38	6935.89	-326.13	2881.64	0.00	0.00	2883.74	
11000.00	89.84	90.38	6936.17	-326.80	2981.63	0.00	0.00	2983.73	
11100.00	89.84	90.38	6936.45	-327.47	3081.63	0.00	0.00	3083.73	

## 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
11200.00	89.84	90.38	6936.74	-328.14	3181.63	0.00	0.00	3183.73	
11300.00	89.84	90.38	6937.02	-328.81	3281.63	0.00	0.00	3283.73	
11400.00	89.84	90.38	6937.30	-329.48	3381.62	0.00	0.00	3383.73	
11500.00	89.84	90.38	6937.59	-330.15	3481.62	0.00	0.00	3483.73	
11600.00	89.84	90.38	6937.87	-330.82	3581.62	0.00	0.00	3583.73	
11700.00	89.84	90.38	6938.15	-331.49	3681.61	0.00	0.00	3683.73	
11800.00	89.84	90.38	6938.44	-332.16	3781.61	0.00	0.00	3783.73	
11900.00	89.84	90.38	6938.72	-332.83	3881.61	0.00	0.00	3883.73	
12000.00	89.84	90.38	6939.00	-333.50	3981.61	0.00	0.00	3983.73	
12100.00	89.84	90.38	6939.29	-334.17	4081.60	0.00	0.00	4083.73	
12200.00	89.84	90.38	6939.57	-334.84	4181.60	0.00	0.00	4183.73	
12300.00	89.84	90.38	6939.85	-335.51	4281.60	0.00	0.00	4283.73	
12351.29	89.84	90.38	6940.00	-335.85	4332.89	0.00	0.00	4335.02	TD

Formation Points (Relative to centre, TVD relative to Drill Floor )			
Name	MD (US ft)	TVD (US ft)	
FOX HILLS BASE	726.00	726.00	
PARKMAN	3589.76	3521.00	
SUSSEX	4070.43	3984.00	
SHARON SPRINGS	7019.57	6798.00	
NIOBRARA A	7125.98	6857.00	
NIOBRARA B	7250.79	6904.00	