

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

Field Name: *WATTENBURG_NAD83*
Site Name: *BERRY FARMS 41N-8HZ PAD*
Well Name: *BERRY FARMS 32N-8HZ*
Plan: *PLAN 1*





Plan Point Information:

DogLeg Severity Unit: %/100.00ft				Position offsets from Slot centre							
MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface	Build	Turn	
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(DLSU)	(°)	(DLSU)	(DLSU)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	
1910.12	16.20	168.85	1899.37	-111.64	22.00	-22.82	2.00	168.9	2.00	0.00	
5728.07	16.20	168.85	5565.67	-1156.86	228.00	-236.47	0.00	0.0	0.00	0.00	
6538.19	0.00	0.00	6365.04	-1268.50	250.00	-259.29	2.00	180.0	-2.00	0.00	
7438.19	90.00	270.42	6938.00	-1264.31	-322.94	313.67	10.00	270.4	10.00	0.00	
11913.13	90.00	270.42	6938.00	-1231.55	-4797.76	4788.60	0.00	0.0	0.00	0.00	

Plan Data for BERRY FARMS 32N-8HZ

Field: WATTENBURG_NAD83
Map Unit: USFT Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / Colorado North (ftUS)

Site: BERRY FARMS 41N-8HZ PAD
Unit: USFeet TVD Reference:
Company Name: Anadarko Petroleum
Position: Northing: 1332293.10USft Latitude: 40.244018°
Easting: 3165843.86USft Longitude: -104.905895°
North Reference: True Grid Convergence: 0.38°
Elevation Above VRD: 4821.00USft

Slot: BERRY FARMS 32N-8HZ
Position:
Offset is from Site centre
+N/-S: -119.85USftNorthing: 1332173.25USft Latitude: 40.243689°
+E/-W: 0.00USft Easting: 3165844.67USft Longitude: -104.905895°
Elevation Above VRD: 4820.30USft

Well: BERRY FARMS 32N-8HZ
Type: Main-Well
File Number:
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 119.85USft Azimuth: 270.42°
+E/-W: -0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGGM 52755(nT) 8.65° 66.81° 2013-10-17

Target Set Information:

Name: BERRY FARMS 32N-8HZ
Name TVD Lat Long
(USft) (°) (°)
PBHL 6938.00 40.240307 -104.923081

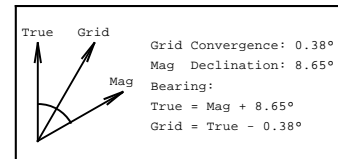
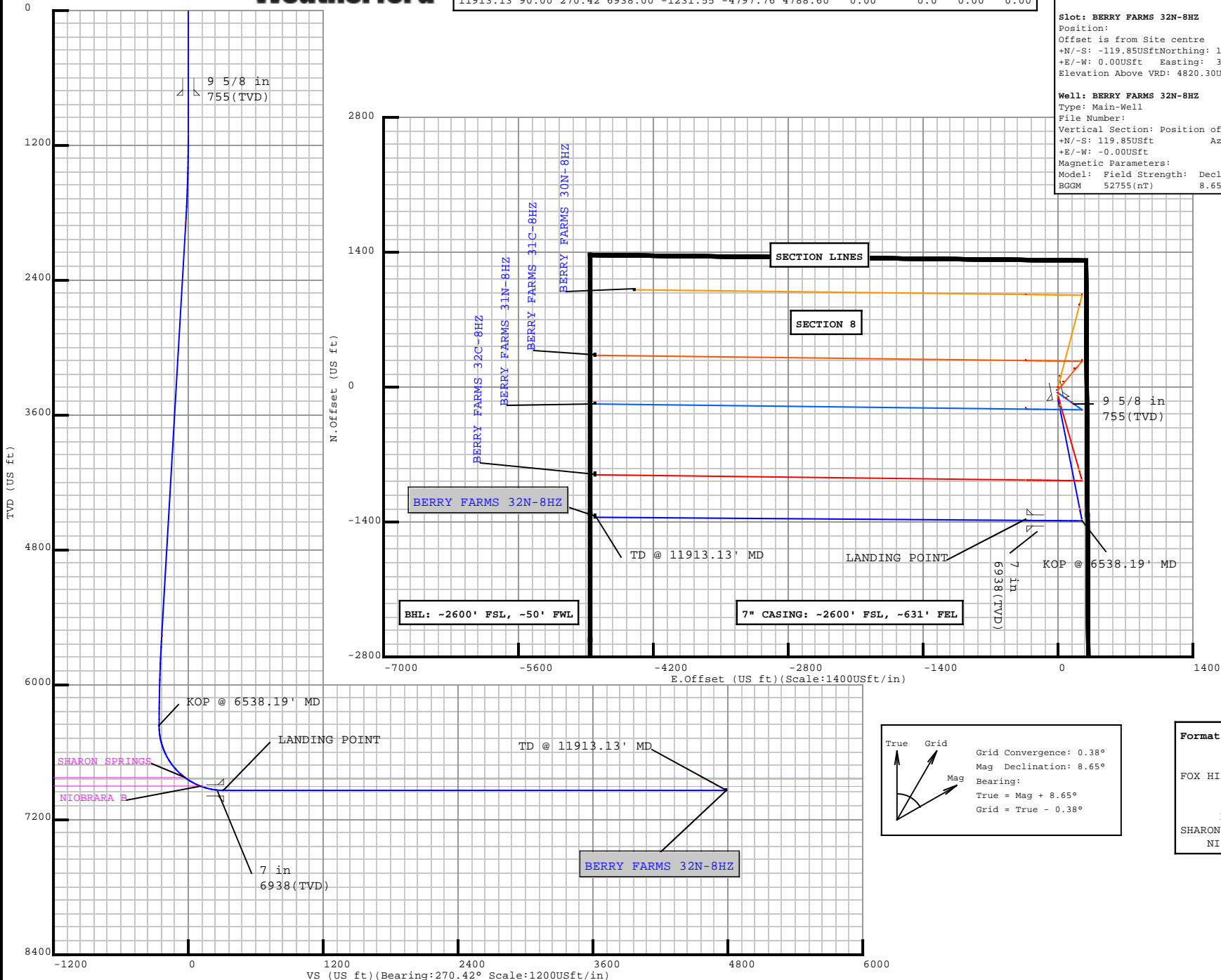
Casing Point Information:

Name	MD	TVD
	(USft)	(USft)
9 5/8 in	755.00	755.00
7 in	7438.19	6938.00

LINER: 6438.19' MD
KOP: 6538.19' MD

Formation Point Information:

Name	TVD Elevation	MD
	(USft)	(USft)
FOX HILLS BASE	705.00	4132.30
SUSSEX	4122.00	715.30
SHANNON	4531.00	306.30
NIOBRARA	0.00	0.00
SHARON SPRINGS	6829.00	-1991.70
NIOBRARA B	6908.00	-2070.70



Plan Surveys for the BERRY FARMS 32N-8HZ

Site Name BERRY FARMS 41N-8HZ PAD	Units : US ft	North Reference : True	Convergence Angle : 0.38
	Position	Northing : 1332293.10 US ft	Latitude : 40.244018
		Easting : 3165843.86 US ft	Longitude : -104.905895
	Elevation above: 4821.00 US ft Comment :		
Slot Name BERRY FARMS 32N-8HZ	Position (Offsets relative to Site Centre)		
	+N / -S : -119.85 US ft	Northing : 1332173.25 US ft	Latitude : 40.243689
	+E / -W : 0.00 US ft	Easting : 3165844.67 US ft	Longitude : -104.905895
	Slot TVD Reference : Ground Elevation Elevation above : 4820.30 US ft Comment :		
Well Name BERRY FARMS 32N-8HZ	Type : Main well	UWI :	Plan : PLAN 1
	Rig Height Drill Floor : 17.00 US ft	Comment :	
	Relative to : 4837.30 US ft		
	Closure Distance : 4953.3 US ft	Closure Azimuth : 255.603°	
	Vertical Section (Position of Origin Relative to Slot)		
	+N / -S : 119.85 US ft	+E / -W : -0.00 US ft	Az : 270.42°
	Magnetic Parameters		
	Model : BGGM	Field Strength : 52755.5nT	Dec : 8.65°
			Dip : 66.81°
			Date : 17/Oct/2013

Target Set**Name :** BERRY FARMS 32N-8HZ**Number of Targets :** 1**Comment :**

TargetName:	Position (Relative to centre)			
PBHL	+N / -S : -1231.55US ft		Northing : 1330909.59 US ft	Latitude : 40°14'25.105200"
Shape:	+E / -W : -4797.76 US ft		Easting : 3161055.27US ft	Longitude : -104°55'23.091600"
Cuboid	TVD (Drill Floor) : 6938.00 US ft			
	Orientation	Azimuth : 0.00°	Inclination : 0.00°	
	Dimensions	Length : 20.00 US ft	Breadth : 20.00 US ft	Height : 20.00 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	755.00	0.00	0.00	755.00	0.00	0.00	40.243689	-104.905895
7 in	7438.19	90.00	270.42	6938.00	-1264.31	-322.94	40.240218	-104.907052

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)	Latitude (°)	Longitude (°)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	40.243689	-104.905895	0.00	0.00	-0.88	
705.00	0.00	0.00	705.00	0.00	0.00	40.243689	-104.905895	0.00	0.00	-0.88	FOX HILLS BASE :
755.00	0.00	0.00	755.00	0.00	0.00	40.243689	-104.905895	0.00	0.00	-0.88	9 5/8 in
1100.00	0.00	0.00	1100.00	0.00	0.00	40.243689	-104.905895	0.00	0.00	-0.88	
1910.12	16.20	168.85	1899.37	-111.64	22.00	40.243383	-104.905816	2.00	168.85	-23.70	
4224.68	16.20	168.85	4122.00	-745.29	146.88	40.241643	-104.905369	0.00	0.00	-153.23	SUSSEX :
4650.60	16.20	168.85	4531.00	-861.89	169.86	40.241323	-104.905287	0.00	0.00	-177.06	SHANNON :
5728.07	16.20	168.85	5565.67	-1156.86	228.00	40.240513	-104.905078	0.00	0.00	-237.36	
6538.19	0.00	0.00	6365.04	-1268.50	250.00	40.240207	-104.904999	2.00	180.00	-260.17	KOP @ 6538.19' MD
7078.92	54.07	270.42	6829.00	-1266.77	13.24	40.240212	-104.905848	10.00	270.42	-23.41	SHARON SPRINGS :
7251.96	71.38	270.42	6908.00	-1265.65	-139.98	40.240215	-104.906396	10.00	0.00	129.82	NIOBRARA B :
7438.19	90.00	270.42	6938.00	-1264.31	-322.94	40.240218	-104.907052	10.00	0.00	312.78	7 in
7438.19	90.00	270.42	6938.00	-1264.31	-322.94	40.240218	-104.907052	0.00	0.00	312.78	LANDING POINT
11913.13	90.00	270.42	6938.00	-1231.55	-4797.76	40.240307	-104.923081	0.00	0.00	4787.72	TD @ 11913.13' MD

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	-0.88	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	-0.88	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	-0.88	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	-0.88	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	-0.88	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	-0.88	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	-0.88	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	-0.88	
705.00	0.00	0.00	705.00	0.00	0.00	0.00	0.00	-0.88	FOX HILLS BASE : 9 5/8 in
755.00	0.00	0.00	755.00	0.00	0.00	0.00	0.00	-0.88	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	-0.88	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	-0.88	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	-0.88	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	-0.88	
1200.00	2.00	168.85	1199.98	-1.71	0.34	2.00	168.85	-1.23	
1300.00	4.00	168.85	1299.84	-6.85	1.35	2.00	0.00	-2.28	
1400.00	6.00	168.85	1399.45	-15.40	3.03	2.00	0.00	-4.03	
1500.00	8.00	168.85	1498.70	-27.35	5.39	2.00	0.00	-6.47	
1600.00	10.00	168.85	1597.47	-42.70	8.42	2.00	0.00	-9.61	
1700.00	12.00	168.85	1695.62	-61.42	12.11	2.00	0.00	-13.44	
1800.00	14.00	168.85	1793.06	-83.49	16.45	2.00	0.00	-17.95	
1900.00	16.00	168.85	1889.64	-108.88	21.46	2.00	0.00	-23.14	
1910.12	16.20	168.85	1899.37	-111.64	22.00	2.00	0.00	-23.70	
2000.00	16.20	168.85	1985.68	-136.24	26.85	0.00	0.00	-28.73	
2100.00	16.20	168.85	2081.70	-163.62	32.25	0.00	0.00	-34.33	
2200.00	16.20	168.85	2177.73	-191.00	37.64	0.00	0.00	-39.92	
2300.00	16.20	168.85	2273.76	-218.37	43.04	0.00	0.00	-45.52	
2400.00	16.20	168.85	2369.79	-245.75	48.43	0.00	0.00	-51.12	
2500.00	16.20	168.85	2465.82	-273.13	53.83	0.00	0.00	-56.71	
2600.00	16.20	168.85	2561.84	-300.50	59.22	0.00	0.00	-62.31	
2700.00	16.20	168.85	2657.87	-327.88	64.62	0.00	0.00	-67.90	
2800.00	16.20	168.85	2753.90	-355.26	70.02	0.00	0.00	-73.50	
2900.00	16.20	168.85	2849.93	-382.63	75.41	0.00	0.00	-79.10	
3000.00	16.20	168.85	2945.96	-410.01	80.81	0.00	0.00	-84.69	
3100.00	16.20	168.85	3041.99	-437.39	86.20	0.00	0.00	-90.29	
3200.00	16.20	168.85	3138.01	-464.76	91.60	0.00	0.00	-95.88	
3300.00	16.20	168.85	3234.04	-492.14	96.99	0.00	0.00	-101.48	
3400.00	16.20	168.85	3330.07	-519.52	102.39	0.00	0.00	-107.08	
3500.00	16.20	168.85	3426.10	-546.89	107.78	0.00	0.00	-112.67	
3600.00	16.20	168.85	3522.13	-574.27	113.18	0.00	0.00	-118.27	

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
3700.00	16.20	168.85	3618.15	-601.65	118.57	0.00	0.00	-123.86	
3800.00	16.20	168.85	3714.18	-629.02	123.97	0.00	0.00	-129.46	
3900.00	16.20	168.85	3810.21	-656.40	129.37	0.00	0.00	-135.06	
4000.00	16.20	168.85	3906.24	-683.78	134.76	0.00	0.00	-140.65	
4100.00	16.20	168.85	4002.27	-711.15	140.16	0.00	0.00	-146.25	
4200.00	16.20	168.85	4098.30	-738.53	145.55	0.00	0.00	-151.84	
4224.68	16.20	168.85	4122.00	-745.29	146.88	0.00	0.00	-153.23	SUSSEX :
4300.00	16.20	168.85	4194.32	-765.91	150.95	0.00	0.00	-157.44	
4400.00	16.20	168.85	4290.35	-793.28	156.34	0.00	0.00	-163.04	
4500.00	16.20	168.85	4386.38	-820.66	161.74	0.00	0.00	-168.63	
4600.00	16.20	168.85	4482.41	-848.04	167.13	0.00	0.00	-174.23	
4650.60	16.20	168.85	4531.00	-861.89	169.86	0.00	0.00	-177.06	SHANNON :
4700.00	16.20	168.85	4578.44	-875.41	172.53	0.00	0.00	-179.82	
4800.00	16.20	168.85	4674.46	-902.79	177.92	0.00	0.00	-185.42	
4900.00	16.20	168.85	4770.49	-930.17	183.32	0.00	0.00	-191.02	
5000.00	16.20	168.85	4866.52	-957.54	188.72	0.00	0.00	-196.61	
5100.00	16.20	168.85	4962.55	-984.92	194.11	0.00	0.00	-202.21	
5200.00	16.20	168.85	5058.58	-1012.30	199.51	0.00	0.00	-207.80	
5300.00	16.20	168.85	5154.61	-1039.67	204.90	0.00	0.00	-213.40	
5400.00	16.20	168.85	5250.63	-1067.05	210.30	0.00	0.00	-219.00	
5500.00	16.20	168.85	5346.66	-1094.43	215.69	0.00	0.00	-224.59	
5600.00	16.20	168.85	5442.69	-1121.80	221.09	0.00	0.00	-230.19	
5700.00	16.20	168.85	5538.72	-1149.18	226.48	0.00	0.00	-235.78	
5728.07	16.20	168.85	5565.67	-1156.86	228.00	0.00	0.00	-237.36	
5800.00	14.76	168.85	5634.99	-1175.70	231.71	2.00	180.00	-241.21	
5900.00	12.76	168.85	5732.11	-1199.04	236.31	2.00	180.00	-245.98	
6000.00	10.76	168.85	5830.01	-1219.05	240.25	2.00	180.00	-250.07	
6100.00	8.76	168.85	5928.56	-1235.68	243.53	2.00	180.00	-253.47	
6200.00	6.76	168.85	6027.63	-1248.94	246.15	2.00	180.00	-256.18	
6300.00	4.76	168.85	6127.12	-1258.79	248.09	2.00	180.00	-258.19	
6400.00	2.76	168.85	6226.90	-1265.23	249.36	2.00	180.00	-259.51	
6500.00	0.76	168.85	6326.85	-1268.25	249.95	2.00	180.00	-260.12	
6538.19	0.00	0.00	6365.04	-1268.50	250.00	2.00	180.00	-260.17	KOP @ 6538.19' MD
6600.00	6.18	270.42	6426.73	-1268.48	246.67	10.00	270.42	-256.84	
6700.00	16.18	270.42	6524.71	-1268.33	227.30	10.00	0.00	-237.48	
6800.00	26.18	270.42	6617.83	-1268.07	191.22	10.00	0.00	-201.39	
6900.00	36.18	270.42	6703.28	-1267.69	139.51	10.00	0.00	-149.68	
7000.00	46.18	270.42	6778.45	-1267.21	73.76	10.00	0.00	-83.92	
7078.92	54.07	270.42	6829.00	-1266.77	13.24	10.00	0.00	-23.41	SHARON SPRINGS :
7100.00	56.18	270.42	6841.05	-1266.64	-4.06	10.00	0.00	-6.11	
7200.00	66.18	270.42	6889.20	-1266.00	-91.56	10.00	0.00	81.39	

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	
7251.96	71.38	270.42	6908.00	-1265.65	-139.98	10.00	0.00	129.82	NIOBRARA B :	
7300.00	76.18	270.42	6921.41	-1265.31	-186.09	10.00	0.00	175.93		
7400.00	86.18	270.42	6936.73	-1264.59	-284.78	10.00	0.00	274.62		
7438.19	90.00	270.42	6938.00	-1264.31	-322.94	10.00	0.00	312.78	7 in LANDING POINT	
7438.19	90.00	270.42	6938.00	-1264.31	-322.94	0.00	0.00	312.78		
7500.00	90.00	270.42	6938.00	-1263.85	-384.75	0.00	0.00	374.59		
7600.00	90.00	270.42	6938.00	-1263.12	-484.75	0.00	0.00	474.59		
7700.00	90.00	270.42	6938.00	-1262.39	-584.74	0.00	0.00	574.59		
7800.00	90.00	270.42	6938.00	-1261.66	-684.74	0.00	0.00	674.59		
7900.00	90.00	270.42	6938.00	-1260.93	-784.74	0.00	0.00	774.59		
8000.00	90.00	270.42	6938.00	-1260.19	-884.73	0.00	0.00	874.59		
8100.00	90.00	270.42	6938.00	-1259.46	-984.73	0.00	0.00	974.59		
8200.00	90.00	270.42	6938.00	-1258.73	-1084.73	0.00	0.00	1074.59		
8300.00	90.00	270.42	6938.00	-1258.00	-1184.73	0.00	0.00	1174.59		
8400.00	90.00	270.42	6938.00	-1257.26	-1284.72	0.00	0.00	1274.59		
8500.00	90.00	270.42	6938.00	-1256.53	-1384.72	0.00	0.00	1374.59		
8600.00	90.00	270.42	6938.00	-1255.80	-1484.72	0.00	0.00	1474.59		
8700.00	90.00	270.42	6938.00	-1255.07	-1584.72	0.00	0.00	1574.59		
8800.00	90.00	270.42	6938.00	-1254.34	-1684.71	0.00	0.00	1674.59		
8900.00	90.00	270.42	6938.00	-1253.60	-1784.71	0.00	0.00	1774.59		
9000.00	90.00	270.42	6938.00	-1252.87	-1884.71	0.00	0.00	1874.59		
9100.00	90.00	270.42	6938.00	-1252.14	-1984.70	0.00	0.00	1974.59		
9200.00	90.00	270.42	6938.00	-1251.41	-2084.70	0.00	0.00	2074.59		
9300.00	90.00	270.42	6938.00	-1250.68	-2184.70	0.00	0.00	2174.59		
9400.00	90.00	270.42	6938.00	-1249.94	-2284.70	0.00	0.00	2274.59		
9500.00	90.00	270.42	6938.00	-1249.21	-2384.69	0.00	0.00	2374.59		
9600.00	90.00	270.42	6938.00	-1248.48	-2484.69	0.00	0.00	2474.59		
9700.00	90.00	270.42	6938.00	-1247.75	-2584.69	0.00	0.00	2574.59		
9800.00	90.00	270.42	6938.00	-1247.02	-2684.69	0.00	0.00	2674.59		
9900.00	90.00	270.42	6938.00	-1246.28	-2784.68	0.00	0.00	2774.59		
10000.00	90.00	270.42	6938.00	-1245.55	-2884.68	0.00	0.00	2874.59		
10100.00	90.00	270.42	6938.00	-1244.82	-2984.68	0.00	0.00	2974.59		
10200.00	90.00	270.42	6938.00	-1244.09	-3084.68	0.00	0.00	3074.59		
10300.00	90.00	270.42	6938.00	-1243.36	-3184.67	0.00	0.00	3174.59		
10400.00	90.00	270.42	6938.00	-1242.62	-3284.67	0.00	0.00	3274.59		
10500.00	90.00	270.42	6938.00	-1241.89	-3384.67	0.00	0.00	3374.59		
10600.00	90.00	270.42	6938.00	-1241.16	-3484.66	0.00	0.00	3474.59		
10700.00	90.00	270.42	6938.00	-1240.43	-3584.66	0.00	0.00	3574.59		
10800.00	90.00	270.42	6938.00	-1239.70	-3684.66	0.00	0.00	3674.59		
10900.00	90.00	270.42	6938.00	-1238.96	-3784.66	0.00	0.00	3774.59		
11000.00	90.00	270.42	6938.00	-1238.23	-3884.65	0.00	0.00	3874.59		

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
11100.00	90.00	270.42	6938.00	-1237.50	-3984.65	0.00	0.00	3974.59	
11200.00	90.00	270.42	6938.00	-1236.77	-4084.65	0.00	0.00	4074.59	
11300.00	90.00	270.42	6938.00	-1236.04	-4184.65	0.00	0.00	4174.59	
11400.00	90.00	270.42	6938.00	-1235.30	-4284.64	0.00	0.00	4274.59	
11500.00	90.00	270.42	6938.00	-1234.57	-4384.64	0.00	0.00	4374.59	
11600.00	90.00	270.42	6938.00	-1233.84	-4484.64	0.00	0.00	4474.59	
11700.00	90.00	270.42	6938.00	-1233.11	-4584.64	0.00	0.00	4574.59	
11800.00	90.00	270.42	6938.00	-1232.38	-4684.63	0.00	0.00	4674.59	
11900.00	90.00	270.42	6938.00	-1231.64	-4784.63	0.00	0.00	4774.59	
11913.13	90.00	270.42	6938.00	-1231.55	-4797.76	0.00	0.00	4787.72	TD @ 11913.13' MD

Formation Points (Relative to centre, TVD relative to Drill Floor)			
Name	MD (US ft)	TVD (US ft)	
FOX HILLS BASE	705.00	705.00	
SUSSEX	4224.68	4122.00	
SHANNON	4650.60	4531.00	
NIOBRARA	6829.00	0.00	
SHARON SPRINGS	7078.92	6829.00	
NIOBRARA B	7251.96	6908.00	