

**Plan Data for CANNON 13N-10HZ**

**Field:** WATTENBERG\_ANADARKO\_NAD 83

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

**Slot: CANNON 13N-10HZ**

Position:

Offset is from Site centre  
 +N/-S: -15.29USft Northing: 1301554.24USft Latitude: 40.158847°  
 +E/-W: 25.71USft Easting: 3204425.59USft Longitude: -104.768597°  
 Elevation Above VRD: 4949.00USft

**Plan Point Information:**

DogLeg Severity (USft)	Unit: °/100.00ft	+N/-S (USft)	+E/-W (USft)	Position offsets from Slot centre	DLS Toolface (°)			
896.00	0.42	6.25	895.96	5.50	-4.40	-5.53	0.14	31.4L
1150.00	0.42	6.25	1149.95	7.35	-4.20	-7.37	0.00	0.0R
1713.61	11.36	288.97	1709.85	27.51	-56.62	-27.85	2.00	79.3L
5903.71	11.36	288.97	5817.89	295.76	-836.95	-300.87	0.00	0.0R
6471.58	0.00	0.00	6382.05	314.00	-890.00	-319.43	2.00	180.0R
6771.58	0.00	0.00	6682.05	314.00	-890.00	-319.43	0.00	0.0R
7673.68	90.21	179.65	7255.00	-261.05	-886.49	255.63	10.00	179.7R
11624.68	90.21	179.65	7240.52	-4211.94	-862.35	4206.60	0.00	0.0R

**Plan Data for CANNON 13N-10HZ**

**Formation Point Information:**

Name	TVD Elevation (USft)	MD (USft)	
PARKMAN	4066.00	899.00	4116.82
SUSSEX	4457.00	508.00	4515.63
SHARON SPRINGS	7123.00	-2158.00	7274.76
NIORARA A	7187.00	-2222.00	7389.58
NIORARA B	7255.00	-2290.00	7668.61

**Plan Data for CANNON 13N-10HZ**

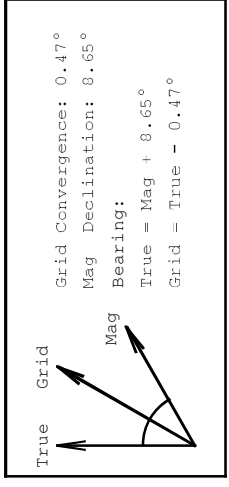
**Casing Point Information:**

Name	MD (USft)	TVD (USft)
9 5/8 in	960.00	959.96
7 in	7673.68	7255.00

**Plan Data for CANNON 13N-10HZ**

**Target Set Information:**

Name	TVD (USft)	Lat (°)	Long (°)	Shape
PBHL	7240.00	40.146641	-104.771676	Cuboid



**5D Survey Report**

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**Anadarko Petroleum**

**Field Name:** WATTENBERG\_ANADARKO\_NAD 83  
**Site Name:** CANNON 29-10HZ  
**Well Name:** CANNON 13N-10HZ  
**Survey:** *Definitive Survey*

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## Surveys for the CANNON 13N-10HZ

<b>Site Name</b> CANNON 29-10HZ	<b>Units :</b> US ft <b>North Reference :</b> True <b>Northing :</b> 1301569.32 US ft <b>Easting :</b> 3204399.75 US ft <b>Convergence Angle :</b> 0.47 <b>Latitude :</b> 40.158889 <b>Longitude :</b> -104.768689
<b>Slot Name</b> CANNON 13N-10HZ	<b>Position</b> <b>Elevation above:</b> 4949.00 US ft <b>Comment :</b> <b>Position (Offsets relative to Site Centre)</b> <b>+ N / -S :</b> -15.29 US ft <b>Northing :</b> 1301554.24 US ft <b>Latitude :</b> 40.158847 <b>+ E / -W :</b> 25.71 US ft <b>Easting :</b> 3204425.59 US ft <b>Longitude :</b> -104.768597 <b>Slot TVD Reference :</b> Ground Elevation <b>Elevation above :</b> 4949.00 US ft <b>Comment :</b>
<b>Well Name</b> CANNON 13N-10HZ	<b>Type :</b> Main well <b>Rig Height</b> <i>Drill Floor</i> : 16.00 US ft <b>Relative to :</b> 4965.00 US ft <b>Closure Distance :</b> 4273.12 US ft <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> 179.65° <b>UWI :</b> <b>Comment :</b> <b>Closure Azimuth :</b> 191.53°

5D Survey Report

**Target Set**

**Name :** 2      **Number of Targets :** 1

**Comment :**

<b>TargetName:</b>	<b>Position (Relative to centre)</b>
PBHL	<b>Latitude :</b> 40°8'47.907600"
<b>Shape:</b>	<b>Longitude :</b> -104°46'18.033600"
Cuboid	<b>Northing :</b> 1297100.89 US ft
	<b>Easting :</b> 3203601.56US ft
	<b>TVD (Drill Floor) :</b> 7240.00 US ft
<b>Orientation</b>	<b>Azimuth :</b> 0.00°
<b>Dimensions</b>	<b>Inclination :</b> 0.00°
	<b>Length :</b> 1.00 US ft
	<b>Breadth :</b> 1.00 US ft
	<b>Height :</b> 1.00 US ft

**Survey Name :** Definitive Survey

**Date :** 04/Apr/2013      **Survey Tool :**      **Comment :**      **Company :**

**Magnetic Model**

**Model Name:** Default      **Date:** 04/Apr/2013      **Field Strength:** 50000.0 nT      **Declination:** 0.00°      **Dip:** 0.00°

**Survey Tool Ranges**

Name	Start MD (us ft)	End MD (us ft)	Source Survey
MWD	0.00	896.00	GYROS
MWD	896.00	11605.00	WFT MWD

**Casing Points (Relative to centre, TVD relative to Drill Floor)**

Name	MD (US ft)	Az (°)	Inc (°)	TVD (US ft)	N. Offset (US ft)	Az (°)	TVD (US ft)	N. Offset (US ft)	Latitude (°)	E. Offset (US ft)	Longitude (°)
7 in	7658.00	87.79	178.81	7256.82	40.158847	-242.43	40.158847	-104.768597	40.158181	-879.53	-104.771744

**Well path created using minimum curvature**

Survey Points (Relative to centre, TVD relative to Drill Floor)													
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	W. Offset (US ft)	Northing (US ft)	Easting (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	1301554.24	3204425.59	40.158847	-104.768597	0.00	0.00	-0.00	
16.00	0.00	0.00	16.00	0.00	0.00	1301554.24	3204425.59	40.158847	-104.768597	0.00	0.00	-0.00	
116.00	0.47	272.47	116.00	0.02	-0.41	1301554.25	3204425.18	40.158847	-104.768598	0.47	272.47	-0.02	
216.00	0.58	288.54	215.99	0.20	-1.30	1301554.43	3204424.29	40.158848	-104.768602	0.18	61.45	-0.20	
316.00	0.64	301.37	315.99	0.65	-2.26	1301554.87	3204423.33	40.158849	-104.768605	0.15	72.79	-0.66	
416.00	0.66	316.83	415.98	1.36	-3.13	1301555.57	3204422.45	40.158851	-104.768608	0.18	91.26	-1.38	
516.00	0.66	331.59	515.98	2.29	-3.80	1301556.49	3204421.78	40.158853	-104.768611	0.17	97.38	-2.31	
616.00	0.62	338.65	615.97	3.30	-4.27	1301557.50	3204421.30	40.158856	-104.768612	0.09	120.40	-3.32	

5D Survey Report

Survey 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)	Latitude (°)	Longitude (°)	DLS (°/100 US ft)	T. Face (°)	VS (US ft)	Comment
716.00	0.53	354.17	715.96	4.26	-4.51	1301559.46	3204421.04	40.158659	-104.768613	0.18	127.63	-4.29	
816.00	0.32	14.27	815.96	4.99	-4.49	1301559.19	3204421.06	40.158661	-104.768613	0.25	154.40	-5.02	
896.00	0.42	6.25	895.96	5.50	-4.40	1301559.70	3204421.14	40.158662	-104.768613	0.14	328.57	-5.53	TIE ON
1054.00	0.78	305.20	1053.95	6.69	-5.22	1301560.89	3204420.32	40.158665	-104.768616	0.43	266.44	-6.73	FIRST MWD SURVEY
1145.00	1.75	284.82	1144.93	7.41	-7.07	1301561.59	3204418.46	40.158667	-104.768622	1.16	324.70	-7.45	
1236.00	2.75	306.10	1235.86	9.05	-10.17	1301563.20	3204415.34	40.158672	-104.768633	1.41	50.84	-9.11	
1327.00	4.87	307.77	1326.65	12.70	-14.99	1301566.82	3204410.49	40.158682	-104.768651	2.33	3.83	-12.79	
1418.00	6.73	306.33	1417.18	18.23	-22.34	1301572.28	3204403.10	40.158697	-104.768677	2.05	354.81	-18.36	
1515.00	7.55	302.24	1513.43	24.99	-32.31	1301578.97	3204393.07	40.158916	-104.768713	0.99	326.16	-25.19	
1607.00	8.59	291.83	1604.52	30.77	-43.80	1301584.65	3204381.54	40.158931	-104.768754	1.95	300.21	-31.04	
1699.00	9.83	290.61	1695.34	36.09	-57.53	1301589.86	3204367.76	40.158946	-104.768803	1.36	350.45	-36.44	
1791.00	10.93	286.35	1785.83	41.31	-73.25	1301594.95	3204352.00	40.158960	-104.768859	1.46	322.99	-41.76	
1885.00	11.69	286.86	1878.00	46.58	-90.92	1301600.07	3204334.29	40.158975	-104.768922	0.82	7.75	-47.14	
1978.00	11.24	285.69	1969.15	51.77	-108.66	1301605.11	3204316.51	40.158989	-104.768986	0.54	206.76	-52.43	
2072.00	11.36	290.74	2061.33	57.52	-126.14	1301610.72	3204298.98	40.159005	-104.769048	1.06	85.57	-58.29	
2165.00	12.11	292.67	2152.39	64.53	-143.71	1301617.58	3204281.36	40.159024	-104.769111	0.91	28.57	-65.40	
2258.00	10.74	291.74	2243.54	71.50	-160.76	1301624.41	3204264.25	40.159043	-104.769172	1.49	187.20	-72.48	
2352.00	9.83	290.00	2336.03	77.48	-176.43	1301630.27	3204248.52	40.159060	-104.769228	1.02	198.00	-78.56	
2445.00	9.27	294.04	2427.74	83.25	-190.73	1301635.92	3204234.18	40.159076	-104.769279	0.94	131.86	-84.42	
2538.00	11.08	291.53	2519.27	89.58	-205.89	1301642.12	3204218.97	40.159093	-104.769334	2.00	345.00	-90.84	
2632.00	11.87	287.85	2611.40	95.86	-223.49	1301648.26	3204201.31	40.159110	-104.769397	1.15	315.37	-97.23	
2725.00	12.71	289.01	2702.26	102.13	-242.27	1301654.36	3204182.49	40.159127	-104.769464	0.94	16.95	-103.60	
2819.00	12.29	284.93	2794.04	108.07	-261.71	1301660.15	3204162.99	40.159144	-104.769533	1.04	242.58	-109.67	
2912.00	12.77	285.45	2884.82	113.36	-281.19	1301665.28	3204143.48	40.159158	-104.769603	0.53	13.48	-115.08	
3005.00	11.67	286.75	2975.71	118.81	-300.10	1301670.57	3204124.52	40.159173	-104.769671	1.22	166.59	-120.64	
3099.00	12.77	292.86	3067.59	125.59	-318.78	1301677.19	3204105.79	40.159192	-104.769738	1.80	52.63	-127.53	
3192.00	11.83	293.32	3158.45	133.35	-337.00	1301684.81	3204087.50	40.159213	-104.769803	1.02	174.27	-135.41	
3286.00	10.78	284.78	3250.63	139.41	-354.35	1301690.72	3204070.10	40.159230	-104.769865	2.10	233.76	-141.57	
3371.00	11.93	289.95	3333.97	144.44	-370.30	1301695.62	3204054.11	40.159244	-104.769922	1.81	44.07	-146.63	
3456.00	9.65	291.40	3417.46	150.03	-385.19	1301701.09	3204039.17	40.159259	-104.769975	2.70	173.92	-152.38	
3542.00	9.76	288.41	3502.23	154.97	-398.82	1301705.91	3204025.51	40.159272	-104.770024	0.60	280.83	-157.40	
3627.00	11.23	288.99	3585.81	159.93	-413.48	1301710.76	3204010.80	40.159286	-104.770076	1.73	4.40	-162.46	
3712.00	10.82	284.19	3669.24	164.58	-429.04	1301715.28	3203995.20	40.159299	-104.770132	1.18	243.59	-167.20	
3798.00	10.89	286.35	3753.70	168.85	-444.66	1301719.42	3203979.55	40.159311	-104.770188	0.48	81.30	-171.56	
3883.00	10.73	292.78	3837.20	174.17	-459.67	1301724.62	3203964.50	40.159325	-104.770242	1.43	100.71	-176.98	
3968.00	11.28	292.27	3920.63	180.39	-474.65	1301730.71	3203949.46	40.159342	-104.770295	0.66	349.71	-183.28	
4054.00	12.11	300.01	4004.85	188.09	-490.25	1301736.28	3203933.80	40.159363	-104.770351	2.06	65.95	-191.08	
4139.00	11.65	297.08	4088.03	196.45	-505.61	1301746.52	3203918.37	40.159386	-104.770406	0.89	231.24	-199.54	
4224.00	12.50	293.42	4171.15	204.02	-521.70	1301753.95	3203902.23	40.159407	-104.770464	1.35	316.19	-207.20	
4310.00	12.45	295.04	4255.12	211.64	-538.63	1301761.43	3203885.23	40.159428	-104.770524	0.41	98.92	-214.93	

5D Survey Report

Survey 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)	Latitude (°)	Longitude (°)	CLS (°/100 US ft)	T. Face (°)	VS (US ft)	Comment
4395.00	11.13	292.37	4538.33	218.64	-554.52	1301768.30	3203869.28	40.159447	-104.770581	1.68	201.15	-222.02	
4461.00	10.53	286.38	4422.80	224.28	-569.66	1301775.81	3203864.10	40.159463	-104.770635	1.12	229.38	-227.75	
4565.00	11.43	278.60	4506.25	227.99	-585.36	1301777.39	3203838.37	40.159473	-104.770691	2.43	290.93	-231.56	
4651.00	10.43	273.34	4589.71	229.69	-601.37	1301778.97	3203822.35	40.159478	-104.770749	1.66	222.36	-233.36	
4737.00	11.15	280.91	4674.19	231.72	-617.30	1301780.86	3203806.40	40.159483	-104.770806	1.85	66.82	-235.49	
4822.00	12.68	289.01	4757.36	236.32	-634.20	1301785.32	3203789.47	40.159496	-104.770866	2.66	51.56	-240.19	
4908.00	11.09	285.04	4841.52	241.54	-651.11	1301790.40	3203772.51	40.159510	-104.770927	2.08	205.28	-245.51	
4993.00	9.99	283.08	4925.08	245.33	-666.19	1301794.07	3203757.40	40.159520	-104.770981	1.36	197.09	-249.39	
5078.00	10.40	283.26	5008.74	246.76	-680.84	1301797.37	3203742.73	40.159530	-104.771033	0.48	4.53	-252.91	
5163.00	11.16	289.34	5092.24	253.24	-696.06	1301801.73	3203727.46	40.159542	-104.771087	1.61	59.26	-257.49	
5249.00	12.42	290.01	5176.42	259.16	-712.61	1301807.52	3203710.87	40.159558	-104.771147	1.47	6.53	-263.51	
5334.00	12.51	288.20	5259.42	265.17	-729.94	1301813.38	3203693.49	40.159575	-104.771209	0.47	282.09	-269.62	
5420.00	9.01	284.87	5343.90	269.80	-745.30	1301817.89	3203678.09	40.159588	-104.771264	4.13	188.44	-274.35	
5505.00	9.05	287.89	5427.84	273.57	-758.10	1301821.54	3203665.26	40.159598	-104.771309	0.56	86.67	-278.19	
5591.00	12.06	286.70	5512.38	278.23	-773.15	1301826.08	3203650.18	40.159611	-104.771363	3.51	355.27	-282.94	
5676.00	11.65	284.47	5595.57	282.92	-789.96	1301830.64	3203633.32	40.159624	-104.771423	0.72	227.09	-287.74	
5761.00	9.00	288.18	5679.18	287.14	-804.59	1301834.74	3203618.66	40.159635	-104.771476	3.21	167.73	-292.05	
5847.00	9.96	289.77	5764.01	291.76	-817.98	1301839.24	3203605.23	40.159648	-104.771524	1.16	16.04	-296.75	
5932.00	10.48	291.73	5847.66	297.10	-832.08	1301844.47	3203591.09	40.159663	-104.771574	0.74	34.74	-302.18	
6018.00	7.02	285.47	5932.65	301.40	-844.41	1301848.67	3203578.72	40.159674	-104.771618	4.17	192.31	-306.56	
6102.00	6.28	293.24	6016.08	304.59	-853.58	1301851.78	3203569.53	40.159683	-104.771651	1.39	133.25	-309.75	
6188.00	5.34	292.32	6101.64	307.96	-861.61	1301855.09	3203561.47	40.159692	-104.771680	1.10	185.20	-313.22	
6273.00	4.37	292.07	6186.33	310.68	-868.27	1301857.75	3203554.79	40.159700	-104.771704	1.14	181.13	-315.98	
6359.00	3.84	283.92	6272.12	312.57	-873.95	1301859.59	3203549.09	40.159705	-104.771724	1.07	213.93	-317.90	
6444.00	2.51	279.26	6357.00	313.52	-878.41	1301860.50	3203544.63	40.159708	-104.771740	1.36	190.15	-318.88	
6530.00	1.82	276.80	6442.94	313.98	-881.62	1301860.94	3203541.41	40.159709	-104.771751	0.81	186.44	-319.36	
6615.00	1.41	274.23	6527.91	314.22	-884.01	1301861.16	3203539.02	40.159710	-104.771760	0.49	188.74	-319.61	
6700.00	0.97	233.60	6612.89	313.87	-885.63	1301860.79	3203537.40	40.159709	-104.771766	1.09	223.15	-319.27	
6786.00	2.32	174.21	6698.86	311.71	-886.04	1301858.63	3203537.01	40.159703	-104.771767	2.33	276.05	-317.11	
6872.00	10.79	165.18	6784.22	302.17	-883.80	1301849.11	3203539.33	40.159676	-104.771759	9.99	348.54	-307.57	
6957.00	19.18	170.55	6866.26	280.67	-879.46	1301827.65	3203543.84	40.159617	-104.771744	9.99	12.01	-286.04	
7000.00	22.59	171.03	6906.43	265.54	-877.02	1301812.54	3203546.41	40.159576	-104.771735	7.94	3.10	-270.89	
7043.00	26.11	172.54	6945.59	247.99	-874.50	1301795.01	3203549.08	40.159528	-104.771726	8.31	10.72	-253.33	
7085.00	29.61	175.27	6982.72	228.48	-872.44	1301775.52	3203551.29	40.159474	-104.771718	8.87	21.24	-233.81	
7128.00	33.50	180.24	7019.36	206.02	-871.62	1301753.06	3203552.30	40.159413	-104.771716	10.88	35.91	-211.34	
7171.00	38.09	183.06	7054.23	180.89	-872.37	1301727.93	3203551.75	40.159344	-104.771718	11.34	20.92	-186.22	
7213.00	42.55	183.13	7086.25	153.76	-873.84	1301700.79	3203550.51	40.159269	-104.771723	10.62	0.61	-159.10	
7256.00	47.67	184.68	7116.59	123.38	-875.93	1301670.39	3203548.67	40.159186	-104.771731	12.18	12.66	-128.73	
7298.00	52.39	184.89	7143.56	91.31	-878.62	1301638.30	3203546.25	40.159098	-104.771741	11.24	2.02	-96.68	
7341.00	55.68	184.15	7168.81	56.62	-881.36	1301603.59	3203543.79	40.159002	-104.771750	7.78	349.46	-62.01	
7384.00	60.20	182.84	7191.63	20.26	-883.57	1301567.21	3203541.88	40.158903	-104.771758	10.82	345.85	-25.66	

## 5D Survey Report

Survey 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)	Latitude (°)	Longitude (°)	CLS (°/100 US ft)	T. Face (°)	VS (US ft)	Comment
7427.00	64.98	182.70	7211.42	-17.86	-885.41	1301529.08	3203540.36	40.158798	-104.771765	11.12	358.48	12.45	
7469.00	70.33	179.75	7227.38	-56.68	-886.22	1301490.26	3203539.86	40.158691	-104.771768	14.30	332.40	51.26	
7512.00	76.24	178.09	7239.75	-97.83	-885.44	1301449.11	3203540.99	40.158578	-104.771765	14.23	344.70	92.42	
7554.00	81.02	177.16	7248.02	-138.96	-883.73	1301408.00	3203543.04	40.158466	-104.771759	11.59	349.11	133.56	
7608.00	86.02	177.39	7254.12	-192.54	-881.18	1301354.44	3203546.03	40.158318	-104.771750	9.27	2.63	187.15	
7658.00	87.79	178.81	7256.82	-242.43	-879.53	1301304.56	3203548.09	40.158181	-104.771744	4.54	38.76	237.06	7 in
7750.00	91.05	181.42	7257.75	-334.41	-879.71	1301212.59	3203548.67	40.157929	-104.771744	4.54	38.69	329.03	
7835.00	90.86	181.85	7256.33	-419.36	-882.14	1301127.62	3203546.94	40.157696	-104.771753	0.55	113.84	413.96	
7920.00	89.57	181.94	7256.01	-504.31	-884.95	1301042.65	3203544.83	40.157463	-104.771763	1.52	176.01	498.90	
8006.00	91.48	181.49	7255.22	-590.27	-887.52	1300956.67	3203542.97	40.157227	-104.771772	2.28	346.74	584.83	
8091.00	93.46	181.15	7251.56	-675.16	-889.48	1300871.77	3203541.71	40.156994	-104.771779	2.36	350.27	669.74	
8177.00	92.47	179.94	7247.11	-761.04	-890.29	1300785.89	3203541.60	40.156758	-104.771782	1.82	230.71	755.59	
8262.00	91.36	178.82	7244.27	-845.98	-889.37	1300700.95	3203543.22	40.156525	-104.771779	1.85	225.26	840.53	
8348.00	87.16	178.04	7245.38	-931.92	-887.02	1300615.03	3203546.29	40.156289	-104.771770	4.97	190.52	926.49	
8433.00	85.87	177.47	7250.55	-1016.70	-883.70	1300530.29	3203550.31	40.156056	-104.771759	1.66	203.78	1011.28	
8519.00	87.66	178.19	7255.40	-1102.50	-880.45	1300444.52	3203554.27	40.155820	-104.771747	2.24	21.90	1097.10	
8603.00	87.84	177.41	7258.70	-1186.37	-877.22	1300360.68	3203558.18	40.155590	-104.771735	0.95	282.99	1180.99	
8689.00	90.31	177.80	7260.09	-1272.28	-873.63	1300274.80	3203562.48	40.155354	-104.771723	2.91	8.98	1266.92	
8774.00	92.10	176.98	7258.30	-1357.22	-871.24	1300189.88	3203565.57	40.155121	-104.771714	2.52	33.38	1351.87	
8860.00	91.79	179.15	7255.38	-1443.16	-869.84	1300103.96	3203567.68	40.154885	-104.771709	0.41	151.27	1437.82	
8945.00	90.86	178.92	7253.42	-1528.12	-868.41	1300019.01	3203569.81	40.154652	-104.771704	1.13	193.89	1522.79	
9030.00	90.62	179.88	7252.32	-1613.11	-867.52	1299934.03	3203571.40	40.154419	-104.771701	1.16	104.03	1607.78	
9116.00	90.86	180.18	7251.21	-1699.10	-867.56	1299848.04	3203572.07	40.154183	-104.771701	0.45	51.34	1693.77	
9201.00	90.37	179.56	7250.30	-1784.10	-867.37	1299763.05	3203572.96	40.153949	-104.771700	0.93	231.68	1778.76	
9287.00	90.19	180.40	7249.88	-1870.09	-867.34	1299677.06	3203573.70	40.153713	-104.771700	1.00	102.09	1864.76	
9372.00	89.94	180.16	7249.78	-1955.09	-867.76	1299592.06	3203573.99	40.153480	-104.771701	0.41	223.83	1949.76	
9458.00	89.08	179.90	7250.51	-2041.09	-867.80	1299506.06	3203574.65	40.153244	-104.771702	1.04	196.82	2035.75	
9543.00	88.52	180.70	7252.29	-2126.07	-868.25	1299421.08	3203574.91	40.153011	-104.771703	1.15	125.01	2120.72	
9628.00	90.43	181.48	7253.07	-2211.04	-869.86	1299336.10	3203573.99	40.152777	-104.771709	2.43	22.22	2205.69	
9714.00	88.58	180.25	7253.82	-2297.03	-871.16	1299250.11	3203573.40	40.152541	-104.771714	2.58	213.61	2291.66	
9799.00	88.40	181.11	7256.06	-2381.99	-872.17	1299165.14	3203573.09	40.152308	-104.771717	1.03	101.84	2376.62	
9885.00	88.03	180.16	7258.74	-2467.94	-873.12	1299079.18	3203572.85	40.152072	-104.771721	1.18	246.70	2462.56	
9970.00	88.58	180.34	7261.25	-2552.90	-873.49	1298994.22	3203573.18	40.151839	-104.771722	0.68	18.12	2547.52	
10055.00	89.63	180.99	7262.58	-2637.89	-874.48	1298909.23	3203572.89	40.151606	-104.771725	1.45	31.76	2632.49	
10141.00	88.27	180.38	7264.15	-2723.86	-875.51	1298823.25	3203572.58	40.151370	-104.771729	1.73	204.15	2718.46	
10226.00	90.06	181.26	7265.39	-2808.84	-876.72	1298738.26	3203572.06	40.151136	-104.771733	2.35	26.19	2803.43	
10312.00	90.92	180.22	7264.66	-2894.83	-877.84	1298652.27	3203571.66	40.150900	-104.771737	1.57	309.59	2889.41	
10397.00	90.31	179.98	7263.74	-2979.82	-877.98	1298567.28	3203572.21	40.150667	-104.771738	0.77	201.48	2974.40	
10483.00	91.23	179.31	7262.59	-3065.80	-877.45	1298481.30	3203573.45	40.150431	-104.771736	1.32	323.94	3060.39	
10568.00	90.49	178.58	7261.31	-3150.79	-875.89	1298396.34	3203575.72	40.150198	-104.771730	1.22	224.61	3145.38	
10653.00	91.17	178.86	7260.08	-3235.76	-873.99	1298311.39	3203578.32	40.149964	-104.771724	0.87	22.38	3230.36	

## 5D Survey Report

Survey 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)	Eastings (US ft)	Latitude (°)	Longitude (°)	DLS ("/100 US ft)	T. Face (°)	VS (US ft)	Comment
10739.00	91.60	176.92	7258.00	-3321.71	-872.32	1298225.44	3203580.69	40.149728	-104.771718	0.50	7.94	3316.32	
10824.00	91.79	179.37	7255.49	-3406.67	-871.05	1298140.50	3203582.66	40.149495	-104.771713	0.57	67.09	3401.28	
10910.00	91.36	178.44	7253.12	-3492.62	-869.41	1298054.57	3203585.01	40.149259	-104.771707	1.19	245.19	3487.24	
10995.00	91.54	179.11	7250.97	-3577.57	-867.59	1297969.64	3203587.53	40.149026	-104.771701	0.82	74.95	3572.20	
11080.00	91.79	178.85	7248.50	-3662.52	-866.08	1297884.70	3203589.74	40.148793	-104.771695	0.42	313.89	3657.16	
11166.00	92.28	179.42	7245.45	-3748.46	-864.78	1297798.78	3203591.75	40.148557	-104.771691	0.87	49.29	3743.10	
11251.00	92.47	178.91	7241.93	-3833.37	-863.55	1297713.87	3203593.69	40.148324	-104.771686	0.64	290.46	3828.03	
11337.00	92.65	178.79	7238.09	-3919.27	-861.82	1297627.99	3203596.12	40.148088	-104.771680	0.25	326.34	3913.93	
11422.00	92.10	178.63	7234.56	-4004.18	-859.91	1297543.11	3203598.73	40.147855	-104.771673	0.67	196.21	3998.85	
11507.00	92.77	178.20	7230.95	-4089.07	-857.56	1297458.24	3203601.78	40.147622	-104.771665	0.94	327.34	4083.75	
11551.00	92.83	177.93	7228.80	-4132.99	-856.08	1297414.33	3203603.63	40.147501	-104.771659	0.63	282.55	4127.68	LAST MWC SURVEY
11605.00	92.83	177.93	7226.14	-4186.89	-854.13	1297360.45	3203606.02	40.147353	-104.771652	0.00	0.00	4181.59	PROJECTION TO TD

Formation Points (Relative to centre, TVD relative to Drill Floor)			
Name	MC (US ft)	TVD (US ft)	
PARKMAN	4116.50	4066.00	
SUSSEX	4515.81	4457.00	
SHARON SPRINGS	7265.62	7123.00	
NIOBRARA A	7374.82	7187.00	
NIOBRARA B	7621.54	7255.00	