

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 3-T2N-R65W

Cannon 13C-3HZ

Plan A Rev 0

Design: Actual Field Surveys

Sperry Drilling Services Standard Report

30 August, 2012

Well Coordinates: 1,307,342.82 N, 3,236,100.82 E (40° 10' 26.27" N, 104° 39' 18.28" W)

Ground Level: 4,840.00 ft

Local Coordinate Origin:

Centered on Well Cannon 13C-3HZ

Viewing Datum:

RKB=25ft @ 4865.00ft (HP 308)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

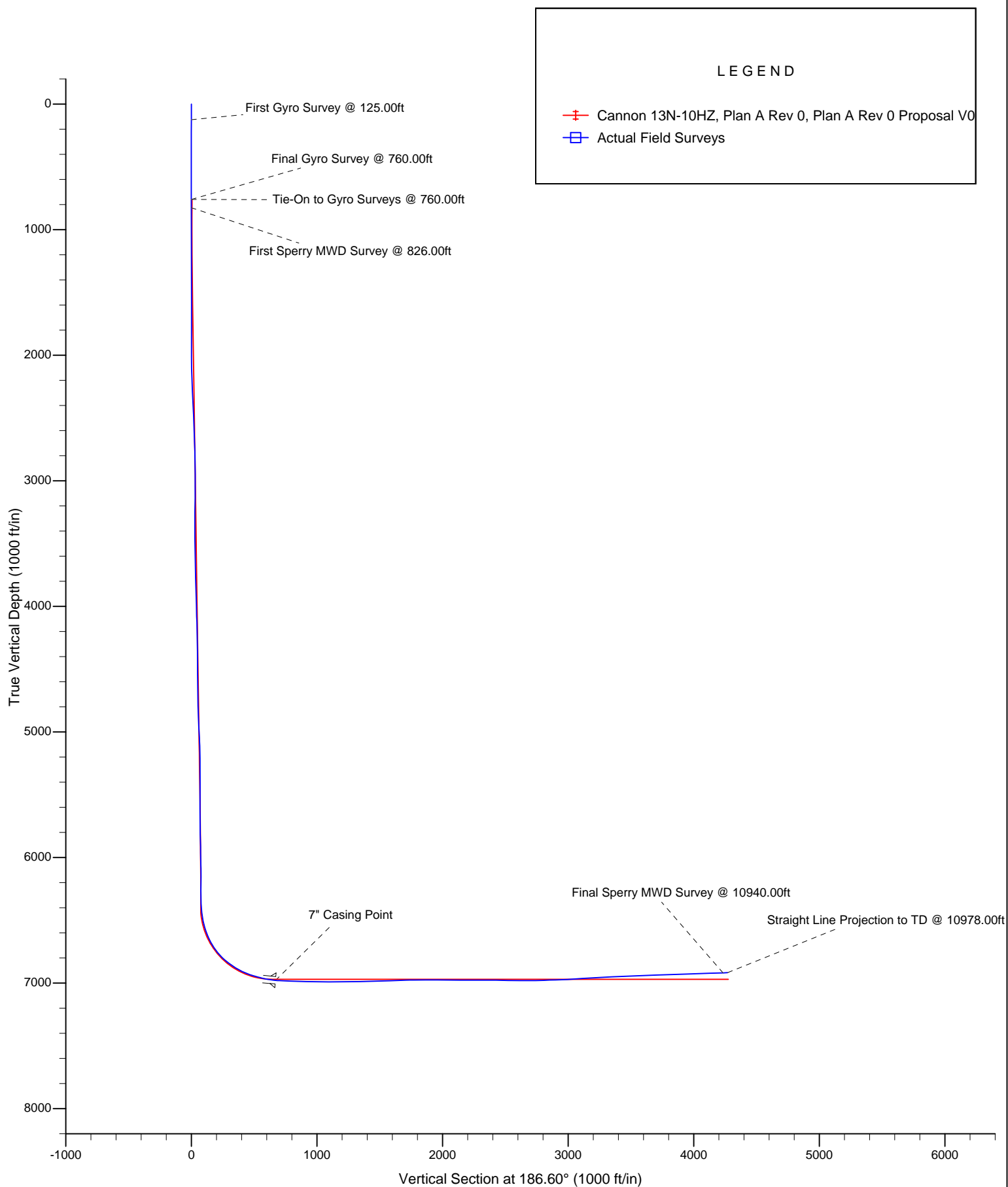
Version: 2003.16 Build: 43I

HALLIBURTON

Project: Weld County, CO (NAD 83)
Site: Sec. 3-T2N-R65W
Well: Cannon 13C-3HZ

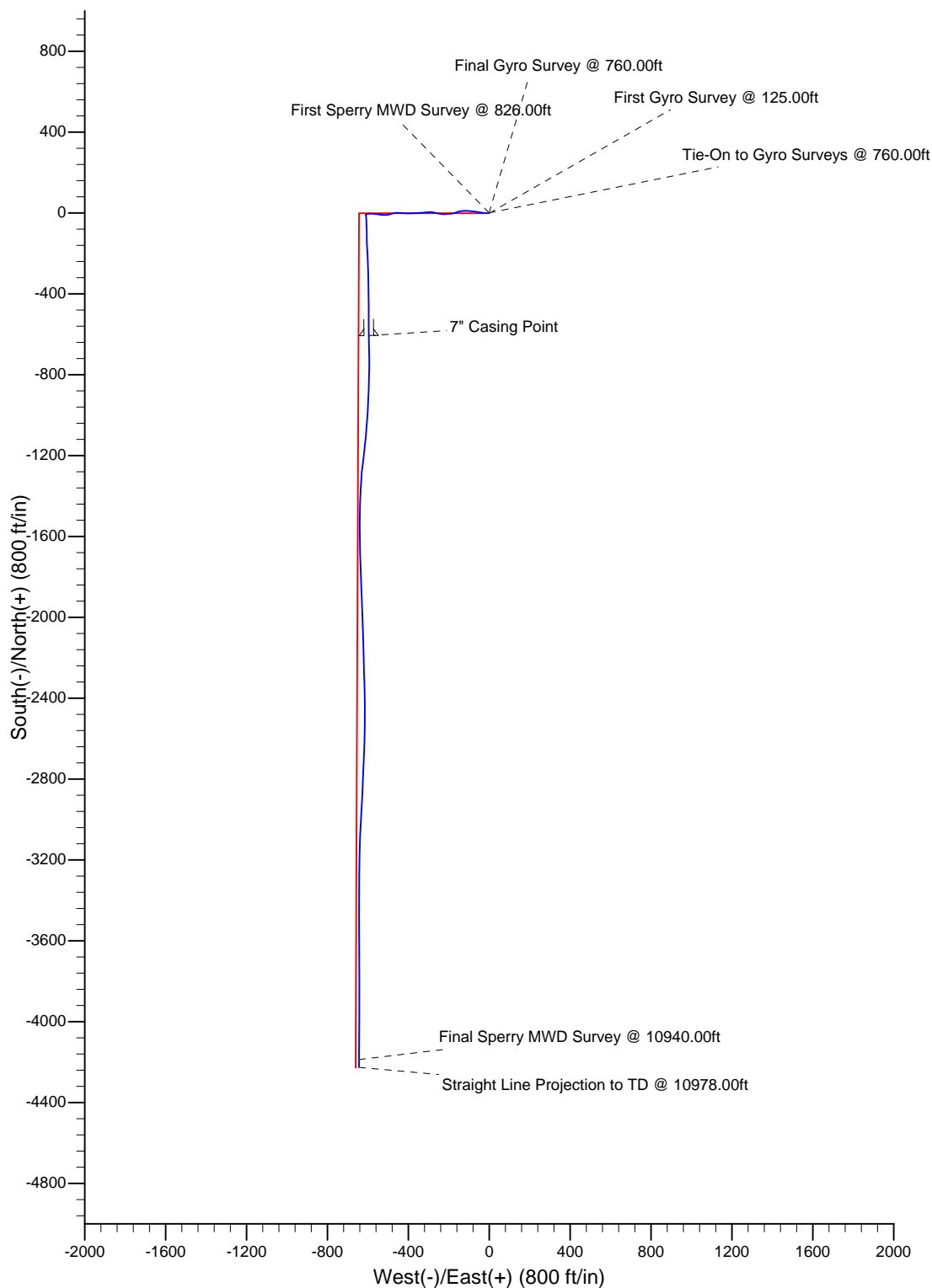
Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling



LEGEND

- +— Cannon 13N-10HZ, Plan A Rev 0, Plan A Rev 0 Proposal V0
- +— Actual Field Surveys



Design Report for Cannon 13C-3HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00
125.00	0.20	268.49	125.00	0.00	-0.17	0.02	0.20
First Gyro Survey @ 125.00ft							
225.00	0.12	3.10	225.00	0.10	-0.34	-0.06	0.24
325.00	0.08	296.24	325.00	0.23	-0.40	-0.18	0.12
425.00	0.13	51.81	425.00	0.33	-0.37	-0.29	0.18
525.00	0.15	248.77	525.00	0.35	-0.41	-0.31	0.28
625.00	0.18	352.48	625.00	0.46	-0.55	-0.40	0.26
725.00	0.32	3.65	725.00	0.90	-0.55	-0.83	0.15
760.00	0.24	12.27	760.00	1.07	-0.53	-1.00	0.26
Tie-On to Gyro Surveys @ 760.00ft - Final Gyro Survey @ 760.00ft							
826.00	0.18	155.74	826.00	1.11	-0.46	-1.05	0.60
First Sperry MWD Survey @ 826.00ft							
918.00	0.14	117.25	918.00	0.92	-0.30	-0.88	0.12
1,010.00	0.94	241.73	1,009.99	0.51	-0.86	-0.41	1.11
1,102.00	3.37	272.70	1,101.92	0.28	-4.23	0.20	2.84
1,194.00	4.89	262.94	1,193.68	-0.07	-10.82	1.31	1.81
1,286.00	6.82	276.83	1,285.20	0.10	-20.14	2.22	2.59
1,378.00	6.19	274.90	1,376.61	1.17	-30.51	2.34	0.72
1,470.00	7.52	279.10	1,467.95	2.55	-41.39	2.23	1.54
1,561.00	6.86	279.60	1,558.24	4.40	-52.63	1.69	0.73
1,653.00	8.75	279.05	1,649.38	6.41	-64.96	1.10	2.06
1,745.00	7.71	276.59	1,740.43	8.22	-78.00	0.80	1.19
1,837.00	7.69	276.08	1,831.60	9.58	-90.25	0.86	0.08
1,929.00	7.51	275.37	1,922.79	10.80	-102.36	1.05	0.22
2,021.00	7.07	271.94	2,014.05	11.55	-114.00	1.64	0.67
2,113.00	6.47	266.58	2,105.41	11.43	-124.84	3.00	0.95
2,208.00	6.36	261.62	2,199.81	10.35	-135.38	5.29	0.59
2,302.00	7.19	258.29	2,293.16	8.39	-146.30	8.49	0.98
2,397.00	8.02	253.14	2,387.32	5.27	-158.46	12.99	1.13
2,492.00	6.74	251.18	2,481.53	1.54	-170.08	18.03	1.37
2,587.00	7.13	256.68	2,575.84	-1.61	-181.09	22.43	0.81
2,682.00	7.99	267.61	2,670.02	-3.25	-193.43	25.47	1.76
2,776.00	7.20	266.77	2,763.19	-3.85	-205.84	27.50	0.85
2,871.00	7.29	263.90	2,857.43	-4.83	-217.77	29.84	0.39
2,966.00	8.54	278.69	2,951.54	-4.40	-230.74	30.91	2.50
3,060.00	7.71	275.35	3,044.59	-2.76	-243.92	30.79	1.02
3,155.00	6.69	280.15	3,138.84	-1.19	-255.71	30.59	1.25
3,250.00	6.29	285.90	3,233.24	1.21	-266.16	29.41	0.80
3,345.00	4.87	282.93	3,327.78	3.54	-275.10	28.12	1.52
3,440.00	5.44	277.51	3,422.40	5.03	-283.50	27.61	0.79
3,534.00	5.75	264.10	3,515.95	5.13	-292.60	28.55	1.43
3,629.00	7.00	267.27	3,610.37	4.36	-303.11	30.52	1.37
3,724.00	7.15	264.30	3,704.64	3.50	-314.78	32.72	0.42
3,819.00	7.89	263.48	3,798.83	2.17	-327.14	35.46	0.79
3,913.00	9.32	266.71	3,891.77	1.00	-341.15	38.24	1.61
4,008.00	9.01	267.53	3,985.55	0.24	-356.26	40.73	0.35
4,103.00	7.95	267.19	4,079.51	-0.40	-370.26	42.98	1.12
4,198.00	9.75	268.88	4,173.38	-0.88	-384.86	45.13	1.91

Design Report for Cannon 13C-3HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4,292.00	9.12	270.28	4,266.11	-1.00	-400.27	47.02	0.71
4,387.00	8.52	273.77	4,359.98	-0.50	-414.82	48.20	0.85
4,482.00	7.50	272.23	4,454.05	0.20	-428.04	49.02	1.10
4,577.00	7.46	270.85	4,548.25	0.54	-440.40	50.11	0.19
4,672.00	6.31	275.69	4,642.56	1.15	-451.76	50.82	1.35
4,766.00	5.99	266.11	4,736.02	1.33	-461.80	51.79	1.14
4,861.00	7.03	257.85	4,830.41	-0.23	-472.42	54.56	1.47
4,955.00	6.81	249.68	4,923.73	-3.38	-483.27	58.94	1.07
5,050.00	6.61	254.56	5,018.08	-6.79	-493.83	63.54	0.64
5,145.00	8.25	264.61	5,112.28	-8.89	-505.88	67.01	2.20
5,240.00	7.15	274.16	5,206.43	-9.10	-518.57	68.68	1.77
5,335.00	7.72	274.02	5,300.63	-8.22	-530.83	69.22	0.60
5,429.00	7.48	277.10	5,393.80	-7.02	-543.20	69.45	0.50
5,524.00	8.06	280.22	5,487.93	-5.08	-555.89	68.97	0.75
5,619.00	7.12	274.98	5,582.10	-3.39	-568.31	68.72	1.23
5,714.00	5.52	271.71	5,676.52	-2.74	-578.74	69.28	1.73
5,809.00	6.17	267.56	5,771.02	-2.82	-588.41	70.47	0.82
5,904.00	4.32	261.08	5,865.62	-3.59	-597.05	72.23	2.04
5,999.00	3.09	258.53	5,960.42	-4.66	-603.09	73.98	1.31
6,093.00	1.83	257.93	6,054.33	-5.47	-607.04	75.25	1.34
6,188.00	0.81	217.95	6,149.31	-6.32	-608.94	76.31	1.39
6,283.00	0.52	220.22	6,244.30	-7.18	-609.63	77.24	0.31
6,378.00	0.44	162.30	6,339.30	-7.85	-609.80	77.93	0.49
6,409.00	1.16	152.49	6,370.30	-8.25	-609.62	78.30	2.36
6,441.00	3.70	173.03	6,402.27	-9.56	-609.34	79.57	8.27
6,473.00	6.62	178.78	6,434.13	-12.43	-609.18	82.40	9.26
6,504.00	8.31	176.80	6,464.87	-16.45	-609.01	86.38	5.51
6,536.00	11.13	174.56	6,496.41	-21.84	-608.59	91.68	8.89
6,568.00	14.18	175.50	6,527.62	-28.82	-607.99	98.55	9.55
6,599.00	16.88	173.71	6,557.49	-37.08	-607.20	106.67	8.84
6,631.00	19.58	177.14	6,587.88	-47.06	-606.42	116.48	9.08
6,662.00	22.22	178.86	6,616.84	-58.11	-606.05	127.42	8.74
6,694.00	25.23	179.32	6,646.13	-70.98	-605.85	140.18	9.42
6,725.00	28.34	179.06	6,673.80	-84.95	-605.65	154.03	10.04
6,757.00	31.39	179.82	6,701.55	-100.88	-605.50	169.84	9.60
6,789.00	35.16	179.30	6,728.30	-118.43	-605.36	187.26	11.81
6,820.00	38.99	180.73	6,753.03	-137.11	-605.37	205.82	12.66
6,852.00	42.58	177.56	6,777.26	-158.01	-605.04	226.54	12.95
6,883.00	45.92	176.26	6,799.46	-179.60	-603.87	247.86	11.16
6,915.00	50.14	175.21	6,820.85	-203.32	-602.09	271.21	13.41
6,947.00	53.87	176.05	6,840.55	-228.46	-600.17	295.97	11.84
6,979.00	55.73	177.47	6,859.00	-254.57	-598.70	321.73	6.85
7,010.00	57.49	178.41	6,876.06	-280.43	-597.77	347.32	6.22
7,042.00	60.58	179.21	6,892.52	-307.86	-597.20	374.50	9.89
7,073.00	64.23	179.45	6,906.88	-335.33	-596.88	401.75	11.79
7,104.00	68.12	179.82	6,919.40	-363.68	-596.71	429.89	12.60
7,136.00	70.43	179.48	6,930.72	-393.61	-596.52	459.60	7.29
7,167.00	72.21	179.60	6,940.65	-422.97	-596.29	488.74	5.75
7,199.00	74.34	180.18	6,949.86	-453.62	-596.23	519.17	6.88
7,230.00	75.89	180.23	6,957.82	-483.57	-596.34	548.95	5.00
7,262.00	77.83	179.47	6,965.09	-514.74	-596.25	579.89	6.49

Design Report for Cannon 13C-3HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7,293.00	80.43	179.32	6,970.94	-545.17	-595.93	610.09	8.40
7,315.00	82.20	179.28	6,974.26	-566.92	-595.67	631.66	8.05
7,354.70	84.80	179.03	6,978.75	-606.36	-595.08	670.77	6.58
7" Casing Point							
7,384.00	86.72	178.84	6,980.92	-635.57	-594.54	699.73	6.58
7,416.00	87.59	178.66	6,982.51	-667.52	-593.84	731.39	2.78
7,511.00	87.84	180.45	6,986.30	-762.44	-593.10	825.59	1.90
7,606.00	88.83	182.11	6,989.06	-857.37	-595.23	920.14	2.03
7,700.00	89.51	183.22	6,990.42	-951.26	-599.60	1,013.90	1.38
7,795.00	90.37	183.40	6,990.52	-1,046.10	-605.08	1,108.74	0.92
7,890.00	90.80	186.99	6,989.55	-1,140.69	-613.68	1,203.70	3.81
7,985.00	90.93	186.54	6,988.11	-1,235.02	-624.87	1,298.68	0.49
8,080.00	90.43	183.35	6,986.99	-1,329.64	-633.06	1,393.62	3.40
8,174.00	91.24	181.90	6,985.62	-1,423.53	-637.36	1,487.39	1.77
8,269.00	92.72	181.24	6,982.33	-1,518.44	-639.96	1,581.96	1.71
8,364.00	92.04	178.93	6,978.39	-1,613.35	-640.10	1,676.26	2.53
8,459.00	90.19	177.40	6,976.54	-1,708.27	-637.06	1,770.20	2.53
8,554.00	90.68	177.92	6,975.82	-1,803.19	-633.18	1,864.04	0.75
8,648.00	89.75	178.24	6,975.47	-1,897.14	-630.03	1,957.00	1.05
8,743.00	89.26	178.08	6,976.29	-1,992.08	-626.98	2,050.97	0.54
8,838.00	89.75	178.29	6,977.11	-2,087.03	-623.98	2,144.94	0.56
8,933.00	90.25	178.40	6,977.11	-2,181.99	-621.23	2,238.96	0.54
9,027.00	89.75	178.35	6,977.11	-2,275.95	-618.57	2,331.99	0.53
9,122.00	89.20	178.29	6,977.98	-2,370.91	-615.78	2,425.99	0.58
9,217.00	88.82	180.17	6,979.62	-2,465.88	-614.50	2,520.19	2.02
9,312.00	89.69	180.83	6,980.85	-2,560.87	-615.33	2,614.64	1.15
9,407.00	90.19	181.94	6,980.95	-2,655.84	-617.63	2,709.25	1.28
9,502.00	92.47	182.74	6,978.75	-2,750.73	-621.51	2,803.95	2.54
9,597.00	91.42	182.78	6,975.52	-2,845.56	-626.08	2,898.68	1.11
9,692.00	92.41	183.25	6,972.35	-2,940.37	-631.07	2,993.44	1.15
9,787.00	94.27	182.93	6,966.82	-3,035.07	-636.18	3,088.10	1.99
9,882.00	94.02	181.50	6,959.95	-3,129.75	-639.85	3,182.57	1.52
9,977.00	92.78	180.39	6,954.31	-3,224.57	-641.41	3,276.94	1.75
10,072.00	92.54	180.26	6,949.91	-3,319.46	-641.95	3,371.26	0.29
10,167.00	92.97	180.43	6,945.34	-3,414.35	-642.52	3,465.59	0.49
10,262.00	92.23	180.80	6,941.03	-3,509.25	-643.54	3,559.97	0.87
10,357.00	91.36	178.81	6,938.05	-3,604.19	-643.21	3,654.25	2.29
10,452.00	91.67	179.39	6,935.54	-3,699.15	-641.72	3,748.40	0.69
10,548.00	92.04	180.05	6,932.43	-3,795.10	-641.25	3,843.66	0.79
10,643.00	92.16	180.54	6,928.95	-3,890.03	-641.74	3,938.02	0.53
10,738.00	91.86	180.21	6,925.62	-3,984.97	-642.36	4,032.40	0.47
10,833.00	91.79	180.22	6,922.60	-4,079.92	-642.72	4,126.77	0.07
10,928.00	91.73	180.40	6,919.68	-4,174.87	-643.23	4,221.15	0.20
10,940.00	91.98	180.67	6,919.29	-4,186.87	-643.35	4,233.07	3.07
Final Sperry MWD Survey @ 10940.00ft							
10,978.00	91.98	180.67	6,917.98	-4,224.84	-643.79	4,270.85	0.00
Straight Line Projection to TD @ 10978.00ft							

Design Report for Cannon 13C-3HZ - Actual Field Surveys

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
125.00	125.00	0.00	-0.17	First Gyro Survey @ 125.00ft
760.00	760.00	1.07	-0.53	Tie-On to Gyro Surveys @ 760.00ft
760.00	760.00	1.07	-0.53	Final Gyro Survey @ 760.00ft
826.00	826.00	1.11	-0.46	First Sperry MWD Survey @ 826.00ft
10,940.00	6,919.29	-4,186.87	-643.35	Final Sperry MWD Survey @ 10940.00ft
10,978.00	6,917.98	-4,224.84	-643.79	Straight Line Projection to TD @ 10978.00ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
Target	Cannon 13C-31HZ_BHL ReLoc	186.60	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
25.00	760.00	Surface Gyros	NS-GYRO-MS
822.00	10,978.00	Sperry MWD Surveys	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,354.70	6,978.75	7" Casing Point	7	8-3/4

Design Report for Cannon 13C-3HZ - Actual Field Surveys

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Cannon 13C-31HZ_ - actual wellpath misses target center by 344.33ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E) - Point	0.00	0.00	7,146.00	-4,448.41	-515.00	,889.891494	,5,628.247584	40.161753	-104.656920
Cannon 13C-31HZ_ - actual wellpath misses target center by 347.50ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E) - Point	0.00	0.00	7,146.00	-4,448.41	-506.74	,889.974244	,5,636.511655	40.161753	-104.656890
Cannon 13C-31HZ_ - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	,342.818385	,6,100.818963	40.173964	-104.655077
Cannon 13C-3HZ_M - actual wellpath misses target center by 238.82ft at 10448.74ft MD (6935.64 TVD, -3695.88 N, -641.76 E) - Point	0.00	0.00	7,151.65	-3,700.00	-540.00	,637.997699	,5,596.119088	40.163807	-104.657009
Cannon 13C-31HZ_ - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,342.818385	,6,100.818963	40.173964	-104.655077
Point 1				4,157.91	220.66	1,307,603.07	3,240,256.26		
Point 2				1,510.83	237.47	1,307,594.66	3,237,609.25		
Point 3				-1,136.21	254.02	1,307,585.99	3,234,962.29		
Point 4				-1,160.49	-2,253.71	1,305,078.25	3,234,961.90		
Point 5				-1,186.22	-4,909.06	1,302,422.89	3,234,961.48		
Point 6				4,088.85	-4,905.55	1,302,476.66	3,240,236.05		
Point 7				4,115.51	-2,258.66	1,305,123.57	3,240,237.49		
Cannon 13C-3HZ_M - actual wellpath misses target center by 315.88ft at 8455.10ft MD (6976.56 TVD, -1704.38 N, -637.24 E) - Point	0.00	0.00	7,166.65	-1,700.00	-385.00	,639.299199	,5,732.049938	40.169297	-104.656455
Cannon 13C-31HZ_ - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,342.818385	,6,100.818963	40.173964	-104.655077
Point 1				3,690.00	-236.40	1,307,141.60	3,239,792.75		
Point 2				1,507.95	-222.54	1,307,134.67	3,237,610.76		
Point 3				-680.65	-208.86	1,307,127.49	3,235,422.22		
Point 4				-700.45	-2,254.14	1,305,082.20	3,235,421.91		
Point 5				-721.72	-4,448.74	1,302,887.59	3,235,421.55		
Point 6				3,633.44	-4,445.84	1,302,931.99	3,239,776.30		
Point 7				3,655.47	-2,258.23	1,305,119.61	3,239,777.48		
Cannon 13C-31HZ_ - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,342.818385	,6,100.818963	40.173964	-104.655077
Point 1				-282.58	-212.65	1,307,127.49	3,235,820.29		
Point 2				-680.65	-208.86	1,307,127.49	3,235,422.22		
Point 3				-721.72	-4,448.74	1,302,887.59	3,235,421.55		
Point 4				-323.79	-4,452.53	1,302,887.59	3,235,819.48		

North Reference Sheet for Sec. 3-T2N-R65W - Cannon 13C-3HZ - Plan A Rev 0

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB=25ft @ 4865.00ft (HP 308). Northing and Easting are relative to Cannon 13C-3HZ

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995774

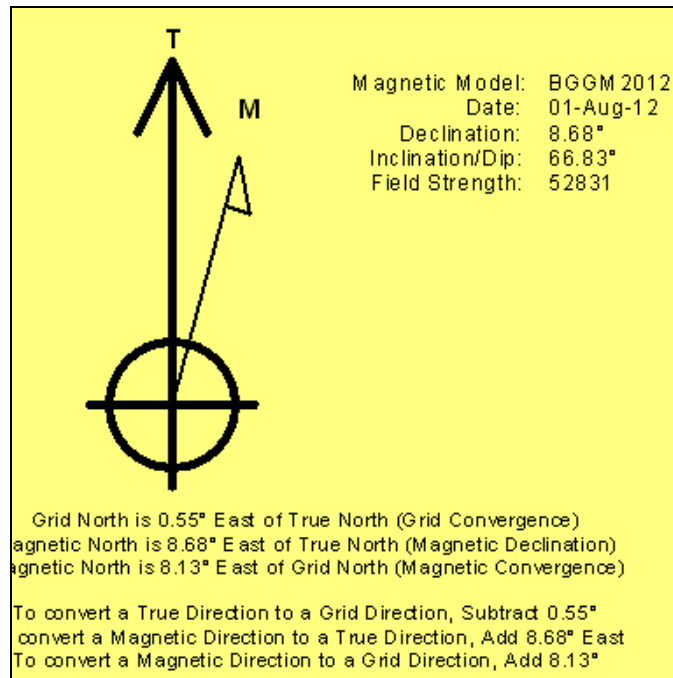
Grid Coordinates of Well: 1,307,342.818385 ft N, 3,236,100.818963 ft E

Geographical Coordinates of Well: 40° 10' 26.27" N, 104° 39' 18.28" W

Grid Convergence at Surface is: 0.55°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,978.00ft
the Bottom Hole Displacement is 4,273.61ft in the Direction of 188.66° (True).

Magnetic Convergence at surface is: -8.13° (1 August 2012, , BGGM2012)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 3-T2N-R65W

Cannon 13C-3HZ

Plan A Rev 0

Design: Actual Field Surveys

Survey Report - Geographic

30 August, 2012

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Project	Weld County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Sec. 3-T2N-R65W				
Site Position:		Northing:	1,307,311.710052ft	Latitude:	40.173779
From:	Lat/Long	Easting:	3,239,877.076052ft	Longitude:	-104.641565
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.55 °

Well	Cannon 13C-3HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,307,342.818385 ft	Latitude:	40.173964
	+E/-W	0.00 ft	Easting:	3,236,100.818963 ft	Longitude:	-104.655077
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,840.00 ft

Wellbore	Plan A Rev 0				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	2012-08-01	8.68	66.83	52,831

Design	Actual Field Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	186.60	

Survey Program	Date	2012-08-30			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
25.00	760.00	Surface Gyros (Plan A Rev 0)	NS-GYRO-MS	North sensing gyrocompassing m/s	
822.00	10,978.00	Sperry MWD Surveys (Plan A Rev 0)	MWD	MWD - Standard	

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	07,342.818385	36,100.818963	40.173964	-104.655077
25.00	0.00	0.00	25.00	0.00	0.00	07,342.818385	36,100.818963	40.173964	-104.655077
125.00	0.20	268.49	125.00	0.00	-0.17	07,342.812124	36,100.644550	40.173964	-104.655078
First Gyro Survey @ 125.00ft									
225.00	0.12	3.10	225.00	0.10	-0.34	07,342.910474	36,100.474803	40.173964	-104.655078
325.00	0.08	296.24	325.00	0.23	-0.40	07,343.045353	36,100.416562	40.173965	-104.655078
425.00	0.13	51.81	425.00	0.33	-0.37	07,343.146604	36,100.442143	40.173965	-104.655078
525.00	0.15	248.77	525.00	0.35	-0.41	07,343.169029	36,100.409078	40.173965	-104.655078
625.00	0.18	352.48	625.00	0.46	-0.55	07,343.275990	36,100.265485	40.173965	-104.655079
725.00	0.32	3.65	725.00	0.90	-0.55	07,343.710338	36,100.258566	40.173966	-104.655079
760.00	0.24	12.27	760.00	1.07	-0.53	07,343.879700	36,100.278753	40.173967	-104.655079
Tie-On to Gyro Surveys @ 760.00ft - Final Gyro Survey @ 760.00ft									
826.00	0.18	155.74	826.00	1.11	-0.46	07,343.920938	36,100.350334	40.173967	-104.655079
First Sperry MWD Survey @ 826.00ft									
918.00	0.14	117.25	918.00	0.92	-0.30	07,343.739256	36,100.511367	40.173966	-104.655078
1,010.00	0.94	241.73	1,009.99	0.51	-0.86	07,343.325014	36,099.950586	40.173965	-104.655080
1,102.00	3.37	272.70	1,101.92	0.28	-4.23	07,343.062879	36,096.586807	40.173965	-104.655092
1,194.00	4.89	262.94	1,193.68	-0.07	-10.82	07,342.645500	36,089.997801	40.173964	-104.655116
1,286.00	6.82	276.83	1,285.20	0.10	-20.14	07,342.724421	36,080.680469	40.173964	-104.655149
1,378.00	6.19	274.90	1,376.61	1.17	-30.51	07,343.698868	36,070.305412	40.173967	-104.655186
1,470.00	7.52	279.10	1,467.95	2.55	-41.39	07,344.970889	36,059.406485	40.173971	-104.655225
1,561.00	6.86	279.60	1,558.24	4.40	-52.63	07,346.711789	36,048.151412	40.173976	-104.655265
1,653.00	8.75	279.05	1,649.38	6.41	-64.96	07,348.611331	36,035.804121	40.173982	-104.655309
1,745.00	7.71	276.59	1,740.43	8.22	-78.00	07,350.295923	36,022.746519	40.173987	-104.655356
1,837.00	7.69	276.08	1,831.60	9.58	-90.25	07,351.539283	36,010.483302	40.173990	-104.655400
1,929.00	7.51	275.37	1,922.79	10.80	-102.36	07,352.638452	35,998.366216	40.173994	-104.655443
2,021.00	7.07	271.94	2,014.05	11.55	-114.00	07,353.281775	35,986.715637	40.173996	-104.655485
2,113.00	6.47	266.58	2,105.41	11.43	-124.84	07,353.061021	35,975.884792	40.173995	-104.655524
2,208.00	6.36	261.62	2,199.81	10.35	-135.38	07,351.874458	35,965.347432	40.173992	-104.655561
2,302.00	7.19	258.29	2,293.16	8.39	-146.30	07,349.817949	35,954.455824	40.173987	-104.655601
2,397.00	8.02	253.14	2,387.32	5.27	-158.46	07,346.573531	35,942.322692	40.173978	-104.655644
2,492.00	6.74	251.18	2,481.53	1.54	-170.08	07,342.742484	35,930.739630	40.173968	-104.655686
2,587.00	7.13	256.68	2,575.84	-1.61	-181.09	07,339.481049	35,919.756615	40.173960	-104.655725
2,682.00	7.99	267.61	2,670.02	-3.25	-193.43	07,337.729901	35,907.438473	40.173955	-104.655769
2,776.00	7.20	266.77	2,763.19	-3.85	-205.84	07,337.007376	35,895.036485	40.173953	-104.655814
2,871.00	7.29	263.90	2,857.43	-4.83	-217.77	07,335.917797	35,883.109698	40.173951	-104.655856
2,966.00	8.54	278.69	2,951.54	-4.40	-230.74	07,336.219514	35,870.138932	40.173952	-104.655903
3,060.00	7.71	275.35	3,044.59	-2.76	-243.92	07,337.736293	35,856.946753	40.173956	-104.655950
3,155.00	6.69	280.15	3,138.84	-1.19	-255.71	07,339.193199	35,845.140592	40.173961	-104.655992
3,250.00	6.29	285.90	3,233.24	1.21	-266.16	07,341.494327	35,834.666419	40.173967	-104.656029
3,345.00	4.87	282.93	3,327.78	3.54	-275.10	07,343.737150	35,825.709232	40.173974	-104.656061
3,440.00	5.44	277.51	3,422.40	5.03	-283.50	07,345.147934	35,817.300838	40.173978	-104.656091
3,534.00	5.75	264.10	3,515.95	5.13	-292.60	07,345.159540	35,808.198854	40.173978	-104.656124
3,629.00	7.00	267.27	3,610.37	4.36	-303.11	07,344.294477	35,797.690666	40.173976	-104.656162
3,724.00	7.15	264.30	3,704.64	3.50	-314.78	07,343.320490	35,786.034671	40.173974	-104.656203
3,819.00	7.89	263.48	3,798.83	2.17	-327.14	07,341.875220	35,773.687027	40.173970	-104.656248
3,913.00	9.32	266.71	3,891.77	1.00	-341.15	07,340.572347	35,759.689523	40.173967	-104.656298
4,008.00	9.01	267.53	3,985.55	0.24	-356.26	07,339.666371	35,744.586286	40.173965	-104.656352
4,103.00	7.95	267.19	4,079.51	-0.40	-370.26	07,338.890418	35,730.599549	40.173963	-104.656402
4,198.00	9.75	268.88	4,173.38	-0.88	-384.86	07,338.271955	35,715.999834	40.173962	-104.656454
4,292.00	9.12	270.28	4,266.11	-1.00	-400.27	07,338.005991	35,700.594699	40.173961	-104.656509
4,387.00	8.52	273.77	4,359.98	-0.50	-414.82	07,338.366824	35,686.040070	40.173963	-104.656561
4,482.00	7.50	272.23	4,454.05	0.20	-428.04	07,338.944809	35,672.816741	40.173964	-104.656609
4,577.00	7.46	270.85	4,548.25	0.54	-440.40	07,339.159736	35,660.452909	40.173965	-104.656653
4,672.00	6.31	275.69	4,642.56	1.15	-451.76	07,339.660547	35,649.086290	40.173967	-104.656694

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,766.00	5.99	266.11	4,736.02	1.33	-461.80	07,339.744352	35,639.051572	40.173968	-104.656730
4,861.00	7.03	257.85	4,830.41	-0.23	-472.42	07,338.083287	35,628.438146	40.173963	-104.656768
4,955.00	6.81	249.68	4,923.73	-3.38	-483.27	07,334.834069	35,617.619057	40.173955	-104.656806
5,050.00	6.61	254.56	5,018.08	-6.79	-493.83	07,331.322190	35,607.100070	40.173945	-104.656844
5,145.00	8.25	264.61	5,112.28	-8.89	-505.88	07,329.111338	35,595.063586	40.173940	-104.656887
5,240.00	7.15	274.16	5,206.43	-9.10	-518.57	07,328.779131	35,582.383412	40.173939	-104.656933
5,335.00	7.72	274.02	5,300.63	-8.22	-530.83	07,329.538439	35,570.114336	40.173941	-104.656977
5,429.00	7.48	277.10	5,393.80	-7.02	-543.20	07,330.619349	35,557.734305	40.173945	-104.657021
5,524.00	8.06	280.22	5,487.93	-5.08	-555.89	07,332.444256	35,545.026264	40.173950	-104.657066
5,619.00	7.12	274.98	5,582.10	-3.39	-568.31	07,334.018583	35,532.591189	40.173955	-104.657111
5,714.00	5.52	271.71	5,676.52	-2.74	-578.74	07,334.566597	35,522.152782	40.173956	-104.657148
5,809.00	6.17	267.56	5,771.02	-2.82	-588.41	07,334.393490	35,512.486497	40.173956	-104.657183
5,904.00	4.32	261.08	5,865.62	-3.59	-597.05	07,333.539063	35,503.858422	40.173954	-104.657214
5,999.00	3.09	258.53	5,960.42	-4.66	-603.09	07,332.417573	35,497.824773	40.173951	-104.657235
6,093.00	1.83	257.93	6,054.33	-5.47	-607.04	07,331.562320	35,493.882113	40.173949	-104.657249
6,188.00	0.81	217.95	6,149.31	-6.32	-608.94	07,330.697597	35,491.993977	40.173947	-104.657256
6,283.00	0.52	220.22	6,244.30	-7.18	-609.63	07,329.832411	35,491.310901	40.173944	-104.657259
6,378.00	0.44	162.30	6,339.30	-7.85	-609.80	07,329.154201	35,491.149899	40.173942	-104.657259
6,409.00	1.16	152.49	6,370.30	-8.25	-609.62	07,328.764251	35,491.334747	40.173941	-104.657258
6,441.00	3.70	173.03	6,402.27	-9.56	-609.34	07,327.454580	35,491.622187	40.173938	-104.657257
6,473.00	6.62	178.78	6,434.13	-12.43	-609.18	07,324.586750	35,491.814119	40.173930	-104.657257
6,504.00	8.31	176.80	6,464.87	-16.45	-609.01	07,320.565158	35,492.015548	40.173919	-104.657256
6,536.00	11.13	174.56	6,496.41	-21.84	-608.59	07,315.185027	35,492.488794	40.173904	-104.657255
6,568.00	14.18	175.50	6,527.62	-28.82	-607.99	07,308.207621	35,493.155751	40.173885	-104.657253
6,599.00	16.88	173.71	6,557.49	-37.08	-607.20	07,299.955380	35,494.025548	40.173862	-104.657250
6,631.00	19.58	177.14	6,587.88	-47.06	-606.42	07,289.988311	35,494.897236	40.173835	-104.657247
6,662.00	22.22	178.86	6,616.84	-58.11	-606.05	07,278.942487	35,495.378355	40.173804	-104.657246
6,694.00	25.23	179.32	6,646.13	-70.98	-605.85	07,266.073569	35,495.702345	40.173769	-104.657245
6,725.00	28.34	179.06	6,673.80	-84.95	-605.65	07,252.109897	35,496.034569	40.173731	-104.657244
6,757.00	31.39	179.82	6,701.55	-100.88	-605.50	07,236.180959	35,496.337170	40.173687	-104.657244
6,789.00	35.16	179.30	6,728.30	-118.43	-605.36	07,218.630621	35,496.643197	40.173639	-104.657243
6,820.00	38.99	180.73	6,753.03	-137.11	-605.37	07,199.948042	35,496.806007	40.173588	-104.657243
6,852.00	42.58	177.56	6,777.26	-158.01	-605.04	07,179.061712	35,497.337805	40.173530	-104.657242
6,883.00	45.92	176.26	6,799.46	-179.60	-603.87	07,157.479121	35,498.716614	40.173471	-104.657238
6,915.00	50.14	175.21	6,820.85	-203.32	-602.09	07,133.778695	35,500.718597	40.173406	-104.657232
6,947.00	53.87	176.05	6,840.55	-228.46	-600.17	07,108.658887	35,502.874443	40.173337	-104.657225
6,979.00	55.73	177.47	6,859.00	-254.57	-598.70	07,082.570429	35,504.597085	40.173265	-104.657219
7,010.00	57.49	178.41	6,876.06	-280.43	-597.77	07,056.716411	35,505.771640	40.173194	-104.657216
7,042.00	60.58	179.21	6,892.52	-307.86	-597.20	07,029.294317	35,506.599621	40.173119	-104.657214
7,073.00	64.23	179.45	6,906.88	-335.33	-596.88	07,001.832753	35,507.181540	40.173043	-104.657213
7,104.00	68.12	179.82	6,919.40	-363.68	-596.71	06,973.484735	35,507.630904	40.172966	-104.657212
7,136.00	70.43	179.48	6,930.72	-393.61	-596.52	06,943.562481	35,508.099514	40.172883	-104.657212
7,167.00	72.21	179.60	6,940.65	-422.97	-596.29	06,914.202446	35,508.614875	40.172803	-104.657211
7,199.00	74.34	180.18	6,949.86	-453.62	-596.23	06,883.561351	35,508.964809	40.172719	-104.657211
7,230.00	75.89	180.23	6,957.82	-483.57	-596.34	06,853.604318	35,509.143020	40.172637	-104.657211
7,262.00	77.83	179.47	6,965.09	-514.74	-596.25	06,822.447524	35,509.522296	40.172551	-104.657211
7,293.00	80.43	179.32	6,970.94	-545.17	-595.93	06,792.013791	35,510.133892	40.172467	-104.657209
7,315.00	82.20	179.28	6,974.26	-566.92	-595.67	06,770.272981	35,510.606752	40.172408	-104.657209
7,354.70	84.80	179.03	6,978.75	-606.36	-595.08	06,730.844901	35,511.565702	40.172299	-104.657206
7" Casing Point									
7,384.00	86.72	178.84	6,980.92	-635.57	-594.54	06,701.639272	35,512.388136	40.172219	-104.657204
7,416.00	87.59	178.66	6,982.51	-667.52	-593.84	06,669.696083	35,513.389741	40.172132	-104.657202
7,511.00	87.84	180.45	6,986.30	-762.44	-593.10	06,574.793773	35,515.031115	40.171871	-104.657199
7,606.00	88.83	182.11	6,989.06	-857.37	-595.23	06,479.850201	35,513.814297	40.171610	-104.657207
7,700.00	89.51	183.22	6,990.42	-951.26	-599.60	06,385.930332	35,510.339036	40.171353	-104.657223

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
7,795.00	90.37	183.40	6,990.52	-1,046.10	-605.08	06,291.045849	35,505.758057	40.171092	-104.657242
7,890.00	90.80	186.99	6,989.55	-1,140.69	-613.68	06,196.383055	35,498.060186	40.170833	-104.657273
7,985.00	90.93	186.54	6,988.11	-1,235.02	-624.87	06,101.957150	35,487.770448	40.170574	-104.657313
8,080.00	90.43	183.35	6,986.99	-1,329.64	-633.06	06,007.260219	35,480.485605	40.170314	-104.657342
8,174.00	91.24	181.90	6,985.62	-1,423.53	-637.36	05,913.339336	35,477.075919	40.170056	-104.657358
8,269.00	92.72	181.24	6,982.33	-1,518.44	-639.96	05,818.418402	35,475.378940	40.169796	-104.657367
8,364.00	92.04	178.93	6,978.39	-1,613.35	-640.10	05,723.514444	35,476.142912	40.169535	-104.657367
8,459.00	90.19	177.40	6,976.54	-1,708.27	-637.06	05,628.625400	35,480.088708	40.169275	-104.657357
8,554.00	90.68	177.92	6,975.82	-1,803.19	-633.18	05,533.753243	35,484.871386	40.169014	-104.657343
8,648.00	89.75	178.24	6,975.47	-1,897.14	-630.03	05,439.846072	35,488.915513	40.168756	-104.657331
8,743.00	89.26	178.08	6,976.29	-1,992.08	-626.98	05,344.936302	35,492.870064	40.168496	-104.657320
8,838.00	89.75	178.29	6,977.11	-2,087.03	-623.98	05,250.024838	35,496.783199	40.168235	-104.657310
8,933.00	90.25	178.40	6,977.11	-2,181.99	-621.23	05,155.099248	35,500.431421	40.167974	-104.657300
9,027.00	89.75	178.35	6,977.11	-2,275.95	-618.57	05,061.170986	35,503.992060	40.167716	-104.657290
9,122.00	89.20	178.29	6,977.98	-2,370.91	-615.78	04,966.251035	35,507.681541	40.167456	-104.657280
9,217.00	88.82	180.17	6,979.62	-2,465.88	-614.50	04,871.298719	35,509.862818	40.167195	-104.657276
9,312.00	89.69	180.83	6,980.85	-2,560.87	-615.33	04,776.312232	35,509.938913	40.166934	-104.657279
9,407.00	90.19	181.94	6,980.95	-2,655.84	-617.63	04,681.328272	35,508.547819	40.166674	-104.657287
9,502.00	92.47	182.74	6,978.75	-2,750.73	-621.51	04,586.411459	35,505.575083	40.166413	-104.657301
9,597.00	91.42	182.78	6,975.52	-2,845.56	-626.08	04,491.542411	35,501.907245	40.166153	-104.657317
9,692.00	92.41	183.25	6,972.35	-2,940.37	-631.07	04,396.689065	35,497.817277	40.165893	-104.657335
9,787.00	94.27	182.93	6,966.82	-3,035.07	-636.18	04,301.952208	35,493.607720	40.165633	-104.657353
9,882.00	94.02	181.50	6,959.95	-3,129.75	-639.85	04,207.247453	35,490.848310	40.165373	-104.657366
9,977.00	92.78	180.39	6,954.31	-3,224.57	-641.41	04,112.424317	35,490.188443	40.165112	-104.657372
10,072.00	92.54	180.26	6,949.91	-3,319.46	-641.95	04,017.531484	35,490.554363	40.164852	-104.657374
10,167.00	92.97	180.43	6,945.34	-3,414.35	-642.52	03,922.646137	35,490.887147	40.164591	-104.657376
10,262.00	92.23	180.80	6,941.03	-3,509.25	-643.54	03,827.748837	35,490.772664	40.164331	-104.657380
10,357.00	91.36	178.81	6,938.05	-3,604.19	-643.21	03,732.813104	35,492.000807	40.164070	-104.657378
10,452.00	91.67	179.39	6,935.54	-3,699.15	-641.72	03,637.881087	35,494.397082	40.163810	-104.657373
10,548.00	92.04	180.05	6,932.43	-3,795.10	-641.25	03,541.946118	35,495.780163	40.163546	-104.657371
10,643.00	92.16	180.54	6,928.95	-3,890.03	-641.74	03,447.015151	35,496.195941	40.163286	-104.657373
10,738.00	91.86	180.21	6,925.62	-3,984.97	-642.36	03,352.078277	35,496.479196	40.163025	-104.657375
10,833.00	91.79	180.22	6,922.60	-4,079.92	-642.72	03,257.132067	35,497.027599	40.162764	-104.657377
10,928.00	91.73	180.40	6,919.68	-4,174.87	-643.23	03,162.181746	35,497.418586	40.162504	-104.657378
10,940.00	91.98	180.67	6,919.29	-4,186.87	-643.35	03,150.188562	35,497.420877	40.162471	-104.657379
Final Sperry MWD Survey @ 10940.00ft									
10,978.00	91.98	180.67	6,917.98	-4,224.84	-643.79	03,112.212944	35,497.338645	40.162367	-104.657380
Straight Line Projection to TD @ 10978.00ft									

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Cannon 13C-31HZ_B		0.00	0.00	7,146.00	-4,448.41	-515.00	302,889.891494	35,628.247584	40.161753	-104.656920
- actual wellpath misses target center by 344.33ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E)										
- Point										
Cannon 13C-31HZ_B		0.00	0.00	7,146.00	-4,448.41	-506.74	302,889.974244	35,636.511655	40.161753	-104.656890
- actual wellpath misses target center by 347.50ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	36,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Point										
Cannon 13C-3HZ_WF		0.00	0.00	7,151.65	-3,700.00	-540.00	303,637.997699	35,596.119088	40.163807	-104.657009
- actual wellpath misses target center by 238.82ft at 10448.74ft MD (6935.64 TVD, -3695.88 N, -641.76 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	36,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	220.66	4,157.91	1,307,603.07	3,240,256.26		
Point 2				0.00	237.47	1,510.83	1,307,594.66	3,237,609.25		
Point 3				0.00	254.02	-1,136.21	1,307,585.99	3,234,962.29		
Point 4				0.00	-2,253.71	-1,160.49	1,305,078.25	3,234,961.90		
Point 5				0.00	-4,909.06	-1,186.22	1,302,422.89	3,234,961.48		
Point 6				0.00	-4,905.55	4,088.85	1,302,476.66	3,240,236.05		
Point 7				0.00	-2,258.66	4,115.51	1,305,123.57	3,240,237.49		
Cannon 13C-3HZ_WF		0.00	0.00	7,166.65	-1,700.00	-385.00	305,639.299199	35,732.049938	40.169297	-104.656455
- actual wellpath misses target center by 315.88ft at 8455.10ft MD (6976.56 TVD, -1704.38 N, -637.24 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	36,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	-236.40	3,690.00	1,307,141.60	3,239,792.75		
Point 2				0.00	-222.54	1,507.95	1,307,134.67	3,237,610.76		
Point 3				0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 4				0.00	-2,254.14	-700.45	1,305,082.20	3,235,421.91		
Point 5				0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 6				0.00	-4,445.84	3,633.44	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,258.23	3,655.47	1,305,119.61	3,239,777.48		
Cannon 13C-31HZ_L		0.00	0.00	0.00	0.00	0.00	307,342.818385	36,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	-212.65	-282.58	1,307,127.49	3,235,820.29		
Point 2				0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 3				0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 4				0.00	-4,452.53	-323.79	1,302,887.59	3,235,819.48		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,354.70	6,978.75	7" Casing Point	7	8-3/4

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Cannon 13C-31HZ_B - actual wellpath misses target center by 344.33ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E) - Point	0.00	0.00	7,146.00	-4,448.41	-515.00	302,889.891494	235,628.247584	40.161753	-104.656920
Cannon 13C-31HZ_B - actual wellpath misses target center by 347.50ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E) - Point	0.00	0.00	7,146.00	-4,448.41	-506.74	302,889.974244	235,636.511655	40.161753	-104.656890
Cannon 13C-31HZ_S - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Cannon 13C-3HZ_WF - actual wellpath misses target center by 238.82ft at 10448.74ft MD (6935.64 TVD, -3695.88 N, -641.76 E) - Point	0.00	0.00	7,151.65	-3,700.00	-540.00	303,637.997699	235,596.119088	40.163807	-104.657009
Cannon 13C-31HZ_S - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Point 1			0.00	220.66	4,157.91	1,307,603.07	3,240,256.26		
Point 2			0.00	237.47	1,510.83	1,307,594.66	3,237,609.25		
Point 3			0.00	254.02	-1,136.21	1,307,585.99	3,234,962.29		
Point 4			0.00	-2,253.71	-1,160.49	1,305,078.25	3,234,961.90		
Point 5			0.00	-4,909.06	-1,186.22	1,302,422.89	3,234,961.48		
Point 6			0.00	-4,905.55	4,088.85	1,302,476.66	3,240,236.05		
Point 7			0.00	-2,258.66	4,115.51	1,305,123.57	3,240,237.49		
Cannon 13C-3HZ_WF - actual wellpath misses target center by 315.88ft at 8455.10ft MD (6976.56 TVD, -1704.38 N, -637.24 E) - Point	0.00	0.00	7,166.65	-1,700.00	-385.00	305,639.299199	235,732.049938	40.169297	-104.656455
Cannon 13C-31HZ_S - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Point 1			0.00	-236.40	3,690.00	1,307,141.60	3,239,792.75		
Point 2			0.00	-222.54	1,507.95	1,307,134.67	3,237,610.76		
Point 3			0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 4			0.00	-2,254.14	-700.45	1,305,082.20	3,235,421.91		
Point 5			0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 6			0.00	-4,445.84	3,633.44	1,302,931.99	3,239,776.30		
Point 7			0.00	-2,258.23	3,655.47	1,305,119.61	3,239,777.48		
Cannon 13C-31HZ_L - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Point 1			0.00	-212.65	-282.58	1,307,127.49	3,235,820.29		
Point 2			0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 3			0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 4			0.00	-4,452.53	-323.79	1,302,887.59	3,235,819.48		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,354.70	6,978.75	7" Casing Point	7	8-3/4

Design Annotations

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Cannon 13C-31HZ_B - actual wellpath misses target center by 344.33ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E) - Point	0.00	0.00	7,146.00	-4,448.41	-515.00	302,889.891494	235,628.247584	40.161753	-104.656920
Cannon 13C-31HZ_B - actual wellpath misses target center by 347.50ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E) - Point	0.00	0.00	7,146.00	-4,448.41	-506.74	302,889.974244	235,636.511655	40.161753	-104.656890
Cannon 13C-31HZ_S - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Cannon 13C-3HZ_WF - actual wellpath misses target center by 238.82ft at 10448.74ft MD (6935.64 TVD, -3695.88 N, -641.76 E) - Point	0.00	0.00	7,151.65	-3,700.00	-540.00	303,637.997699	235,596.119088	40.163807	-104.657009
Cannon 13C-31HZ_S - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Point 1			0.00	220.66	4,157.91	1,307,603.07	3,240,256.26		
Point 2			0.00	237.47	1,510.83	1,307,594.66	3,237,609.25		
Point 3			0.00	254.02	-1,136.21	1,307,585.99	3,234,962.29		
Point 4			0.00	-2,253.71	-1,160.49	1,305,078.25	3,234,961.90		
Point 5			0.00	-4,909.06	-1,186.22	1,302,422.89	3,234,961.48		
Point 6			0.00	-4,905.55	4,088.85	1,302,476.66	3,240,236.05		
Point 7			0.00	-2,258.66	4,115.51	1,305,123.57	3,240,237.49		
Cannon 13C-3HZ_WF - actual wellpath misses target center by 315.88ft at 8455.10ft MD (6976.56 TVD, -1704.38 N, -637.24 E) - Point	0.00	0.00	7,166.65	-1,700.00	-385.00	305,639.299199	235,732.049938	40.169297	-104.656455
Cannon 13C-31HZ_S - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Point 1			0.00	-236.40	3,690.00	1,307,141.60	3,239,792.75		
Point 2			0.00	-222.54	1,507.95	1,307,134.67	3,237,610.76		
Point 3			0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 4			0.00	-2,254.14	-700.45	1,305,082.20	3,235,421.91		
Point 5			0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 6			0.00	-4,445.84	3,633.44	1,302,931.99	3,239,776.30		
Point 7			0.00	-2,258.23	3,655.47	1,305,119.61	3,239,777.48		
Cannon 13C-31HZ_L - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
Point 1			0.00	-212.65	-282.58	1,307,127.49	3,235,820.29		
Point 2			0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 3			0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 4			0.00	-4,452.53	-323.79	1,302,887.59	3,235,819.48		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,354.70	6,978.75	7" Casing Point	7	8-3/4

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
125.00	125.00	0.00	-0.17	First Gyro Survey @ 125.00ft

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Cannon 13C-31HZ_B		0.00	0.00	7,146.00	-4,448.41	-515.00	302,889.891494	235,628.247584	40.161753	-104.656920
- actual wellpath misses target center by 344.33ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E)										
- Point										
Cannon 13C-31HZ_B		0.00	0.00	7,146.00	-4,448.41	-506.74	302,889.974244	235,636.511655	40.161753	-104.656890
- actual wellpath misses target center by 347.50ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Point										
Cannon 13C-3HZ_WF		0.00	0.00	7,151.65	-3,700.00	-540.00	303,637.997699	235,596.119088	40.163807	-104.657009
- actual wellpath misses target center by 238.82ft at 10448.74ft MD (6935.64 TVD, -3695.88 N, -641.76 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	220.66	4,157.91	1,307,603.07	3,240,256.26		
Point 2				0.00	237.47	1,510.83	1,307,594.66	3,237,609.25		
Point 3				0.00	254.02	-1,136.21	1,307,585.99	3,234,962.29		
Point 4				0.00	-2,253.71	-1,160.49	1,305,078.25	3,234,961.90		
Point 5				0.00	-4,909.06	-1,186.22	1,302,422.89	3,234,961.48		
Point 6				0.00	-4,905.55	4,088.85	1,302,476.66	3,240,236.05		
Point 7				0.00	-2,258.66	4,115.51	1,305,123.57	3,240,237.49		
Cannon 13C-3HZ_WF		0.00	0.00	7,166.65	-1,700.00	-385.00	305,639.299199	235,732.049938	40.169297	-104.656455
- actual wellpath misses target center by 315.88ft at 8455.10ft MD (6976.56 TVD, -1704.38 N, -637.24 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	-236.40	3,690.00	1,307,141.60	3,239,792.75		
Point 2				0.00	-222.54	1,507.95	1,307,134.67	3,237,610.76		
Point 3				0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 4				0.00	-2,254.14	-700.45	1,305,082.20	3,235,421.91		
Point 5				0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 6				0.00	-4,445.84	3,633.44	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,258.23	3,655.47	1,305,119.61	3,239,777.48		
Cannon 13C-31HZ_L		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	-212.65	-282.58	1,307,127.49	3,235,820.29		
Point 2				0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 3				0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 4				0.00	-4,452.53	-323.79	1,302,887.59	3,235,819.48		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,354.70	6,978.75	7" Casing Point	7	8-3/4
760.00	760.00	1.07	-0.53	Tie-On to Gyro Surveys @ 760.00ft
760.00	760.00	1.07	-0.53	Final Gyro Survey @ 760.00ft
826.00	826.00	1.11	-0.46	First Sperry MWD Survey @ 826.00ft
10,940.00	6,919.29	-4,186.87	-643.35	Final Sperry MWD Survey @ 10940.00ft
10,978.00	6,917.98	-4,224.84	-643.79	Straight Line Projection to TD @ 10978.00ft

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Cannon 13C-31HZ_B		0.00	0.00	7,146.00	-4,448.41	-515.00	302,889.891494	235,628.247584	40.161753	-104.656920
- actual wellpath misses target center by 344.33ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E)										
- Point										
Cannon 13C-31HZ_B		0.00	0.00	7,146.00	-4,448.41	-506.74	302,889.974244	235,636.511655	40.161753	-104.656890
- actual wellpath misses target center by 347.50ft at 10978.00ft MD (6917.98 TVD, -4224.84 N, -643.79 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Point										
Cannon 13C-3HZ_WF		0.00	0.00	7,151.65	-3,700.00	-540.00	303,637.997699	235,596.119088	40.163807	-104.657009
- actual wellpath misses target center by 238.82ft at 10448.74ft MD (6935.64 TVD, -3695.88 N, -641.76 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	220.66	4,157.91	1,307,603.07	3,240,256.26		
Point 2				0.00	237.47	1,510.83	1,307,594.66	3,237,609.25		
Point 3				0.00	254.02	-1,136.21	1,307,585.99	3,234,962.29		
Point 4				0.00	-2,253.71	-1,160.49	1,305,078.25	3,234,961.90		
Point 5				0.00	-4,909.06	-1,186.22	1,302,422.89	3,234,961.48		
Point 6				0.00	-4,905.55	4,088.85	1,302,476.66	3,240,236.05		
Point 7				0.00	-2,258.66	4,115.51	1,305,123.57	3,240,237.49		
Cannon 13C-3HZ_WF		0.00	0.00	7,166.65	-1,700.00	-385.00	305,639.299199	235,732.049938	40.169297	-104.656455
- actual wellpath misses target center by 315.88ft at 8455.10ft MD (6976.56 TVD, -1704.38 N, -637.24 E)										
- Point										
Cannon 13C-31HZ_S		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	-236.40	3,690.00	1,307,141.60	3,239,792.75		
Point 2				0.00	-222.54	1,507.95	1,307,134.67	3,237,610.76		
Point 3				0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 4				0.00	-2,254.14	-700.45	1,305,082.20	3,235,421.91		
Point 5				0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 6				0.00	-4,445.84	3,633.44	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,258.23	3,655.47	1,305,119.61	3,239,777.48		
Cannon 13C-31HZ_Li		0.00	0.00	0.00	0.00	0.00	307,342.818385	236,100.818963	40.173964	-104.655077
- actual wellpath hits target center										
- Polygon										
Point 1				0.00	-212.65	-282.58	1,307,127.49	3,235,820.29		
Point 2				0.00	-208.86	-680.65	1,307,127.49	3,235,422.22		
Point 3				0.00	-4,448.74	-721.72	1,302,887.59	3,235,421.55		
Point 4				0.00	-4,452.53	-323.79	1,302,887.59	3,235,819.48		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,354.70	6,978.75	7" Casing Point	7	8-3/4

Checked By: _____ Approved By: _____ Date: _____

Halliburton Company
Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 13C-3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 13C-3HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db