

# **Anadarko Petroleum Corp.**

**Weld County, CO (NAD 83)**

**Sec. 11-T2N-R65W**

**Dowdy 35-11 - Slot A 2**

**Plan A Rev 1**

**Survey: Sperry MWD Survey**

## **Standard Survey Report**

**27 April, 2011**

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Site:</b>	Sec. 11-T2N-R65W	<b>MD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Well:</b>	Dowdy 35-11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Plan A Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	EDM 2003.16 Single User Db

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

<b>Site</b>	Sec. 11-T2N-R65W			
<b>Site Position:</b>		<b>Northing:</b>	1,298,134.39 ft	<b>Latitude:</b>
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,241,273.69 ft	<b>Longitude:</b>
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>

<b>Well</b>	Dowdy 35-11 - Slot A 2				
<b>Well Position</b>	+N/S +E/W	0.00 ft	<b>Northing:</b> <b>Easting:</b>	1,298,134.17 ft 3,241,289.90 ft	<b>Latitude:</b> <b>Longitude:</b>
		0.00 ft		4,866.00 ft	<b>Ground Level:</b>
<b>Position Uncertainty</b>					4,866.00 ft

<b>Wellbore</b>	Plan A Rev 1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2010	3/31/2011	8.76	66.89	53,010

<b>Design</b>	Actual Field Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>		<b>Depth From (TVD) (ft)</b>	<b>+N/S (ft)</b>	<b>+E/W (ft)</b>	<b>Direction (°)</b>
		0.00	0.00	0.00	162.25

<b>Survey Program</b>	Date	4/27/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
75.00	7,870.00	Sperry MWD Survey (Plan A Rev 1)	MWD	MWD - Standard

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/S (ft)	+E/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Tie-on at surface</b>									
75.00	0.57	74.15	75.00	0.10	0.36	0.01	0.76	0.76	0.00
<b>First Sperry MWD Survey</b>									
167.00	0.31	49.41	167.00	0.39	0.99	-0.07	0.34	-0.28	-26.89
260.00	0.57	46.30	259.99	0.87	1.51	-0.37	0.28	0.28	-3.34
352.00	1.34	152.97	351.98	0.23	2.33	0.49	1.74	0.84	115.95
398.00	2.54	172.57	397.96	-1.26	2.71	2.03	2.94	2.61	42.61
442.00	3.37	157.29	441.90	-3.42	3.33	4.27	2.58	1.89	-34.73
531.00	5.16	147.54	530.65	-9.21	6.49	10.75	2.16	2.01	-10.96
619.00	7.26	150.66	618.13	-17.40	11.34	20.03	2.42	2.39	3.55
709.00	8.20	148.43	707.31	-27.82	17.49	31.83	1.10	1.04	-2.48
791.00	8.11	150.38	788.48	-37.83	23.41	43.17	0.35	-0.11	2.38

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Site:</b>	Sec. 11-T2N-R65W	<b>MD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Well:</b>	Dowdy 35-11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Plan A Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	EDM 2003.16 Single User Db

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/S (ft)	+E/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
887.00	7.83	149.15	883.55	-49.33	30.11	56.16	0.34	-0.29	-1.28
977.00	10.10	153.18	972.45	-61.64	36.81	69.93	2.62	2.52	4.48
1,065.00	11.55	159.42	1,058.88	-76.78	43.39	86.35	2.12	1.65	7.09
1,153.00	14.05	163.00	1,144.69	-95.24	49.61	105.83	2.98	2.84	4.07
1,243.00	16.50	163.93	1,231.51	-117.97	56.35	129.54	2.74	2.72	1.03
1,333.00	16.41	163.19	1,317.82	-142.43	63.56	155.02	0.25	-0.10	-0.82
1,420.00	16.21	163.48	1,401.32	-165.83	70.57	179.45	0.25	-0.23	0.33
1,510.00	16.46	164.46	1,487.69	-190.16	77.56	204.75	0.41	0.28	1.09
1,598.00	16.15	163.15	1,572.15	-213.89	84.44	229.45	0.55	-0.35	-1.49
1,686.00	15.95	163.90	1,656.72	-237.22	91.35	253.77	0.33	-0.23	0.85
1,776.00	15.32	161.61	1,743.39	-260.38	98.53	278.02	0.98	-0.70	-2.54
1,863.00	16.42	160.71	1,827.07	-282.89	106.21	301.81	1.30	1.26	-1.03
1,953.00	14.87	158.75	1,913.73	-305.66	114.60	326.05	1.82	-1.72	-2.18
2,041.00	15.66	162.77	1,998.63	-327.53	122.21	349.20	1.50	0.90	4.57
2,127.00	15.63	161.30	2,081.44	-349.59	129.37	372.39	0.46	-0.03	-1.71
2,214.00	16.36	164.48	2,165.08	-372.50	136.40	396.35	1.31	0.84	3.66
2,300.00	16.40	164.37	2,247.59	-395.86	142.91	420.59	0.06	0.05	-0.13
2,388.00	17.66	164.98	2,331.73	-420.72	149.72	446.33	1.45	1.43	0.69
2,476.00	15.59	163.29	2,416.04	-444.94	156.58	471.49	2.42	-2.35	-1.92
2,563.00	15.58	158.41	2,499.85	-467.00	164.24	494.84	1.51	-0.01	-5.61
2,650.00	16.13	162.91	2,583.54	-489.42	172.09	518.58	1.55	0.63	5.17
2,737.00	16.08	157.46	2,667.13	-512.10	180.26	542.67	1.74	-0.06	-6.26
2,826.00	17.02	156.69	2,752.44	-535.44	190.14	567.92	1.08	1.06	-0.87
2,915.00	18.63	162.20	2,837.18	-560.95	199.64	595.11	2.62	1.81	6.19
3,001.00	18.38	166.34	2,918.73	-587.20	207.04	622.37	1.55	-0.29	4.81
3,090.00	16.52	165.24	3,003.63	-613.07	213.58	649.00	2.12	-2.09	-1.24
3,177.00	17.71	165.18	3,086.78	-637.83	220.12	674.57	1.37	1.37	-0.07
3,264.00	19.02	160.41	3,169.35	-663.98	228.26	701.96	2.29	1.51	-5.48
3,352.00	18.33	164.63	3,252.72	-690.83	236.73	730.12	1.72	-0.78	4.80
3,442.00	16.75	171.99	3,338.54	-717.33	242.29	757.04	3.02	-1.76	8.18
3,530.00	14.79	172.83	3,423.23	-741.03	245.46	780.59	2.24	-2.23	0.95
3,618.00	12.66	166.79	3,508.72	-761.57	249.07	801.24	2.91	-2.42	-6.86
3,706.00	15.02	159.74	3,594.16	-781.66	255.22	822.25	3.29	2.68	-8.01
3,796.00	13.19	160.34	3,681.44	-802.27	262.72	844.17	2.04	-2.03	0.67
3,884.00	14.40	158.77	3,766.90	-821.92	270.06	865.13	1.44	1.37	-1.78
3,974.00	14.63	159.36	3,854.03	-842.99	278.11	887.65	0.30	0.26	0.66
4,061.00	14.04	158.96	3,938.32	-863.12	285.78	909.16	0.69	-0.68	-0.46
4,149.00	13.75	159.49	4,023.75	-882.88	293.27	930.26	0.36	-0.33	0.60
4,239.00	11.58	166.78	4,111.56	-901.70	299.09	949.95	2.99	-2.41	8.10
4,328.00	7.83	162.36	4,199.27	-916.17	302.97	964.92	4.29	-4.21	-4.97
4,416.00	6.88	166.33	4,286.54	-927.01	306.03	976.18	1.22	-1.08	4.51
4,504.00	5.48	155.05	4,374.03	-935.94	309.05	985.60	2.10	-1.59	-12.82
4,594.00	1.65	185.70	4,463.85	-941.13	310.73	991.06	4.61	-4.26	34.06
4,683.00	1.54	215.97	4,552.82	-943.37	309.90	992.94	0.94	-0.12	34.01
4,770.00	1.14	212.43	4,639.79	-945.05	308.75	994.19	0.47	-0.46	-4.07
4,857.00	0.56	160.83	4,726.78	-946.18	308.43	995.17	1.04	-0.67	-59.31
4,946.00	0.79	62.56	4,815.78	-946.31	309.12	995.50	1.16	0.26	-110.42
5,035.00	1.12	63.80	4,904.77	-945.64	310.44	995.27	0.37	0.37	1.39
5,123.00	2.52	67.50	4,992.72	-944.52	313.00	994.98	1.60	1.59	4.20
5,210.00	1.62	50.01	5,079.66	-943.00	315.71	994.36	1.25	-1.03	-20.10
5,297.00	0.47	32.95	5,166.65	-941.91	316.85	993.66	1.35	-1.32	-19.61
5,384.00	1.18	56.12	5,253.64	-941.11	317.78	993.19	0.89	0.82	26.63
5,471.00	0.87	71.80	5,340.62	-940.40	319.16	992.94	0.48	-0.36	18.02
5,558.00	1.13	49.84	5,427.61	-939.64	320.44	992.60	0.53	0.30	-25.24

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2						
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)						
<b>Site:</b>	Sec. 11-T2N-R65W	<b>MD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)						
<b>Well:</b>	Dowdy 35-11	<b>North Reference:</b>	Grid						
<b>Wellbore:</b>	Plan A Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature						
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	EDM 2003.16 Single User Db						
<b>Survey</b>									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,644.00	0.62	47.86	5,513.60	-938.79	321.43	992.09	0.59	-0.59	-2.30
5,730.00	0.77	42.65	5,599.59	-938.05	322.17	991.61	0.19	0.17	-6.06
5,820.00	1.19	55.89	5,689.58	-937.08	323.35	991.05	0.53	0.47	14.71
5,908.00	1.39	88.56	5,777.56	-936.54	325.17	991.09	0.85	0.23	37.12
5,996.00	0.85	79.35	5,865.54	-936.39	326.88	991.47	0.64	-0.61	-10.47
6,082.00	1.31	66.79	5,951.53	-935.89	328.41	991.46	0.60	0.53	-14.60
6,170.00	0.62	220.22	6,039.52	-935.85	329.03	991.61	2.14	-0.78	174.35
6,260.00	0.09	289.65	6,129.52	-936.20	328.65	991.83	0.66	-0.59	77.14
6,350.00	0.23	342.13	6,219.52	-936.01	328.53	991.60	0.21	0.16	58.31
6,438.00	0.13	342.39	6,307.52	-935.74	328.44	991.33	0.11	-0.11	0.30
6,526.00	0.47	18.84	6,395.52	-935.31	328.53	990.94	0.42	0.39	41.42
6,614.00	1.13	326.88	6,483.51	-934.24	328.17	989.81	1.04	0.75	-59.05
6,704.00	1.34	345.15	6,573.49	-932.48	327.42	987.90	0.49	0.23	20.30
6,794.00	1.61	332.02	6,663.46	-930.34	326.55	985.61	0.48	0.30	-14.59
6,882.00	1.38	351.78	6,751.43	-928.20	325.82	983.35	0.64	-0.26	22.45
6,959.08	1.41	338.83	6,828.49	-926.40	325.35	981.49	0.41	0.04	-16.81
<b>Dowdy 35-11 Plan A Rev 1 Zone Tgt</b>									
6,969.00	1.42	337.22	6,838.40	-926.17	325.26	981.24	0.41	0.09	-16.20
7,055.00	0.78	325.35	6,924.39	-924.71	324.51	979.62	0.79	-0.74	-13.80
7,145.00	2.05	262.29	7,014.36	-924.42	322.57	978.75	2.04	1.41	-70.07
7,233.00	4.09	248.79	7,102.23	-925.77	318.08	978.67	2.44	2.32	-15.34
7,319.00	4.12	250.50	7,188.01	-927.91	312.31	978.95	0.15	0.03	1.99
7,407.00	3.92	265.51	7,275.80	-929.20	306.33	978.35	1.21	-0.23	17.06
7,495.00	1.76	292.06	7,363.69	-928.93	302.08	976.80	2.81	-2.45	30.17
7,582.00	1.18	301.30	7,450.66	-927.96	300.08	975.27	0.72	-0.67	10.62
7,670.00	1.31	316.56	7,538.64	-926.76	298.61	973.68	0.40	0.15	17.34
7,758.00	0.71	326.91	7,626.62	-925.57	297.62	972.24	0.71	-0.68	11.76
7,815.00	1.16	331.57	7,683.62	-924.77	297.15	971.34	0.80	0.79	8.18
<b>Final Sperry MWD Survey</b>									
7,847.60	1.16	331.57	7,716.21	-924.19	296.84	970.69	0.00	0.00	0.00
<b>Dowdy 35-11 Plan A Rev 1 BH Tgt</b>									
7,870.00	1.16	331.57	7,738.61	-923.79	296.62	970.24	0.00	0.00	0.00
<b>Straight Line Projection to TD</b>									

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Site:</b>	Sec. 11-T2N-R65W	<b>MD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Well:</b>	Dowdy 35-11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Plan A Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	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)			
Dowdy 35-11 Plan A F	0.00	359.44	7,716.00	-914.48	292.68	1,297,219.73	3,241,582.57	40.146031	-104.635814	
- survey misses target center by 10.57ft at 7847.60ft MD (7716.21 TVD, -924.19 N, 296.84 E)										
- Point										
Dowdy 35-11 Plan A F	0.00	359.44	6,828.00	-914.48	292.68	1,297,219.73	3,241,582.57	40.146031	-104.635814	
- survey misses target center by 34.78ft at 6959.17ft MD (6828.58 TVD, -926.40 N, 325.35 E)										
- Circle (radius 50.00)										
Dowdy 19-11 (PAD) S	0.00	359.44	0.00	0.17	15.94	1,298,134.34	3,241,305.84	40.148549	-104.636772	
- survey misses target center by 15.94ft at 0.08ft MD (0.08 TVD, 0.00 N, 0.00 E)										
- Polygon										
Point 1			0.00	-969.99	-1,022.66	1,297,164.22	3,240,267.28			
Point 2			0.00	-966.23	1,623.42	1,297,167.98	3,242,913.26			
Point 3			0.00	1,715.65	1,597.32	1,299,849.74	3,242,887.15			
Point 4			0.00	1,689.89	-1,048.56	1,299,823.99	3,240,241.39			

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N-S (ft)	+E/W (ft)	Comment	
0.00	0.00	0.00	0.00	Tie-on at surface	
75.00	75.00	0.10	0.36	First Sperry MWD Survey	
7,815.00	7,683.62	-924.77	297.15	Final Sperry MWD Survey	
7,870.00	7,738.61	-923.79	296.62	Straight Line Projection to TD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# **Anadarko Petroleum Corp.**

**Weld County, CO (NAD 83)**

**Sec. 11-T2N-R65W**

**Dowdy 35-11 - Slot A 2**

**Plan A Rev 1**

**Survey: Sperry MWD Survey**

## **Survey Report - Geographic**

**27 April, 2011**

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2		
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<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	EDM 2003.16 Single User Db		
<b>Project</b>	Weld County, CO (NAD 83)				
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level		
<b>Geo Datum:</b>	North American Datum 1983				
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor		
<b>Site</b>	Sec. 11-T2N-R65W				
<b>Site Position:</b>		<b>Northing:</b>	1,298,134.39 ft		
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,241,273.69 ft		
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"		
			<b>Latitude:</b> 40.148550		
			<b>Longitude:</b> -104.636887		
			<b>Grid Convergence:</b> 0.56 °		
<b>Well</b>	Dowdy 35-11 - Slot A 2				
<b>Well Position</b>	+N/S 0.00 ft	<b>Northing:</b>	1,298,134.17 ft		
	+E/W 0.00 ft	<b>Easting:</b>	3,241,289.90 ft		
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	4,866.00 ft		
			<b>Latitude:</b> 40.148549		
			<b>Longitude:</b> -104.636829		
			<b>Ground Level:</b> 4,866.00 ft		
<b>Wellbore</b>	Plan A Rev 1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2010	3/31/2011	8.76	66.89	53,010
<b>Design</b>	Actual Field Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>		<b>Depth From (TVD) (ft)</b>	<b>+N/S (ft)</b>	<b>+E/W (ft)</b>	<b>Direction (°)</b>
		0.00	0.00	0.00	162.25
<b>Survey Program</b>		Date 4/27/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
75.00	7,870.00	Sperry MWD Survey (Plan A Rev 1)	MWD	MWD - Standard	

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Site:</b>	Sec. 11-T2N-R65W	<b>MD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Well:</b>	Dowdy 35-11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Plan A Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	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	1,298,134.17	3,241,289.90	40.148549	-104.636829
<b>Tie-on at surface</b>									
75.00	0.57	74.15	75.00	0.10	0.36	1,298,134.27	3,241,290.26	40.148549	-104.636828
<b>First Sperry MWD Survey</b>									
167.00	0.31	49.41	167.00	0.39	0.99	1,298,134.56	3,241,290.89	40.148550	-104.636825
260.00	0.57	46.30	259.99	0.87	1.51	1,298,135.04	3,241,291.41	40.148551	-104.636824
352.00	1.34	152.97	351.98	0.23	2.33	1,298,134.40	3,241,292.23	40.148550	-104.636821
398.00	2.54	172.57	397.96	-1.26	2.71	1,298,132.91	3,241,292.61	40.148545	-104.636819
442.00	3.37	157.29	441.90	-3.42	3.33	1,298,130.75	3,241,293.23	40.148539	-104.636817
531.00	5.16	147.54	530.65	-9.21	6.49	1,298,124.96	3,241,296.39	40.148524	-104.636806
619.00	7.26	150.66	618.13	-17.40	11.34	1,298,116.77	3,241,301.24	40.148501	-104.636789
709.00	8.20	148.43	707.31	-27.82	17.49	1,298,106.35	3,241,307.39	40.148472	-104.636767
791.00	8.11	150.38	788.48	-37.83	23.41	1,298,096.34	3,241,313.31	40.148444	-104.636747
887.00	7.83	149.15	883.55	-49.33	30.11	1,298,084.84	3,241,320.01	40.148413	-104.636723
977.00	10.10	153.18	972.45	-61.64	36.81	1,298,072.53	3,241,326.71	40.148379	-104.636699
1,065.00	11.55	159.42	1,058.88	-76.78	43.39	1,298,057.40	3,241,333.29	40.148337	-104.636676
1,153.00	14.05	163.00	1,144.69	-95.24	49.61	1,298,038.93	3,241,339.51	40.148286	-104.636655
1,243.00	16.50	163.93	1,231.51	-117.97	56.35	1,298,016.20	3,241,346.24	40.148224	-104.636632
1,333.00	16.41	163.19	1,317.82	-142.43	63.56	1,297,991.75	3,241,353.46	40.148156	-104.636607
1,420.00	16.21	163.48	1,401.32	-165.83	70.57	1,297,968.34	3,241,360.47	40.148092	-104.636582
1,510.00	16.46	164.46	1,487.69	-190.16	77.56	1,297,944.02	3,241,367.45	40.148025	-104.636558
1,598.00	16.15	163.15	1,572.15	-213.89	84.44	1,297,920.29	3,241,374.34	40.147960	-104.636534
1,686.00	15.95	163.90	1,656.72	-237.22	91.35	1,297,896.96	3,241,381.24	40.147895	-104.636511
1,776.00	15.32	161.61	1,743.39	-260.38	98.53	1,297,873.80	3,241,388.42	40.147832	-104.636486
1,863.00	16.42	160.71	1,827.07	-282.89	106.21	1,297,851.29	3,241,396.11	40.147770	-104.636459
1,953.00	14.87	158.75	1,913.73	-305.66	114.60	1,297,828.52	3,241,404.50	40.147707	-104.636430
2,041.00	15.66	162.77	1,998.63	-327.53	122.21	1,297,806.65	3,241,412.11	40.147647	-104.636403
2,127.00	15.63	161.30	2,081.44	-349.59	129.37	1,297,784.59	3,241,419.26	40.147586	-104.636378
2,214.00	16.36	164.48	2,165.08	-372.50	136.40	1,297,761.69	3,241,426.30	40.147523	-104.636354
2,300.00	16.40	164.37	2,247.59	-395.86	142.91	1,297,738.33	3,241,432.81	40.147459	-104.636332
2,388.00	17.66	164.98	2,331.73	-420.72	149.72	1,297,713.47	3,241,439.61	40.147390	-104.636308
2,476.00	15.59	163.29	2,416.04	-444.94	156.58	1,297,689.25	3,241,446.47	40.147323	-104.636284
2,563.00	15.58	158.41	2,499.85	-467.00	164.24	1,297,667.19	3,241,454.13	40.147263	-104.636258
2,650.00	16.13	162.91	2,583.54	-489.42	172.09	1,297,644.77	3,241,461.98	40.147201	-104.636231
2,737.00	16.08	157.46	2,667.13	-512.10	180.26	1,297,622.09	3,241,470.15	40.147138	-104.636202
2,826.00	17.02	156.69	2,752.44	-535.44	190.14	1,297,598.75	3,241,480.03	40.147074	-104.636168
2,915.00	18.63	162.20	2,837.18	-560.95	199.64	1,297,573.25	3,241,489.53	40.147004	-104.636134
3,001.00	18.38	166.34	2,918.73	-587.20	207.04	1,297,546.99	3,241,496.94	40.146932	-104.636109
3,090.00	16.52	165.24	3,003.63	-613.07	213.58	1,297,521.12	3,241,503.47	40.146860	-104.636086
3,177.00	17.71	165.18	3,086.78	-637.83	220.12	1,297,496.37	3,241,510.01	40.146792	-104.636064
3,264.00	19.02	160.41	3,169.35	-663.98	228.26	1,297,470.22	3,241,518.15	40.146720	-104.636036
3,352.00	18.33	164.63	3,252.72	-690.83	236.73	1,297,443.37	3,241,526.62	40.146646	-104.636006
3,442.00	16.75	171.99	3,338.54	-717.33	242.29	1,297,416.87	3,241,532.18	40.146573	-104.635987
3,530.00	14.79	172.83	3,423.23	-741.03	245.46	1,297,393.17	3,241,535.35	40.146508	-104.635977
3,618.00	12.66	166.79	3,508.72	-761.57	249.07	1,297,372.64	3,241,538.96	40.146452	-104.635965
3,706.00	15.02	159.74	3,594.16	-781.66	255.22	1,297,352.55	3,241,545.11	40.146397	-104.635943
3,796.00	13.19	160.34	3,681.44	-802.27	262.72	1,297,331.94	3,241,552.60	40.146340	-104.635917
3,884.00	14.40	158.77	3,766.90	-821.92	270.06	1,297,312.28	3,241,559.94	40.146286	-104.635892
3,974.00	14.63	159.36	3,854.03	-842.99	278.11	1,297,291.21	3,241,568.00	40.146228	-104.635864
4,061.00	14.04	158.96	3,938.32	-863.12	285.78	1,297,271.08	3,241,575.66	40.146172	-104.635837
4,149.00	13.75	159.49	4,023.75	-882.88	293.27	1,297,251.33	3,241,583.16	40.146118	-104.635811
4,239.00	11.58	166.78	4,111.56	-901.70	299.09	1,297,232.51	3,241,588.97	40.146066	-104.635791
4,328.00	7.83	162.36	4,199.27	-916.17	302.97	1,297,218.03	3,241,592.86	40.146026	-104.635777
4,416.00	6.88	166.33	4,286.54	-927.01	306.03	1,297,207.20	3,241,595.92	40.145996	-104.635767
4,504.00	5.48	155.05	4,374.03	-935.94	309.05	1,297,198.27	3,241,598.94	40.145972	-104.635756

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Site:</b>	Sec. 11-T2N-R65W	<b>MD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Well:</b>	Dowdy 35-11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Plan A Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	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
4,594.00	1.65	185.70	4,463.85	-941.13	310.73	1,297,193.08	3,241,600.62	40.145957	-104.635750
4,683.00	1.54	215.97	4,552.82	-943.37	309.90	1,297,190.84	3,241,599.79	40.145951	-104.635753
4,770.00	1.14	212.43	4,639.79	-945.05	308.75	1,297,189.16	3,241,598.64	40.145947	-104.635758
4,857.00	0.56	160.83	4,726.78	-946.18	308.43	1,297,188.03	3,241,598.32	40.145944	-104.635759
4,946.00	0.79	62.56	4,815.78	-946.31	309.12	1,297,187.90	3,241,599.00	40.145943	-104.635756
5,035.00	1.12	63.80	4,904.77	-945.64	310.44	1,297,188.57	3,241,600.33	40.145945	-104.635752
5,123.00	2.52	67.50	4,992.72	-944.52	313.00	1,297,189.69	3,241,602.89	40.145948	-104.635742
5,210.00	1.62	50.01	5,079.66	-943.00	315.71	1,297,191.21	3,241,605.60	40.145952	-104.635733
5,297.00	0.47	32.95	5,166.65	-941.91	316.85	1,297,192.30	3,241,606.73	40.145955	-104.635729
5,384.00	1.18	56.12	5,253.64	-941.11	317.78	1,297,193.10	3,241,607.67	40.145957	-104.635725
5,471.00	0.87	71.80	5,340.62	-940.40	319.16	1,297,193.80	3,241,609.04	40.145959	-104.635720
5,558.00	1.13	49.84	5,427.61	-939.64	320.44	1,297,194.56	3,241,610.32	40.145961	-104.635716
5,644.00	0.62	47.86	5,513.60	-938.79	321.43	1,297,195.42	3,241,611.32	40.145963	-104.635712
5,730.00	0.77	42.65	5,599.59	-938.05	322.17	1,297,196.16	3,241,612.05	40.145965	-104.635709
5,820.00	1.19	55.89	5,689.58	-937.08	323.35	1,297,197.13	3,241,613.24	40.145968	-104.635705
5,908.00	1.39	88.56	5,777.56	-936.54	325.17	1,297,197.67	3,241,615.06	40.145970	-104.635699
5,996.00	0.85	79.35	5,865.54	-936.39	326.88	1,297,197.82	3,241,616.77	40.145970	-104.635692
6,082.00	1.31	66.79	5,951.53	-935.89	328.41	1,297,198.32	3,241,618.30	40.145971	-104.635687
6,170.00	0.62	220.22	6,039.52	-935.85	329.03	1,297,198.35	3,241,618.92	40.145971	-104.635685
6,260.00	0.09	289.65	6,129.52	-936.20	328.65	1,297,198.01	3,241,618.54	40.145970	-104.635686
6,350.00	0.23	342.13	6,219.52	-936.01	328.53	1,297,198.20	3,241,618.41	40.145971	-104.635687
6,438.00	0.13	342.39	6,307.52	-935.74	328.44	1,297,198.47	3,241,618.33	40.145972	-104.635687
6,526.00	0.47	18.84	6,395.52	-935.31	328.53	1,297,198.90	3,241,618.42	40.145973	-104.635686
6,614.00	1.13	326.88	6,483.51	-934.24	328.17	1,297,199.97	3,241,618.06	40.145976	-104.635688
6,704.00	1.34	345.15	6,573.49	-932.48	327.42	1,297,201.73	3,241,617.30	40.145981	-104.635690
6,794.00	1.61	332.02	6,663.46	-930.34	326.55	1,297,203.86	3,241,616.44	40.145987	-104.635693
6,882.00	1.38	351.78	6,751.43	-928.20	325.82	1,297,206.00	3,241,615.71	40.145992	-104.635696
6,959.08	1.41	338.83	6,828.49	-926.40	325.35	1,297,207.81	3,241,615.23	40.145997	-104.635698
<b>Dowdy 35-11 Plan A Rev 1 Zone Tgt</b>									
6,969.00	1.42	337.22	6,838.40	-926.17	325.26	1,297,208.04	3,241,615.14	40.145998	-104.635698
7,055.00	0.78	325.35	6,924.39	-924.71	324.51	1,297,209.50	3,241,614.40	40.146002	-104.635700
7,145.00	2.05	262.29	7,014.36	-924.42	322.57	1,297,209.79	3,241,612.45	40.146003	-104.635707
7,233.00	4.09	248.79	7,102.23	-925.77	318.08	1,297,208.44	3,241,607.97	40.145999	-104.635724
7,319.00	4.12	250.50	7,188.01	-927.91	312.31	1,297,206.30	3,241,602.20	40.145994	-104.635744
7,407.00	3.92	265.51	7,275.80	-929.20	306.33	1,297,205.01	3,241,596.22	40.145990	-104.635766
7,495.00	1.76	292.06	7,363.69	-928.93	302.08	1,297,205.28	3,241,591.97	40.145991	-104.635781
7,582.00	1.18	301.30	7,450.66	-927.96	300.08	1,297,206.25	3,241,589.96	40.145994	-104.635788
7,670.00	1.31	316.56	7,538.64	-926.76	298.61	1,297,207.45	3,241,588.50	40.145997	-104.635793
7,758.00	0.71	326.91	7,626.62	-925.57	297.62	1,297,208.64	3,241,587.51	40.146000	-104.635797
7,815.00	1.16	331.57	7,683.62	-924.77	297.15	1,297,209.44	3,241,587.04	40.146003	-104.635798
<b>Final Sperry MWD Survey</b>									
7,847.60	1.16	331.57	7,716.21	-924.19	296.84	1,297,210.02	3,241,586.73	40.146004	-104.635799
<b>Dowdy 35-11 Plan A Rev 1 BH Tgt</b>									
7,870.00	1.16	331.57	7,738.61	-923.79	296.62	1,297,210.42	3,241,586.51	40.146005	-104.635800
<b>Straight Line Projection to TD</b>									

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dowdy 35-11 - Slot A 2
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Site:</b>	Sec. 11-T2N-R65W	<b>MD Reference:</b>	RKB 17' @ 4883.00ft (Extreme 8)
<b>Well:</b>	Dowdy 35-11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Plan A Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	EDM 2003.16 Single User Db

Targets										
Target Name		Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- hit/miss target	- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Dowdy 35-11 Plan A F		0.00	359.44	7,716.00	-914.48	292.68	1,297,219.73	3,241,582.57	40.146031	-104.635814
	- survey misses target center by 10.57ft at 7847.60ft MD (7716.21 TVD, -924.19 N, 296.84 E)									
	- Point									
Dowdy 35-11 Plan A F		0.00	359.44	6,828.00	-914.48	292.68	1,297,219.73	3,241,582.57	40.146031	-104.635814
	- survey misses target center by 34.78ft at 6959.17ft MD (6828.58 TVD, -926.40 N, 325.35 E)									
	- Circle (radius 50.00)									
Dowdy 19-11 (PAD) S		0.00	359.44	0.00	0.17	15.94	1,298,134.34	3,241,305.84	40.148549	-104.636772
	- survey misses target center by 15.94ft at 0.08ft MD (0.08 TVD, 0.00 N, 0.00 E)									
	- Polygon									
	Point 1			0.00	-969.99	-1,022.66	1,297,164.22	3,240,267.28		
	Point 2			0.00	-966.23	1,623.42	1,297,167.98	3,242,913.26		
	Point 3			0.00	1,715.65	1,597.32	1,299,849.74	3,242,887.15		
	Point 4			0.00	1,689.89	-1,048.56	1,299,823.99	3,240,241.39		

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N-S (ft)	+E-W (ft)	Comment	
0.00	0.00	0.00	0.00	Tie-on at surface	
75.00	75.00	0.10	0.36	First Sperry MWD Survey	
7,815.00	7,683.62	-924.77	297.15	Final Sperry MWD Survey	
7,870.00	7,738.61	-923.79	296.62	Straight Line Projection to TD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



