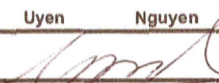
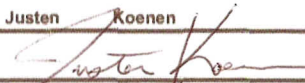




# SPERRY-SUN DRILLING SERVICES

## CERTIFIED SURVEY WORK SHEET

<b>OPERATOR:</b>	Anadarko
<b>WELL:</b>	Dechant 3-19HZ
<b>FIELD:</b>	DJ-Basin
<b>RIG:</b>	Xtreme 8
<b>LEGAL:</b>	
<b>COUNTY:</b>	Weld
<b>STATE:</b>	Colorado
<b>CAL. METHOD:</b>	Minimum Curvature
<b>MAG. DECL. APPLIED:</b>	8.75
<b>VERTICAL SEC. DIR. :</b>	18.930

<b>SSDS Job Number :</b>	7981215
<b>Start Date of Job :</b>	2/21/2011
<b>End Date of Job :</b>	3/5/2011
<b>Lead Directional Driller:</b>	Justen Koenen
<b>Other SSDS DD's :</b>	Paul Jevne
<b>SSDS MWD Engineers :</b>	Uyen Nguyen
	Mario Schonsberg

	Main Hole =====>		1st Side Track =====>		2nd Side Track =====>		3rd Side Track =====>		4th Side Track =====>	
		Tie On		Tie On		Tie On		Tie On		Tie On
ESS Survey	0.00									
First Survey Depth	227.00	MWD								
Last Survey Depth	945.00	MWD								
KOP Depth/Sidetrack MD	6310.00	KOP	KOP-ST1		KOP-ST2		KOP-ST3		KOP-ST4	
First Survey Depth	227.00	MWD	MWD		MWD		MWD		MWD	
Last Survey Depth	11413.00	MWD	MWD		MWD		MWD		MWD	
Bit Extrapolation to TD	11450.00	T.D.	T.D.		T.D.		T.D.		T.D.	
The following Sperry Sun Drilling Services personnel listed below, do certify the above survey information to be accurate :										
Print Name :	Uyen	Nguyen	Print Nan	Justen	Koenen	Print Name :				
Sign Name :			Sign Name :			Sign Name :				
Print Name :	Mario	Schonsberg	Print Nan	Paul	Jevne	Print Name :				
Sign Name :			Sign Name :			Sign Name :				
TieOn	Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole)									
MWD	Sperry Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's									
ESS	Sperry Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's									
Gyro	Gyro Survey's ; Provided by third party vendor, or by Sperry Sun Drilling Services (SSDS)									
SS	Single Shot (SS) Survey's ; Provided by Sperry Sun Drilling Services (SSDS) or third party vendor.									

Examples of Survey Types:

# **Anadarko Petroleum Corp.**

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

**Sec. 19-T2N-R64W**

**Dechant 3-19HZ**

**Plan B Rev 1**

**Survey: Sperry MWD Survey**

## **Standard Survey Report**

**30 March, 2011**

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dechant 3-19HZ
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Site:</b>	Sec. 19-T2N-R64W	<b>MD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Well:</b>	Dechant 3-19HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan B Rev 1	<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. 19-T2N-R64W				
<b>Site Position:</b>		<b>Northing:</b>	1,287,012.14 ft	<b>Latitude:</b>	40.117747
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,251,252.99 ft	<b>Longitude:</b>	-104.601593
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.58 °

<b>Well</b>	Dechant 3-19HZ					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	1,287,001.24 ft	<b>Latitude:</b>	40.117717
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,251,264.66 ft	<b>Longitude:</b>	-104.601552
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	4,934.00 ft	<b>Ground Level:</b>	4,934.00 ft

<b>Wellbore</b>	Plan B 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	2/25/2011	8.75	66.87	53,008

<b>Design</b>	Plan B Rev 1				
<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	18.93	

<b>Survey Program</b>	<b>Date</b>	3/30/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
227.00	11,450.00	Sperry MWD Survey (Plan B Rev 1)	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	0.00
227.00	0.25	270.06	227.00	0.00	-0.50	-0.16	0.11	0.11	0.00	
<b>First Sperry MWD Survey @ 227</b>										
441.00	0.09	190.06	441.00	-0.16	-0.99	-0.48	0.12	-0.07	-37.38	
533.00	0.31	107.42	533.00	-0.31	-0.77	-0.54	0.34	0.24	-89.83	
625.00	0.99	109.24	624.99	-0.65	0.22	-0.54	0.74	0.74	1.98	
716.00	1.93	109.97	715.96	-1.43	2.40	-0.57	1.03	1.03	0.80	
809.00	2.55	98.28	808.89	-2.26	5.92	-0.22	0.82	0.67	-12.57	
899.00	3.12	96.81	898.78	-2.84	10.34	0.67	0.64	0.63	-1.63	
945.00	2.93	99.97	944.72	-3.19	12.74	1.11	0.55	-0.41	6.87	
990.00	2.79	97.07	989.66	-3.53	14.96	1.52	0.45	-0.31	-6.44	
1,079.00	3.08	104.13	1,078.54	-4.38	19.42	2.16	0.52	0.33	7.93	
1,172.00	5.69	105.15	1,171.26	-6.19	26.30	2.68	2.81	2.81	1.10	

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dechant 3-19HZ
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Site:</b>	Sec. 19-T2N-R64W	<b>MD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Well:</b>	Dechant 3-19HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan B Rev 1	<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)
1,263.00	8.14	99.82	1,261.59	-8.47	37.00	4.00	2.78	2.69	-5.86
1,353.00	9.78	102.95	1,350.49	-11.27	50.73	5.80	1.90	1.82	3.48
1,445.00	12.12	103.42	1,440.81	-15.26	67.74	7.54	2.55	2.54	0.51
1,535.00	13.64	99.91	1,528.55	-19.28	87.39	10.12	1.90	1.69	-3.90
1,622.00	15.93	97.07	1,612.66	-22.52	109.35	14.18	2.76	2.63	-3.26
1,712.00	16.43	95.98	1,699.10	-25.36	134.26	19.57	0.65	0.56	-1.21
1,800.00	15.99	98.46	1,783.60	-28.44	158.63	24.57	0.93	-0.50	2.82
1,888.00	15.59	98.55	1,868.28	-31.99	182.31	28.90	0.46	-0.45	0.10
1,976.00	15.88	99.93	1,952.98	-35.82	205.86	32.92	0.54	0.33	1.57
2,065.00	15.65	100.29	2,038.63	-40.06	229.67	36.63	0.28	-0.26	0.40
2,152.00	15.50	100.60	2,122.44	-44.30	252.64	40.08	0.20	-0.17	0.36
2,240.00	15.25	97.88	2,207.29	-48.05	275.66	44.00	0.87	-0.28	-3.09
2,327.00	14.75	100.74	2,291.33	-51.68	297.88	47.77	1.03	-0.57	3.29
2,417.00	15.15	104.27	2,378.28	-56.71	320.53	50.36	1.10	0.44	3.92
2,505.00	14.43	104.66	2,463.37	-62.32	342.29	52.12	0.83	-0.82	0.44
2,594.00	15.43	101.63	2,549.36	-67.52	364.61	54.45	1.43	1.12	-3.40
2,682.00	14.12	101.06	2,634.45	-71.94	386.61	57.41	1.50	-1.49	-0.65
2,772.00	14.39	98.99	2,721.68	-75.79	408.43	60.84	0.64	0.30	-2.30
2,860.00	14.20	96.47	2,806.96	-78.72	429.96	65.06	0.74	-0.22	-2.86
2,948.00	14.47	102.46	2,892.22	-82.30	451.42	68.63	1.71	0.31	6.81
3,035.00	14.96	101.37	2,976.37	-86.86	473.04	71.33	0.65	0.56	-1.25
3,122.00	16.55	103.23	3,060.10	-91.91	496.12	74.04	1.92	1.83	2.14
3,208.00	15.36	102.05	3,142.78	-97.09	519.18	76.63	1.43	-1.38	-1.37
3,294.00	15.93	103.63	3,225.60	-102.25	541.79	79.08	0.83	0.66	1.84
3,381.00	14.74	101.50	3,309.50	-107.27	564.24	81.62	1.51	-1.37	-2.45
3,469.00	16.28	100.51	3,394.29	-111.76	587.34	84.87	1.78	1.75	-1.12
3,555.00	15.31	102.24	3,477.04	-116.36	610.29	87.96	1.25	-1.13	2.01
3,642.00	15.02	103.82	3,561.01	-121.49	632.46	90.31	0.58	-0.33	1.82
3,731.00	15.84	106.24	3,646.81	-127.64	655.32	91.91	1.17	0.92	2.72
3,820.00	15.76	105.39	3,732.44	-134.25	678.63	93.23	0.28	-0.09	-0.96
3,909.00	15.23	105.57	3,818.21	-140.59	701.55	94.66	0.60	-0.60	0.20
3,997.00	16.45	103.53	3,902.87	-146.61	724.80	96.51	1.52	1.39	-2.32
4,083.00	15.44	103.72	3,985.56	-152.17	747.76	98.70	1.18	-1.17	0.22
4,170.00	15.41	102.82	4,069.42	-157.48	770.28	100.98	0.28	-0.03	-1.03
4,258.00	15.57	101.69	4,154.23	-162.47	793.25	103.72	0.39	0.18	-1.28
4,348.00	14.46	103.37	4,241.15	-167.52	816.01	106.33	1.32	-1.23	1.87
4,436.00	14.91	105.34	4,326.28	-173.05	837.61	108.10	0.76	0.51	2.24
4,524.00	16.45	105.08	4,411.00	-179.29	860.56	109.65	1.75	1.75	-0.30
4,612.00	15.38	105.04	4,495.63	-185.56	883.87	111.28	1.22	-1.22	-0.05
4,700.00	14.76	103.63	4,580.60	-191.23	906.03	113.11	0.82	-0.70	-1.60
4,788.00	16.07	101.27	4,665.43	-196.25	928.87	115.77	1.65	1.49	-2.68
4,877.00	16.02	100.14	4,750.97	-200.82	953.04	119.29	0.36	-0.06	-1.27
4,965.00	14.92	97.92	4,835.78	-204.52	976.21	123.31	1.42	-1.25	-2.52
5,053.00	15.08	101.81	4,920.78	-208.43	998.64	126.90	1.16	0.18	4.42
5,139.00	14.42	98.88	5,003.95	-212.37	1,020.17	130.16	1.16	-0.77	-3.41
5,229.00	13.93	101.62	5,091.21	-216.28	1,041.85	133.49	0.92	-0.54	3.04
5,316.00	14.76	101.80	5,175.49	-220.66	1,062.96	136.20	0.96	0.95	0.21
5,405.00	15.48	101.05	5,261.41	-225.25	1,085.72	139.24	0.84	0.81	-0.84
5,492.00	14.29	97.05	5,345.49	-228.79	1,107.77	143.04	1.81	-1.37	-4.60
5,582.00	14.13	96.86	5,432.74	-231.47	1,129.70	147.63	0.19	-0.18	-0.21
5,670.00	13.31	97.63	5,518.23	-234.10	1,150.40	151.86	0.95	-0.93	0.87
5,759.00	14.00	99.45	5,604.71	-237.23	1,171.18	155.64	0.91	0.78	2.04
5,849.00	13.71	100.04	5,692.09	-240.87	1,192.42	159.09	0.36	-0.32	0.66
5,936.00	13.62	97.45	5,776.63	-244.00	1,212.73	162.72	0.71	-0.10	-2.98

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dechant 3-19HZ
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Site:</b>	Sec. 19-T2N-R64W	<b>MD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Well:</b>	Dechant 3-19HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan B Rev 1	<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)
6,024.00	14.73	99.11	5,861.95	-247.11	1,234.05	166.69	1.34	1.26	1.89
6,111.00	15.50	98.94	5,945.94	-250.67	1,256.45	170.60	0.89	0.89	-0.20
6,199.00	14.64	96.92	6,030.92	-253.84	1,279.11	174.95	1.14	-0.98	-2.30
6,286.00	13.43	97.49	6,115.32	-256.48	1,300.04	179.24	1.40	-1.39	0.66
6,316.00	13.20	90.42	6,144.51	-256.96	1,306.92	181.02	5.48	-0.77	-23.57
6,346.00	13.55	84.43	6,173.70	-256.64	1,313.84	183.57	4.76	1.17	-19.97
6,374.00	14.89	77.67	6,200.84	-255.56	1,320.62	186.80	7.61	4.79	-24.14
6,402.00	16.61	68.91	6,227.79	-253.35	1,327.87	191.24	10.46	6.14	-31.29
6,431.00	18.56	59.42	6,255.44	-249.51	1,335.72	197.42	11.94	6.72	-32.72
6,461.00	20.75	52.21	6,283.70	-243.82	1,344.03	205.49	10.88	7.30	-24.03
6,490.00	24.39	46.06	6,310.48	-236.51	1,352.40	215.12	14.94	12.55	-21.21
6,519.00	27.63	41.59	6,336.54	-227.33	1,361.18	226.66	13.05	11.17	-15.41
6,548.00	30.58	37.51	6,361.88	-216.44	1,370.14	239.86	12.25	10.17	-14.07
6,578.00	31.98	36.17	6,387.52	-203.97	1,379.48	254.69	5.21	4.67	-4.47
6,608.00	31.92	35.25	6,412.97	-191.08	1,388.74	269.88	1.64	-0.20	-3.07
6,637.00	31.23	34.61	6,437.68	-178.63	1,397.44	284.48	2.65	-2.38	-2.21
6,667.00	32.45	31.96	6,463.16	-165.40	1,406.12	299.81	6.18	4.07	-8.83
6,697.00	35.07	28.59	6,488.11	-151.00	1,414.50	316.15	10.73	8.73	-11.23
6,725.00	36.71	25.43	6,510.79	-136.38	1,421.95	332.40	8.83	5.86	-11.29
6,755.00	38.62	22.83	6,534.54	-119.65	1,429.43	350.65	8.28	6.37	-8.67
6,784.00	40.47	20.28	6,556.90	-102.48	1,436.21	369.09	8.49	6.38	-8.79
6,813.00	41.76	18.36	6,578.75	-84.49	1,442.51	388.16	6.22	4.45	-6.62
6,841.00	42.95	17.00	6,599.44	-66.51	1,448.24	407.02	5.36	4.25	-4.86
6,869.00	43.70	15.65	6,619.81	-48.08	1,453.64	426.21	4.26	2.68	-4.82
6,897.00	45.08	13.38	6,639.82	-29.12	1,458.54	445.74	7.51	4.93	-8.11
6,927.00	46.08	11.35	6,660.82	-8.19	1,463.12	467.02	5.87	3.33	-6.77
6,957.00	47.35	9.71	6,681.39	13.28	1,467.11	488.62	5.81	4.23	-5.47
6,986.00	48.63	8.78	6,700.80	34.55	1,470.57	509.86	5.02	4.41	-3.21
7,016.00	50.26	8.71	6,720.30	57.08	1,474.04	532.29	5.44	5.43	-0.23
7,046.00	51.37	8.45	6,739.26	80.07	1,477.50	555.17	3.76	3.70	-0.87
7,076.00	51.58	7.79	6,757.94	103.30	1,480.82	578.22	1.86	0.70	-2.20
7,105.00	52.64	7.13	6,775.75	126.00	1,483.79	600.65	4.07	3.66	-2.28
7,134.00	54.25	7.53	6,793.02	149.10	1,486.76	623.47	5.66	5.55	1.38
7,164.00	55.80	7.35	6,810.22	173.48	1,489.95	647.56	5.19	5.17	-0.60
7,194.00	57.49	6.86	6,826.71	198.34	1,493.04	672.08	5.80	5.63	-1.63
7,223.00	59.33	6.66	6,841.90	222.87	1,495.95	696.23	6.37	6.34	-0.69
7,253.00	60.66	6.46	6,856.91	248.68	1,498.92	721.60	4.47	4.43	-0.67
7,283.00	62.49	6.05	6,871.19	274.90	1,501.79	747.34	6.22	6.10	-1.37
7,313.00	64.46	5.87	6,884.58	301.60	1,504.58	773.50	6.59	6.57	-0.60
7,342.00	66.20	5.59	6,896.69	327.82	1,507.21	799.15	6.06	6.00	-0.97
7,371.00	68.25	5.26	6,907.91	354.44	1,509.74	825.15	7.15	7.07	-1.14
7,400.00	70.32	5.68	6,918.17	381.44	1,512.32	851.53	7.27	7.14	1.45
7,429.00	72.02	5.78	6,927.53	408.75	1,515.06	878.25	5.87	5.86	0.34
7,458.00	73.40	5.44	6,936.15	436.30	1,517.77	905.19	4.89	4.76	-1.17
7,488.00	75.45	5.80	6,944.20	465.06	1,520.60	933.31	6.93	6.83	1.20
7,517.00	78.83	5.33	6,950.66	493.20	1,523.34	960.81	11.76	11.66	-1.62
7,528.00	79.94	5.22	6,952.68	503.96	1,524.33	971.32	10.14	10.09	-1.00
7,584.00	86.72	4.90	6,959.18	559.33	1,529.24	1,025.29	12.12	12.11	-0.57
7,627.00	87.53	4.65	6,961.34	602.13	1,532.81	1,066.93	1.97	1.88	-0.58
7,670.00	89.26	4.45	6,962.55	644.98	1,536.22	1,108.56	4.05	4.02	-0.47
7,713.00	89.88	3.52	6,962.87	687.87	1,539.21	1,150.10	2.60	1.44	-2.16
7,757.00	89.81	1.46	6,962.99	731.83	1,541.12	1,192.30	4.68	-0.16	-4.68
7,800.00	90.00	0.48	6,963.06	774.82	1,541.85	1,233.20	2.32	0.44	-2.28
7,844.00	89.69	0.08	6,963.18	818.82	1,542.06	1,274.89	1.15	-0.70	-0.91

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dechant 3-19HZ
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Site:</b>	Sec. 19-T2N-R64W	<b>MD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Well:</b>	Dechant 3-19HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan B Rev 1	<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)
7,888.00	89.94	359.50	6,963.32	862.82	1,541.90	1,316.46	1.44	0.57	-1.32
7,933.00	91.36	0.28	6,962.81	907.81	1,541.82	1,358.99	3.60	3.16	1.73
7,977.00	91.36	0.36	6,961.76	951.80	1,542.06	1,400.68	0.18	0.00	0.18
8,023.00	91.91	0.33	6,960.45	997.78	1,542.34	1,444.26	1.20	1.20	-0.07
8,068.00	91.79	0.27	6,959.00	1,042.76	1,542.57	1,486.88	0.30	-0.27	-0.13
8,112.00	91.42	0.21	6,957.77	1,086.74	1,542.76	1,528.54	0.85	-0.84	-0.14
8,156.00	89.69	0.38	6,957.34	1,130.74	1,542.98	1,570.23	3.95	-3.93	0.39
8,200.00	89.07	0.38	6,957.82	1,174.73	1,543.28	1,611.94	1.41	-1.41	0.00
8,244.00	88.46	359.47	6,958.77	1,218.72	1,543.22	1,653.53	2.49	-1.39	-2.07
8,289.00	89.57	359.30	6,959.54	1,263.71	1,542.74	1,695.93	2.50	2.47	-0.38
8,332.00	89.88	359.38	6,959.75	1,306.71	1,542.24	1,736.44	0.74	0.72	0.19
8,376.00	91.30	359.12	6,959.29	1,350.70	1,541.66	1,777.86	3.28	3.23	-0.59
8,420.00	89.32	359.14	6,959.05	1,394.69	1,541.00	1,819.26	4.50	-4.50	0.05
8,463.00	89.01	359.25	6,959.68	1,437.68	1,540.39	1,859.73	0.76	-0.72	0.26
8,508.00	88.89	0.60	6,960.51	1,482.67	1,540.33	1,902.27	3.01	-0.27	3.00
8,551.00	88.39	0.91	6,961.53	1,525.66	1,540.90	1,943.11	1.37	-1.16	0.72
8,594.00	87.65	1.52	6,963.01	1,568.62	1,541.81	1,984.04	2.23	-1.72	1.42
8,639.00	87.53	1.57	6,964.90	1,613.57	1,543.02	2,026.95	0.29	-0.27	0.11
8,684.00	88.52	2.07	6,966.45	1,658.52	1,544.45	2,069.93	2.46	2.20	1.11
8,727.00	88.70	2.56	6,967.50	1,701.47	1,546.19	2,111.12	1.21	0.42	1.14
8,771.00	88.33	2.10	6,968.64	1,745.42	1,547.98	2,153.27	1.34	-0.84	-1.05
8,815.00	88.39	0.67	6,969.90	1,789.39	1,549.04	2,195.20	3.25	0.14	-3.25
8,860.00	88.64	0.73	6,971.06	1,834.37	1,549.59	2,237.93	0.57	0.56	0.13
8,903.00	88.77	0.98	6,972.04	1,877.35	1,550.23	2,278.80	0.66	0.30	0.58
8,947.00	88.89	0.04	6,972.93	1,921.34	1,550.62	2,320.53	2.15	0.27	-2.14
8,991.00	89.44	0.13	6,973.57	1,965.33	1,550.69	2,362.17	1.27	1.25	0.20
9,036.00	89.75	0.08	6,973.89	2,010.33	1,550.77	2,404.76	0.70	0.69	-0.11
9,080.00	89.51	358.49	6,974.18	2,054.33	1,550.22	2,446.19	3.65	-0.55	-3.61
9,124.00	89.75	358.75	6,974.46	2,098.31	1,549.16	2,487.46	0.80	0.55	0.59
9,169.00	90.06	359.08	6,974.54	2,143.31	1,548.31	2,529.74	1.01	0.69	0.73
9,214.00	88.70	359.12	6,975.02	2,188.30	1,547.60	2,572.06	3.02	-3.02	0.09
9,260.00	88.33	358.81	6,976.21	2,234.27	1,546.77	2,615.28	1.05	-0.80	-0.67
9,304.00	88.21	358.80	6,977.54	2,278.24	1,545.85	2,656.58	0.27	-0.27	-0.02
9,348.00	89.14	358.02	6,978.56	2,322.21	1,544.63	2,697.77	2.76	2.11	-1.77
9,391.00	89.07	358.53	6,979.23	2,365.19	1,543.34	2,738.00	1.20	-0.16	1.19
9,435.00	89.13	358.58	6,979.92	2,409.17	1,542.23	2,779.24	0.18	0.14	0.11
9,479.00	90.62	358.28	6,980.02	2,453.15	1,541.02	2,820.45	3.45	3.39	-0.68
9,522.00	91.79	358.59	6,979.12	2,496.13	1,539.85	2,860.72	2.81	2.72	0.72
9,566.00	92.90	358.44	6,977.31	2,540.07	1,538.71	2,901.92	2.55	2.52	-0.34
9,611.00	93.34	358.31	6,974.87	2,584.99	1,537.44	2,943.99	1.02	0.98	-0.29
9,654.00	94.02	357.73	6,972.11	2,627.87	1,535.95	2,984.08	2.08	1.58	-1.35
9,697.00	93.03	357.29	6,969.46	2,670.75	1,534.09	3,024.03	2.52	-2.30	-1.02
9,741.00	92.66	357.90	6,967.28	2,714.66	1,532.25	3,064.96	1.62	-0.84	1.39
9,786.00	92.78	357.66	6,965.14	2,759.57	1,530.50	3,106.88	0.60	0.27	-0.53
9,830.00	92.84	358.55	6,962.99	2,803.50	1,529.05	3,147.96	2.02	0.14	2.02
9,873.00	93.83	358.09	6,960.48	2,846.40	1,527.79	3,188.13	2.54	2.30	-1.07
9,916.00	92.78	358.48	6,958.01	2,889.31	1,526.51	3,228.30	2.60	-2.44	0.91
9,959.00	92.59	358.44	6,955.99	2,932.25	1,525.35	3,268.54	0.45	-0.44	-0.09
10,003.00	92.97	358.14	6,953.86	2,976.18	1,524.04	3,309.67	1.10	0.86	-0.68
10,048.00	93.64	359.00	6,951.26	3,021.09	1,522.92	3,351.79	2.42	1.49	1.91
10,092.00	94.45	359.41	6,948.16	3,064.97	1,522.31	3,393.10	2.06	1.84	0.93
10,136.00	93.83	359.49	6,944.98	3,108.86	1,521.89	3,434.47	1.42	-1.41	0.18
10,180.00	93.64	359.43	6,942.12	3,152.76	1,521.48	3,475.87	0.45	-0.43	-0.14
10,224.00	92.91	359.87	6,939.60	3,196.69	1,521.21	3,517.33	1.94	-1.66	1.00
10,269.00	91.98	359.77	6,937.68	3,241.65	1,521.07	3,559.81	2.08	-2.07	-0.22

# Halliburton Company

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Dechant 3-19HZ
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Site:</b>	Sec. 19-T2N-R64W	<b>MD Reference:</b>	RKB-17' @ 4951.00ft (Extreme 8)
<b>Well:</b>	Dechant 3-19HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan B Rev 1	<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)
10,310.00	91.11	0.06	6,936.58	3,282.63	1,521.01	3,598.56	2.24	-2.12	0.71
10,352.00	90.00	0.25	6,936.17	3,324.63	1,521.12	3,638.32	2.68	-2.64	0.45
10,397.00	90.25	359.56	6,936.07	3,369.63	1,521.05	3,680.86	1.63	0.56	-1.53
10,441.00	90.74	359.59	6,935.69	3,413.63	1,520.72	3,722.37	1.12	1.11	0.07
10,486.00	90.12	359.69	6,935.35	3,458.62	1,520.44	3,764.84	1.40	-1.38	0.22
10,531.00	89.81	359.33	6,935.38	3,503.62	1,520.05	3,807.28	1.06	-0.69	-0.80
10,575.00	90.31	358.79	6,935.34	3,547.62	1,519.33	3,848.66	1.67	1.14	-1.23
10,619.00	90.00	358.55	6,935.22	3,591.60	1,518.31	3,889.93	0.89	-0.70	-0.55
10,664.00	89.07	358.93	6,935.58	3,636.59	1,517.32	3,932.17	2.23	-2.07	0.84
10,709.00	88.58	358.43	6,936.50	3,681.57	1,516.28	3,974.37	1.56	-1.09	-1.11
10,753.00	89.01	357.71	6,937.43	3,725.53	1,514.80	4,015.48	1.91	0.98	-1.64
10,797.00	88.27	358.32	6,938.47	3,769.49	1,513.28	4,056.57	2.18	-1.68	1.39
10,841.00	89.20	0.04	6,939.45	3,813.48	1,512.65	4,097.97	4.44	2.11	3.91
10,884.00	88.46	0.96	6,940.32	3,856.47	1,513.02	4,138.75	2.75	-1.72	2.14
10,928.00	87.83	359.82	6,941.75	3,900.44	1,513.32	4,180.44	2.96	-1.43	-2.59
10,972.00	88.27	0.22	6,943.25	3,944.42	1,513.34	4,222.04	1.35	1.00	0.91
11,016.00	88.64	0.04	6,944.43	3,988.40	1,513.44	4,263.68	0.94	0.84	-0.41
11,059.00	88.52	359.91	6,945.50	4,031.39	1,513.42	4,304.33	0.41	-0.28	-0.30
11,103.00	88.89	359.74	6,946.49	4,075.37	1,513.29	4,345.90	0.93	0.84	-0.39
11,146.00	89.20	359.50	6,947.21	4,118.37	1,513.00	4,386.47	0.91	0.72	-0.56
11,189.00	89.38	359.35	6,947.74	4,161.36	1,512.57	4,427.00	0.54	0.42	-0.35
11,232.00	89.26	359.75	6,948.25	4,204.36	1,512.23	4,467.56	0.97	-0.28	0.93
11,276.00	88.76	359.69	6,949.01	4,248.35	1,512.02	4,509.10	1.14	-1.14	-0.14
11,319.00	89.81	359.81	6,949.55	4,291.35	1,511.83	4,549.71	2.46	2.44	0.28
11,363.00	90.25	359.23	6,949.53	4,335.34	1,511.46	4,591.21	1.65	1.00	-1.32
11,413.00	91.24	359.67	6,948.88	4,385.34	1,510.98	4,638.34	2.17	1.98	0.88
<b>Final Sperry MWD Survey @ 11413</b>									
11,450.00	91.24	359.67	6,948.07	4,422.33	1,510.77	4,673.26	0.00	0.00	0.00
<b>Straight Line Projection to TD @ 11450</b>									

# Halliburton Company

## Survey Report

<b>Company:</b> Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b> Well Dechant 3-19HZ
<b>Project:</b> Weld County, CO (NAD 83)	<b>TVD Reference:</b> RKB-17' @ 4951.00ft (Extreme 8)
<b>Site:</b> Sec. 19-T2N-R64W	<b>MD Reference:</b> RKB-17' @ 4951.00ft (Extreme 8)
<b>Well:</b> Dechant 3-19HZ	<b>North Reference:</b> True
<b>Wellbore:</b> Plan B Rev 1	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Plan B Rev 1	<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	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Dechant 3-19HZ 460'	0.00	0.00	-47.00	0.00	0.00	1,287,001.24	3,251,264.66	40.117717	-104.601552
- survey misses target center by 47.00ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-47.00	4,476.00	4,254.00	1,291,519.93	3,255,472.92		
Point 2			-47.00	136.00	4,305.00	1,287,180.84	3,255,567.89		
Point 3			-47.00	86.00	141.00	1,287,088.66	3,251,404.78		
Point 4			-47.00	4,427.00	104.00	1,291,428.89	3,251,323.80		
Dechant 3-19HZ_Plar	0.00	0.00	6,941.00	4,433.51	1,520.91	1,291,449.76	3,252,740.51	40.129887	-104.596113
- survey misses target center by 16.67ft at 11450.00ft MD (6948.07 TVD, 4422.33 N, 1510.77 E)									
- Point									
Dechant 3-19HZ Sect	0.00	0.00	-47.00	0.00	0.00	1,287,001.24	3,251,264.66	40.117717	-104.601552
- survey misses target center by 47.00ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-47.00	4,958.00	4,714.00	1,292,006.54	3,255,928.00		
Point 2			-47.00	-324.00	4,765.00	1,286,725.55	3,256,032.51		
Point 3			-47.00	-374.00	-342.00	1,286,623.81	3,250,926.48		
Point 4			-47.00	4,887.00	-378.00	1,291,883.96	3,250,837.18		

### Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N-S (ft)	+E-W (ft)	
227.00	227.00	0.00	-0.50	First Sperry MWD Survey @ 227
11,413.00	6,948.88	4,385.34	1,510.98	Final Sperry MWD Survey @ 11413
11,450.00	6,948.07	4,422.33	1,510.77	Straight Line Projection to TD @ 11450

Checked By: _____	Approved By: _____	Date: _____
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