



# **Anadarko Petroleum Corporation**

**Dacono**

**Dacono 11 Pad**

**Dacono 4-2 (111429)**

**Dacono 4-2**

**Survey: Dacono 4-2**

## **Standard Survey Report**

**20 February, 2012**

# ARK

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Dacono 4-2 (111429)
<b>Project:</b>	Dacono	<b>TVD Reference:</b>	KB @ 5031.00ft (Original Well Elev)
<b>Site:</b>	Dacono 11 Pad	<b>MD Reference:</b>	KB @ 5031.00ft (Original Well Elev)
<b>Well:</b>	Dacono 4-2 (111429)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Dacono 4-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Dacono 4-2	<b>Database:</b>	EDM5000-New

<b>Project</b>	Dacono		
<b>Map System:</b>	Universal Transverse Mercator	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD83 Colorado - HARN		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

<b>Site</b>	Dacono 11 Pad		
<b>Site Position:</b>		<b>Northing:</b>	14,556,637.29 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,647,890.09 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	40.082118°N
		<b>Longitude:</b>	104.973282°W
		<b>Grid Convergence:</b>	0.02 °

<b>Well</b>	Dacono 4-2 (111429)		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b> 14,556,607.43 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b> 1,647,889.82 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.082036°N
		<b>Longitude:</b>	104.973283°W
		<b>Ground Level:</b>	5,016.00 ft

<b>Wellbore</b>	Dacono 4-2		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	4/11/2012	8.84
			<b>Dip Angle (°)</b>
			66.73
			<b>Field Strength (nT)</b>
			52,853

<b>Design</b>	Dacono 4-2		
<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>
	0.00	0.00	0.00
			<b>Direction (°)</b>
			319.49

<b>Survey Program</b>	<b>Date</b>	2/20/2012		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
141.00	8,548.00	Dacono 4-2 (Dacono 4-2)	MWD	MWD - Standard

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>4-2 LW</b>									
13.00	0.03	110.22	13.00	0.00	0.00	0.00	0.22	0.22	0.00
<b>Dacono Investments LTD. #2 (VE)</b>									
141.00	0.31	110.22	141.00	-0.13	0.36	-0.33	0.22	0.22	0.00
234.00	1.01	349.15	233.99	0.59	0.44	0.16	1.29	0.75	-130.18
327.00	2.29	335.92	326.95	3.09	-0.47	2.65	1.43	1.38	-14.23
446.00	4.39	323.62	445.75	8.93	-4.14	9.48	1.85	1.76	-10.34
531.00	5.80	321.25	530.41	14.89	-8.76	17.02	1.68	1.66	-2.79
617.00	7.29	315.75	615.85	22.19	-15.29	26.81	1.88	1.73	-6.40

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<b>Site:</b>	Dacono 11 Pad	<b>MD Reference:</b>	KB @ 5031.00ft (Original Well Elev)
<b>Well:</b>	Dacono 4-2 (111429)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Dacono 4-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Dacono 4-2	<b>Database:</b>	EDM5000-New

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)
702.00	7.91	315.05	700.10	30.19	-23.19	38.02	0.74	0.73	-0.82
788.00	8.31	314.13	785.24	38.71	-31.83	50.11	0.49	0.47	-1.07
873.00	8.79	314.04	869.30	47.50	-40.90	62.69	0.56	0.56	-0.11
975.00	9.10	315.36	970.05	58.66	-52.17	78.49	0.36	0.30	1.29
1,060.00	10.20	321.34	1,053.85	69.32	-61.60	92.72	1.75	1.29	7.04
1,146.00	12.48	319.23	1,138.17	82.30	-72.43	109.62	2.69	2.65	-2.45
1,231.00	12.39	320.32	1,221.17	96.28	-84.25	127.92	0.30	-0.11	1.28
1,317.00	12.22	319.84	1,305.20	110.33	-96.01	146.25	0.23	-0.20	-0.56
1,402.00	14.28	320.85	1,387.93	125.34	-108.43	165.73	2.44	2.42	1.19
1,487.00	15.91	321.42	1,470.00	142.58	-122.31	187.85	1.93	1.92	0.67
1,573.00	16.70	320.46	1,552.54	161.32	-137.53	211.99	0.97	0.92	-1.12
1,659.00	19.38	319.93	1,634.30	181.78	-154.59	238.62	3.12	3.12	-0.62
1,744.00	17.80	319.05	1,714.86	202.38	-172.18	265.71	1.89	-1.86	-1.04
1,830.00	18.81	321.03	1,796.51	223.09	-189.52	292.72	1.38	1.17	2.30
1,915.00	20.48	321.95	1,876.56	245.46	-207.30	321.28	2.00	1.96	1.08
2,001.00	19.82	320.63	1,957.30	268.57	-225.82	350.88	0.93	-0.77	-1.53
2,086.00	18.28	320.06	2,037.64	289.94	-243.52	378.62	1.82	-1.81	-0.67
2,172.00	19.38	322.65	2,119.04	311.62	-260.84	406.36	1.61	1.28	3.01
2,257.00	17.40	322.04	2,199.69	332.86	-277.21	433.14	2.34	-2.33	-0.72
2,343.00	18.59	322.13	2,281.49	353.82	-293.54	459.68	1.38	1.38	0.10
2,428.00	19.29	319.93	2,361.88	375.26	-310.89	487.25	1.18	0.82	-2.59
2,513.00	17.49	316.94	2,442.54	395.33	-328.65	514.06	2.39	-2.12	-3.52
2,599.00	18.59	319.45	2,524.31	415.19	-346.39	540.68	1.57	1.28	2.92
2,684.00	18.59	321.03	2,604.88	436.02	-363.72	567.77	0.59	0.00	1.86
2,770.00	18.11	320.46	2,686.51	456.99	-380.85	594.84	0.60	-0.56	-0.66
2,855.00	19.38	320.63	2,767.00	478.08	-398.21	622.15	1.50	1.49	0.20
2,940.00	19.69	322.65	2,847.10	500.36	-415.84	650.55	0.87	0.36	2.38
3,026.00	18.19	322.96	2,928.45	522.60	-432.72	678.41	1.75	-1.74	0.36
3,111.00	18.81	322.04	3,009.05	543.99	-449.14	705.35	0.81	0.73	-1.08
3,197.00	18.41	319.05	3,090.56	565.18	-466.57	732.78	1.20	-0.47	-3.48
3,282.00	17.01	323.84	3,171.53	585.36	-482.70	758.60	2.38	-1.65	5.64
3,367.00	17.01	322.96	3,252.81	605.32	-497.53	783.41	0.30	0.00	-1.04
3,453.00	16.61	323.36	3,335.14	625.22	-512.44	808.23	0.48	-0.47	0.47
3,538.00	15.69	323.36	3,416.78	644.20	-526.55	831.81	1.08	-1.08	0.00
3,624.00	16.22	322.83	3,499.47	663.10	-540.75	855.41	0.64	0.62	-0.62
3,709.00	17.31	323.46	3,580.86	682.72	-555.45	879.87	1.30	1.28	0.74
3,794.00	15.21	329.95	3,662.46	702.53	-568.56	903.46	3.26	-2.47	7.64
3,880.00	17.49	327.84	3,744.98	723.24	-581.09	927.34	2.74	2.65	-2.45
3,966.00	16.92	327.84	3,827.13	744.78	-594.63	952.51	0.66	-0.66	0.00
4,051.00	16.92	317.16	3,908.47	764.32	-609.63	977.11	3.65	0.00	-12.56
4,137.00	16.30	318.92	3,990.88	782.60	-626.07	1,001.69	0.93	-0.72	2.05
4,222.00	17.01	320.06	4,072.31	801.12	-641.89	1,026.05	0.92	0.84	1.34
4,308.00	16.79	320.63	4,154.60	820.37	-657.85	1,051.04	0.32	-0.26	0.66

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<b>Well:</b>	Dacono 4-2 (111429)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Dacono 4-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Dacono 4-2	<b>Database:</b>	EDM5000-New

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)	
4,392.00	17.09	321.03	4,234.95	839.34	-673.30	1,075.51	0.38	0.36	0.48	
4,478.00	17.49	322.83	4,317.07	859.47	-689.06	1,101.05	0.78	0.47	2.09	
4,563.00	13.89	318.35	4,398.89	877.27	-703.56	1,124.01	4.47	-4.24	-5.27	
4,649.00	16.30	321.64	4,481.92	894.45	-717.91	1,146.39	2.97	2.80	3.83	
4,734.00	16.39	327.44	4,563.49	913.91	-731.77	1,170.19	1.92	0.11	6.82	
4,820.00	17.58	331.05	4,645.74	935.51	-744.59	1,194.93	1.85	1.38	4.20	
4,905.00	20.30	330.04	4,726.13	959.52	-758.17	1,222.01	3.22	3.20	-1.19	
4,991.00	19.20	327.62	4,807.07	984.39	-773.19	1,250.68	1.59	-1.28	-2.81	
5,076.00	20.79	320.00	4,886.96	1,007.75	-790.38	1,279.60	3.59	1.87	-8.96	
5,161.00	19.29	321.16	4,966.81	1,030.25	-808.88	1,308.73	1.83	-1.76	1.36	
5,247.00	17.71	319.93	5,048.36	1,051.32	-826.21	1,336.01	1.89	-1.84	-1.43	
5,332.00	19.51	318.26	5,128.92	1,071.81	-843.98	1,363.13	2.21	2.12	-1.96	
5,375.00	18.41	316.63	5,169.58	1,082.10	-853.43	1,377.09	2.84	-2.56	-3.79	
5,503.00	17.71	319.45	5,291.28	1,111.59	-879.97	1,416.74	0.87	-0.55	2.20	
5,589.00	17.80	319.36	5,373.18	1,131.50	-897.03	1,442.97	0.11	0.10	-0.10	
5,674.00	17.40	319.23	5,454.20	1,150.99	-913.79	1,468.67	0.47	-0.47	-0.15	
5,760.00	16.70	318.83	5,536.42	1,170.03	-930.32	1,493.89	0.83	-0.81	-0.47	
5,845.00	16.79	318.65	5,617.82	1,188.44	-946.47	1,518.37	0.12	0.11	-0.21	
5,931.00	16.30	316.33	5,700.26	1,206.49	-963.01	1,542.84	0.96	-0.57	-2.70	
6,016.00	15.82	316.63	5,781.94	1,223.54	-979.21	1,566.33	0.57	-0.56	0.35	
6,102.00	15.38	316.00	5,864.77	1,240.27	-995.18	1,589.42	0.55	-0.51	-0.73	
6,187.00	13.89	322.83	5,947.02	1,256.51	-1,009.18	1,610.86	2.68	-1.75	8.04	
6,273.00	11.69	326.42	6,030.88	1,271.99	-1,020.23	1,629.81	2.72	-2.56	4.17	
6,358.00	10.90	328.06	6,114.23	1,285.99	-1,029.25	1,646.31	1.00	-0.93	1.93	
6,443.00	9.80	329.16	6,197.85	1,299.02	-1,037.21	1,661.39	1.31	-1.29	1.29	
6,529.00	9.01	332.23	6,282.69	1,311.26	-1,044.10	1,675.17	1.09	-0.92	3.57	
6,609.00	10.42	324.32	6,361.55	1,322.68	-1,051.24	1,688.49	2.42	1.76	-9.89	
6,695.00	10.90	321.95	6,446.06	1,335.40	-1,060.78	1,704.36	0.76	0.56	-2.76	
6,780.00	9.58	322.13	6,529.71	1,347.31	-1,070.08	1,719.46	1.55	-1.55	0.21	
6,866.00	7.78	320.72	6,614.72	1,357.47	-1,078.16	1,732.43	2.11	-2.09	-1.64	
6,951.00	7.91	320.32	6,698.93	1,366.42	-1,085.53	1,744.03	0.17	0.15	-0.47	
7,079.00	6.02	324.15	6,825.98	1,378.64	-1,095.09	1,759.53	1.52	-1.48	2.99	
7,207.00	5.19	324.15	6,953.36	1,388.78	-1,102.41	1,771.99	0.65	-0.65	0.00	
7,335.00	3.91	330.12	7,080.96	1,397.25	-1,107.98	1,782.05	1.06	-1.00	4.66	
7,464.00	2.99	333.73	7,209.72	1,404.09	-1,111.66	1,789.63	0.73	-0.71	2.80	
7,592.00	2.11	337.02	7,337.59	1,409.25	-1,114.06	1,795.11	0.70	-0.69	2.57	
7,720.00	1.71	348.45	7,465.52	1,413.29	-1,115.36	1,799.03	0.43	-0.31	8.93	
7,848.00	1.41	357.85	7,593.48	1,416.73	-1,115.80	1,801.94	0.31	-0.23	7.34	
7,976.00	1.41	4.36	7,721.44	1,419.88	-1,115.74	1,804.29	0.13	0.00	5.09	
8,104.00	1.01	11.34	7,849.41	1,422.55	-1,115.40	1,806.10	0.33	-0.31	5.45	
8,233.00	0.88	15.12	7,978.39	1,424.63	-1,114.91	1,807.36	0.11	-0.10	2.93	
8,361.00	0.88	345.64	8,106.38	1,426.53	-1,114.90	1,808.80	0.35	0.00	-23.03	
8,435.43	1.01	345.39	8,180.79	1,427.71	-1,115.21	1,809.90	0.17	0.17	-0.34	
Dacono 4-2 Tot										

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<b>Site:</b>	Dacono 11 Pad	<b>MD Reference:</b>	KB @ 5031.00ft (Original Well Elev)
<b>Well:</b>	Dacono 4-2 (111429)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Dacono 4-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Dacono 4-2	<b>Database:</b>	EDM5000-New

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)	
8,489.00	1.10	345.24	8,234.36	1,428.67	-1,115.46	1,810.79	0.17	0.17	-0.27	
8,548.00	1.10	345.24	8,293.35	1,429.76	-1,115.75	1,811.81	0.00	0.00	0.00	
Proj to TD at 8548 MD/8293 TVD										

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
8,548.00	8,293.35	1,429.76	-1,115.75	Proj to TD at 8548 MD/8293 TVD	

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