



Weatherford®

Weatherford International Ltd.
2000 Oil Drive
Casper, WY 82604

Survey Certification

Operating Company:	Anadarko Petroleum Corp.
Well Name:	Camp 9N-30HZ
State:	Colorado
County:	Weld
API Number:	512335257
Datum:	NAD 83
Survey Calculation Method:	Minimum Curvature
North Reference:	True North

I, John R. Morgan, hereby certify the attached
directional survey run from the measure depth of 951.00 feet
to the measured depth of 14,198.00 feet as accurate and true
to the best of my knowledge.

Signature

8-Aug-12

Date

John Morgan
Directional Planning
Weatherford International - Rockies District



Weatherford®



FINAL SURVEYS.....SEC.1

DAILY ACTIVITY.....SEC.2

BHA REPORTS..... SEC.3

MOTOR REPORTS.....SEC.4

SLIDE REPORTSEC.5

Drilling Services-Denver, CO



FINAL SURVEYS

Project: COLORADO NORTHERN ZONE - 83
Site: WELD_CAMP 37-31HZ PAD
Well: CAMP 9N-30HZ
Wellbore: CAMP 9N-30HZ
Section:
SHL:
Design: Camp 9N-30HZ (wp10)
Latitude: 40.175944
Longitude: -104.701438
GL: 4949.00
KB: 25' RKB + 4949' GL @ 4974.00ft

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3932.00	3968.77	PARKMAN
4554.00	4594.59	SUSSEX
7011.00	7118.21	SHARON SPRINGS
7079.00	7229.10	NIOBRARA A
7105.00	7277.30	NIOBRARA B
7174.00	7478.08	NIOBRARA C

WELL DETAILS: CAMP 9N-30HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4949.00 Latitude	Longitude	Slot
0.00	0.00	1307943.99	3223139.81	40.175944	-104.701438	

CASING DETAILS

TVD	MD	Name	Size
800.00	800.00	9 5/8"	9-5/8
7183.00	7579.77	7"	7



Azimuths to True North

Magnetic North: 8.69°

Magnetic Field

Strength: 52926.5snT

Dip Angle: 66.85°

Date: 5/2/2012

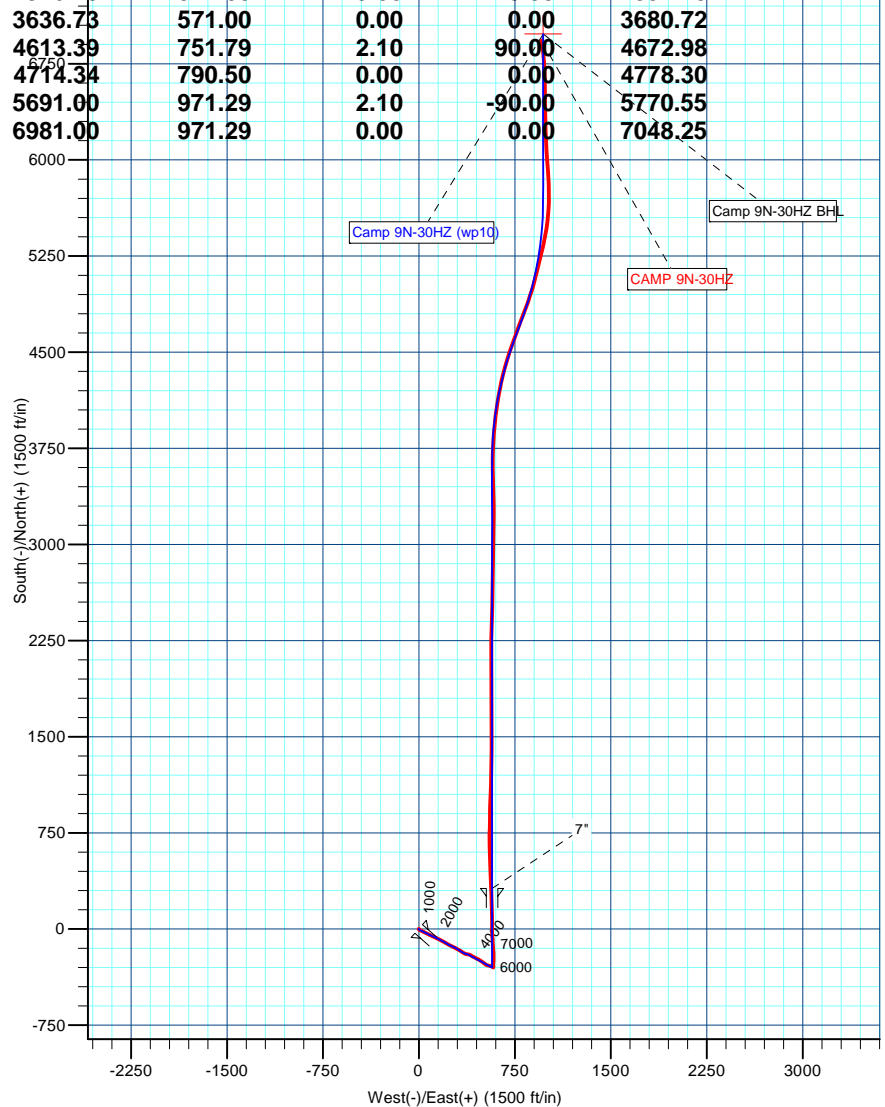
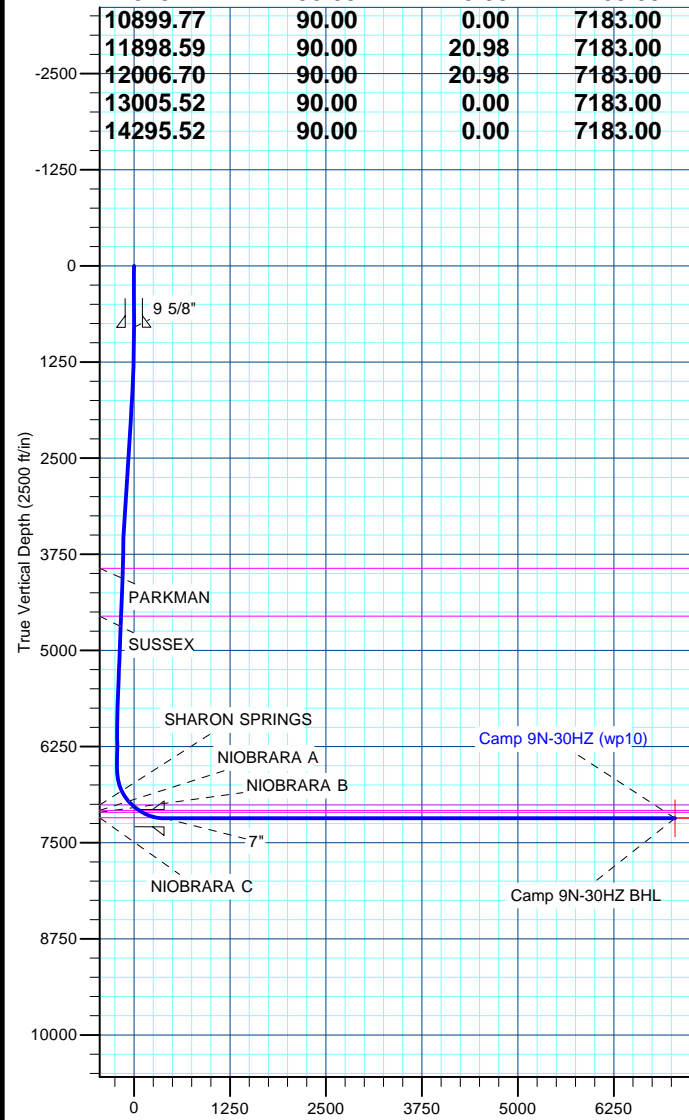
Model: IGRF2010

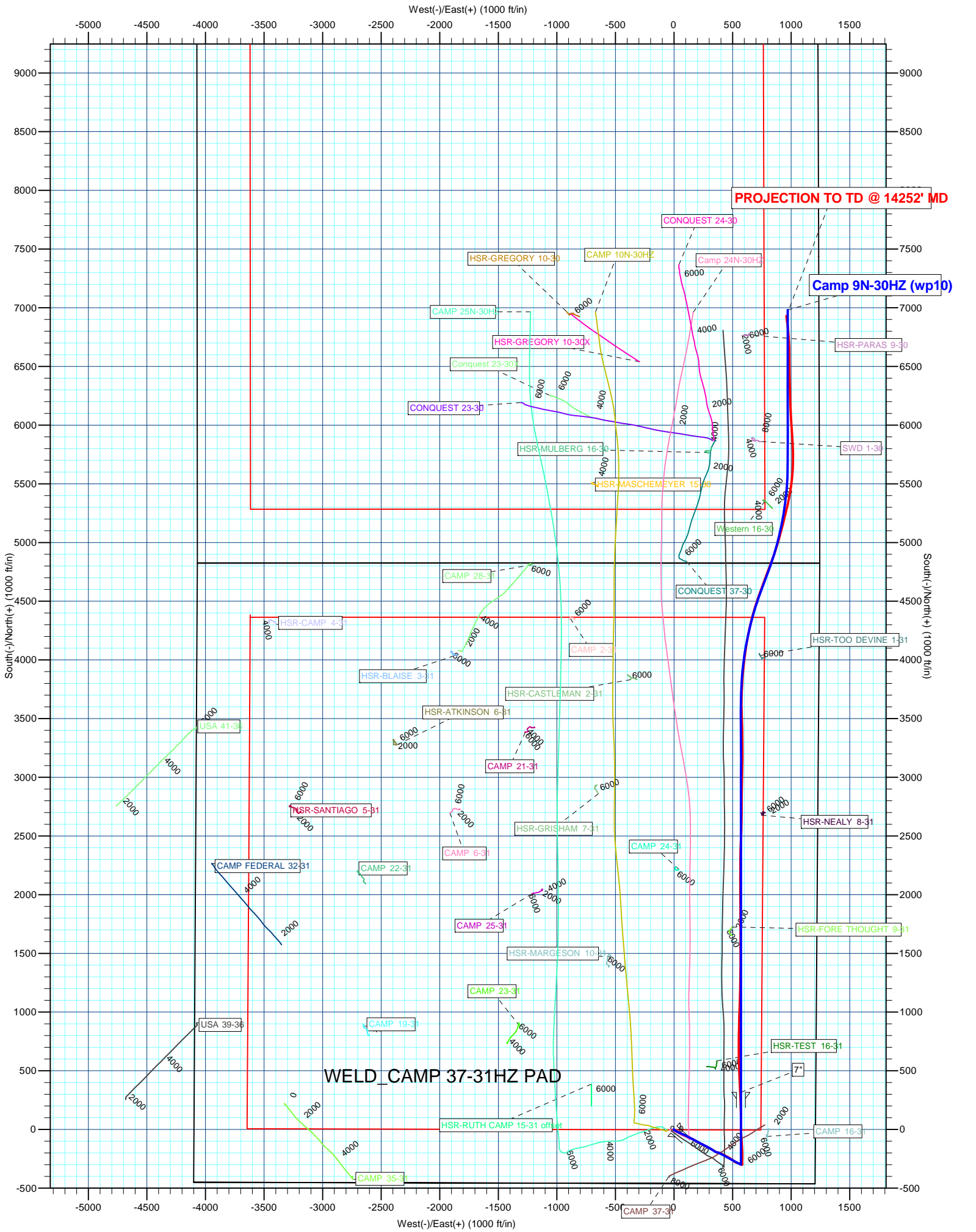
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Camp 9N-30HZ BHL	7183.00	6981.53	971.29	1314933.98	3224048.19	40.195109	-104.697961	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
3574.00	10.31	119.10	3539.01	-188.64	351.48	0.00	0.00	-138.41
3781.75	2.00	87.94	3745.39	-195.09	372.54	4.31	-158.10	-141.89
4019.92	6.38	118.40	3982.88	-201.24	388.34	2.00	42.71	-145.80
5729.35	6.38	118.40	5681.73	-291.57	555.40	0.00	0.00	-212.25
6048.28	0.00	0.00	6000.00	-300.00	571.00	2.00	180.00	-218.45
6624.32	0.00	0.00	6576.04	-300.00	571.00	0.00	0.00	-218.45
7118.21	49.39	0.00	7011.00	-99.99	571.00	10.00	0.00	-20.35
7229.10	54.93	0.00	7079.00	-12.45	571.00	5.00	0.00	66.36
7579.77	90.00	0.00	7183.00	316.73	571.00	10.00	0.00	392.40
10899.77	90.00	0.00	7183.00	3636.73	571.00	0.00	0.00	3680.72
11898.59	90.00	20.98	7183.00	4613.39	751.79	2.10	90.00	4672.98
12006.70	90.00	20.98	7183.00	4714.34	790.50	0.00	0.00	4778.30
13005.52	90.00	0.00	7183.00	5691.00	971.29	2.10	-90.00	5770.55
14295.52	90.00	0.00	7183.00	6981.00	971.29	0.00	0.00	7048.25





US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_CAMP 37-31HZ PAD

CAMP 9N-30HZ

CAMP 9N-30HZ

Design: CAMP 9N-30HZ

Standard Survey Report

08 August, 2012

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_CAMP 37-31HZ PAD			
Site Position:		Northing:	1,307,943.36 usft	Latitude:	40.175944
From:	Lat/Long	Easting:	3,223,064.93 usft	Longitude:	-104.701706
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52 °

Well		CAMP 9N-30HZ				
Well Position	+N/-S	0.00 ft	Northing:	1,307,943.99 usft	Latitude:	40.175944
	+E/-W	0.00 ft	Easting:	3,223,139.81 usft	Longitude:	-104.701438
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,949.00 ft

Wellbore	CAMP 9N-30HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2012	8.69	66.85	52,926

Design	CAMP 9N-30HZ				
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	7.88	

Survey Program	Date	8/8/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100.00	768.00	Survey #1 (CAMP 9N-30HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
951.00	14,252.00	Survey #2 (CAMP 9N-30HZ)	MWD	MWD - STANDARD	

Survey										
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100.00	0.35	249.58	100.00	-0.11	-0.29	-0.14	0.35	0.35	0.00
	200.00	0.20	187.40	200.00	-0.39	-0.59	-0.46	0.31	-0.15	-62.18
	300.00	0.07	82.17	300.00	-0.55	-0.56	-0.62	0.23	-0.13	-105.23
	400.00	0.21	328.67	400.00	-0.39	-0.59	-0.46	0.25	0.14	-113.50
	500.00	0.21	270.99	500.00	-0.23	-0.87	-0.34	0.20	0.00	-57.68
	600.00	0.25	204.39	600.00	-0.42	-1.14	-0.57	0.25	0.04	-66.60
	700.00	0.23	2.56	700.00	-0.42	-1.22	-0.58	0.47	-0.02	158.17
	768.00	0.08	358.82	768.00	-0.24	-1.22	-0.40	0.22	-0.22	-5.50
TIE ON										

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
951.00	0.56	281.84	950.99	0.07	-2.10	-0.21	0.30	0.26	-42.07
FIRST MWD SURVEY									
1,042.00	0.60	265.88	1,041.99	0.13	-3.01	-0.28	0.18	0.04	-17.54
1,133.00	1.54	141.15	1,132.98	-0.85	-2.72	-1.22	2.14	1.03	-137.07
1,224.00	3.58	133.24	1,223.88	-3.75	0.12	-3.70	2.27	2.24	-8.69
1,315.00	5.38	119.63	1,314.60	-7.81	5.90	-6.93	2.28	1.98	-14.96
1,406.00	7.28	115.03	1,405.05	-12.36	14.83	-10.21	2.16	2.09	-5.05
1,498.00	9.08	117.08	1,496.11	-18.13	26.58	-14.32	1.98	1.96	2.23
1,590.00	10.26	114.35	1,586.80	-24.81	40.51	-19.03	1.38	1.28	-2.97
1,682.00	11.22	115.11	1,677.18	-31.99	56.08	-24.00	1.05	1.04	0.83
1,775.00	10.11	116.08	1,768.58	-39.42	71.60	-29.23	1.21	-1.19	1.04
1,867.00	10.08	113.38	1,859.15	-46.16	86.24	-33.91	0.52	-0.03	-2.93
1,962.00	10.19	118.04	1,952.67	-53.41	101.29	-39.03	0.87	0.12	4.91
2,056.00	11.30	118.44	2,045.02	-61.71	116.73	-45.13	1.18	1.18	0.43
2,151.00	9.79	113.60	2,138.42	-69.37	132.32	-50.58	1.84	-1.59	-5.09
2,246.00	10.03	115.18	2,232.00	-76.13	147.20	-55.23	0.38	0.25	1.66
2,341.00	10.01	118.50	2,325.55	-83.59	161.95	-60.60	0.61	-0.02	3.49
2,436.00	10.71	118.56	2,419.00	-91.75	176.96	-66.63	0.74	0.74	0.06
2,531.00	9.30	118.55	2,512.56	-99.64	191.45	-72.46	1.48	-1.48	-0.01
2,626.00	9.65	118.48	2,606.26	-107.10	205.20	-77.97	0.37	0.37	-0.07
2,721.00	11.24	120.27	2,699.68	-115.57	220.19	-84.30	1.71	1.67	1.88
2,815.00	10.69	119.31	2,791.97	-124.45	235.71	-90.97	0.62	-0.59	-1.02
2,911.00	12.20	114.71	2,886.06	-133.05	252.69	-97.16	1.84	1.57	-4.79
3,006.00	11.83	115.40	2,978.98	-141.42	270.60	-103.00	0.42	-0.39	0.73
3,100.00	11.42	115.62	3,071.05	-149.58	287.70	-108.74	0.44	-0.44	0.23
3,195.00	10.14	120.85	3,164.37	-157.94	303.36	-114.87	1.69	-1.35	5.51
3,290.00	8.27	126.65	3,258.15	-166.30	316.02	-121.42	2.19	-1.97	6.11
3,385.00	8.04	119.99	3,352.19	-173.70	327.26	-127.21	1.02	-0.24	-7.01
3,480.00	8.17	124.09	3,446.24	-180.81	338.60	-132.69	0.62	0.14	4.32
3,574.00	10.31	119.10	3,539.01	-188.64	351.48	-138.69	2.43	2.28	-5.31
3,669.00	10.20	106.36	3,632.51	-195.15	366.98	-143.01	2.39	-0.12	-13.41
3,764.00	8.36	96.92	3,726.27	-198.35	381.91	-144.13	2.51	-1.94	-9.94
3,859.00	7.22	104.00	3,820.39	-200.63	394.56	-144.66	1.57	-1.20	7.45
3,954.00	5.49	123.51	3,914.81	-204.58	404.15	-147.26	2.89	-1.82	20.54
4,049.00	6.58	127.27	4,009.29	-210.39	412.27	-151.90	1.22	1.15	3.96
4,143.00	8.67	115.88	4,102.46	-216.74	422.93	-156.73	2.73	2.22	-12.12
4,238.00	8.24	115.68	4,196.42	-222.82	435.51	-161.02	0.45	-0.45	-0.21
4,333.00	5.93	116.61	4,290.69	-227.97	446.03	-164.68	2.43	-2.43	0.98
4,428.00	6.60	116.90	4,385.12	-232.63	455.29	-168.04	0.71	0.71	0.31
4,523.00	7.32	119.57	4,479.42	-238.09	465.42	-172.05	0.83	0.76	2.81
4,618.00	8.44	121.82	4,573.53	-244.75	476.61	-177.12	1.22	1.18	2.37
4,713.00	7.59	125.30	4,667.60	-252.05	487.65	-182.84	1.03	-0.89	3.66
4,808.00	8.00	122.29	4,761.72	-259.21	498.36	-188.46	0.61	0.43	-3.17

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,903.00	7.05	135.50	4,855.91	-266.90	508.04	-194.75	2.07	-1.00	13.91
4,997.00	6.87	128.99	4,949.22	-274.55	516.45	-201.18	0.86	-0.19	-6.93
5,093.00	7.90	110.41	5,044.43	-280.47	527.10	-205.58	2.69	1.07	-19.35
5,188.00	7.47	104.31	5,138.58	-284.27	539.20	-207.69	0.97	-0.45	-6.42
5,284.00	6.39	105.13	5,233.88	-287.21	550.40	-209.06	1.13	-1.13	0.85
5,379.00	4.88	104.47	5,328.42	-289.60	559.42	-210.19	1.59	-1.59	-0.69
5,474.00	3.87	100.65	5,423.14	-291.20	566.48	-210.81	1.11	-1.06	-4.02
5,569.00	3.02	100.78	5,517.97	-292.26	572.09	-211.09	0.89	-0.89	0.14
5,664.00	1.64	102.12	5,612.88	-293.01	575.88	-211.32	1.45	-1.45	1.41
5,758.00	1.24	104.52	5,706.85	-293.55	578.18	-211.54	0.43	-0.43	2.55
5,853.00	0.77	91.78	5,801.84	-293.83	579.81	-211.59	0.54	-0.49	-13.41
5,947.00	0.35	108.38	5,895.83	-293.94	580.72	-211.57	0.47	-0.45	17.66
6,042.00	0.95	140.19	5,990.83	-294.64	581.50	-212.16	0.71	0.63	33.48
6,136.00	0.74	204.59	6,084.82	-295.79	581.74	-213.26	0.98	-0.22	68.51
6,231.00	0.91	179.62	6,179.81	-297.10	581.49	-214.60	0.41	0.18	-26.28
6,326.00	0.91	171.47	6,274.80	-298.60	581.61	-216.07	0.14	0.00	-8.58
6,421.00	0.98	180.01	6,369.79	-300.16	581.72	-217.60	0.17	0.07	8.99
6,516.00	0.20	340.36	6,464.78	-300.81	581.67	-218.25	1.23	-0.82	168.79
6,547.00	0.16	305.65	6,495.78	-300.74	581.61	-218.19	0.37	-0.13	-111.97
6,579.00	0.14	297.22	6,527.78	-300.69	581.54	-218.15	0.09	-0.06	-26.34
6,610.00	1.80	347.52	6,558.78	-300.20	581.40	-217.68	5.53	5.35	162.26
6,642.00	6.11	350.93	6,590.69	-298.03	581.03	-215.58	13.48	13.47	10.66
6,674.00	9.48	358.84	6,622.39	-293.71	580.70	-211.35	11.03	10.53	24.72
6,705.00	11.66	4.68	6,652.87	-288.03	580.91	-205.70	7.83	7.03	18.84
6,737.00	14.09	0.65	6,684.06	-280.91	581.22	-198.60	8.09	7.59	-12.59
6,769.00	16.02	3.08	6,714.96	-272.61	581.50	-190.34	6.34	6.03	7.59
6,800.00	18.26	2.58	6,744.58	-263.49	581.95	-181.24	7.24	7.23	-1.61
6,832.00	21.71	1.23	6,774.65	-252.56	582.30	-170.37	10.88	10.78	-4.22
6,863.00	23.94	1.54	6,803.22	-240.54	582.59	-158.42	7.20	7.19	1.00
6,895.00	25.40	2.21	6,832.30	-227.19	583.03	-145.14	4.65	4.56	2.09
6,926.00	29.19	0.40	6,859.84	-212.98	583.34	-131.02	12.51	12.23	-5.84
6,958.00	32.89	357.75	6,887.26	-196.49	583.05	-114.72	12.32	11.56	-8.28
6,989.00	35.94	356.30	6,912.83	-178.99	582.13	-97.52	10.19	9.84	-4.68
7,021.00	38.51	356.34	6,938.31	-159.68	580.89	-78.56	8.03	8.03	0.13
7,052.00	39.91	356.27	6,962.33	-140.12	579.63	-59.36	4.52	4.52	-0.23
7,084.00	40.46	355.45	6,986.77	-119.53	578.14	-39.16	2.38	1.72	-2.56
7,116.00	44.48	355.91	7,010.37	-97.99	576.51	-18.05	12.60	12.56	1.44
7,147.00	48.76	356.37	7,031.66	-75.51	575.00	4.01	13.85	13.81	1.48
7,179.00	51.75	356.70	7,052.12	-50.95	573.52	28.13	9.38	9.34	1.03
7,211.00	53.67	357.80	7,071.50	-25.53	572.30	53.15	6.59	6.00	3.44
7,243.00	56.07	358.54	7,089.92	0.63	571.46	78.95	7.73	7.50	2.31
7,274.00	60.59	359.43	7,106.19	27.00	571.00	105.01	14.78	14.58	2.87
7,306.00	66.01	359.70	7,120.56	55.58	570.79	133.28	16.95	16.94	0.84
7,337.00	69.64	0.04	7,132.26	84.28	570.72	161.71	11.75	11.71	1.10

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,369.00	72.37	359.61	7,142.68	114.53	570.63	191.66	8.63	8.53	-1.34
7,401.00	75.44	358.68	7,151.55	145.27	570.17	222.05	9.99	9.59	-2.91
7,432.00	78.24	358.59	7,158.60	175.45	569.45	251.84	9.04	9.03	-0.29
7,464.00	80.52	358.25	7,164.50	206.88	568.58	282.86	7.20	7.13	-1.06
7,496.00	81.65	358.00	7,169.46	238.48	567.55	314.02	3.61	3.53	-0.78
7,527.00	83.55	357.95	7,173.45	269.20	566.46	344.30	6.13	6.13	-0.16
7,551.00	85.10	357.50	7,175.82	293.06	565.51	367.81	6.72	6.46	-1.88
7,681.00	87.66	357.07	7,184.03	422.65	559.37	495.32	2.00	1.97	-0.33
7,772.00	88.70	358.19	7,186.92	513.52	555.61	584.83	1.68	1.14	1.23
7,864.00	88.33	359.49	7,189.31	605.47	553.74	675.65	1.47	-0.40	1.41
7,955.00	92.04	359.52	7,189.01	696.45	552.96	765.66	4.08	4.08	0.03
8,046.00	93.15	1.02	7,184.89	787.35	553.39	855.77	2.05	1.22	1.65
8,138.00	93.02	0.90	7,179.94	879.21	554.93	946.96	0.19	-0.14	-0.13
8,229.00	92.10	1.93	7,175.88	970.08	557.17	1,037.29	1.52	-1.01	1.13
8,319.00	90.44	1.78	7,173.88	1,060.01	560.08	1,126.77	1.85	-1.84	-0.17
8,411.00	90.93	1.59	7,172.78	1,151.97	562.79	1,218.23	0.57	0.53	-0.21
8,503.00	91.23	1.27	7,171.05	1,243.92	565.08	1,309.63	0.48	0.33	-0.35
8,594.00	89.74	0.90	7,170.28	1,334.90	566.81	1,399.99	1.69	-1.64	-0.41
8,687.00	89.69	1.04	7,170.74	1,427.88	568.38	1,492.31	0.16	-0.05	0.15
8,779.00	88.89	359.59	7,171.88	1,519.87	568.89	1,583.50	1.80	-0.87	-1.58
8,871.00	89.51	359.70	7,173.16	1,611.86	568.32	1,674.54	0.68	0.67	0.12
8,963.00	89.94	359.39	7,173.61	1,703.86	567.59	1,765.57	0.58	0.47	-0.34
9,055.00	91.23	359.11	7,172.67	1,795.84	566.38	1,856.52	1.43	1.40	-0.30
9,147.00	88.71	359.96	7,172.72	1,887.83	565.64	1,947.54	2.89	-2.74	0.92
9,239.00	88.46	359.87	7,174.99	1,979.80	565.50	2,038.62	0.29	-0.27	-0.10
9,331.00	88.21	359.90	7,177.66	2,071.76	565.31	2,129.69	0.27	-0.27	0.03
9,426.00	90.86	0.41	7,178.43	2,166.75	565.57	2,223.82	2.84	2.79	0.54
9,521.00	91.54	359.96	7,176.44	2,261.73	565.88	2,317.94	0.86	0.72	-0.47
9,616.00	90.49	1.50	7,174.76	2,356.70	567.09	2,412.19	1.96	-1.11	1.62
9,712.00	91.98	2.17	7,172.69	2,452.63	570.16	2,507.63	1.70	1.55	0.70
9,806.00	91.60	2.06	7,169.75	2,546.52	573.63	2,601.11	0.42	-0.40	-0.12
9,901.00	89.75	0.86	7,168.63	2,641.47	576.05	2,695.50	2.32	-1.95	-1.26
9,996.00	90.31	0.43	7,168.58	2,736.47	577.12	2,789.74	0.74	0.59	-0.45
10,092.00	90.93	0.37	7,167.55	2,832.46	577.79	2,884.92	0.65	0.65	-0.06
10,187.00	89.75	0.48	7,166.98	2,927.45	578.49	2,979.11	1.25	-1.24	0.12
10,282.00	89.38	2.06	7,167.70	3,022.42	580.60	3,073.48	1.71	-0.39	1.66
10,377.00	89.75	1.44	7,168.42	3,117.38	583.50	3,167.93	0.76	0.39	-0.65
10,472.00	88.95	359.56	7,169.50	3,212.36	584.33	3,262.13	2.15	-0.84	-1.98
10,567.00	89.38	359.41	7,170.89	3,307.35	583.47	3,356.11	0.48	0.45	-0.16
10,662.00	89.20	358.61	7,172.06	3,402.32	581.83	3,449.96	0.86	-0.19	-0.84
10,757.00	88.21	357.64	7,174.21	3,497.25	578.73	3,543.56	1.46	-1.04	-1.02
10,852.00	88.95	358.82	7,176.57	3,592.17	575.79	3,637.19	1.47	0.78	1.24
10,948.00	87.71	1.61	7,179.36	3,688.12	576.15	3,732.28	3.18	-1.29	2.91

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,043.00	87.71	3.55	7,183.16	3,782.94	580.43	3,826.79	2.04	0.00	2.04
11,138.00	87.04	4.69	7,187.51	3,877.59	587.24	3,921.49	1.39	-0.71	1.20
11,233.00	86.36	6.08	7,192.98	3,972.01	596.14	4,016.24	1.63	-0.72	1.46
11,328.00	87.10	7.88	7,198.40	4,066.15	607.67	4,111.07	2.05	0.78	1.89
11,423.00	87.53	10.27	7,202.85	4,159.85	622.64	4,205.93	2.55	0.45	2.52
11,518.00	90.12	12.13	7,204.80	4,253.01	641.08	4,300.74	3.36	2.73	1.96
11,613.00	87.53	14.49	7,206.75	4,345.43	662.94	4,395.28	3.69	-2.73	2.48
11,707.00	86.92	16.27	7,211.30	4,435.95	687.84	4,488.36	2.00	-0.65	1.89
11,802.00	86.36	18.69	7,216.87	4,526.40	716.33	4,581.86	2.61	-0.59	2.55
11,896.00	87.71	21.00	7,221.73	4,614.69	748.19	4,673.69	2.84	1.44	2.46
11,991.00	87.29	20.89	7,225.87	4,703.33	782.12	4,766.14	0.46	-0.44	-0.12
12,087.00	86.79	20.48	7,230.83	4,793.02	815.99	4,859.63	0.67	-0.52	-0.43
12,182.00	88.83	19.58	7,234.46	4,882.20	848.50	4,952.42	2.35	2.15	-0.95
12,277.00	89.26	17.18	7,236.04	4,972.34	878.45	5,045.81	2.57	0.45	-2.53
12,371.00	88.46	15.58	7,237.91	5,062.50	904.95	5,138.76	1.90	-0.85	-1.70
12,466.00	89.69	13.08	7,239.45	5,154.52	928.46	5,233.13	2.93	1.29	-2.63
12,561.00	91.15	13.95	7,238.75	5,246.89	950.66	5,327.67	1.79	1.54	0.92
12,655.00	90.49	13.00	7,237.41	5,338.29	972.56	5,421.21	1.23	-0.70	-1.01
12,751.00	89.38	9.98	7,237.52	5,432.35	991.68	5,517.01	3.35	-1.16	-3.15
12,846.00	90.06	6.12	7,237.98	5,526.40	1,004.98	5,611.99	4.13	0.72	-4.06
12,940.00	89.88	3.46	7,238.03	5,620.06	1,012.83	5,705.84	2.84	-0.19	-2.83
13,035.00	88.46	0.08	7,239.41	5,714.99	1,015.76	5,800.28	3.86	-1.49	-3.56
13,130.00	90.80	357.95	7,240.02	5,809.96	1,014.13	5,894.13	3.33	2.46	-2.24
13,225.00	91.42	356.07	7,238.18	5,904.81	1,009.17	5,987.40	2.08	0.65	-1.98
13,320.00	91.48	355.52	7,235.77	5,999.52	1,002.21	6,080.27	0.58	0.06	-0.58
13,415.00	90.49	357.59	7,234.14	6,094.33	996.50	6,173.40	2.42	-1.04	2.18
13,510.00	90.62	357.20	7,233.22	6,189.23	992.19	6,266.81	0.43	0.14	-0.41
13,605.00	89.38	358.87	7,233.22	6,284.17	988.93	6,360.40	2.19	-1.31	1.76
13,700.00	88.15	358.25	7,235.27	6,379.11	986.54	6,454.13	1.45	-1.29	-0.65
13,795.00	89.03	359.67	7,237.61	6,474.07	984.82	6,547.95	1.76	0.93	1.49
13,890.00	88.03	359.72	7,240.04	6,569.03	984.31	6,641.95	1.05	-1.05	0.05
13,985.00	88.52	358.65	7,242.90	6,663.98	982.96	6,735.81	1.24	0.52	-1.13
14,080.00	88.64	355.12	7,245.26	6,758.79	977.80	6,829.03	3.72	0.13	-3.72
14,176.00	91.23	354.17	7,245.37	6,854.36	968.84	6,922.47	2.87	2.70	-0.99
14,198.00	90.97	353.15	7,244.94	6,876.23	966.42	6,943.79	4.78	-1.18	-4.64
LAST MWD SURVEY									
14,252.00	90.33	350.65	7,244.33	6,929.68	958.81	6,995.70	4.78	-1.19	-4.63
PROJECTION TO TD									

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
768.00	768.00	-0.24	-1.22	TIE ON
951.00	950.99	0.07	-2.10	FIRST MWD SURVEY
14,198.00	7,244.94	6,876.23	966.42	LAST MWD SURVEY
14,252.00	7,244.33	6,929.68	958.81	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_CAMP 37-31HZ PAD

CAMP 9N-30HZ

CAMP 9N-30HZ

Design: CAMP 9N-30HZ

Survey Report - Geographic

08 August, 2012

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_CAMP 37-31HZ PAD			
Site Position:		Northing:	1,307,943.36 usft	Latitude:	40.175944
From:	Lat/Long	Easting:	3,223,064.93 usft	Longitude:	-104.701706
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52 °

Well	CAMP 9N-30HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,307,943.99 usft	Latitude:	40.175944
	+E/-W	0.00 ft	Easting:	3,223,139.81 usft	Longitude:	-104.701438
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,949.00 ft

Wellbore	CAMP 9N-30HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2012	8.69	66.85	52,926

Design	CAMP 9N-30HZ				
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	7.88	

Survey Program	Date	8/8/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100.00	768.00	Survey #1 (CAMP 9N-30HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
951.00	14,252.00	Survey #2 (CAMP 9N-30HZ)	MWD	MWD - STANDARD	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,307,943.99	3,223,139.81	40.175944	-104.701438
100.00	0.35	249.58	100.00	-0.11	-0.29	1,307,943.88	3,223,139.53	40.175944	-104.701439
200.00	0.20	187.40	200.00	-0.39	-0.59	1,307,943.60	3,223,139.22	40.175943	-104.701440
300.00	0.07	82.17	300.00	-0.55	-0.56	1,307,943.44	3,223,139.26	40.175942	-104.701440
400.00	0.21	328.67	400.00	-0.39	-0.59	1,307,943.60	3,223,139.23	40.175943	-104.701440
500.00	0.21	270.99	500.00	-0.23	-0.87	1,307,943.76	3,223,138.95	40.175943	-104.701441
600.00	0.25	204.39	600.00	-0.42	-1.14	1,307,943.56	3,223,138.67	40.175943	-104.701442
700.00	0.23	2.56	700.00	-0.42	-1.22	1,307,943.56	3,223,138.59	40.175943	-104.701443
768.00	0.08	358.82	768.00	-0.24	-1.22	1,307,943.75	3,223,138.60	40.175943	-104.701443
TIE ON									

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
951.00	0.56	281.84	950.99	0.07	-2.10	1,307,944.05	3,223,137.72	40.175944	-104.701446
FIRST MWD SURVEY									
1,042.00	0.60	265.88	1,041.99	0.13	-3.01	1,307,944.10	3,223,136.80	40.175944	-104.701449
1,133.00	1.54	141.15	1,132.98	-0.85	-2.72	1,307,943.11	3,223,137.11	40.175942	-104.701448
1,224.00	3.58	133.24	1,223.88	-3.75	0.12	1,307,940.24	3,223,139.97	40.175934	-104.701438
1,315.00	5.38	119.63	1,314.60	-7.81	5.90	1,307,936.24	3,223,145.78	40.175923	-104.701417
1,406.00	7.28	115.03	1,405.05	-12.36	14.83	1,307,931.77	3,223,154.76	40.175910	-104.701385
1,498.00	9.08	117.08	1,496.11	-18.13	26.58	1,307,926.10	3,223,166.55	40.175894	-104.701343
1,590.00	10.26	114.35	1,586.80	-24.81	40.51	1,307,919.55	3,223,180.54	40.175876	-104.701293
1,682.00	11.22	115.11	1,677.18	-31.99	56.08	1,307,912.51	3,223,196.18	40.175856	-104.701238
1,775.00	10.11	116.08	1,768.58	-39.42	71.60	1,307,905.22	3,223,211.77	40.175836	-104.701182
1,867.00	10.08	113.38	1,859.15	-46.16	86.24	1,307,898.61	3,223,226.47	40.175817	-104.701130
1,962.00	10.19	118.04	1,952.67	-53.41	101.29	1,307,891.50	3,223,241.58	40.175797	-104.701076
2,056.00	11.30	118.44	2,045.02	-61.71	116.73	1,307,883.34	3,223,257.09	40.175775	-104.701021
2,151.00	9.79	113.60	2,138.42	-69.37	132.32	1,307,875.81	3,223,272.75	40.175754	-104.700965
2,246.00	10.03	115.18	2,232.00	-76.13	147.20	1,307,869.20	3,223,287.70	40.175735	-104.700911
2,341.00	10.01	118.50	2,325.55	-83.59	161.95	1,307,861.87	3,223,302.51	40.175715	-104.700859
2,436.00	10.71	118.56	2,419.00	-91.75	176.96	1,307,853.84	3,223,317.59	40.175692	-104.700805
2,531.00	9.30	118.55	2,512.56	-99.64	191.45	1,307,846.09	3,223,332.16	40.175670	-104.700753
2,626.00	9.65	118.48	2,606.26	-107.10	205.20	1,307,838.74	3,223,345.96	40.175650	-104.700704
2,721.00	11.24	120.27	2,699.68	-115.57	220.19	1,307,830.42	3,223,361.04	40.175627	-104.700650
2,815.00	10.69	119.31	2,791.97	-124.45	235.71	1,307,821.67	3,223,376.63	40.175602	-104.700595
2,911.00	12.20	114.71	2,886.06	-133.05	252.69	1,307,813.22	3,223,393.69	40.175579	-104.700534
3,006.00	11.83	115.40	2,978.98	-141.42	270.60	1,307,805.01	3,223,411.68	40.175556	-104.700470
3,100.00	11.42	115.62	3,071.05	-149.58	287.70	1,307,797.01	3,223,428.84	40.175533	-104.700409
3,195.00	10.14	120.85	3,164.37	-157.94	303.36	1,307,788.80	3,223,444.58	40.175510	-104.700353
3,290.00	8.27	126.65	3,258.15	-166.30	316.02	1,307,780.54	3,223,457.32	40.175487	-104.700307
3,385.00	8.04	119.99	3,352.19	-173.70	327.26	1,307,773.24	3,223,468.62	40.175467	-104.700267
3,480.00	8.17	124.09	3,446.24	-180.81	338.60	1,307,766.24	3,223,480.03	40.175448	-104.700227
3,574.00	10.31	119.10	3,539.01	-188.64	351.48	1,307,758.52	3,223,492.98	40.175426	-104.700180
3,669.00	10.20	106.36	3,632.51	-195.15	366.98	1,307,752.16	3,223,508.54	40.175408	-104.700125
3,764.00	8.36	96.92	3,726.27	-198.35	381.91	1,307,749.09	3,223,523.50	40.175399	-104.700072
3,859.00	7.22	104.00	3,820.39	-200.63	394.56	1,307,746.93	3,223,536.17	40.175393	-104.700026
3,954.00	5.49	123.51	3,914.81	-204.58	404.15	1,307,743.06	3,223,545.78	40.175382	-104.699992
4,049.00	6.58	127.27	4,009.29	-210.39	412.27	1,307,737.33	3,223,553.96	40.175366	-104.699963
4,143.00	8.67	115.88	4,102.46	-216.74	422.93	1,307,731.07	3,223,564.68	40.175349	-104.699925
4,238.00	8.24	115.68	4,196.42	-222.82	435.51	1,307,725.11	3,223,577.31	40.175332	-104.699880
4,333.00	5.93	116.61	4,290.69	-227.97	446.03	1,307,720.05	3,223,587.88	40.175318	-104.699842
4,428.00	6.60	116.90	4,385.12	-232.63	455.29	1,307,715.47	3,223,597.18	40.175305	-104.699809
4,523.00	7.32	119.57	4,479.42	-238.09	465.42	1,307,710.10	3,223,607.36	40.175290	-104.699773
4,618.00	8.44	121.82	4,573.53	-244.75	476.61	1,307,703.54	3,223,618.60	40.175272	-104.699733
4,713.00	7.59	125.30	4,667.60	-252.05	487.65	1,307,696.34	3,223,629.71	40.175252	-104.699693
4,808.00	8.00	122.29	4,761.72	-259.21	498.36	1,307,689.28	3,223,640.49	40.175232	-104.699655
4,903.00	7.05	135.50	4,855.91	-266.90	508.04	1,307,681.68	3,223,650.23	40.175211	-104.699620
4,997.00	6.87	128.99	4,949.22	-274.55	516.45	1,307,674.10	3,223,658.71	40.175190	-104.699590
5,093.00	7.90	110.41	5,044.43	-280.47	527.10	1,307,668.28	3,223,669.41	40.175174	-104.699552
5,188.00	7.47	104.31	5,138.58	-284.27	539.20	1,307,664.59	3,223,681.55	40.175164	-104.699509
5,284.00	6.39	105.13	5,233.88	-287.21	550.40	1,307,661.75	3,223,692.78	40.175156	-104.699469
5,379.00	4.88	104.47	5,328.42	-289.60	559.42	1,307,659.45	3,223,701.82	40.175149	-104.699436
5,474.00	3.87	100.65	5,423.14	-291.20	566.48	1,307,657.91	3,223,708.90	40.175145	-104.699411
5,569.00	3.02	100.78	5,517.97	-292.26	572.09	1,307,656.90	3,223,714.51	40.175142	-104.699391
5,664.00	1.64	102.12	5,612.88	-293.01	575.88	1,307,656.18	3,223,718.31	40.175140	-104.699377
5,758.00	1.24	104.52	5,706.85	-293.55	578.18	1,307,655.66	3,223,720.61	40.175138	-104.699369
5,853.00	0.77	91.78	5,801.84	-293.83	579.81	1,307,655.40	3,223,722.25	40.175137	-104.699363
5,947.00	0.35	108.38	5,895.83	-293.94	580.72	1,307,655.30	3,223,723.15	40.175137	-104.699360

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,042.00	0.95	140.19	5,990.83	-294.64	581.50	1,307,654.61	3,223,723.94	40.175135	-104.699357
6,136.00	0.74	204.59	6,084.82	-295.79	581.74	1,307,653.46	3,223,724.20	40.175132	-104.699356
6,231.00	0.91	179.62	6,179.81	-297.10	581.49	1,307,652.14	3,223,723.96	40.175128	-104.699357
6,326.00	0.91	171.47	6,274.80	-298.60	581.61	1,307,650.65	3,223,724.09	40.175124	-104.699357
6,421.00	0.98	180.01	6,369.79	-300.16	581.72	1,307,649.09	3,223,724.21	40.175120	-104.699356
6,516.00	0.20	340.36	6,464.78	-300.81	581.67	1,307,648.43	3,223,724.16	40.175118	-104.699357
6,547.00	0.16	305.65	6,495.78	-300.74	581.61	1,307,648.51	3,223,724.11	40.175118	-104.699357
6,579.00	0.14	297.22	6,527.78	-300.69	581.54	1,307,648.55	3,223,724.04	40.175119	-104.699357
6,610.00	1.80	347.52	6,558.78	-300.20	581.40	1,307,649.04	3,223,723.89	40.175120	-104.699358
6,642.00	6.11	350.93	6,590.69	-298.03	581.03	1,307,651.21	3,223,723.50	40.175126	-104.699359
6,674.00	9.48	358.84	6,622.39	-293.71	580.70	1,307,655.53	3,223,723.14	40.175138	-104.699360
6,705.00	11.66	4.68	6,652.87	-288.03	580.91	1,307,661.20	3,223,723.29	40.175153	-104.699359
6,737.00	14.09	0.65	6,684.06	-280.91	581.22	1,307,668.32	3,223,723.53	40.175173	-104.699358
6,769.00	16.02	3.08	6,714.96	-272.61	581.50	1,307,676.63	3,223,723.74	40.175196	-104.699357
6,800.00	18.26	2.58	6,744.58	-263.49	581.95	1,307,685.76	3,223,724.11	40.175221	-104.699356
6,832.00	21.71	1.23	6,774.65	-252.56	582.30	1,307,696.69	3,223,724.36	40.175251	-104.699354
6,863.00	23.94	1.54	6,803.22	-240.54	582.59	1,307,708.71	3,223,724.55	40.175284	-104.699353
6,895.00	25.40	2.21	6,832.30	-227.19	583.03	1,307,722.07	3,223,724.86	40.175320	-104.699352
6,926.00	29.19	0.40	6,859.84	-212.98	583.34	1,307,736.28	3,223,725.05	40.175359	-104.699351
6,958.00	32.89	357.75	6,887.26	-196.49	583.05	1,307,752.77	3,223,724.61	40.175405	-104.699352
6,989.00	35.94	356.30	6,912.83	-178.99	582.13	1,307,770.25	3,223,723.53	40.175453	-104.699355
7,021.00	38.51	356.34	6,938.31	-159.68	580.89	1,307,789.55	3,223,722.12	40.175506	-104.699359
7,052.00	39.91	356.27	6,962.33	-140.12	579.63	1,307,809.10	3,223,720.68	40.175559	-104.699364
7,084.00	40.46	355.45	6,986.77	-119.53	578.14	1,307,829.68	3,223,719.00	40.175616	-104.699369
7,116.00	44.48	355.91	7,010.37	-97.99	576.51	1,307,851.20	3,223,717.18	40.175675	-104.699375
7,147.00	48.76	356.37	7,031.66	-75.51	575.00	1,307,873.66	3,223,715.47	40.175737	-104.699381
7,179.00	51.75	356.70	7,052.12	-50.95	573.52	1,307,898.21	3,223,713.76	40.175804	-104.699386
7,211.00	53.67	357.80	7,071.50	-25.53	572.30	1,307,923.62	3,223,712.32	40.175874	-104.699390
7,243.00	56.07	358.54	7,089.92	0.63	571.46	1,307,949.77	3,223,711.25	40.175946	-104.699393
7,274.00	60.59	359.43	7,106.19	27.00	571.00	1,307,976.14	3,223,710.55	40.176018	-104.699395
7,306.00	66.01	359.70	7,120.56	55.58	570.79	1,308,004.71	3,223,710.07	40.176097	-104.699396
7,337.00	69.64	0.04	7,132.26	84.28	570.72	1,308,033.41	3,223,709.75	40.176175	-104.699396
7,369.00	72.37	359.61	7,142.68	114.53	570.63	1,308,063.66	3,223,709.39	40.176258	-104.699396
7,401.00	75.44	358.68	7,151.55	145.27	570.17	1,308,094.39	3,223,708.65	40.176343	-104.699398
7,432.00	78.24	358.59	7,158.60	175.45	569.45	1,308,124.56	3,223,707.66	40.176426	-104.699400
7,464.00	80.52	358.25	7,164.50	206.88	568.58	1,308,155.99	3,223,706.51	40.176512	-104.699403
7,496.00	81.65	358.00	7,169.46	238.48	567.55	1,308,187.57	3,223,705.19	40.176599	-104.699407
7,527.00	83.55	357.95	7,173.45	269.20	566.46	1,308,218.28	3,223,703.83	40.176683	-104.699411
7,551.00	85.10	357.50	7,175.82	293.06	565.51	1,308,242.14	3,223,702.66	40.176748	-104.699414
7,681.00	87.66	357.07	7,184.03	422.65	559.37	1,308,371.66	3,223,695.35	40.177104	-104.699436
7,772.00	88.70	358.19	7,186.92	513.52	555.61	1,308,462.50	3,223,690.77	40.177354	-104.699450
7,864.00	88.33	359.49	7,189.31	605.47	553.74	1,308,554.42	3,223,688.08	40.177606	-104.699457
7,955.00	92.04	359.52	7,189.01	696.45	552.96	1,308,645.39	3,223,686.48	40.177856	-104.699459
8,046.00	93.15	1.02	7,184.89	787.35	553.39	1,308,736.29	3,223,686.09	40.178105	-104.699458
8,138.00	93.02	0.90	7,179.94	879.21	554.93	1,308,828.16	3,223,686.80	40.178357	-104.699452
8,229.00	92.10	1.93	7,175.88	970.08	557.17	1,308,919.05	3,223,688.22	40.178607	-104.699444
8,319.00	90.44	1.78	7,173.88	1,060.01	560.08	1,309,009.00	3,223,690.33	40.178854	-104.699434
8,411.00	90.93	1.59	7,172.78	1,151.97	562.79	1,309,100.98	3,223,692.20	40.179106	-104.699424
8,503.00	91.23	1.27	7,171.05	1,243.92	565.08	1,309,192.95	3,223,693.67	40.179359	-104.699416
8,594.00	89.74	0.90	7,170.28	1,334.90	566.81	1,309,283.94	3,223,694.57	40.179608	-104.699410
8,687.00	89.69	1.04	7,170.74	1,427.88	568.38	1,309,376.93	3,223,695.31	40.179864	-104.699404
8,779.00	88.89	359.59	7,171.88	1,519.87	568.89	1,309,468.92	3,223,694.99	40.180116	-104.699402
8,871.00	89.51	359.70	7,173.16	1,611.86	568.32	1,309,560.90	3,223,693.59	40.180369	-104.699404
8,963.00	89.94	359.39	7,173.61	1,703.86	567.59	1,309,652.89	3,223,692.03	40.180621	-104.699407
9,055.00	91.23	359.11	7,172.67	1,795.84	566.38	1,309,744.86	3,223,690.00	40.180874	-104.699411

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,147.00	88.71	359.96	7,172.72	1,887.83	565.64	1,309,836.84	3,223,688.42	40.181126	-104.699414
9,239.00	88.46	359.87	7,174.99	1,979.80	565.50	1,309,928.80	3,223,687.46	40.181379	-104.699414
9,331.00	88.21	359.90	7,177.66	2,071.76	565.31	1,310,020.76	3,223,686.45	40.181631	-104.699415
9,426.00	90.86	0.41	7,178.43	2,166.75	565.57	1,310,115.75	3,223,685.85	40.181892	-104.699414
9,521.00	91.54	359.96	7,176.44	2,261.73	565.88	1,310,210.72	3,223,685.30	40.182153	-104.699413
9,616.00	90.49	1.50	7,174.76	2,356.70	567.09	1,310,305.70	3,223,685.65	40.182413	-104.699409
9,712.00	91.98	2.17	7,172.69	2,452.63	570.16	1,310,401.65	3,223,687.86	40.182677	-104.699398
9,806.00	91.60	2.06	7,169.75	2,546.52	573.63	1,310,495.57	3,223,690.49	40.182934	-104.699385
9,901.00	89.75	0.86	7,168.63	2,641.47	576.05	1,310,590.54	3,223,692.05	40.183195	-104.699377
9,996.00	90.31	0.43	7,168.58	2,736.47	577.12	1,310,685.54	3,223,692.26	40.183456	-104.699373
10,092.00	90.93	0.37	7,167.55	2,832.46	577.79	1,310,781.53	3,223,692.07	40.183719	-104.699370
10,187.00	89.75	0.48	7,166.98	2,927.45	578.49	1,310,876.53	3,223,691.92	40.183980	-104.699368
10,282.00	89.38	2.06	7,167.70	3,022.42	580.60	1,310,971.52	3,223,693.17	40.184241	-104.699360
10,377.00	89.75	1.44	7,168.42	3,117.38	583.50	1,311,066.49	3,223,695.21	40.184502	-104.699350
10,472.00	88.95	359.56	7,169.50	3,212.36	584.33	1,311,161.48	3,223,695.19	40.184762	-104.699347
10,567.00	89.38	359.41	7,170.89	3,307.35	583.47	1,311,256.45	3,223,693.48	40.185023	-104.699350
10,662.00	89.20	358.61	7,172.06	3,402.32	581.83	1,311,351.41	3,223,690.98	40.185284	-104.699356
10,757.00	88.21	357.64	7,174.21	3,497.25	578.73	1,311,446.30	3,223,687.02	40.185544	-104.699367
10,852.00	88.95	358.82	7,176.57	3,592.17	575.79	1,311,541.20	3,223,683.23	40.185805	-104.699377
10,948.00	87.71	1.61	7,179.36	3,688.12	576.15	1,311,637.14	3,223,682.73	40.186068	-104.699376
11,043.00	87.71	3.55	7,183.16	3,782.94	580.43	1,311,732.00	3,223,686.15	40.186329	-104.699361
11,138.00	87.04	4.69	7,187.51	3,877.59	587.24	1,311,826.71	3,223,692.11	40.186588	-104.699336
11,233.00	86.36	6.08	7,192.98	3,972.01	596.14	1,311,921.21	3,223,700.16	40.186848	-104.699305
11,328.00	87.10	7.88	7,198.40	4,066.15	607.67	1,312,015.45	3,223,710.84	40.187106	-104.699263
11,423.00	87.53	10.27	7,202.85	4,159.85	622.64	1,312,109.28	3,223,724.96	40.187363	-104.699210
11,518.00	90.12	12.13	7,204.80	4,253.01	641.08	1,312,202.60	3,223,742.57	40.187619	-104.699144
11,613.00	87.53	14.49	7,206.75	4,345.43	662.94	1,312,295.21	3,223,763.60	40.187873	-104.699065
11,707.00	86.92	16.27	7,211.30	4,435.95	687.84	1,312,385.95	3,223,787.68	40.188121	-104.698976
11,802.00	86.36	18.69	7,216.87	4,526.40	716.33	1,312,476.65	3,223,815.35	40.188369	-104.698874
11,896.00	87.71	21.00	7,221.73	4,614.69	748.19	1,312,565.23	3,223,846.42	40.188612	-104.698760
11,991.00	87.29	20.89	7,225.87	4,703.33	782.12	1,312,654.17	3,223,879.55	40.188855	-104.698639
12,087.00	86.79	20.48	7,230.83	4,793.02	815.99	1,312,744.16	3,223,912.60	40.189101	-104.698518
12,182.00	88.83	19.58	7,234.46	4,882.20	848.50	1,312,833.63	3,223,944.31	40.189346	-104.698401
12,277.00	89.26	17.18	7,236.04	4,972.34	878.45	1,312,924.03	3,223,973.45	40.189594	-104.698294
12,371.00	88.46	15.58	7,237.91	5,062.50	904.95	1,313,014.43	3,223,999.13	40.189841	-104.698199
12,466.00	89.69	13.08	7,239.45	5,154.52	928.46	1,313,106.66	3,224,021.81	40.190094	-104.698115
12,561.00	91.15	13.95	7,238.75	5,246.89	950.66	1,313,199.22	3,224,043.18	40.190347	-104.698035
12,655.00	90.49	13.00	7,237.41	5,338.29	972.56	1,313,290.81	3,224,064.26	40.190598	-104.697957
12,751.00	89.38	9.98	7,237.52	5,432.35	991.68	1,313,385.05	3,224,082.53	40.190856	-104.697889
12,846.00	90.06	6.12	7,237.98	5,526.40	1,004.98	1,313,479.21	3,224,094.98	40.191115	-104.697841
12,940.00	89.88	3.46	7,238.03	5,620.06	1,012.83	1,313,572.94	3,224,101.99	40.191372	-104.697813
13,035.00	88.46	0.08	7,239.41	5,714.99	1,015.76	1,313,667.89	3,224,104.07	40.191632	-104.697802
13,130.00	90.80	357.95	7,240.02	5,809.96	1,014.13	1,313,762.84	3,224,101.58	40.191893	-104.697808
13,225.00	91.42	356.07	7,238.18	5,904.81	1,009.17	1,313,857.64	3,224,095.77	40.192153	-104.697826
13,320.00	91.48	355.52	7,235.77	5,999.52	1,002.21	1,313,952.29	3,224,087.95	40.192413	-104.697851
13,415.00	90.49	357.59	7,234.14	6,094.33	996.50	1,314,047.04	3,224,081.39	40.192674	-104.697871
13,510.00	90.62	357.20	7,233.22	6,189.23	992.19	1,314,141.89	3,224,076.22	40.192934	-104.697887
13,605.00	89.38	358.87	7,233.22	6,284.17	988.93	1,314,236.80	3,224,072.11	40.193195	-104.697898
13,700.00	88.15	358.25	7,235.27	6,379.11	986.54	1,314,331.72	3,224,068.87	40.193455	-104.697907
13,795.00	89.03	359.67	7,237.61	6,474.07	984.82	1,314,426.65	3,224,066.29	40.193716	-104.697913
13,890.00	88.03	359.72	7,240.04	6,569.03	984.31	1,314,521.61	3,224,064.93	40.193977	-104.697915
13,985.00	88.52	358.65	7,242.90	6,663.98	982.96	1,314,616.54	3,224,062.72	40.194237	-104.697920
14,080.00	88.64	355.12	7,245.26	6,758.79	977.80	1,314,711.30	3,224,056.71	40.194498	-104.697938
14,176.00	91.23	354.17	7,245.37	6,854.36	968.84	1,314,806.79	3,224,046.89	40.194760	-104.697970

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 9N-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 9N-30HZ	North Reference:	True
Wellbore:	CAMP 9N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 9N-30HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,198.00	90.97	353.15	7,244.94	6,876.23	966.42	1,314,828.63	3,224,044.26	40.194820	-104.697979
LAST MWD SURVEY									
14,252.00	90.33	350.65	7,244.33	6,929.68	958.81	1,314,882.01	3,224,036.18	40.194967	-104.698006
PROJECTION TO TD									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
768.00	768.00	-0.24	-1.22	TIE ON	
951.00	950.99	0.07	-2.10	FIRST MWD SURVEY	
14,198.00	7,244.94	6,876.23	966.42	LAST MWD SURVEY	
14,252.00	7,244.33	6,929.68	958.81	PROJECTION TO TD	

Checked By: _____ Approved By: _____ Date: _____



DAILY ACTIVITY



Weatherford®

Daily Activity Report

Drilling Services
v4.2.2674

Day 1 - 2012/07/23

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Scott Coulter

MWD Trainee: James Asher

GROUND ELEV: 4949 ft

START DEPTH: 0.0 ft

PROGRESS: 2211.0 ft

DAILY COST: USD\$16230.00

KB ELEV: 4974 ft

END DEPTH: 2211.0 ft

AVG. ROP.: 308.4 ft/hr

PREVIOUS COST: USD\$0.00

TOTAL COST: USD\$16230.00

WORK STATUS: Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-05:00	Nipple Up BOPs	5.00	0	n/a	19:35-19:40	Circ & Accumulate Surveys	0.08	1558	1
05:00-11:15	Pressure Test - Test BOP	6.25	0	n/a	19:40-19:45	Orienting With Motor	0.08	1574	1
11:15-13:15	PU Directional Tools	2.00	0	1	19:45-20:10	Rotating With Motor	0.42	1650	1
13:15-14:35	RIH	1.33	808	1	20:10-20:15	Circ & Accumulate Surveys	0.08	1650	1
14:35-15:00	Drill Out Flt, Shoe & Cmnt	0.42	853	1	20:15-20:25	Orienting With Motor	0.17	1658	1
15:00-15:45	Rotating With Motor	0.75	1011	1	20:25-20:50	Rotating With Motor	0.42	1742	1
15:45-15:50	Circ & Accumulate Surveys	0.08	1011	1	20:50-20:55	Circ & Accumulate Surveys	0.08	1742	1
15:50-16:00	Rotating With Motor	0.17	1102	1	20:55-21:05	Rotating With Motor	0.17	1835	1
16:00-16:20	Circ & Accumulate Surveys	0.33	1102	1	21:05-21:10	Circ & Accumulate Surveys	0.08	1835	1
16:20-16:35	Orienting With Motor	0.25	1127	1	21:10-21:15	Orienting With Motor	0.08	1845	1
16:35-16:50	Rotating With Motor	0.25	1193	1	21:15-21:35	Rotating With Motor	0.33	1927	1
16:50-17:00	Circ & Accumulate Surveys	0.17	1193	1	21:35-21:40	Circ & Accumulate Surveys	0.08	1927	1
17:00-17:20	Orienting With Motor	0.33	1218	1	21:40-21:50	Rotating With Motor	0.17	1937	1
17:20-17:40	Rotating With Motor	0.33	1284	1	21:50-22:15	Orienting With Motor	0.42	1950	1
17:40-17:45	Circ & Accumulate Surveys	0.08	1284	1	22:15-22:40	Rotating With Motor	0.42	2022	1
17:45-18:00	Orienting With Motor	0.25	1309	1	22:40-22:45	Circ & Accumulate Surveys	0.08	2022	1
18:00-18:15	Rotating With Motor	0.25	1375	1	22:45-22:55	Orienting With Motor	0.17	2042	1
18:15-18:20	Circ & Accumulate Surveys	0.08	1375	1	22:55-23:10	Rotating With Motor	0.25	2116	1
18:20-18:40	Orienting With Motor	0.33	1400	1	23:10-23:15	Circ & Accumulate Surveys	0.08	2116	1
18:40-19:00	Rotating With Motor	0.33	1466	1	23:15-23:35	Rotating With Motor	0.33	2211	1
19:00-19:05	Circ & Accumulate Surveys	0.08	1466	1	23:35-23:40	Circ & Accumulate Surveys	0.08	2211	1
19:05-19:15	Orienting With Motor	0.17	1486	1	23:40-24:00	Rig Service	0.33	2211	1
19:15-19:35	Rotating With Motor	0.33	1558	1			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL:	7.17	ORIENTING HRS:	2.25	ROTARY DRILL:	0.00
TIME DRILL:	0.00	ROTATING HRS:	4.92	MOTOR HRS:	9.08
MOTOR REAM:	0.00	TRIP:	1.33		
CIRC:	1.92	ROTARY DRILL:	0.00	OTHER:	13.58
MOTOR HRS:	9.08	DRILL HRS:	7.17	TOTAL HRS:	24.00

DRILLING PARAMETERS:

ROTARY TORQUE:	5000 ft-lb	STRING WEIGHT	81000 lbs
WOB SLIDING (HI):	20000 lbf	WOB ROTATE (HI):	35000 lbf
WOB SLIDING (LO):	10000 lbf	WOB ROTATE (LO):	25000 lbf
RPM (ROTARY):	55 rpm	DRAG UP:	87000 lbf
RPM (MOTOR):	167 rpm	DRAG DN:	79000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 1	HOLE SIZE: 8.75 in	SECTION TYPE: Build & Hold	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-40981	MODEL: QLE7850
SETTING: 1.5 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Varel	BIT TYPE: Varel	TYPE: VM513	MTR HRS THIS DAY: 9.083333333333333
IADC BIT GRADE: 1 / 1 / NO / ? / X / I / NO / PP			MTR HRS TO DATE: 9.083333333333333
			NOZZLES: 0.863 in² TFA



Daily Activity Report

Drilling Services
v4.2.2674

Day 1 - 2012/07/23

PUMP PARAMETERS

PRESSURE ON BTM: 1865

PRESSURE OFF BTM: 1000

TOTAL FLOW RATE: 569.66 gal/min

PUMP 1: TYPE: PZ-11

EFF.: 95.0%

SPM: 78.00

LINER: 6.00 in

STROKE VOL.: 3.8438 gal/stk

PUMP 2: TYPE: PZ-11

EFF.: 95.0%

SPM: 78.00

LINER: 6.00 in

STROKE VOL.: 3.8438 gal/stk

PUMP 3: TYPE:

EFF.: 100.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water

VISC: 27 sec/qt

WTR LOSS: 0 cc/30min

PV: 1 cP

YP: 4 lb/100 ft²

pH: 11.2

DENSITY: 8.4 lb/gal

GEL 0/10: 0.00 lb/100 ft²

SAND: 0.01

SOLIDS: 0.4

OIL: 0

TEMP: 94 °F

LIQUID BASE: Water

LIQUID RATE: 0 gal/min

GAS TYPE:

GAS RATE: 0 cu ft/min

COMMENTS:

P/U BHA #1. RIH Tag CMT @ 808'.

Drill Out CMT, FLT & Shoe.

Shoe @ 853'

Drill Ahead in build & hold section F/ 853' - 2211' MD

CUSTOMER SIGNATURE: _____

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674**Day 2 - 2012/07/24****FILE #:** 4026338**WELL NAME:** Camp 9N-30HZ**SERVICE CO.:** Weatherford Drilling Services**JOB TYPE:** Horizontal**COMPANY:** Anadarko Petroleum Corporation**SURVEY TYPE:** HEL LWD**RIG & NO:** Helmerich & Payne 307**SURFACE LOCATION:** Weld County**FIELD / LOCATION:** Wattenburg / CO / USA**DIR Supervisor:** Josh Monroe, Brian Trani**MWD Supervisor:** Jett Hunter, Scott Coulter**MWD Trainee:** James Asher**DIR Trainee:** Paul F. Trione**GROUND ELEV:** 4949 ft**START DEPTH:** 2211.0 ft**PROGRESS:** 2657.0 ft**DAILY COST:** USD\$11450.00**KB ELEV:** 4974 ft**END DEPTH:** 4868.0 ft**AVG. ROP.:** 151.1 ft/hr**PREVIOUS COST:** USD\$16230.00**TOTAL COST:** USD\$27680.00**WORK STATUS:** Operating*(All units are imperial.)*

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:05	Orienting With Motor	0.08	2226	1	08:40-09:00	Orienting With Motor	0.33	3649	1
00:05-00:25	Rotating With Motor	0.33	2306	1	09:00-12:00	Circulating - See Comments - WOO Anti Collision I	3.00	3649	1
00:25-00:30	Circ & Accumulate Surveys	0.08	2306	1	12:00-12:30	Orienting With Motor	0.50	3676	1
00:30-00:35	Orienting With Motor	0.08	2314	1	12:30-12:35	Rotating With Motor	0.08	3698	1
00:35-00:55	Rotating With Motor	0.33	2401	1	12:35-12:40	Circ & Accumulate Surveys - check shot	0.08	3698	1
00:55-01:00	Circ & Accumulate Surveys	0.08	2401	1	12:40-13:15	Rotating With Motor	0.58	3729	1
01:00-01:10	Orienting With Motor	0.17	2421	1	13:15-13:20	Circ & Accumulate Surveys	0.08	3729	1
01:10-01:25	Rotating With Motor	0.25	2496	1	13:20-13:45	Orienting With Motor	0.42	3754	1
01:25-01:30	Circ & Accumulate Surveys	0.08	2496	1	13:45-14:00	Rotating With Motor	0.25	3793	1
01:30-01:55	Rotating With Motor	0.42	2591	1	14:00-14:05	Circ & Accumulate Surveys - check shot	0.08	3793	1
01:55-02:00	Circ & Accumulate Surveys	0.08	2591	1	14:05-14:45	Rotating With Motor	0.67	3824	1
02:00-02:10	Orienting With Motor	0.17	2611	1	14:45-14:50	Circ & Accumulate Surveys	0.08	3824	1
02:10-02:30	Rotating With Motor	0.33	2686	1	14:50-15:15	Orienting With Motor	0.42	3839	1
02:30-02:35	Circ & Accumulate Surveys	0.08	2686	1	15:15-15:40	Rotating With Motor	0.42	3919	1
02:35-02:40	Rotating With Motor	0.08	2706	1	15:40-15:45	Circ & Accumulate Surveys	0.08	3919	1
02:40-02:50	Orienting With Motor	0.17	2731	1	15:45-16:15	Work On MWD - RFD	0.50	3919	1
02:50-03:10	Rotating With Motor	0.33	2781	1	16:15-16:25	Orienting With Motor	0.17	3934	1
03:10-03:15	Circ & Accumulate Surveys	0.08	2781	1	16:25-16:35	Rotating With Motor	0.17	4014	1
03:15-03:25	Rotating With Motor	0.17	2875	1	16:35-16:40	Circ & Accumulate Surveys	0.08	4014	1
03:25-03:30	Circ & Accumulate Surveys	0.08	2875	1	16:40-17:15	Orienting With Motor	0.58	4045	1
03:30-03:40	Orienting With Motor	0.17	2890	1	17:15-17:45	Rotating With Motor	0.50	4109	1
03:40-04:00	Rotating With Motor	0.33	2971	1	17:45-17:50	Circ & Accumulate Surveys	0.08	4109	1
04:00-04:05	Circ & Accumulate Surveys	0.08	2971	1	17:50-18:15	Orienting With Motor	0.42	4140	1
04:05-04:20	Rotating With Motor	0.25	3066	1	18:15-18:35	Rotating With Motor	0.33	4203	1
04:20-04:25	Circ & Accumulate Surveys	0.08	3066	1	18:35-18:40	Circ & Accumulate Surveys	0.08	4203	1
04:25-04:45	Rotating With Motor	0.33	3160	1	18:40-19:00	Rotating With Motor	0.33	4298	1
04:45-04:50	Circ & Accumulate Surveys	0.08	3160	1	19:00-19:05	Circ & Accumulate Surveys	0.08	4298	1
04:50-05:00	Rotating With Motor	0.17	3180	1	19:05-19:25	Rotating With Motor	0.33	4393	1
05:00-05:05	Orienting With Motor	0.08	3188	1	19:25-19:30	Circ & Accumulate Surveys	0.08	4393	1
05:05-05:20	Rotating With Motor	0.25	3255	1	19:30-19:50	Orienting With Motor	0.33	4418	1
05:20-05:25	Circ & Accumulate Surveys	0.08	3255	1	19:50-20:00	Rotating With Motor	0.17	4435	1
05:25-05:40	Rotating With Motor	0.25	3350	1	20:00-20:12	Orienting With Motor	0.20	4435	1
05:40-05:45	Circ & Accumulate Surveys	0.08	3350	1	20:12-20:30	Rotating With Motor	0.30	4448	1
05:45-06:00	Orienting With Motor	0.25	3371	1	20:30-20:35	Circ & Accumulate Surveys	0.08	4448	1
06:00-06:30	Rotating With Motor	0.50	3445	1	20:35-20:55	Orienting With Motor	0.33	4503	1
06:30-06:35	Circ & Accumulate Surveys	0.08	3445	1	20:55-21:15	Rotating With Motor - 2125	0.33	4583	1
06:35-06:50	Orienting With Motor	0.25	3470	1	21:15-21:20	Circ & Accumulate Surveys	0.08	4583	1
06:50-07:00	Rotating With Motor	0.17	3508	1	21:20-21:55	Orienting With Motor	0.58	4608	1
07:00-07:10	Orienting With Motor	0.17	3518	1	21:55-22:05	Rotating With Motor	0.17	4678	1

**Weatherford®**

Daily Activity Report

Drilling Services

v4.2.2674

Day 2 - 2012/07/24

07:10-07:25	Rotating With Motor	0.25	3540	1	22:05-22:10	Circ & Accumulate Surveys	0.08	4678	1
07:25-07:30	Circ & Accumulate Surveys	0.08	3540	1	22:10-22:35	Rotating With Motor	0.42	4773	1
07:30-08:00	Orienting With Motor	0.50	3571	1	22:35-22:40	Circ & Accumulate Surveys	0.08	4773	1
08:00-08:15	Rotating With Motor	0.25	3603	1	22:40-23:20	Orienting With Motor	0.67	4793	1
08:15-08:20	Orienting With Motor	0.08	3618	1	23:20-23:35	Rotating With Motor	0.25	4868	1
08:20-08:30	Rotating With Motor	0.17	3634	1	23:35-24:00	Rig Service	0.42	4868	1
08:30-08:40	Circ & Accumulate Surveys	0.17	3634	1			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 17.58	ORIENTING HRS: 7.12	ROTARY DRILL: 0.00	ROTARY TORQUE: 6000 ft-lb	STRING WEIGHT 82000 lbs
TIME DRILL: 0.00	ROTATING HRS: 10.47	MOTOR HRS: 23.08	WOB SLIDING (HI): 20000 lbf	WOB ROTATE (HI): 28000 lbf
MOTOR REAM: 0.00		TRIP: 0.00	WOB SLIDING (LO): 10000 lbf	WOB ROTATE (LO): 12000 lbf
CIRC: 5.50	ROTARY DRILL: 0.00	OTHER: 0.92	RPM (ROTARY): 55 rpm	DRAG UP: 88000 lbf
MOTOR HRS: 23.08	DRILL HRS: 17.58	TOTAL HRS: 24.00	RPM (MOTOR): 167 rpm	DRAG DN: 78000 lbf

DRILLING PARAMETERS:**BHA / MOTOR / BIT INFORMATION:**

BHA: 1 **HOLE SIZE:** 8.75 in **SECTION TYPE:** Build & Hold **SURVEY TYPE:** Positive Pulse MWD
MANFCT.: Weatherford **STABILIZER:** No **SERIAL#:** 675-40981 **MODEL:** QLE7850 **LOBE CFG.:** 7/8
SETTING: 1.5 ° **KICKPAD:** No **SIZE:** 6 3/4" (171mm) **MTR HRS THIS DAY:** 23.08333333 **MTR HRS TO DATE:** 32.16666666666666
MANFCT: Varel **BIT TYPE:** Varel **TYPE:** VM513 **NOZZLES:** 0.863 in² TFA
IADC BIT GRADE: 1 / 1 / NO / ? / X / I / NO / PP

PUMP PARAMETERS

PRESSURE ON BTM: 3300 **PRESSURE OFF BTM:** 2350 **TOTAL FLOW RATE:** 569.66 gal/min
PUMP 1: TYPE: PZ-11 **EFF.:** 95.0% **SPM:** 78.00 **LINER:** 6.00 in **STROKE VOL.:** 3.8438 gal/stk
PUMP 2: TYPE: PZ-11 **EFF.:** 95.0% **SPM:** 78.00 **LINER:** 6.00 in **STROKE VOL.:** 3.8438 gal/stk
PUMP 3: TYPE: **EFF.:** 100.0% **SPM:** 0.00 **LINER:** 0.00 in **STROKE VOL.:** 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem **VISC:** 28 sec/qt **WTR LOSS:** 0 cc/30min **PV:** 1 cP **YP:** 4 lb/100 ft² **pH:** 9.7
DENSITY: 8.7 lb/gal **GEL 0/10:** 1.00 lb/100 ft² **SAND:** 0.01 **SOLIDS:** 2.7 **OIL:** 0 **TEMP:** 108 °F
LIQUID BASE: Water **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

COMMENTS:

Drill Ahead F/ 2211' - 4868'

While drilling ahead I began projecting ahead towards the next upcoming well Camp 37-31. I noticed that the well plan was planned with a 0.6 separation factor. This was not caught by the well planner or any of the engineers. I stopped driller immediately to reevaluate the situation. I informed the Co. man of the situation we then called the drilling engineer. Decisions were made to shut in the existing well and the well plan was changed to get a max separation factor of 0.8. We slid down and to the left to avoid colliding with the existing well. The closest clearance depth we had was 10.12'.

Continue drilling ahead holding 8 degrees of angle until we need to drop it back vertical per drilling engineers request.

CUSTOMER SIGNATURE:

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674**Day 3 - 2012/07/25****FILE #:** 4026338**WELL NAME:** Camp 9N-30HZ**SERVICE CO.:** Weatherford Drilling Services**JOB TYPE:** Horizontal**COMPANY:** Anadarko Petroleum Corporation**SURVEY TYPE:** HEL LWD**RIG & NO:** Helmerich & Payne 307**SURFACE LOCATION:** Weld County**FIELD / LOCATION:** Wattenburg / CO / USA**DIR Supervisor:** Josh Monroe, Brian Trani**DIR Trainee:** Paul F. Trione**MWD Supervisor:** Jett Hunter, Scott Coulter, Rusty Komrs**MWD Trainee:** James Asher**GROUND ELEV:** 4949 ft**START DEPTH:** 4868.0 ft**PROGRESS:** 1547.0 ft**DAILY COST:** USD\$17350.00**KB ELEV:** 4974 ft**END DEPTH:** 6415.0 ft**AVG. ROP.:** 137.5 ft/hr**PREVIOUS COST:** USD\$27680.00**TOTAL COST:** USD\$45030.00**WORK STATUS:** Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:05	Circ & Accumulate Surveys	0.08	4868	1	14:50-15:15	Rotating With Motor	0.42	5438	2
00:05-00:20	Orienting With Motor	0.25	4876	1	15:15-15:20	Circ & Accumulate Surveys	0.08	5438	2
00:20-00:45	Rotating With Motor	0.42	4963	1	15:20-15:45	Rotating With Motor	0.42	5534	2
00:45-00:50	Circ & Accumulate Surveys	0.08	4963	1	15:45-15:50	Circ & Accumulate Surveys	0.08	5534	2
00:50-01:36	Orienting With Motor	0.77	4988	1	15:50-16:10	Rotating With Motor	0.33	5628	2
01:36-01:50	Rotating With Motor	0.23	5030	1	16:10-16:15	Circ & Accumulate Surveys	0.08	5628	2
01:50-01:55	Circ & Accumulate Surveys - Checkshot	0.08	5030	1	16:15-16:40	Orienting With Motor	0.42	5643	2
01:55-02:10	Rotating With Motor	0.25	5057	1	16:40-17:00	Rotating With Motor	0.33	5724	2
02:10-02:15	Circ & Accumulate Surveys	0.08	5057	1	17:00-17:05	Circ & Accumulate Surveys	0.08	5724	2
02:15-02:35	Orienting With Motor	0.33	5087	1	17:05-17:30	Rotating With Motor	0.42	5818	2
02:35-02:50	Rotating With Motor	0.25	5125	1	17:30-17:35	Circ & Accumulate Surveys	0.08	5818	2
02:50-03:00	Orienting With Motor	0.17	5131	1	17:35-17:50	Rotating With Motor	0.25	5885	2
03:00-03:30	Circulating - Temp. 500 psi drop.	0.50	5131	1	17:50-18:25	Circulating - Pressure Issues	0.58	5885	2
03:30-03:55	Rotating With Motor	0.42	5153	1	18:25-18:30	Rotating With Motor	0.08	5912	2
03:55-04:00	Circ & Accumulate Surveys	0.08	5153	1	18:30-18:35	Circ & Accumulate Surveys	0.08	5912	2
04:00-05:30	Circulating - Prep. to POOH.	1.50	5153	1	18:35-19:25	Rotating With Motor	0.83	6007	2
05:30-08:30	POOH - See Comments - Pressure Loss	3.00	5153	1	19:25-19:30	Circ & Accumulate Surveys	0.08	6007	2
08:30-10:30	Handle Directional Tools	2.00	5153	2	19:30-20:50	Rotating With Motor	1.33	6102	2
10:30-11:20	RIH	0.83	5153	2	20:50-20:55	Circ & Accumulate Surveys	0.08	6102	2
11:20-11:40	Shallow Pulse Check	0.33	5153	2	20:55-21:50	Rotating With Motor	0.92	6196	2
11:40-13:50	RIH	2.17	5153	2	21:50-21:55	Circ & Accumulate Surveys	0.08	6196	2
13:50-13:55	Circ & Accumulate Surveys - Check Shot	0.08	5153	2	21:55-22:35	Rotating With Motor	0.67	6291	2
13:55-14:15	Rotating With Motor	0.33	5248	2	22:35-22:40	Circ & Accumulate Surveys	0.08	6291	2
14:15-14:20	Circ & Accumulate Surveys	0.08	5248	2	22:40-23:20	Rotating With Motor	0.67	6386	2
14:20-14:45	Rotating With Motor	0.42	5344	2	23:20-23:40	Rig Service	0.33	6386	2
14:45-14:50	Circ & Accumulate Surveys	0.08	5344	2	23:40-24:00	Rotating With Motor	0.33	6415	2

TIME SUMMARY (hrs):

MOTOR DRILL: 11.25	ORIENTING HRS: 1.52	ROTARY DRILL: 0.00
TIME DRILL: 0.00	ROTATING HRS: 1.57	MOTOR HRS: 15.67
MOTOR REAM: 0.00		TRIP: 6.00
CIRC: 4.42	ROTARY DRILL: 0.00	OTHER: 2.33
MOTOR HRS: 15.67	DRILL HRS: 11.25	TOTAL HRS: 24.00

DRILLING PARAMETERS:

ROTARY TORQUE: 7800 ft-lb	STRING WEIGHT 120000 lbs
WOB SLIDING (HI): 24000 lbf	WOB ROTATE (HI): 28000 lbf
WOB SLIDING (LO): 18000 lbf	WOB ROTATE (LO): 17000 lbf
RPM (ROTARY): 55 rpm	DRAG UP: 108000 lbf
RPM (MOTOR): 167 rpm	DRAG DN: 139000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 1	HOLE SIZE: 8.75 in	SECTION TYPE: Build & Hold	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-40981	MODEL: QLE7850
SETTING: 1.5 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Varel	BIT TYPE: Varel	TYPE: VM513	MTR HRS THIS DAY: 5.5
IADC BIT GRADE: 1 / 1 / NO / ? / X / I / NO / PP			MTR HRS TO DATE: 37.666666666666

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674**Day 3 - 2012/07/25**

BHA: 2 HOLE SIZE: 8.75 in
 MANFCT.: Weatherford STABILIZER: No
 SETTING: 1.5 ° KICKPAD: No
 MANFCT: Varel BIT TYPE: Varel
 IADC BIT GRADE: 1 / 2 / BT / G / X / I / FC / TD

SECTION TYPE: Build & Hold
 SERIAL#: 675-41002
 SIZE: 6 3/4" (171mm)
 TYPE: VM513

SURVEY TYPE: Positive Pulse MWD
 MODEL: LE7850 LOBE CFG.: 7/8
 MTR HRS THIS DAY: 10.166666666666667 MTR HRS TO DATE: 10.166666666666667
 NOZZLES: 0.863 in² TFA

PUMP PARAMETERS

PRESSURE ON BTM: 3400		PRESSURE OFF BTM: 2400		TOTAL FLOW RATE: 569.66 gal/min	
PUMP 1:	TYPE: PZ-11	EFF.: 95.0%	SPM: 78.00	LINER: 6.00 in	STROKE VOL.: 3.8438 gal/stk
PUMP 2:	TYPE: PZ-11	EFF.: 95.0%	SPM: 78.00	LINER: 6.00 in	STROKE VOL.: 3.8438 gal/stk
PUMP 3:	TYPE:	EFF.: 100.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water	VISC: 27 sec/qt	WTR LOSS: 0 cc/30min	PV: 1 cP	YP: 4 lb/100 ft ²	pH: 8.4
DENSITY: 8.4 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0.01	SOLIDS: 0.4	OIL: 0	TEMP: 157 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Drill Ahead F/ 4868' - 6415'

We continued to slide approx. 20ft per stand up and to the left to maintain 8° INC to drop point of nudge and counteract moderate push right/South from 4868' to 5131' MD.

Around 4900' MD we started experiencing differential spikes up to 1300psi when rotating. Survey at 4903' MD showed a 13 degree right swing in AZM South indicating a change in formation and possible indicator of pressure spikes.

At 5131' MD, while sliding, pressure began to spike again followed by a 500psi pressure loss from 2300psi off bottom to to 1800psi. Shakers were monitored for signs of rubber but nothing was found. Strong reactive torque from motor and ability of weight to drill off showed motor was functioning. Pressure was steadily regained and the company rep. decided to continue drilling to 5153' MD.

At 04:00, 5153' MD, Company Rep. decided to TOOH to inspect drillstring and BHA.

Motor and bit looked excellent, no problems found. Differential spikes were due to Sussex formation which is very normal for this area. Company man was informed that I didn't think a trip was necessary but they decided to anyway to troubleshoot Pressure loss, which was back to normal before tripping.

Once picking up the new motor and began drilling we experienced a 500 psi pressure drop shortly followed by an excessive pressure increase. Pressure increase is believed to be plugging of the jets from stator rubber due to the fact we were getting black rubber over the shakers.

CUSTOMER SIGNATURE:



Weatherford®

Daily Activity Report

Drilling Services
v4.2.2674

Day 4 - 2012/07/26

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

DIR Trainee: Paul F. Trione

MWD Supervisor: Jett Hunter, Rusty Komrs

MWD Trainee: James Asher

GROUND ELEV: 4949 ft

START DEPTH: 6415.0 ft

PROGRESS: 438.0 ft

DAILY COST: USD\$24227.50

KB ELEV: 4974 ft

END DEPTH: 6853.0 ft

AVG. ROP.: 47.4 ft/hr

PREVIOUS COST: USD\$45030.00

WORK STATUS: Operating

(All units are imperial.)

TOTAL COST: USD\$69257.50

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:40	Rotating With Motor	0.67	6481	2	16:20-16:30	Circ & Accumulate Surveys	0.17	6639	3
00:40-00:45	Circ & Accumulate Surveys	0.08	6481	2	16:30-16:50	Orienting With Motor	0.33	6670	3
00:45-01:10	Orienting With Motor	0.42	6496	2	16:50-17:00	Circ & Accumulate Surveys	0.17	6670	3
01:10-01:50	Rotating With Motor	0.67	6576	2	17:00-17:55	Orienting With Motor	0.92	6702	3
01:50-01:55	Circ & Accumulate Surveys	0.08	6576	2	17:55-18:00	Circ & Accumulate Surveys	0.08	6702	3
01:55-02:10	Rotating With Motor - TD Section	0.25	6607	2	18:00-18:20	Rotating With Motor	0.33	6715	3
02:10-02:15	Circ & Accumulate Surveys	0.08	6607	2	18:20-18:45	Orienting With Motor	0.42	6734	3
02:15-04:40	Circulating - Pump Sweep	2.42	6607	2	18:45-18:50	Circ & Accumulate Surveys	0.08	6734	3
04:40-08:45	POOH To Change BHA	4.08	6607	2	18:50-19:10	Rotating With Motor	0.33	6744	3
08:45-09:45	Handle Directional Tools	1.00	6607	3	19:10-19:30	Orienting With Motor	0.33	6765	3
09:45-10:00	Other - See Comments - Orient Motor	0.25	6607	3	19:30-19:35	Circ & Accumulate Surveys	0.08	6765	3
10:00-10:45	RIH	0.75	6607	3	19:35-22:20	Orienting With Motor - Sweep /Stack Stall	2.75	6805	3
10:45-12:20	Slip And Cut	1.58	6607	3	22:20-22:25	Circ & Accumulate Surveys	0.08	6805	3
12:20-12:30	Shallow Test Tools	0.17	6607	3	22:25-22:50	Rotating With Motor	0.42	6815	3
12:30-15:45	RIH	3.25	6607	3	22:50-23:35	Orienting With Motor	0.75	6829	3
15:45-16:00	Circ & Accumulate Surveys	0.25	6607	3	23:35-23:40	Circ & Accumulate Surveys	0.08	6829	3
16:00-16:20	Orienting With Motor	0.33	6639	3	23:40-24:00	Orienting With Motor	0.33	6853	3

TIME SUMMARY (hrs):

MOTOR DRILL:	9.25	ORIENTING HRS:	0.42	ROTARY DRILL:	0.00
TIME DRILL:	0.00	ROTATING HRS:	1.58	MOTOR HRS:	12.92
MOTOR REAM:	0.00			TRIP:	8.08
CIRC:	3.67	ROTARY DRILL:	0.00	OTHER:	3.00
MOTOR HRS:	12.92	DRILL HRS:	9.25	TOTAL HRS:	24.00

DRILLING PARAMETERS:

ROTARY TORQUE:	10500 ft-lb	STRING WEIGHT	150000 lbs
WOB SLIDING (HI):	34000 lbf	WOB ROTATE (HI):	35000 lbf
WOB SLIDING (LO):	22000 lbf	WOB ROTATE (LO):	20000 lbf
RPM (ROTARY):	45 rpm	DRAG UP:	158000 lbf
RPM (MOTOR):	167 rpm	DRAG DN:	140000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 2	HOLE SIZE: 8.75 in	SECTION TYPE: Build & Hold	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-41002	MODEL: LE7850
SETTING: 1.5 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Varel	BIT TYPE: Varel	TYPE: VM513	MTR HRS THIS DAY: 4.666666666666667
IADC BIT GRADE: 1 / 2 / BT / G / X / I / FC / TD			MTR HRS TO DATE: 14.833333333333333
			NOZZLES: 0.863 in² TFA

BHA: 3	HOLE SIZE: 8.75 in	SECTION TYPE: Build	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-4037	MODEL: LE7850
SETTING: 2.38 °	KICKPAD: YES	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Security	BIT TYPE: PDC Bit Security	TYPE: FXD54	MTR HRS THIS DAY: 8.25
IADC BIT GRADE: 1 / 1 / NO / A / X / I / CT / TD			MTR HRS TO DATE: 8.25
			NOZZLES: 1.011 in² TFA



Weatherford

Daily Activity Report

Drilling Services

v4.2.2674

Day 4 - 2012/07/26

PUMP PARAMETERS

PRESSURE ON BTM: 4500

PRESSURE OFF BTM: 4000

TOTAL FLOW RATE: 525.84 gal/min

PUMP 1: TYPE: PZ-11

EFF.: 95.0%

SPM: 72.00

LINER: 6.00 in

STROKE VOL.: 3.8438 gal/stk

PUMP 2: TYPE: PZ-11

EFF.: 95.0%

SPM: 72.00

LINER: 6.00 in

STROKE VOL.: 3.8438 gal/stk

PUMP 3: TYPE:

EFF.: 100.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water

VISC: 38 sec/qt

WTR LOSS: 8 cc/30min

PV: 13 cP

YP: 14 lb/100 ft² pH: 8.3

DENSITY: 9.2 lb/gal

GEL 0/10: 5.00 lb/100 ft²

SAND: 0.04

SOLIDS: 3.7

OIL: 0

TEMP: 134 °F

LIQUID BASE: Water

LIQUID RATE: 0 gal/min

GAS TYPE:

GAS RATE: 0 cu ft/min

COMMENTS:

Drill Ahead F/ 6386' - 6607'. TD Verticle Section. POOH to P/U Curve assembly.

Once picking up the new motor and began drilling we experienced a 500 psi pressure drop shortly followed by an excessive pressure increase. Pressure increase is beleived to by plugging of the jets from stator rubber due to the fact we were getting black rubber over the shakers.

CUSTOMER SIGNATURE: _____

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674**Day 5 - 2012/07/27****FILE #:** 4026338**WELL NAME:** Camp 9N-30HZ**SERVICE CO.:** Weatherford Drilling Services**JOB TYPE:** Horizontal**COMPANY:** Anadarko Petroleum Corporation**SURVEY TYPE:** HEL LWD**RIG & NO:** Helmerich & Payne 307**SURFACE LOCATION:** Weld County**FIELD / LOCATION:** Wattenburg / CO / USA**DIR Supervisor:** Josh Monroe, Brian Trani**DIR Trainee:** Paul F. Trione**MWD Supervisor:** Jett Hunter, Rusty Komrs**MWD Trainee:** Julio Rincon, James Asher**GROUND ELEV:** 4949 ft**START DEPTH:** 6853.0 ft**PROGRESS:** 671.0 ft**DAILY COST:** USD\$18327.50**KB ELEV:** 4974 ft**END DEPTH:** 7524.0 ft**AVG. ROP.:** 38.2 ft/hr**PREVIOUS COST:** USD\$69257.50**TOTAL COST:** USD\$87585.00**WORK STATUS:** Operating*(All units are imperial.)*

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:20	Orienting With Motor	0.33	6860	3	13:30-13:40	Circ & Accumulate Surveys	0.17	7176	3
00:20-00:25	Circ & Accumulate Surveys	0.08	6860	3	13:40-13:55	Rotating With Motor	0.25	7189	3
00:25-00:40	Rig Service	0.25	6860	3	13:55-14:05	Circ & Accumulate Surveys	0.17	7207	3
00:40-00:55	Rotating With Motor	0.25	6866	3	14:05-14:15	Circ & Accumulate Surveys	0.17	7207	3
00:55-02:40	Orienting With Motor - Stack Stall, Hang Up	1.75	6892	3	14:15-14:25	Rotating With Motor	0.17	7218	3
02:40-02:45	Circ & Accumulate Surveys	0.08	6892	3	14:25-15:15	Orienting With Motor	0.83	7218	3
02:45-03:00	Circ & Condition Mud - Lube Sweep	0.25	6892	3	15:15-15:30	Circ & Accumulate Surveys	0.25	7239	3
03:00-03:55	Orienting With Motor	0.92	6923	3	15:30-16:05	Circulating - Work stuck pipe	0.58	7239	3
03:55-04:00	Circ & Accumulate Surveys	0.08	6923	3	16:05-16:35	Orienting With Motor	0.50	7271	3
04:00-04:10	Rotating With Motor	0.17	6928	3	16:35-16:55	Circ & Accumulate Surveys	0.33	7271	3
04:10-04:50	Orienting With Motor	0.67	6955	3	16:55-17:40	Orienting With Motor	0.75	7303	3
04:50-05:20	Circ & Accumulate Surveys - Noise / Pump Issues	0.50	6955	3	17:40-17:50	Circ & Accumulate Surveys	0.17	7303	3
05:20-05:25	Rotating With Motor	0.08	6959	3	17:50-18:40	Orienting With Motor	0.83	7334	3
05:25-05:30	Circ & Accumulate Surveys	0.08	6986	3	18:40-18:45	Circ & Accumulate Surveys	0.08	7334	3
05:30-06:05	Orienting With Motor	0.58	6986	3	18:45-18:55	Rotating With Motor	0.17	7349	3
06:05-06:10	Circ & Accumulate Surveys	0.08	6986	3	18:55-19:35	Orienting With Motor	0.67	7366	3
06:10-06:30	Rotating With Motor	0.33	6997	3	19:35-19:40	Circ & Accumulate Surveys	0.08	7366	3
06:30-06:45	Orienting With Motor	0.25	7018	3	19:40-19:50	Rotating With Motor	0.17	7383	3
06:45-06:55	Circ & Accumulate Surveys	0.17	7018	3	19:50-20:40	Orienting With Motor	0.83	7397	3
06:55-07:20	Rotating With Motor	0.42	7031	3	20:40-20:45	Circ & Accumulate Surveys	0.08	7397	3
07:20-07:35	Circ & Accumulate Surveys	0.25	7049	3	20:45-21:00	Rotating With Motor	0.25	7413	3
07:35-07:40	Circ & Accumulate Surveys	0.08	7049	3	21:00-21:25	Orienting With Motor	0.42	7429	3
07:40-08:00	Rotating With Motor	0.33	7057	3	21:25-21:30	Circ & Accumulate Surveys	0.08	7429	3
08:00-10:00	Orienting With Motor - Bad SLD Bad For	2.00	7075	3	21:30-21:55	Rotating With Motor	0.42	7450	3
10:00-11:00	Work Stuck Pipe	1.00	7075	3	21:55-22:10	Orienting With Motor	0.25	7461	3
11:00-11:15	Orienting With Motor - Bad SLD Bad Form	0.25	7081	3	22:10-22:15	Circ & Accumulate Surveys	0.08	7461	3
11:15-11:30	Circ & Accumulate Surveys	0.25	7081	3	22:15-22:40	Rotating With Motor	0.42	7492	3
11:30-11:45	Rotating With Motor	0.25	7089	3	22:40-22:45	Circ & Accumulate Surveys	0.08	7492	3
11:45-12:05	Orienting With Motor	0.33	7112	3	22:45-23:10	Rotating With Motor	0.42	7514	3
12:05-12:15	Circ & Accumulate Surveys	0.17	7112	3	23:10-23:30	Orienting With Motor	0.33	7524	3
12:15-12:45	Orienting With Motor	0.50	7144	3	23:30-23:55	Rig Service	0.42	7524	3
12:45-13:00	Circ & Accumulate Surveys	0.25	7144	3	23:55-24:00	Circ & Accumulate Surveys	0.08	7524	3
13:00-13:30	Orienting With Motor	0.50	7176	3			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 17.58	ORIENTING HRS: 13.50	ROTARY DRILL: 0.00
TIME DRILL: 0.00	ROTATING HRS: 4.08	MOTOR HRS: 22.33
MOTOR REAM: 0.00		TRIP: 0.00
CIRC: 4.75	ROTARY DRILL: 0.00	OTHER: 1.67
MOTOR HRS: 22.33	DRILL HRS: 17.58	TOTAL HRS: 24.00

DRILLING PARAMETERS:

ROTARY TORQUE: 11000 ft-lb	STRING WEIGHT 143000 lbs
WOB SLIDING (HI): 45000 lbf	WOB ROTATE (HI): 28000 lbf
WOB SLIDING (LO): 12000 lbf	WOB ROTATE (LO): 12000 lbf
RPM (ROTARY): 25 rpm	DRAG UP: 178000 lbf
RPM (MOTOR): 170 rpm	DRAG DN: 123000 lbf

**Weatherford®**

Daily Activity Report

Drilling Services

v4.2.2674

Day 5 - 2012/07/27**BHA / MOTOR / BIT INFORMATION:**

BHA: 3	HOLE SIZE: 8.75 in	SECTION TYPE: Build	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-4037	MODEL: LE7850
SETTING: 2.38 °	KICKPAD: YES	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Security	BIT TYPE: PDC Bit Security	TYPE: FXD54	MTR HRS THIS DAY: 22.33333333
IADC BIT GRADE: 1 / 1 / NO / A / X / I / CT / TD			MTR HRS TO DATE: 30.5833333333
			NOZZLES: 1.011 in ² TFA

PUMP PARAMETERS

PRESSURE ON BTM: 3100	PRESSURE OFF BTM: 2750	TOTAL FLOW RATE: 547.75 gal/min
PUMP 1: TYPE: PZ-11	EFF.: 95.0%	SPM: 75.00
PUMP 2: TYPE: PZ-11	EFF.: 95.0%	SPM: 75.00
PUMP 3: TYPE:	EFF.: 100.0%	SPM: 0.00
	LINER: 6.00 in	STROKE VOL.: 3.8438 gal/stk
	LINER: 6.00 in	STROKE VOL.: 3.8438 gal/stk
	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water	VISC: 37 sec/qt	WTR LOSS: 8.1 cc/30min	PV: 14 cP	YP: 12 lb/100 ft ²	pH: 8.3
DENSITY: 9.2 lb/gal	GEL 0/10: 5.00 lb/100 ft ²	SAND: 0.04	SOLIDS: 3.7	OIL: 0	TEMP: 120 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Kick off curve. Drill F/ 6829' - 7524'.

CUSTOMER SIGNATURE:

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674

Day 6 - 2012/07/28

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe

DIR Trainee: Paul F. Trione

MWD Supervisor: Jett Hunter, Rusty Komrs

MWD Trainee: James Asher, Julio Rincon

GROUND ELEV: 4949 ft

START DEPTH: 7524.0 ft

PROGRESS: 87.0 ft

DAILY COST: USD\$18327.50

KB ELEV: 4974 ft

END DEPTH: 7611.0 ft

AVG. ROP.: 47.5 ft/hr

PREVIOUS COST: USD\$87585.00

WORK STATUS: Operating

(All units are imperial.)

TOTAL COST: USD\$105912.50

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:20	Rotating With Motor	0.33	7545	3	02:00-02:15	Rotating With Motor	0.25	7600	3
00:20-00:45	Orienting With Motor	0.42	7556	3	02:15-02:30	Orienting With Motor	0.25	7611	3
00:45-00:50	Circ & Accumulate Surveys	0.08	7556	3	02:30-02:40	Circulating	0.17	7611	3
00:50-01:10	Rotating With Motor	0.33	7571	3	02:40-02:45	Circ & Accumulate Surveys	0.08	7611	3
01:10-01:20	Orienting With Motor	0.17	7580	3	02:45-05:00	Circ Bottoms Up - Send Sweeps	2.25	7611	3
01:20-01:50	Work Stuck Pipe & Circ	0.50	7580	3	05:00-09:00	POOH To Run Casing	4.00	7611	3
01:50-01:55	Rotating With Motor	0.08	7587	3	09:00-10:30	Lay Down Directional Tools	1.50	7611	3
01:55-02:00	Circ & Accumulate Surveys	0.08	7587	3	10:30-24:00	Wait On Orders	13.50	7611	n/a

TIME SUMMARY (hrs):

MOTOR DRILL:	1.83	ORIENTING HRS:	0.83	ROTARY DRILL:	0.00
TIME DRILL:	0.00	ROTATING HRS:	1.00	MOTOR HRS:	5.00
MOTOR REAM:	0.00	TRIP:	4.00	OTHER:	15.00
CIRC:	3.17	ROTARY DRILL:	0.00	TOTAL HRS:	24.00
MOTOR HRS:	5.00	DRILL HRS:	1.83		

DRILLING PARAMETERS:

ROTARY TORQUE:	12000 ft-lb	STRING WEIGHT	141000 lbs
WOB SLIDING (HI):	36000 lbf	WOB ROTATE (HI):	15000 lbf
WOB SLIDING (LO):	14000 lbf	WOB ROTATE (LO):	12000 lbf
RPM (ROTARY):	30 rpm	DRAG UP:	191000 lbf
RPM (MOTOR):	160 rpm	DRAG DN:	116000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 3	HOLE SIZE: 8.75 in	SECTION TYPE: Build	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-4037	MODEL: LE7850
SETTING: 2.38 °	KICKPAD: YES	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Security	BIT TYPE: PDC Bit Security	TYPE: FXD54	MTR HRS THIS DAY: 5
IADC BIT GRADE: 1 / 1 / NO / A / X / I / CT / TD			NOZZLES: 1.011 in² TFA
			MTR HRS TO DATE: 35.583333333333

PUMP PARAMETERS

PRESSURE ON BTM: 3300	PRESSURE OFF BTM: 3000	TOTAL FLOW RATE: 547.75 gal/min
PUMP 1: TYPE: PZ-11	EFF.: 95.0% SPM: 75.00	LINER: 6.00 in
PUMP 2: TYPE: PZ-11	EFF.: 95.0% SPM: 75.00	LINER: 6.00 in
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in
		STROKE VOL.: 3.8438 gal/stk
		STROKE VOL.: 3.8438 gal/stk
		STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water	VISC: 40 sec/qt	WTR LOSS: 1 cc/30min	PV: 17 cP	YP: 15 lb/100 ft²	pH: 8.7
DENSITY: 9.8 lb/gal	GEL 0/10: 4.00 lb/100 ft²	SAND: 0.05	SOLIDS: 7.1	OIL: 1	TEMP: 168 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Drill ahead in curve T/ 7611'. Curve landed

POOH to run casing

Lay down directional tools and WOO.

CUSTOMER SIGNATURE:

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674

Day 7 - 2012/07/29

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

DIR Trainee: Paul F. Trione

MWD Supervisor: Jett Hunter, Rusty Komrs

MWD Trainee: James Asher, Julio Rincon

GROUND ELEV: 4949 ft

START DEPTH: 7611.0 ft

PROGRESS: 31.0 ft

DAILY COST: USD\$34150.00

KB ELEV: 4974 ft

END DEPTH: 7642.0 ft

AVG. ROP.: 182.3 ft/hr

PREVIOUS COST: USD\$105912.50

TOTAL COST: USD\$140062.50

WORK STATUS: Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-15:00	Wait On Orders	15.00	7611	n/a	18:45-22:10	RIH	3.42	7611	4
15:00-15:15	PU Directional Tools	0.25	7611	4	22:10-23:45	Drill Out Flt, Shoe & Cmmt	1.58	7611	4
15:15-15:30	Rig Repair	0.25	7611	4	23:45-23:55	Rotating With Motor	0.17	7642	4
15:30-17:00	PU Directional Tools	1.50	7611	4	23:55-24:00	Circ & Accumulate Surveys - Check shot	0.08	7642	4
17:00-18:45	Other - See Comments - Program LWD	1.75	7611	4			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 0.17	ORIENTING HRS: 0.00	ROTARY DRILL: 0.00
TIME DRILL: 0.00	ROTATING HRS: 0.17	MOTOR HRS: 1.83
MOTOR REAM: 0.00		TRIP: 3.42
CIRC: 1.67	ROTARY DRILL: 0.00	OTHER: 18.75
MOTOR HRS: 1.83	DRILL HRS: 0.17	TOTAL HRS: 24.00

DRILLING PARAMETERS:

ROTARY TORQUE:	STRING WEIGHT	0 lbs
WOB SLIDING (HI): 0 lbf	WOB ROTATE (HI): 0 lbf	
WOB SLIDING (LO): 0 lbf	WOB ROTATE (LO): 0 lbf	
RPM (ROTARY): 55 rpm	DRAG UP: 0 lbf	
RPM (MOTOR):	DRAG DN: 0 lbf	

BHA / MOTOR / BIT INFORMATION:

BHA: 4	HOLE SIZE: 6.125 in	SECTION TYPE: Lateral 1	SURVEY TYPE: HEL LWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 475-3966	MODEL: ME6770
SETTING: 1.5 °	KICKPAD: No	SIZE: 5" (127mm)	LOBE CFG.: 6/7
MANFCT: Security	BIT TYPE: Security PDC Bit	TYPE: FXD54	MTR HRS THIS DAY: 1.833333333
IADC BIT GRADE: 1 / 3 / BT / G / X / I / BT / BHA			MTR HRS TO DATE: 1.8333333333333
			NOZZLES: 0.61 in ² TFA

PUMP PARAMETERS

PRESSURE ON BTM: 3500	PRESSURE OFF BTM: 2500	TOTAL FLOW RATE: 299.00 gal/min
PUMP 1: TYPE: PZ-11	EFF.: 95.0% SPM: 78.00	LINER: 6.00 in
PUMP 2: TYPE: PZ-11	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in
		STROKE VOL.: 3.8438 gal/stk
		STROKE VOL.: 0.0000 gal/stk
		STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water	VISC: 40 sec/qt	WTR LOSS: 6.2 cc/30min	PV: 14 cP	YP: 7 lb/100 ft ²	pH: 10.2
DENSITY: 9.9 lb/gal	GEL 0/10: 2.00 lb/100 ft ²	SAND: 0.5	SOLIDS: 8.2	OIL: 0	TEMP: 180 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Wait On Orders.

P/U Lateral BHA

Drill CMT, FLT & Shoe

Drill Ahead F/ 7611' - 7642'

New Target TVD = 7173' 0" VS @ 90 Degrees

CUSTOMER SIGNATURE: _____

**Weatherford®**

Daily Activity Report

Day 8 - 2012/07/30**Drilling Services**
v4.2.2674**FILE #:** 4026338**WELL NAME:** Camp 9N-30HZ**SERVICE CO.:** Weatherford Drilling Services**JOB TYPE:** Horizontal**COMPANY:** Anadarko Petroleum Corporation**SURVEY TYPE:** HEL LWD**RIG & NO:** Helmerich & Payne 307**SURFACE LOCATION:** Weld County**FIELD / LOCATION:** Wattenburg / CO / USA**DIR Supervisor:** Josh Monroe, Charles Apodaca**DIR Trainee:** Paul F. Trione**MWD Supervisor:** Jett Hunter, Rusty Komrs**MWD Trainee:** James Asher, Julio Rincon**GROUND ELEV:** 4949 ft**START DEPTH:** 7642.0 ft**PROGRESS:** 2418.0 ft**DAILY COST:** USD\$20550.00**KB ELEV:** 4974 ft**END DEPTH:** 10060.0 ft**AVG. ROP.:** 119.4 ft/hr**PREVIOUS COST:** USD\$140062.50**TOTAL COST:** USD\$160612.50**WORK STATUS:** Operating*(All units are imperial.)*

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:35	Rotating With Motor	0.58	7733	4	11:50-12:25	Rotating With Motor	0.58	8831	4
00:35-00:40	Circ & Accumulate Surveys	0.08	7733	4	12:25-12:30	Circ & Accumulate Surveys	0.08	8831	4
00:40-00:45	Rotating With Motor	0.08	7738	4	12:30-13:20	Rotating With Motor	0.83	8923	4
00:45-01:15	Orienting With Motor	0.50	7763	4	13:20-13:25	Circ & Accumulate Surveys	0.08	8923	4
01:15-01:30	Rotating With Motor	0.25	7794	4	13:25-14:10	Rotating With Motor	0.75	9015	4
01:30-01:50	Orienting With Motor	0.33	7814	4	14:10-14:15	Circ & Accumulate Surveys	0.08	9015	4
01:50-02:00	Rotating With Motor	0.17	7824	4	14:15-15:00	Rotating With Motor	0.75	9107	4
02:00-02:15	Circ & Accumulate Surveys - Spr & Conn.	0.25	7824	4	15:00-15:05	Circ & Accumulate Surveys	0.08	9107	4
02:15-02:40	Rotating With Motor	0.42	7894	4	15:05-15:35	Orienting With Motor	0.50	9129	4
02:40-02:45	Circ & Accumulate Surveys - Check shot	0.08	7894	4	15:35-16:10	Rotating With Motor	0.58	9199	4
02:45-03:00	Rotating With Motor	0.25	7916	4	16:10-16:15	Circ & Accumulate Surveys	0.08	9199	4
03:00-03:05	Circ & Accumulate Surveys - Connection	0.08	7916	4	16:15-16:55	Rotating With Motor	0.67	9291	4
03:05-03:10	Rotating With Motor	0.08	7921	4	16:55-17:00	Circ & Accumulate Surveys	0.08	9291	4
03:10-03:40	Orienting With Motor	0.50	7951	4	17:00-17:35	Rotating With Motor	0.58	9383	4
03:40-03:50	Rotating With Motor	0.17	7977	4	17:35-17:40	Circ & Accumulate Surveys	0.08	9383	4
03:50-04:15	Orienting With Motor	0.42	7992	4	17:40-18:00	Orienting With Motor	0.33	9398	4
04:15-04:25	Rotating With Motor	0.17	8007	4	18:00-18:35	Rotating With Motor	0.58	9478	4
04:25-04:30	Circ & Accumulate Surveys - Connection	0.08	8007	4	18:35-18:40	Circ & Accumulate Surveys - Connection	0.08	9478	4
04:30-05:05	Rotating With Motor	0.58	8098	4	18:40-19:10	Rotating With Motor	0.50	9573	4
05:05-05:10	Circ & Accumulate Surveys - Connection	0.08	8098	4	19:10-19:15	Circ & Accumulate Surveys - Connection	0.08	9573	4
05:10-05:15	Rotating With Motor	0.08	8103	4	19:15-19:20	Rotating With Motor	0.08	9578	4
05:15-05:40	Work On MWD - Work on LWD	0.42	8103	4	19:20-19:45	Orienting With Motor	0.42	9601	4
05:40-05:55	Orienting With Motor	0.25	8113	4	19:45-20:05	Rotating With Motor	0.33	9668	4
05:55-06:30	Rotating With Motor	0.58	8190	4	20:05-20:10	Circ & Accumulate Surveys - Connection	0.08	9668	4
06:30-06:40	Circ & Accumulate Surveys	0.17	8190	4	20:10-20:40	Rotating With Motor	0.50	9764	4
06:40-07:00	Orienting With Motor	0.33	8215	4	20:40-20:45	Circ & Accumulate Surveys - Connection	0.08	9764	4
07:00-07:30	Rotating With Motor	0.50	8281	4	20:45-20:50	Rotating With Motor	0.08	9769	4
07:30-07:40	Circ & Accumulate Surveys	0.17	8281	4	20:50-21:05	Orienting With Motor	0.25	9781	4
07:40-07:55	Orienting With Motor	0.25	8301	4	21:05-21:50	Rotating With Motor	0.75	9858	4
07:55-08:40	Rotating With Motor	0.75	8371	4	21:50-21:55	Circ & Accumulate Surveys - Connection	0.08	9858	4
08:40-08:45	Circ & Accumulate Surveys	0.08	8371	4	21:55-22:00	Rotating With Motor	0.08	9863	4
08:45-09:30	Rotating With Motor	0.75	8463	4	22:00-22:10	Orienting With Motor	0.17	9878	4
09:30-09:35	Circ & Accumulate Surveys	0.08	8463	4	22:10-22:40	Rotating With Motor	0.50	9953	4
09:35-10:15	Rotating With Motor	0.67	8555	4	22:40-22:45	Circ & Accumulate Surveys - Connection.	0.08	9953	4
10:15-10:35	Circ & Accumulate Surveys	0.33	8567	4	22:45-23:20	Rotating With Motor	0.58	10048	4
10:35-11:10	Rotating With Motor	0.58	8646	4	23:20-23:50	Rig Service - SPR	0.50	10048	4
11:10-11:15	Circ & Accumulate Surveys	0.08	8646	4	23:50-23:55	Circ & Accumulate Surveys - Connection	0.08	10048	4
11:15-11:45	Rotating With Motor	0.50	8739	4	23:55-24:00	Rotating With Motor	0.08	10060	4
11:45-11:50	Circ & Accumulate Surveys	0.08	8739	4			0.00		

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674

Day 8 - 2012/07/30

TIME SUMMARY (hrs):			DRILLING PARAMETERS:		
MOTOR DRILL:	20.25	ORIENTING HRS:	4.25	ROTARY DRILL:	0.00
TIME DRILL:	0.00	ROTATING HRS:	16.00	MOTOR HRS:	23.08
MOTOR REAM:	0.00	TRIP:	0.00	ROTARY TORQUE:	6600 ft-lb
CIRC:	2.83	ROTARY DRILL:	0.00	WOB SLIDING (HI):	20000 lbf
		OTHER:	0.92	WOB SLIDING (LO):	5000 lbf
MOTOR HRS:	23.08	DRILL HRS:	20.25	RPM (ROTARY):	50 rpm
		TOTAL HRS:	24.00	RPM (MOTOR):	246 rpm
				STRING WEIGHT	124000 lbs
				WOB ROTATE (HI):	25000 lbf
				WOB ROTATE (LO):	10000 lbf
				DRAG UP:	163000 lbf
				DRAG DN:	101000 lbf

— BHA / MOTOR / BIT INFORMATION: —

BHA: 4 HOLE SIZE: 6.125 in SECTION TYPE: Lateral 1 SURVEY TYPE: HEL LWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 475-3966 MODEL: ME6770 LOBE CFG.: 6/7
 SETTING: 1.5 ° KICKPAD: No SIZE: 5" (127mm) MTR HRS THIS DAY: 23.08333333 MTR HRS TO DATE: 24.916666666666
 MANFCT: Security BIT TYPE: Security PDC Bit TYPE: FXD54 NOZZLES: 0.61 in² TFA
 IADC BIT GRADE: 1 / 3 / BT / G / X / I / BT / BHA

— PUMP PARAMETERS —

PRESSURE ON BTM: 3500 PRESSURE OFF BTM: 2500 TOTAL FLOW RATE: 299.00 gal/min
 PUMP 1: TYPE: PZ-11 EFF.: 95.0% SPM: 78.00 LINER: 6.00 in STROKE VOL.: 3.8438 gal/stk
 PUMP 2: TYPE: PZ-11 EFF.: 95.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD —

MUD TYPE: Water VISC: 40 sec/qt WTR LOSS: 5.8 cc/30min PV: 17 cP YP: 16 lb/100 ft² pH: 8.8
 DENSITY: 10 lb/gal GEL 0/10: 4.00 lb/100 ft² SAND: 0.5 SOLIDS: 8.2 OIL: 0 TEMP: 183 °F
 LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

— COMMENTS: —

Drill F/ 7642' - 10060'

CUSTOMER SIGNATURE: _____



Weatherford®

Daily Activity Report

Drilling Services
v4.2.2674

Day 9 - 2012/07/31

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

DIR Trainee: Paul F. Trione

MWD Supervisor: Jett Hunter, Rusty Komrs

MWD Trainee: Julio Rincon, James Asher

GROUND ELEV: 4949 ft

START DEPTH: 10060.0 ft

PROGRESS: 1983.0 ft

DAILY COST: USD\$20550.00

KB ELEV: 4974 ft

END DEPTH: 12043.0 ft

AVG. ROP.: 90.1 ft/hr

PREVIOUS COST: USD\$160612.50

TOTAL COST: USD\$181162.50

WORK STATUS: Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:40	Rotating With Motor	0.67	10144	4	12:15-12:35	Orienting With Motor	0.33	11105	4
00:40-00:45	Circ & Accumulate Surveys - Connection	0.08	10144	4	12:35-13:25	Rotating With Motor	0.83	11190	4
00:45-00:50	Rotating With Motor	0.08	10149	4	13:25-13:30	Circ & Accumulate Surveys	0.08	11190	4
00:50-01:10	Orienting With Motor	0.33	10164	4	13:30-13:50	Orienting With Motor	0.33	11200	4
01:10-01:40	Rotating With Motor	0.50	10239	4	13:50-14:45	Rotating With Motor	0.92	11285	4
01:40-01:45	Circ & Accumulate Surveys - Connection	0.08	10239	4	14:45-14:55	Circ & Accumulate Surveys	0.17	11285	4
01:45-02:25	Rotating With Motor	0.67	10334	4	14:55-15:35	Orienting With Motor	0.67	11285	4
02:25-02:30	Circ & Accumulate Surveys - Connection	0.08	10334	4	15:35-16:10	Rotating With Motor	0.58	11380	4
02:30-02:35	Rotating With Motor	0.08	10339	4	16:10-16:15	Circ & Accumulate Surveys	0.08	11380	4
02:35-02:50	Orienting With Motor	0.25	10354	4	16:15-17:00	Orienting With Motor - Slide @ 60 R	0.75	11412	4
02:50-03:30	Rotating With Motor	0.67	10429	4	17:00-17:20	Rotating With Motor	0.33	11475	4
03:30-03:35	Circ & Accumulate Surveys	0.08	10429	4	17:20-17:30	Circ & Accumulate Surveys - Connection	0.17	11475	4
03:35-03:45	Rotating With Motor	0.17	10434	4	17:30-18:00	Orienting With Motor	0.50	11507	4
03:45-04:15	Orienting With Motor	0.50	10459	4	18:00-18:25	Rotating With Motor	0.42	11570	4
04:15-04:45	Rotating With Motor	0.50	10524	4	18:25-18:30	Circ & Accumulate Surveys - Connection	0.08	11570	4
04:45-05:00	Circ & Accumulate Surveys - Connection	0.25	10524	4	18:30-19:05	Orienting With Motor	0.58	11603	4
05:00-05:35	Rotating With Motor	0.58	10619	4	19:05-19:30	Rotating With Motor	0.42	11665	4
05:35-05:40	Circ & Accumulate Surveys - Connection	0.08	10619	4	19:30-19:35	Circ & Accumulate Surveys - Connection	0.08	11665	4
05:40-07:00	Rotating With Motor	1.33	10714	4	19:35-19:40	Rotating With Motor	0.08	11670	4
07:00-07:05	Circ & Accumulate Surveys	0.08	10714	4	19:40-20:20	Orienting With Motor	0.67	11700	4
07:05-08:10	Rotating With Motor	1.08	10809	4	20:20-20:45	Rotating With Motor	0.42	11759	4
08:10-08:15	Circ & Accumulate Surveys	0.08	10809	4	20:45-20:50	Circ & Accumulate Surveys	0.08	11759	4
08:15-08:45	Orienting With Motor	0.50	10829	4	20:50-20:55	Rotating With Motor	0.08	11764	4
08:45-09:35	Rotating With Motor	0.83	10904	4	20:55-21:30	Orienting With Motor	0.58	11799	4
09:35-09:40	Circ & Accumulate Surveys	0.08	10904	4	21:30-22:10	Rotating With Motor	0.67	11854	4
09:40-10:15	Orienting With Motor	0.58	10937	4	22:10-22:15	Circ & Accumulate Surveys - Connection	0.08	11854	4
10:15-11:05	Rotating With Motor	0.83	11000	4	22:15-22:20	Rotating With Motor	0.08	11859	4
11:05-11:10	Circ & Accumulate Surveys	0.08	11000	4	22:20-22:55	Orienting With Motor	0.58	11894	4
11:10-11:35	Orienting With Motor	0.42	11020	4	22:55-23:20	Rotating With Motor	0.42	11948	4
11:35-12:10	Rotating With Motor	0.58	11095	4	23:20-23:25	Circ & Accumulate Surveys - Connection	0.08	11948	4
12:10-12:15	Circ & Accumulate Surveys	0.08	11095	4	23:25-24:00	Rotating With Motor	0.58	12043	4

TIME SUMMARY (hrs):

MOTOR DRILL: 22.00	ORIENTING HRS: 7.58	ROTARY DRILL: 0.00
TIME DRILL: 0.00	ROTATING HRS: 14.42	MOTOR HRS: 24.00
MOTOR REAM: 0.00		TRIP: 0.00
CIRC: 2.00	ROTARY DRILL: 0.00	OTHER: 0.00
MOTOR HRS: 24.00	DRILL HRS: 22.00	TOTAL HRS: 24.00

DRILLING PARAMETERS:

ROTARY TORQUE: 9900 ft-lb	STRING WEIGHT: 136000 lbs
WOB SLIDING (HI): 25000 lbf	WOB ROTATE (HI): 26000 lbf
WOB SLIDING (LO): 5000 lbf	WOB ROTATE (LO): 10000 lbf
RPM (ROTARY): 55 rpm	DRAG UP: 163000 lbf
RPM (MOTOR): 246 rpm	DRAG DN: 101000 lbf

— BHA / MOTOR / BIT INFORMATION: —

**Weatherford**

Daily Activity Report

Drilling Services
v4.2.2674**Day 9 - 2012/07/31**

BHA: 4 **HOLE SIZE:** 6.125 in **SECTION TYPE:** Lateral 1 **SURVEY TYPE:** HEL LWD
MANFCT.: Weatherford **STABILIZER:** No **SERIAL#:** 475-3966 **MODEL:** ME6770 **LOBE CFG.:** 6/7
SETTING: 1.5 ° **KICKPAD:** No **SIZE:** 5" (127mm) **MTR HRS THIS DAY:** 24 **MTR HRS TO DATE:** 48.91666666666666
MANFCT: Security **BIT TYPE:** Security PDC Bit **TYPE:** FXD54 **NOZZLES:** 0.61 in² TFA
IADC BIT GRADE: 1 / 3 / BT / G / X / I / BT / BHA

PUMP PARAMETERS

PRESSURE ON BTM: 3700		PRESSURE OFF BTM: 2800		TOTAL FLOW RATE: 299.00 gal/min	
PUMP 1:	TYPE: PZ-11	EFF.: 95.0%	SPM: 78.00	LINER: 6.00 in	STROKE VOL.: 3.8438 gal/stk
PUMP 2:	TYPE: PZ-11	EFF.: 95.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk
PUMP 3:	TYPE:	EFF.: 100.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water	VISC: 39 sec/qt	WTR LOSS: 5.8 cc/30min	PV: 13 cP	YP: 9 lb/100 ft ²	pH: 9.4
DENSITY: 9.7 lb/gal	GEL 0/10: 2.00 lb/100 ft ²	SAND: 0.5	SOLIDS: 6.6	OIL: 1	TEMP: 175 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Drill F/ 10060' to 12043

Target Change @ 0500 F/ 7173 TVD @ 90 deg. To
 7120 TVD @ 0° VS W/ 1.2 DOWN DIP HOLDING A
 88.8 DEG. @ 0500 TVD TARGET WAS 7186 AND CHANGING PER VERTICAL SECTION.

CUSTOMER SIGNATURE:

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674

Day 10 - 2012/08/01

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

DIR Trainee: Paul F. Trione

MWD Supervisor: Jett Hunter, Rusty Komrs

MWD Trainee: James Asher, Julio Rincon

Other: Chad Clay

GROUND ELEV: 4949 ft

START DEPTH: 12043.0 ft

PROGRESS: 1082.0 ft

DAILY COST: USD\$20550.00

KB ELEV: 4974 ft

END DEPTH: 13125.0 ft

AVG. ROP.: 66.9 ft/hr

PREVIOUS COST: USD\$181162.50

TOTAL COST: USD\$201712.50

WORK STATUS: Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:25	Rig Service -	0.42	12043	4	09:40-10:00	Orienting With Motor	0.33	12546	4
00:25-00:35	Gamma Rerun - LWD	0.17	12043	4	10:00-10:50	Rotating With Motor	0.83	12613	4
00:35-00:40	Circ & Accumulate Surveys	0.08	12043	4	10:50-11:00	Circ & Accumulate Surveys	0.17	12613	4
00:40-00:50	Rotating With Motor	0.17	12053	4	11:00-11:30	Orienting With Motor	0.50	12644	4
00:50-01:45	Circ & Condition Hole - Sweep	0.92	12053	4	11:30-12:10	Rotating With Motor	0.67	12707	4
01:45-02:15	Rotating With Motor	0.50	12109	4	12:10-12:15	Circ & Accumulate Surveys	0.08	12707	4
02:15-02:35	Orienting With Motor	0.33	12124	4	12:15-13:15	Orienting With Motor	1.00	12747	4
02:35-02:50	Rotating With Motor	0.25	12139	4	13:15-13:45	Rotating With Motor	0.50	12771	4
02:50-02:55	Circ & Accumulate Surveys - Connection	0.08	12139	4	13:45-14:00	Orienting With Motor	0.25	12786	4
02:55-03:00	Rotating With Motor	0.08	12144	4	14:00-14:20	Rotating With Motor	0.33	12803	4
03:00-03:35	Orienting With Motor	0.58	12179	4	14:20-14:25	Circ & Accumulate Surveys	0.08	12803	4
03:35-04:05	Rotating With Motor	0.50	12234	4	14:25-15:10	Orienting With Motor - 80 L	0.75	12828	4
04:05-04:10	Circ & Accumulate Surveys	0.08	12234	4	15:10-15:50	Rotating With Motor	0.67	12898	4
04:10-04:15	Rotating With Motor	0.08	12239	4	15:50-15:55	Circ & Accumulate Surveys	0.08	12898	4
04:15-04:45	Orienting With Motor	0.50	12274	4	15:55-16:30	Orienting With Motor	0.58	12923	4
04:45-05:10	Rotating With Motor	0.42	12329	4	16:30-17:05	Rotating With Motor	0.58	12992	4
05:10-05:15	Circ & Accumulate Surveys - Connection	0.08	12329	4	17:05-17:10	Circ & Accumulate Surveys	0.08	12992	4
05:15-05:20	Rotating With Motor	0.08	12334	4	17:10-18:00	Orienting With Motor	0.83	13017	4
05:20-06:05	Orienting With Motor	0.75	12364	4	18:00-18:35	Rotating With Motor	0.58	13087	4
06:05-07:05	Rotating With Motor	1.00	12423	4	18:35-18:40	Circ & Accumulate Surveys - Connection	0.08	13087	4
07:05-07:10	Circ & Accumulate Surveys	0.08	12423	4	18:40-18:45	Rotating With Motor	0.08	13092	4
07:10-07:30	Orienting With Motor	0.33	12455	4	18:45-19:20	Orienting With Motor	0.58	13117	4
07:30-09:00	Circ & Condition Hole	1.50	12455	4	19:20-20:15	Rotating With Motor	0.92	13125	4
09:00-09:35	Rotating With Motor	0.58	12518	4	20:15-22:40	Circ & Accumulate Surveys	2.42	13125	4
09:35-09:40	Circ & Accumulate Surveys	0.08	12518	4	22:40-24:00	POOH - See Comments - Change bit & motor	1.33	13125	4

TIME SUMMARY (hrs):

MOTOR DRILL: 16.17	ORIENTING HRS: 7.33
TIME DRILL: 0.00	ROTATING HRS: 8.83
MOTOR REAM: 0.00	TRIP: 1.33
CIRC: 5.92	OTHER: 0.58
MOTOR HRS: 22.08	DRILL HRS: 16.17
TOTAL HRS: 24.00	

DRILLING PARAMETERS:

ROTARY TORQUE: 12500 ft-lb	STRING WEIGHT 140000 lbs
WOB SLIDING (HI): 30000 lbf	WOB ROTATE (HI): 28000 lbf
WOB SLIDING (LO): 5000 lbf	WOB ROTATE (LO): 10000 lbf
RPM (ROTARY): 55 rpm	DRAG UP: 228000 lbf
RPM (MOTOR): 246 rpm	DRAG DN: 87000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 4 HOLE SIZE: 6.125 in
MANFCT.: Weatherford STABILIZER: No
SETTING: 1.5 ° KICKPAD: No
MANFCT: Security BIT TYPE: Security PDC Bit
IADC BIT GRADE: 1 / 3 / BT / G / X / I / BT / BHA

SECTION TYPE: Lateral 1
SERIAL#: 475-3966
SIZE: 5" (127mm)
TYPE: FXD54

SURVEY TYPE: HEL LWD
MODEL: ME6770 LOBE CFG.: 6/7
MTR HRS THIS DAY: 22.08333333 MTR HRS TO DATE: 71
NOZZLES: 0.61 in² TFA



Weatherford

Daily Activity Report

Drilling Services

v4.2.2674

Day 10 - 2012/08/01

PUMP PARAMETERS

PRESSURE ON BTM: 4500

PRESSURE OFF BTM: 3500

TOTAL FLOW RATE: 299.00 gal/min

PUMP 1: TYPE: PZ-11

EFF.: 95.0%

SPM: 78.00

LINER: 6.00 in

STROKE VOL.: 3.8438 gal/stk

PUMP 2: TYPE: PZ-11

EFF.: 95.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

PUMP 3: TYPE:

EFF.: 100.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water

VISC: 37 sec/qt

WTR LOSS: 5.8 cc/30min

PV: 13 cP

YP: 9 lb/100 ft²

pH: 9.4

DENSITY: 9.8 lb/gal

GEL 0/10: 4.00 lb/100 ft²

SAND: 0.5

SOLIDS: 6.6

OIL: 1

TEMP: 180 °F

LIQUID BASE: Water

LIQUID RATE: 0 gal/min

GAS TYPE:

GAS RATE: 0 cu ft/min

COMMENTS:

Drill F/ 12043 TO 13125

Target TVD change to 7237 @ 0' vs @ 90 deg.

CUSTOMER SIGNATURE: _____

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674

Day 11 - 2012/08/02

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

DIR Trainee: Paul F. Trione

MWD Supervisor: Jett Hunter, Rusty Komrs

MWD Trainee: James Asher, Julio Rincon

Other: Chad Clay

GROUND ELEV: 4949 ft

START DEPTH: 13125.0 ft

PROGRESS: 565.0 ft

DAILY COST: USD\$23130.00

KB ELEV: 4974 ft

END DEPTH: 13690.0 ft

AVG. ROP.: 104.2 ft/hr

PREVIOUS COST: USD\$201712.50

TOTAL COST: USD\$224842.50

WORK STATUS: Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-04:30	POOH - See Comments - Change bit & motor	4.50	13125	4	20:10-20:20	Circulating - Reset MWD Computer	0.17	13374	5
04:30-05:30	Work On MWD - down load LWD data	1.00	13125	4	20:20-20:25	Circ & Accumulate Surveys	0.08	13374	5
05:30-07:15	Change Bit And Motor	1.75	13125	5	20:25-20:30	Rotating With Motor	0.08	13384	5
07:15-08:20	Work On MWD - Program LWD	1.08	13125	5	20:30-21:05	Orienting With Motor - Slide @ 130R	0.58	13410	5
08:20-08:30	Handle Directional Tools	0.17	13125	5	21:05-21:25	Rotating With Motor	0.33	13469	5
08:30-16:10	RIH	7.67	13125	5	21:25-21:30	Circ & Accumulate Surveys	0.08	13469	5
16:10-17:15	Ream - See Comments - Wash to bttm	1.08	13125	5	21:30-22:10	Rotating With Motor	0.67	13564	5
17:15-17:40	Circ & Accumulate Surveys - Check shot.	0.42	13125	5	22:10-22:15	Circ & Accumulate Surveys	0.08	13564	5
17:40-18:35	Orienting With Motor	0.92	13155	5	22:15-22:30	Rotating With Motor	0.25	13574	5
18:35-18:55	Rotating With Motor	0.33	13184	5	22:30-23:00	Orienting With Motor - Slide @ 130R	0.50	13599	5
18:55-19:00	Circ & Accumulate Surveys	0.08	13184	5	23:00-23:25	Rotating With Motor	0.42	13659	5
19:00-19:30	Rotating With Motor	0.50	13279	5	23:25-23:45	Rig Service	0.33	13659	5
19:30-19:35	Circ & Accumulate Surveys	0.08	13279	5	23:45-24:00	Rotating With Motor	0.25	13690	5
19:35-20:10	Rotating With Motor	0.58	13374	5			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 5.42	ORIENTING HRS: 0.00	ROTARY DRILL: 0.00	ROTARY TORQUE: 12000 ft-lb	STRING WEIGHT: 140000 lbs
TIME DRILL: 0.00	ROTATING HRS: 0.00	MOTOR HRS: 7.50	WOB SLIDING (HI): 69000 lbf	WOB ROTATE (HI): 16000 lbf
MOTOR REAM: 1.08		TRIP: 12.17	WOB SLIDING (LO): 10000 lbf	WOB ROTATE (LO): 12000 lbf
CIRC: 1.00	ROTARY DRILL: 0.00	OTHER: 4.33	RPM (ROTARY): 55 rpm	DRAG UP: 0 lbf
MOTOR HRS: 7.50	DRILL HRS: 5.42	TOTAL HRS: 24.00	RPM (MOTOR): 246 rpm	DRAG DN: 0 lbf

DRILLING PARAMETERS:

BHA / MOTOR / BIT INFORMATION:

BHA: 4

HOLE SIZE: 6.125 in

SECTION TYPE: Lateral 1

SURVEY TYPE: HEL LWD

MANFCT.: Weatherford

STABILIZER: No

SERIAL#: 475-3966

MODEL: ME6770

LOBE CFG.:6/7

SETTING: 1.5 °

KICKPAD:No

SIZE: 5" (127mm)

MTR HRS THIS DAY: 0

MTR HRS TO DATE:71

MANFCT: Security

BIT TYPE:Security PDC Bit

TYPE: FXD54

NOZZLES:0.61 in² TFA

IADC BIT GRADE: 1 / 3 / BT / G / X / I / BT / BHA

BHA: 5

HOLE SIZE: 6.125 in

SECTION TYPE: Lateral 2

SURVEY TYPE: HEL LWD

MANFCT.: Weatherford

STABILIZER: No

SERIAL#: 475-4074

MODEL: Hyperline

LOBE CFG.:6/7

SETTING: 1.5 °

KICKPAD:No

SIZE: 5" (127mm)

MTR HRS THIS DAY: 7.5

MTR HRS TO DATE:7.5

MANFCT: Security

BIT TYPE:Security

TYPE: FXD54

NOZZLES:0.61 in² TFA

IADC BIT GRADE: 1 / 1 / WT / A / X / I / NO / TD



Daily Activity Report

Drilling Services
v4.2.2674

Day 11 - 2012/08/02

PUMP PARAMETERS

PRESSURE ON BTM: 4500

PRESSURE OFF BTM: 3500

TOTAL FLOW RATE: 298.00 gal/min

PUMP 1: TYPE: PZ-11

EFF.: 95.0%

SPM: 78.00

LINER: 6.00 in

STROKE VOL.: 3.8438 gal/stk

PUMP 2: TYPE: PZ-11

EFF.: 95.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

PUMP 3: TYPE:

EFF.: 100.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water

VISC: 41 sec/qt

WTR LOSS: 5.6 cc/30min

PV: 15 cP

YP: 13 lb/100 ft²

pH: 8.5

DENSITY: 10.3 lb/gal

GEL 0/10: 6.00 lb/100 ft²

SAND: 0.6

SOLIDS: 8.8

OIL: 3

TEMP: 144 °F

LIQUID BASE: Water

LIQUID RATE: 0 gal/min

GAS TYPE:

GAS RATE: 0 cu ft/min

COMMENTS:

Drill F/ 13125 to

CUSTOMER SIGNATURE: _____

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674

Day 12 - 2012/08/03

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

DIR Trainee: Paul F. Trione

MWD Supervisor: Rusty Komrs, Jett Hunter

Other: Chad Clay

MWD Trainee: Julio Rincon, James Asher

GROUND ELEV: 4949 ft

START DEPTH: 13690.0 ft

PROGRESS: 562.0 ft

DAILY COST: USD\$24350.00

KB ELEV: 4974 ft

END DEPTH: 14252.0 ft

AVG. ROP.: 86.5 ft/hr

PREVIOUS COST: USD\$224842.50

TOTAL COST: USD\$249192.50

WORK STATUS: Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:25	Rotating With Motor	0.42	13754	5	05:25-05:40	Circ & Accumulate Surveys	0.25	14039	5
00:25-00:30	Circ & Accumulate Surveys	0.08	13754	5	05:40-05:55	Rotating With Motor	0.25	14070	5
00:30-00:40	Rotating With Motor	0.17	13766	5	05:55-06:00	Circ & Accumulate Surveys - check shot	0.08	14070	5
00:40-01:30	Orienting With Motor - Slide @ 60R	0.83	13791	5	06:00-07:00	Rotating With Motor	1.00	14134	5
01:30-01:55	Rotating With Motor	0.42	13849	5	07:00-07:10	Circ & Accumulate Surveys	0.17	14134	5
01:55-02:00	Circ & Accumulate Surveys	0.08	13849	5	07:10-07:55	Rotating With Motor	0.75	14230	5
02:00-02:45	Rotating With Motor	0.75	13944	5	07:55-08:05	Circ & Accumulate Surveys - Connection	0.17	14230	5
02:45-03:00	Circ & Accumulate Surveys - Reshot Survey	0.25	13944	5	08:05-08:25	Rotating With Motor	0.33	14252	5
03:00-03:10	Rotating With Motor	0.17	13954	5	08:25-08:50	Circ & Accumulate Surveys	0.42	14252	5
03:10-03:40	Wash To Bottom	0.50	13954	5	08:50-11:30	Circ & Condition Hole	2.67	14252	5
03:40-04:00	Circulating - See Comments - Acquire Tool Face	0.33	13954	5	11:30-12:20	Other - See Comments - Flow Check.	0.83	14252	5
04:00-05:10	Orienting With Motor - Slide @ HS	1.17	13969	5	12:20-22:05	Lay Down Directional Tools	9.75	14252	5
05:10-05:25	Rotating With Motor	0.25	14039	5	22:05-24:00	Other - See Comments - Load LWD on to truck	1.92	14252	5

TIME SUMMARY (hrs):

MOTOR DRILL: 6.50	ORIENTING HRS: 2.00	ROTARY DRILL: 0.00	ROTARY TORQUE: 14000 ft-lb	STRING WEIGHT: 136000 lbs
TIME DRILL: 0.00	ROTATING HRS: 4.50	MOTOR HRS: 11.50	WOB SLIDING (HI): 85000 lbf	WOB ROTATE (HI): 18000 lbf
MOTOR REAM: 0.00		TRIP: 0.00	WOB SLIDING (LO): 50000 lbf	WOB ROTATE (LO): 12000 lbf
CIRC: 5.00	ROTARY DRILL: 0.00	OTHER: 12.50	RPM (ROTARY): 60 rpm	DRAG UP: 247000 lbf
MOTOR HRS: 11.50	DRILL HRS: 6.50	TOTAL HRS: 24.00	RPM (MOTOR): 231 rpm	DRAG DN: 64000 lbf

DRILLING PARAMETERS:**BHA / MOTOR / BIT INFORMATION:**

BHA: 5

HOLE SIZE: 6.125 in

SECTION TYPE: Lateral 2

SURVEY TYPE: HEL LWD

MANFCT.: Weatherford

STABILIZER: No

SERIAL#: 475-4074

MODEL: Hyperline

LOBE CFG.:6/7

SETTING: 1.5 °

KICKPAD:No

SIZE: 5" (127mm)

MTR HRS THIS DAY: 11.5

MTR HRS TO DATE:19

MANFCT: Security

BIT TYPE:Security

TYPE: FXD54

NOZZLES:0.61 in² TFA

IADC BIT GRADE: 1 / 1 / WT / A / X / I / NO / TD

PUMP PARAMETERS

PRESSURE ON BTM: 4200

PRESSURE OFF BTM:3750

TOTAL FLOW RATE: 286.00 gal/min

PUMP 1: TYPE: PZ-11

EFF.: 95.0%

SPM: 75.00

LINER: 6.00 in

STROKE VOL.: 3.8438 gal/stk

PUMP 2: TYPE: PZ-11

EFF.: 95.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

PUMP 3: TYPE:

EFF.: 100.0%

SPM: 0.00

LINER: 0.00 in

STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Water

VISC: 40 sec/qt

WTR LOSS: 5.6 cc/30min

PV: 12 cP

YP: 0.1 lb/100 ft²

pH: 9.2

DENSITY: 10.2 lb/gal

GEL 0/10: 4.00 lb/100 ft²

SAND: 0

SOLIDS: 0

OIL: 0

TEMP: 180 °F

LIQUID BASE: Water

LIQUID RATE: 0 gal/min

GAS TYPE:

GAS RATE: 0 cu ft/min

COMMENTS:

Finished laying down BHA 5 and loaded lwd tools on truck for TX.



Daily Activity Report

Drilling Services
v4.2.2674

Day 12 - 2012/08/03

CUSTOMER SIGNATURE: _____



BHA REPORTS

**Weatherford**

BHA Report

Drilling Services
v4.2.2674

BHA 1 - Build & Hold Section

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Scott Coulter

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Varel	Varel	4004230	VM513	8.75	0	0		4 1/2" REG Pin	1.00 ft	1.00 ft
1	Weatherford Motor	Weatherford	675-40981	QLE7850	7.75	0	3.35	4 1/2" REG Box	4 1/2" IF Box	27.98 ft	28.98 ft
1	Muleshoe	Weatherford	675-17969	NM UBHO	6.75	2.75	0	4 1/2" IF Pin	4 1/2" IF Box	3.12 ft	32.10 ft
1	NMDC	Weatherford	675-37406	NMDC	6.85	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	30.60 ft	62.70 ft
1	Flex NMDC	Weatherford	650-21590	NMDC	6.59	3.125	5.02	4 1/2" IF Pin	4 1/2" IF Box	30.07 ft	92.77 ft
1	X/O Sub	Weatherford	625-36322	X/O Sub	6.35	2.75	0	4 1/2" IF Pin	XT-39 Box	3.57 ft	96.34 ft
60	4" HWDP	Rig	Rig	25 STDS	4	2.75	0	XT-39 Pin	XT-39 Box	1830.87	1927.21 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/07/23 TO 2012/07/25
DEPTH IN: 0.00 ft **ANGLE IN:** 0.00 °
DEPTH OUT: 5153.00 ft **ANGLE OUT:** 6.87 °
DRILL HRS: 27.83 **BUILD:** 6.87 °
ORIENTING HRS: 10.88 **HOLE MADE:** 5153.00 ft
ROTATING HRS: 16.95 **AVG R.O.P.:** 185.16 ft/hr

MOTOR INFORMATION

MANFCT. Weatherford
SERIAL #: 675-40981
MODEL: QLE7850
LOBE CFG: 7/8
BIT TO BEND: 6.27
SETTING: 1.50 °
KICK PAD: No
STABILIZER: No
MOTOR HRS: 37.67

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	78	78	0
STROKE VOLUME:	3.8438 gal/stk	3.8438 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	569.65637 gal/min		
PUMP PRESSURE:	OFF BTM: 2400 psi	ON BTM: 3400 psi	

MUD INFORMATION

MUD TYPE: Water
DENSITY: 8.4 lb/gal
VISCOSITY: 27 sec/qt
WTR LOSS: 0 cc/30min
PLAST VISC: 1 cP
YIELD PT: 4 lb/100 ft²
LIQUID BASE: Water
TEMP: 157 °F
pH: 8.4
SAND: 0.01
SOLIDS: 0.4
OIL: 0
LIQUID RATE: 0 gal/min
GAS TYPE:
GAS RATE: 0 cu ft/min

BIT INFORMATION

MANFCT: Varel **TYPE:** VM513 **IADC BIT GRADE:** 1 / 1 / NO / ? / X / I / NO / PP
NOZZLES: 0.863 in² TFA

REASON FOR BHA CHANGE

Inspect drillstring and BHA for pressure loss and stalls, pressure spikes rotating and sliding due to Sussex formation.

FORMATION CHARACTERISTICS

Assembly tracked well and required aprox. 15% slide to maintain direction and 8 deg. angle up until reaching transition into Sussex formation. When transitioning into Sussex assy. began pulling South and motor began stalling easily which is very normal for this formation.

MWD COMMENTS

Mud Pulse MWD performed as expected, no magnetic interference once out of surface casing. Excellent detection throughout run. No MWD issues. We ran a 60 degree orifice with a 6 3/4 pulser. Battery consumption at end of the run was 13 Amp hours. Re-run MP-1 for BHA 2.

**BHA 1 - Build & Hold Section**

SIDETRACKING PROCEDURE COMMENTS

NA

RUN SUMMARY

Average build rates experienced were 7.5 degrees /100' Condition of BHA looked good when pulled other than the flex NMDC which was washing around hard bands. This Flex NMDC SN (625-21590) Was laid down and back up Flex was picked up. The Flex laid down was sent from the shop this way and was run because it was our only option.

**Weatherford**

BHA Report

Drilling Services
v4.2.2674

BHA 2 - Build & Hold Section

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Scott Coulter, Rusty Komrs

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Varel	Varel	4004230	VM513	8.75	0	0		4 1/2" REG Pin	1.00 ft	1.00 ft
1	Weatherford Motor	Weatherford	675-41002	LE7850	7.76	0	3.35	4 1/2" REG Box	4 1/2" IF Box	27.93 ft	28.93 ft
1	Muleshoe	Weatherford	675-17969	NM UBHO	6.75	2.75	0	4 1/2" IF Pin	4 1/2" IF Box	3.12 ft	32.05 ft
1	NMDC	Weatherford	675-37406	NMDC	6.85	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	30.60 ft	62.65 ft
1	Flex NMDC	Weatherford	650-21601	Flex	6.54	3.125	6.47	4 1/2" IF Pin	4 1/2" IF Box	30.40 ft	93.05 ft
1	X/O Sub	Weatherford	625-36322	X/O Sub	6.35	2.75	0	4 1/2" IF Pin	XT-39 Box	3.57 ft	96.62 ft
60	4" HWDP	Rig	Rig	25 STDS	4	2.75	0	XT-39 Pin	XT-39 Box	1830.87	1927.49 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/07/25 TO 2012/07/26
DEPTH IN: 5153.00 ft **ANGLE IN:** 7.82 °
DEPTH OUT: 6607.00 ft **ANGLE OUT:** 0.98 °
DRILL HRS: 10.17 **BUILD:** -6.84 °
ORIENTING HRS: 0.83 **HOLE MADE:** 1454.00 ft
ROTATING HRS: 9.33 **AVG R.O.P.:** 142.97 ft/hr

MOTOR INFORMATION

MANFCT. Weatherford
SERIAL #: 675-41002
MODEL: LE7850
LOBE CFG: 7/8
BIT TO BEND: 6.22
SETTING: 1.50 °
KICK PAD: No
STABILIZER: No
MOTOR HRS: 14.83

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	72	72	0
STROKE VOLUME:	3.8438 gal/stk	3.8438 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	525.83665 gal/min		
PUMP PRESSURE:	OFF BTM: 4000 psi	ON BTM: 4500 psi	

MUD INFORMATION

MUD TYPE: Water
DENSITY: 9.2 lb/gal
VISCOSITY: 38 sec/qt
WTR LOSS: 8 cc/30min
PLAST VISC: 13 cP
YIELD PT: 14 lb/100 ft²
LIQUID BASE: Water
TEMP: 134 °F
pH: 8.3
SAND: 0.04
SOLIDS: 3.7
OIL: 0
LIQUID RATE: 0 gal/min
GAS TYPE:
GAS RATE: 0 cu ft/min

BIT INFORMATION

MANFCT: Varel **TYPE:** VM513 **IADC BIT GRADE:** 1 / 2 / BT / G / X / I / FC / TD
NOZZLES: 0.863 in² TFA

REASON FOR BHA CHANGE

POOH to P/U Curve Assembly

FORMATION CHARACTERISTICS

Formation drilled as expected. We let the angle drop out naturally and drilled vertical to KOP.

MWD COMMENTS

MWD Mud Pulse tool performed as expected. a 60 orifice was used with a 6 3/4" pulser. Battery consumption at the end of the run was 50% consumed and last downhole temp was 168 degrees.

SIDETRACKING PROCEDURE COMMENTS

NA



RUN SUMMARY

Average build rates experienced wer 9 degrees / 100' Condition of BHA looked good when pulled. No problems encountered.

**Weatherford**

BHA Report

BHA 3 - Build Section

Drilling Services
v4.2.2674**FILE #:** 4026338**WELL NAME:** Camp 9N-30HZ**SERVICE CO.:** Weatherford Drilling Services**JOB TYPE:** Horizontal**COMPANY:** Anadarko Petroleum Corporation**SURVEY TYPE:** HEL LWD**RIG & NO:** Helmerich & Payne 307**SURFACE LOCATION:** Weld County**FIELD / LOCATION:** Wattenburg / CO / USA**DIR Supervisor:** Josh Monroe, Brian Trani**MWD Supervisor:** Jett Hunter, Rusty Komrs**BHA SURVEY TYPE:** Positive Pulse MWD**HOLE SIZE:** 8.75 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	PDC Bit Security	Security	12011619	FXD54	8.75	0	0		4 1/2" REG Pin	1.00 ft	1.00 ft
1	Weatherford Motor	Weatherford	675-4037	LE7850	8.1	0	3.33	4 1/2" REG Box	4 1/2" IF Box	27.88 ft	28.88 ft
1	Muleshoe	Weatherford	675-17969	NM UBHO	6.75	2.75	0	4 1/2" IF Pin	4 1/2" IF Box	3.12 ft	32.00 ft
1	NMDC	Weatherford	675-37406	NMDC	6.85	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	30.60 ft	62.60 ft
1	Flex NMDC	Weatherford	650-21601	Flex	6.54	3.125	6.47	4 1/2" IF Pin	4 1/2" IF Box	30.40 ft	93.00 ft
1	X/O Sub	Weatherford	625-36322	X/O Sub	6.35	2.75	0	4 1/2" IF Pin	XT-39 Box	3.57 ft	96.57 ft
60	4" HWDP	Rig	Rig	25 STDS	4	2.75	0	XT-39 Pin	XT-39 Box	1830.87	1927.44 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/07/26 TO 2012/07/28
DEPTH IN: 6607.00 ft **ANGLE IN:** 0.16 °
DEPTH OUT: 7611.00 ft **ANGLE OUT:** 83.55 °
DRILL HRS: 26.67 **BUILD:** 83.39 °
ORIENTING HRS: 20.50 **HOLE MADE:** 1004.00 ft
ROTATING HRS: 6.17 **AVG R.O.P.:** 37.65 ft/hr

MOTOR INFORMATION

MANFCT. Weatherford
SERIAL #: 675-4037
MODEL: LE7850
LOBE CFG: 7/8
BIT TO BEND: 6.25
SETTING: 2.38 °
KICK PAD: YES
STABILIZER: No
MOTOR HRS: 35.58

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	75	75	0
STROKE VOLUME:	3.8438 gal/stk	3.8438 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	547.74651 gal/min		
PUMP PRESSURE:	OFF BTM: 3000 psi	ON BTM: 3300 psi	

MUD INFORMATION

MUD TYPE: Water
DENSITY: 9.8 lb/gal
VISCOSITY: 40 sec/qt
WTR LOSS: 1 cc/30min
PLAST VISC: 17 cP
YIELD PT: 15 lb/100 ft²
LIQUID BASE: Water
TEMP: 168 °F
pH: 8.7
SAND: 0.05
SOLIDS: 7.1
OIL: 1
LIQUID RATE: 0 gal/min
GAS TYPE:
GAS RATE: 0 cu ft/min

BIT INFORMATION

MANFCT: Security **TYPE:** FXD54 **IADC BIT GRADE:** 1 / 1 / NO / A / X / I / CT / TD
NOZZLES: 1.011 in² TFA

REASON FOR BHA CHANGE

TD Curve

FORMATION CHARACTERISTICS

All Formations drilled as expected. We experienced a little slower ROP in this curve compared to previous wells. As usual The Sussex was sticking us causing us to hang up and get stuck twice. I believe part of this problem is due to the 8 1/4" kick pad with a sleeve in our 8 3/4" hole, making it hard to transfer weight to the bit which in turn leads to stalling of the motor once it slips off.

MWD COMMENTS

MWD Mud Pulse tool performed as expected. a 60 orifice was used with a 6 3/4" pulser. Battery consumption at the end of the run was 53% consumed and last down hole temp was 180 degrees.



Weatherford®

BHA Report

BHA 3 - Build Section

Drilling Services
v4.2.2674

SIDETRACKING PROCEDURE COMMENTS

NA

RUN SUMMARY

Average build rates experienced were 14 degrees / 100'. Objective of the BHA was to build the curve. This BHA was successful in doing so. Condition of BHA looked good when pulled. No problems encountered.

**Weatherford®**

BHA Report

Drilling Services
v4.2.2674

BHA 4 - Lateral 1 Section

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

MWD Supervisor: Jett Hunter, Rusty Komrs

BHA SURVEY TYPE: HEL LWD

HOLE SIZE: 6.125 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Security PDC Bit	Security	1987478	FXD54	6.125	0	0		3 1/2" REG Pin	1.00 ft	1.00 ft
1	Weatherford Motor	Weatherford	475-3966	ME6770	5.5	0	0.62	3 1/2" REG Box	3 1/2" IF Box	26.00 ft	27.00 ft
1	Duradrill Slide Stab	Duradrill	DM9332-03	Dynomax	4.82	2.25	0	3 1/2" IF Pin	3 1/2" IF Box	5.90 ft	32.90 ft
1	SAGR	Weatherford	NW21490	LWD/Azi. GR	4.75	2.5	6.74	3 1/2" IF Pin	3 1/2" IF Box	13.98 ft	46.88 ft
1	Split IDS	WEATHERFORD	NW21489	LWD / Svy Snsr	4.75	2.5	3.36	3 1/2" IF Pin	3 1/2" IF Box	12.13 ft	59.01 ft
1	MFR	Weatherford	NW21488	LWD/Resistivity	4.75	2.5	7.33	3 1/2" IF Pin	3 1/2" IF Box	29.36 ft	88.37 ft
1	HEL LWD	Weatherford	NW21487	LWD/ Pulser	4.75	2.5	10.43	3 1/2" IF Pin	3 1/2" IF Box	17.60 ft	105.97 ft
1	Stabilizer	Stabadrill	SD 20817	NM Stabilizer	4.8	3.5	2.09	3 1/2" IF Pin	3 1/2" IF Box	5.73 ft	111.70 ft
1	NMDC	Weatherford	43546	Slick NMDC	4.84	2.75	0	3 1/2" IF Pin	3 1/2" IF Box	30.99 ft	142.69 ft
1	X/O Sub	Weatherford	44887	X/O Sub	5.04	2.625	0	3 1/2" IF Pin	XT-39 Box	2.68 ft	145.37 ft
63	4" Drill Pipe	Rig	Rig	21 STDS	4	3.5	0	XT-39 Pin	XT-39 Box	1992.49	2137.86 ft
1	Shock Sub /Aggitator	MOV	1065132-14	Aggitator	5	2	0	XT-39 Pin	XT-39 Box	22.31 ft	2160.17 ft
156	4" Drill Pipe	Rig	Rig	52 STDS	4	3.5	0	XT-39 Pin	XT-39 Box	4931.82	7091.99 ft
75	4" HWDP	Rig	Rig	25 STDS	4	2.75	0	XT-39 Pin	XT-39 Box	2291.05	9383.04 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/07/29 TO 2012/08/02
 DEPTH IN: 7611.00 ft ANGLE IN: 87.66 °
 DEPTH OUT: 13125.00 ft ANGLE OUT: 88.46 °
 DRILL HRS: 58.58 BUILD: 0.80 °
 ORIENTING HRS: 19.17 HOLE MADE: 5514.00 ft
 ROTATING HRS: 39.42 AVG R.O.P.: 94.13 ft/hr

MOTOR INFORMATION

MANFCT. Weatherford
 SERIAL #: 475-3966
 MODEL: ME6770
 LOBE CFG: 6/7
 BIT TO BEND: 6.13
 SETTING: 1.50 °
 KICK PAD: No
 STABILIZER: No
 MOTOR HRS: 71.00

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	78	0	0
STROKE VOLUME:	3.8438 gal/stk	0.0 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	298 gal/min		
PUMP PRESSURE:	OFF BTM: 3500 psi	ON BTM: 4500 psi	

MUD INFORMATION

MUD TYPE: Water
 LIQUID BASE: Water
 DENSITY: 10.3 lb/gal
 TEMP: 144 °F
 VISCOSITY: 41 sec/qt
 pH: 8.5
 WTR LOSS: 5.6 cc/30min
 SAND: 0.6
 LIQUID RATE: 0 gal/min
 PLAST VISC: 15 cP
 SOLIDS: 8.8
 GAS TYPE:
 YIELD PT: 13 lb/100 ft²
 OIL: 3
 GAS RATE: 0 cu ft/min

BIT INFORMATION

MANFCT: Security TYPE: FXD54 IADC BIT GRADE: 1 / 3 / BT / G / X / I / BT / BHA
 NOZZLES: 0.61 in² TFA

REASON FOR BHA CHANGE

Change bit and motor.

FORMATION CHARACTERISTICS

Formation can be hard to slide in with out Lube, BHA had a tendancey to drop inc in rotation when you let your angle drop under 89.5 and build when you let it get over 90.5.



MWD COMMENTS

LWD to ran as good as expected. signal strenghts were good . 70 hrs circulateing, tool pluse was a 12 & Detection was 95 %
Detection goes bad when geting diff pressure spikes or spp spikes.

SIDETRACKING PROCEDURE COMMENTS

RUN SUMMARY

Average build up rates experienced were 8 deg. per 100'. Condition of BHA # 4 when pulled were good. Motor had a 1/4" of squat when testing it and a 1/4" of play in bit houseing.

**Weatherford®**

BHA Report

Drilling Services
v4.2.2674

BHA 5 - Lateral 2 Section

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

MWD Supervisor: Jett Hunter, Rusty Komrs

BHA SURVEY TYPE: HEL LWD

HOLE SIZE: 6.125 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Security	Security	11994074	FXD54	6.125	0	0		3 1/2" REG Pin	1.00 ft	1.00 ft
1	Weatherford Motor	Weatherford	475-4074	Hyperline	5.45	0	0.51	3 1/2" REG Box	3 1/2" IF Box	28.23 ft	29.23 ft
1	Duradrill Slide Stab	Duradrill	DM9332-03	Dynomax	4.82	2.25	0	3 1/2" IF Pin	3 1/2" IF Box	5.90 ft	35.13 ft
1	SAGR	Weatherford	NW21490	LWD/Azi. GR	4.75	2.5	6.74	3 1/2" IF Pin	3 1/2" IF Box	13.98 ft	49.11 ft
1	Split IDS	WEATHERFORD	NW21489	LWD / Svy Snsr	4.75	2.5	3.36	3 1/2" IF Pin	3 1/2" IF Box	12.13 ft	61.24 ft
1	MFR	Weatherford	NW21488	LWD/Resistivity	4.75	2.5	7.33	3 1/2" IF Pin	3 1/2" IF Box	29.36 ft	90.60 ft
1	HEL LWD	Weatherford	NW21487	LWD/ Pulser	4.75	2.5	10.43	3 1/2" IF Pin	3 1/2" IF Box	17.60 ft	108.20 ft
1	Stabilizer	Stabadrill	SD 20817	NM Stabilizer	4.8	3.5	2.09	3 1/2" IF Pin	3 1/2" IF Box	5.73 ft	113.93 ft
1	NMDC	Weatherford	43546	Slick NMDC	4.84	2.75	0	3 1/2" IF Pin	3 1/2" IF Box	30.99 ft	144.92 ft
1	X/O Sub	Weatherford	44887	X/O Sub	5.04	2.625	0	3 1/2" IF Pin	XT-39 Box	2.68 ft	147.60 ft
63	4" Drill Pipe	Rig	Rig	21 STDS	4	3.5	0	XT-39 Pin	XT-39 Box	1992.49	2140.09 ft
1	Shock Sub /Aggitator	MOV	1065132-14	Aggitator	5	2	0	XT-39 Pin	XT-39 Box	22.31 ft	2162.40 ft
156	4" Drill Pipe	Rig	Rig	52 STDS	4	3.5	0	XT-39 Pin	XT-39 Box	4931.82	7094.22 ft
75	4" HWDP	Rig	Rig	25 STDS	4	2.75	0	XT-39 Pin	XT-39 Box	2291.05	9385.27 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/08/02 TO 2012/08/03
 DEPTH IN: 13125.00 ft ANGLE IN: 88.46 °
 DEPTH OUT: 14252.00 ft ANGLE OUT: 88.03 °
 DRILL HRS: 11.92 BUILD: -0.43 °
 ORIENTING HRS: 4.00 HOLE MADE: 1127.00 ft
 ROTATING HRS: 7.92 AVG R.O.P.: 94.55 ft/hr

MOTOR INFORMATION

MANFCT. Weatherford
 SERIAL #: 475-4074
 MODEL: Hyperline
 LOBE CFG: 6/7
 BIT TO BEND: 6.14
 SETTING: 1.50 °
 KICK PAD: No
 STABILIZER: No
 MOTOR HRS: 19.00

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	75	0	0
STROKE VOLUME:	3.8438 gal/stk	0.0 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	286 gal/min		
PUMP PRESSURE:	OFF BTM: 3750 psi	ON BTM: 4200 psi	

MUD INFORMATION

MUD TYPE: Water
 LIQUID BASE: Water
 DENSITY: 10.2 lb/gal
 TEMP: 180 °F
 VISCOSITY: 40 sec/qt
 pH: 9.2
 WTR LOSS: 5.6 cc/30min
 SAND: 0
 LIQUID RATE: 0 gal/min
 PLAST VISC: 12 cP
 SOLIDS: 0
 GAS TYPE:
 YIELD PT: 0.1 lb/100 ft²
 OIL: 0
 GAS RATE: 0 cu ft/min

BIT INFORMATION

MANFCT: Security TYPE: FXD54 IADC BIT GRADE: 1 / 1 / WT / A / X / I / NO / TD
 NOZZLES: 0.61 in² TFA

REASON FOR BHA CHANGE

T.D. Lateral section pull out of the hole to run inner.

FORMATION CHARACTERISTICS

Formation (Niobrara C Marl) can be hard to slide in with out Lube, BHA had a tendancey to drop inc in rotation when you let your angle drop under 89.5 and build when you let it get over 90.5.



MWD COMMENTS

LWD to ran as good as expected. signal strenghts were good . 19 hrs circulateing, tool pluse was a 12 & Detection was 95 %. The detection goes bad when geting diff pressure spikes or spp spikes.

SIDETRACKING PROCEDURE COMMENTS

RUN SUMMARY

Average build up rates experienced were 8 deg. per 100'. Condition of BHA # 5 when pulled were good.



SLIDE REPORT



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 1 - 2012/07/23 TO 2012/07/25

FILE #: 4026338

JOB TYPE: Horizontal

RIG & NO: Helmerich & Payne 307

WELL NAME: Camp 9N-30HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld County

SERVICE CO.: Weatherford Drilling Services

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Scott Coulter

BHA NO: 1	DATES RUN: 2012/07/23 TO 2012/07/25	SECTION: Build & Ho	TOOLFACE OFFSET: 109.5 °	SURVEY OFFSET: 60 ft
MOTOR SETTING: 1.50 °	KICKPAD: No	STABILIZER: No	MODEL: QLE7850	SERIAL NO: 675-40981
			BHA SURVEY TYPE: Positive Pulse MWD	

(Distances are shown in feet.)

BIT		SURVEY					----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF		FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
853.00	249.00	793.00	0.00	0.00	ROT		853.00	853.00	0.00	853.00	1102.00	249.00	0.00	0.00	0.00	
1102.00	91.00	1042.00	0.60	265.88	117 M		1102.00	1127.00	25.00	1127.00	1193.00	66.00	0.00	0.00	0.24	
1193.00	91.00	1133.00	1.54	141.15	110 M		1193.00	1218.00	25.00	1218.00	1284.00	66.00	25.00	0.04	1.03	
1284.00	91.00	1224.00	3.58	133.24	100 M		1284.00	1309.00	25.00	1309.00	1375.00	66.00	25.00	0.08	2.24	
1375.00	91.00	1315.00	5.38	119.63	15L		1375.00	1400.00	25.00	1400.00	1466.00	66.00	25.00	0.07	1.98	
1466.00	92.00	1406.00	7.28	115.03	HS		1466.00	1486.00	20.00	1486.00	1558.00	72.00	25.00	0.08	2.09	
1558.00	92.00	1498.00	9.08	117.08	20L		1558.00	1574.00	16.00	1574.00	1650.00	76.00	20.00	0.09	1.96	
1650.00	185.00	1590.00	10.26	114.35	HS		1650.00	1658.00	8.00	1658.00	1835.00	177.00	16.00	0.07	1.28	
1835.00	92.00	1775.00	10.11	116.08	HS		1835.00	1845.00	10.00	1845.00	1927.00	82.00	8.00	-0.02	-0.08	
1927.00	95.00	1867.00	0.00	0.00	10R		1927.00	1940.00	13.00	1940.00	2022.00	82.00	10.00	-1.01	-10.99	
2022.00	189.00	1962.00	10.19	118.04	10L		2022.00	2042.00	20.00	2042.00	2211.00	169.00	13.00	0.78	10.73	
2211.00	95.00	2151.00	9.79	113.60	15R		2211.00	2226.00	15.00	2226.00	2306.00	80.00	20.00	-0.02	-0.21	
2306.00	95.00	2246.00	10.03	115.18	10R		2306.00	2314.00	8.00	2314.00	2401.00	87.00	15.00	0.02	0.25	
2401.00	190.00	2341.00	10.01	118.50	HS		2401.00	2421.00	20.00	2421.00	2591.00	170.00	8.00	0.00	-0.02	
2591.00	95.00	2531.00	9.30	118.55	HS		2591.00	2611.00	20.00	2611.00	2686.00	75.00	20.00	-0.04	-0.37	
2686.00	189.00	2626.00	9.65	118.48	HS		2686.00	2711.00	25.00	2711.00	2875.00	164.00	20.00	0.02	0.37	
2875.00	305.00	2815.00	10.69	119.31	HS		2875.00	2895.00	20.00	2895.00	3180.00	285.00	25.00	0.04	0.55	
3180.00	170.00	3120.00	11.42	115.62	130 R		3180.00	3188.00	8.00	3188.00	3350.00	162.00	20.00	0.04	0.24	
3350.00	95.00	3290.00	8.27	126.65	50L		3350.00	3371.00	21.00	3371.00	3445.00	74.00	8.00	-0.39	-1.85	
3445.00	63.00	3385.00	8.04	119.99	10L		3445.00	3470.00	25.00	3470.00	3508.00	38.00	21.00	-0.01	-0.24	
3508.00	32.00	3448.00	8.04	119.99	10L		3508.00	3518.00	10.00	3518.00	3540.00	22.00	3.00	0.00	0.00	
3540.00	63.00	3480.00	8.17	124.09	30L		3540.00	3571.00	31.00	3571.00	3603.00	32.00	22.00	0.01	0.41	
3603.00	31.00	3543.00	8.17	124.09	30L		3603.00	3618.00	15.00	3618.00	3634.00	16.00	13.00	0.00	0.00	
3634.00	12.00	3574.00	10.30	119.10	30L		3634.00	3649.00	15.00	3649.00	3646.00	-3.00	28.00	0.08	6.87	
3646.00	83.00	3586.00	10.30	119.10	130L		3646.00	3676.00	30.00	3676.00	3729.00	53.00	0.00	0.00	0.00	



(Distances are shown in feet.)

Slide Sheet Report

Drilling Services

v4.2.2674

BHA 1 - 2012/07/23 TO 2012/07/25

BIT		SURVEY				----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
3729.00	95.00	3669.00	10.20	106.36	130L	3729.00	3754.00	25.00	3754.00	3824.00	70.00	53.00	0.00	-0.12	
3824.00	95.00	3764.00	8.36	96.92	80R	3824.00	3839.00	15.00	3839.00	3919.00	80.00	32.00	-0.06	-1.94	
3919.00	95.00	3859.00	7.22	104.00	80R	3919.00	3934.00	15.00	3934.00	4014.00	80.00	15.00	-0.08	-1.20	
4014.00	95.00	3954.00	5.49	123.51	20L	4014.00	4045.00	31.00	4045.00	4109.00	64.00	15.00	-0.12	-1.82	
4109.00	284.00	4049.00	6.58	127.27	45L	4109.00	4140.00	31.00	4140.00	4393.00	253.00	31.00	0.04	1.15	
4393.00	95.00	4333.00	5.93	116.61	HS	4393.00	4433.00	40.00	4433.00	4488.00	55.00	31.00	-0.02	-0.23	
4488.00	95.00	4428.00	6.60	116.90	HS	4488.00	4503.00	15.00	4503.00	4583.00	80.00	0.00	0.00	0.00	
4583.00	95.00	4523.00	7.32	119.57	HS	4583.00	4608.00	25.00	4608.00	4678.00	70.00	0.00	0.00	0.00	
4678.00	95.00	4618.00	7.59	125.30	45L	4678.00	4698.00	20.00	4698.00	4773.00	75.00	25.00	0.01	0.28	
4773.00	95.00	4713.00	7.59	125.30	45L	4773.00	4793.00	20.00	4793.00	4868.00	75.00	20.00	0.00	0.00	
4868.00	95.00	4808.00	8.00	122.29	30L	4868.00	4876.00	8.00	4876.00	4963.00	87.00	20.00	0.02	0.43	
4963.00	94.00	4903.00	7.05	135.50	60L	4963.00	4988.00	25.00	4988.00	5057.00	69.00	8.00	-0.12	-1.00	
5057.00	96.00	4997.00	6.87	128.99	60L	5057.00	5087.00	30.00	5087.00	5153.00	66.00	25.00	-0.01	-0.19	

Totals:	750.00 ft	3550.00 ft
Percentages:	17.4%	82.6%
Time:	10.88 hrs	16.95 hrs
Percentages:	39.1%	60.9%



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 2 - 2012/07/25 TO 2012/07/26

FILE #: 4026338

JOB TYPE: Horizontal

RIG & NO: Helmerich & Payne 307

WELL NAME: Camp 9N-30HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld County

SERVICE CO.: Weatherford Drilling Services

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Scott Coulter, Rusty Komrs

BHA NO: 2	DATES RUN: 2012/07/25 TO 2012/07/26	SECTION: Build & Ho	TOOLFACE OFFSET: 98.57 °	SURVEY OFFSET: 60 ft
MOTOR SETTING: 1.50 °	KICKPAD: No	STABILIZER: No	MODEL: LE7850	SERIAL NO: 675-41002
			BHA SURVEY TYPE: Positive Pulse MWD	

(Distances are shown in feet.)

BIT		SURVEY					----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF		FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
5153.00	475.00	5093.00	7.82	109.80	ROT		5153.00	5153.00	0.00	5153.00	5628.00	475.00	0.00	0.00	0.00	
5628.00	853.00	5568.00	3.02	100.78	280 M		5628.00	5643.00	15.00	5643.00	6481.00	838.00	0.00	0.00	0.00	
6481.00	126.00	6421.00	0.98	180.01	360 M		6481.00	6496.00	15.00	6496.00	6607.00	111.00	15.00	-0.14	-0.24	

Totals:	30.00 ft	1424.00 ft
Percentages:	2.1%	97.9%
Time:	0.83 hrs	9.33 hrs
Percentages:	8.2%	91.8%



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 3 - 2012/07/26 TO 2012/07/28

FILE #: 4026338

JOB TYPE: Horizontal

RIG & NO: Helmerich & Payne 307

WELL NAME: Camp 9N-30HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld County

SERVICE CO.: Weatherford Drilling Services

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Rusty Komrs

BHA NO: 3	DATES RUN: 2012/07/26 TO 2012/07/28	SECTION: Build	TOOLFACE OFFSET: 337.8 °	SURVEY OFFSET: 60 ft
MOTOR SETTING: 2.38 °	KICKPAD: YES	STABILIZER: No	MODEL: LE7850	SERIAL NO: 675-4037
			BHA SURVEY TYPE: Positive Pulse MWD	

(Distances are shown in feet.)

BIT		SURVEY				----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
6607.00	32.00	6547.00	0.16	305.65	350 M	6607.00	6639.00	32.00	6639.00	6639.00	0.00	0.00	0.00	0.00	
6639.00	31.00	6579.00	0.14	297.22	350 M	6639.00	6670.00	31.00	6670.00	6670.00	0.00	0.00	0.00	-0.06	
6670.00	32.00	6610.00	1.80	347.52	350 M	6670.00	6701.00	31.00	6701.00	6702.00	1.00	3.00	0.55	5.35	
6702.00	32.00	6642.00	6.11	350.93	HS	6702.00	6721.00	19.00	6721.00	6734.00	13.00	32.00	0.13	13.47	
6734.00	31.00	6674.00	9.48	358.84	15R	6734.00	6755.00	21.00	6755.00	6765.00	10.00	32.00	0.11	10.53	
6765.00	32.00	6705.00	11.66	4.68	30L	6765.00	6797.00	32.00	6797.00	6797.00	0.00	30.00	0.07	7.03	
6797.00	18.00	6737.00	14.09	0.65	HS	6797.00	6811.00	14.00	6811.00	6815.00	4.00	19.00	0.13	7.59	
6815.00	45.00	6755.00	16.02	3.08	HS	6815.00	6860.00	45.00	6860.00	6860.00	0.00	18.00	0.11	10.72	
6860.00	32.00	6800.00	18.26	2.58	20L	6860.00	6886.00	26.00	6886.00	6892.00	6.00	35.00	0.06	4.98	
6892.00	31.00	6832.00	21.71	1.23	HS	6892.00	6918.00	26.00	6918.00	6923.00	5.00	28.00	0.12	10.78	
6923.00	32.00	6863.00	23.94	1.54	30L	6923.00	6950.00	27.00	6950.00	6955.00	5.00	31.00	0.07	7.19	
6955.00	42.00	6895.00	25.40	2.21	30L	6955.00	6982.00	27.00	6982.00	6997.00	15.00	26.00	0.06	4.56	
6997.00	34.00	6937.00	29.19	0.40	10 L	6997.00	7018.00	21.00	7018.00	7031.00	13.00	37.00	0.10	9.02	
7031.00	26.00	6971.00	32.89	357.75	10 L	7031.00	7049.00	18.00	7049.00	7057.00	8.00	29.00	0.13	10.88	
7057.00	32.00	6997.00	35.94	356.30	HS	7057.00	7081.00	24.00	7081.00	7089.00	8.00	11.00	0.28	11.73	Bad SLD Ratty Formation / WOB Stacking
7089.00	23.00	7029.00	38.51	356.34	HS	7089.00	7112.00	23.00	7112.00	7112.00	0.00	21.00	0.12	8.03	
7112.00	32.00	7052.00	39.91	356.27	HS	7112.00	7144.00	32.00	7144.00	7144.00	0.00	18.00	0.08	6.09	
7144.00	45.00	7084.00	40.46	355.45	20 R	7144.00	7176.00	32.00	7176.00	7189.00	13.00	24.00	0.02	1.72	
7189.00	29.00	7129.00	4.48	355.91	20 R	7189.00	7207.00	18.00	7207.00	7218.00	11.00	40.00	-0.90	-79.96	
7218.00	21.00	7158.00	48.76	356.37	10 R	7218.00	7239.00	21.00	7239.00	7239.00	0.00	29.00	1.53	152.69	
7239.00	32.00	7179.00	51.75	356.70	20R	7239.00	7271.00	32.00	7271.00	7271.00	0.00	18.00	0.17	14.24	
7271.00	32.00	7211.00	53.67	357.80	20R	7271.00	7303.00	32.00	7303.00	7303.00	0.00	18.00	0.11	6.00	
7303.00	46.00	7243.00	56.07	358.54	10R	7303.00	7334.00	31.00	7334.00	7349.00	15.00	25.00	0.10	7.50	
7349.00	34.00	7289.00	60.59	359.43	10L	7349.00	7366.00	17.00	7366.00	7383.00	17.00	46.00	0.10	9.83	
7383.00	14.00	7323.00	66.01	359.70	HS	7383.00	7397.00	14.00	7397.00	7397.00	0.00	34.00	0.16	15.94	

Slide Sheet Report

BHA 3 - 2012/07/26 TO 2012/07/28

(Distances are shown in feet.)

BIT		SURVEY				----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
7397.00	32.00	7337.00	69.64	0.04	HS	7397.00	7413.00	16.00	7413.00	7429.00	16.00	11.00	0.33	25.93	
7429.00	32.00	7369.00	72.37	359.61	HS	7429.00	7440.00	11.00	7440.00	7461.00	21.00	0.00	0.00	0.00	
7461.00	31.00	7401.00	75.44	358.68		7461.00	7461.00	0.00	7461.00	7492.00	31.00	0.00	0.00	0.00	
7492.00	32.00	7432.00	78.24	358.59	HS	7492.00	7502.00	10.00	7502.00	7524.00	22.00	0.00	0.00	0.00	
7524.00	32.00	7464.00	80.52	358.25	HS	7524.00	7535.00	11.00	7535.00	7556.00	21.00	0.00	0.00	0.00	
7556.00	31.00	7496.00	81.65	358.00	HS	7556.00	7565.00	9.00	7565.00	7587.00	22.00	0.00	0.00	0.00	
7587.00	24.00	7527.00	83.55	357.95	HS	7587.00	7598.00	11.00	7598.00	7611.00	13.00	0.00	0.00	0.00	

Totals:	714.00 ft	290.00 ft
Percentages:	71.1%	28.9%
Time:	20.50 hrs	6.17 hrs
Percentages:	76.9%	23.1%



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 4 - 2012/07/29 TO 2012/08/02

FILE #: 4026338

JOB TYPE: Horizontal

RIG & NO: Helmerich & Payne 307

WELL NAME: Camp 9N-30HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld County

SERVICE CO.: Weatherford Drilling Services

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

MWD Supervisor: Jett Hunter, Rusty Komrs

BHA NO: 4	DATES RUN: 2012/07/29 TO 2012/08/02	SECTION: Lateral 1	TOOLFACE OFFSET: 203.4 °	SURVEY OFFSET: 52 ft
MOTOR SETTING: 1.50 °	KICKPAD: No	STABILIZER: No	MODEL: ME6770	SERIAL NO: 475-3966
			BHA SURVEY TYPE: HEL LWD	

(Distances are shown in feet.)

BIT		SURVEY					----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF		FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
7733.00	183.00	7681.00	87.66	357.07	60 R		7733.00	7778.00	45.00	7778.00	7916.00	138.00	0.00	0.00	0.00	
7916.00	182.00	7864.00	88.33	359.49	45 R		7916.00	7961.00	45.00	7961.00	8098.00	137.00	45.00	0.01	0.37	
8098.00	92.00	8046.00	93.15	1.02	LS		8098.00	8108.00	10.00	8108.00	8190.00	82.00	45.00	0.11	2.65	
8190.00	91.00	8138.00	93.02	0.90	130 R		8190.00	8215.00	25.00	8215.00	8281.00	66.00	10.00	-0.01	-0.14	
8281.00	274.00	8229.00	92.10	1.93	LS		8281.00	8301.00	20.00	8301.00	8555.00	254.00	25.00	-0.04	-1.01	
8555.00	552.00	8503.00	91.23	1.27	LS		8555.00	8567.00	12.00	8567.00	9107.00	540.00	20.00	-0.04	-0.32	
9107.00	276.00	9055.00	91.23	359.11	145 R		9107.00	9129.00	22.00	9129.00	9383.00	254.00	12.00	0.00	0.00	
9383.00	190.00	9331.00	88.21	359.90	HS		9383.00	9398.00	15.00	9398.00	9573.00	175.00	22.00	-0.14	-1.09	
9573.00	191.00	9521.00	91.54	359.96	120 R		9573.00	9596.00	23.00	9596.00	9764.00	168.00	15.00	0.22	1.75	
9764.00	94.00	9712.00	91.98	2.17	145 L		9764.00	9776.00	12.00	9776.00	9858.00	82.00	23.00	0.02	0.23	
9858.00	286.00	9806.00	91.60	2.06	160 L		9858.00	9873.00	15.00	9873.00	10144.00	271.00	12.00	-0.03	-0.40	
10144.00	190.00	10092.00	90.93	0.37	160 L		10144.00	10159.00	15.00	10159.00	10334.00	175.00	15.00	-0.04	-0.23	
10334.00	95.00	10282.00	89.38	2.06	90 L		10334.00	10349.00	15.00	10349.00	10429.00	80.00	15.00	-0.10	-0.82	
10429.00	380.00	10377.00	89.75	1.44	125 L		10429.00	10454.00	25.00	10454.00	10809.00	355.00	15.00	0.02	0.39	
10809.00	95.00	10757.00	88.21	357.64	80 R		10809.00	10829.00	20.00	10829.00	10904.00	75.00	25.00	-0.06	-0.41	
10904.00	96.00	10852.00	88.95	358.82	90 R		10904.00	10936.00	32.00	10936.00	11000.00	64.00	20.00	0.04	0.78	
11000.00	95.00	10948.00	87.71	1.61	90 R		11000.00	11020.00	20.00	11020.00	11095.00	75.00	32.00	-0.04	-1.29	
11095.00	95.00	11043.00	87.71	3.55	90 R		11095.00	11105.00	10.00	11105.00	11190.00	85.00	20.00	0.00	0.00	
11190.00	95.00	11138.00	87.04	4.69	90 R		11190.00	11200.00	10.00	11200.00	11285.00	85.00	10.00	-0.07	-0.71	
11285.00	95.00	11233.00	86.36	6.08	45 R		11285.00	11317.00	32.00	11317.00	11380.00	63.00	10.00	-0.07	-0.72	
11380.00	95.00	11328.00	87.10	7.88	60 R		11380.00	11412.00	32.00	11412.00	11475.00	63.00	0.00	0.00	0.00	
11475.00	95.00	11423.00	87.53	10.27	60 R		11475.00	11507.00	32.00	11507.00	11570.00	63.00	32.00	0.01	0.45	
11570.00	95.00	11518.00	90.12	12.13	60 R		11570.00	11603.00	33.00	11603.00	11665.00	62.00	32.00	0.08	2.73	
11665.00	94.00	11613.00	87.53	14.49	90 R		11665.00	11695.00	30.00	11695.00	11759.00	64.00	33.00	-0.08	-2.73	
11759.00	95.00	11707.00	86.92	16.27	75 R		11759.00	11794.00	35.00	11794.00	11854.00	60.00	30.00	-0.02	-0.65	



(Distances are shown in feet.)

Slide Sheet Report

Drilling Services

v4.2.2674

BHA 4 - 2012/07/29 TO 2012/08/02

BIT DEPTH	DRILLED	SURVEY			TF	----- ORIENTING -----			----- ROTATING -----			SLIDE SEEN	BUR /ft	BUR /100ft	COMMENTS
		DEPTH	INC	AZM		FROM	TO	FEET	FROM	TO	FEET				
11854.00	189.00	11802.00	86.36	18.69	70 R	11854.00	11889.00	35.00	11889.00	12043.00	154.00	35.00	-0.02	-0.59	
12043.00	96.00	11991.00	87.29	20.89	HS	12043.00	12058.00	15.00	12058.00	12139.00	81.00	35.00	0.03	0.49	
12139.00	95.00	12087.00	86.79	20.48	45 L	12139.00	12174.00	35.00	12174.00	12234.00	60.00	15.00	-0.03	-0.52	
12234.00	100.00	12182.00	88.83	19.58	65 L	12234.00	12269.00	35.00	12269.00	12334.00	65.00	35.00	0.06	2.15	
12334.00	89.00	12282.00	89.26	17.18	45 L	12334.00	12364.00	30.00	12364.00	12423.00	59.00	35.00	0.01	0.43	
12423.00	95.00	12371.00	88.46	15.58	45 L	12423.00	12455.00	32.00	12455.00	12518.00	63.00	30.00	-0.03	-0.90	
12518.00	95.00	12466.00	89.69	13.08	90 L	12518.00	12546.00	28.00	12546.00	12613.00	67.00	32.00	0.04	1.29	
12613.00	94.00	12561.00	91.15	13.95	100 L	12613.00	12644.00	31.00	12644.00	12707.00	63.00	28.00	0.05	1.54	
12707.00	64.00	12655.00	90.49	13.00	90L	12707.00	12747.00	40.00	12747.00	12771.00	24.00	31.00	-0.02	-0.70	
12771.00	32.00	12719.00	90.49	13.00	90 L	12771.00	12786.00	15.00	12786.00	12803.00	17.00	12.00	0.00	0.00	
12803.00	95.00	12751.00	89.38	9.98	80 R	12803.00	12828.00	25.00	12828.00	12898.00	70.00	28.00	-0.04	-3.47	
12898.00	189.00	12846.00	90.06	6.12	90 L	12898.00	12923.00	25.00	12923.00	13087.00	164.00	40.00	0.02	0.72	
13087.00	13092.0	13035.00	88.46	0.08	90L	13087.00	13112.00	25.00	13112.00	26179.00	13067.0	25.00	-0.06	-0.85	

Totals:	956.00 ft	17490.00 ft
Percentages:	5.2%	94.8%
Time:	19.17 hrs	39.42 hrs
Percentages:	32.7%	67.3%



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 5 - 2012/08/02 TO 2012/08/03

FILE #: 4026338

JOB TYPE: Horizontal

RIG & NO: Helmerich & Payne 307

WELL NAME: Camp 9N-30HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld County

SERVICE CO.: Weatherford Drilling Services

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

MWD Supervisor: Jett Hunter, Rusty Komrs

BHA NO: 5	DATES RUN: 2012/08/02 TO 2012/08/03	SECTION: Lateral 2	TOOLFACE OFFSET: 322.7 °	SURVEY OFFSET: 54 ft
MOTOR SETTING: 1.50 °	KICKPAD: No	STABILIZER: No	MODEL: Hyperline	SERIAL NO: 475-4074
				BHA SURVEY TYPE: HEL LWD

(Distances are shown in feet.)

BIT		SURVEY					----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF		FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
13089.00	95.00	13035.00	88.46	0.08	60 L		13089.00	13144.00	55.00	13144.00	13184.00	40.00	0.00	0.00	0.00	
13184.00	95.00	13130.00	88.15	375.95			13184.00	13184.00	0.00	13184.00	13279.00	95.00	0.00	0.00	0.00	
13279.00	95.00	13225.00	91.42	356.07			13279.00	13279.00	0.00	13279.00	13374.00	95.00	0.00	0.00	0.00	
13374.00	95.00	13320.00	91.48	355.52	130R		13374.00	13400.00	26.00	13400.00	13469.00	69.00	0.00	0.00	0.06	
13469.00	95.00	13415.00	90.49	357.59			13469.00	13469.00	0.00	13469.00	13564.00	95.00	0.00	0.00	0.00	
13564.00	95.00	13510.00	90.62	357.20	130R		13564.00	13589.00	25.00	13589.00	13659.00	70.00	0.00	0.00	0.00	
13659.00	95.00	13605.00	89.38	358.87			13659.00	13659.00	0.00	13659.00	13754.00	95.00	25.00	-0.05	-1.31	
13754.00	95.00	13700.00	88.15	358.25	60R		13754.00	13779.00	25.00	13779.00	13849.00	70.00	0.00	0.00	0.00	
13849.00	95.00	13795.00	89.03	359.67			13849.00	13849.00	0.00	13849.00	13944.00	95.00	0.00	0.00	0.00	
13944.00	95.00	13890.00	88.03	359.72	HS		13944.00	13959.00	15.00	13959.00	14039.00	80.00	0.00	0.00	-1.05	

Totals:	146.00 ft	804.00 ft
Percentages:	15.4%	84.6%
Time:	4.00 hrs	7.92 hrs
Percentages:	33.6%	66.4%



MOTOR REPORTS

**Weatherford®**

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 1 - Build & Hold Section, Motor #675-40981

FILE #: 4026338 WELL NAME: Camp 9N-30HZ SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Anadarko Petroleum Corporation SURVEY TYPE: HEL LWD
 RIG & NO: Helmerich & Payne 307 SURFACE LOCATION: Weld County FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani
 MWD Supervisor: Jett Hunter, Scott Coulter

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

GENERAL INFORMATION:

BHA #: 1 START DEPTH: 0.00 ft
 DATE IN: 2012/07/23 END DEPTH: 5153.00 ft
 DATE OUT: 2012/07/25 HOLE MADE: 5153.00 ft
 ANGLE IN: 0.00 ° AVG ROP: 185.16 ft/hr
 ANGLE OUT: 6.87 °
 ORIENTING HRS: 10.88 ROTATING HRS: 16.95

MOTOR INFORMATION:

MANFCT: Weatherford
 SERIAL #: 675-40981
 MODEL: QLE7850
 LOBE: 7/8 BIT TO BEND: 6.27 ft
 SETTING: 1.50 ° KICKPAD: No
 STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: VM513 IADC BIT GRADE: 1 / 1 / NO / ? / X / I / NO / PP
 BIT PRESS DROP: 0.00 psi TOTAL FLOW RATE: 569.66 gal/min PUMP PRESS: (OFF) 2400.00 psi
 MTR PRESS DROP: 0.00 psi NOZZLES: 0.863 in² TFA (ON) 3400.00 psi

MUD INFORMATION:

MUD TYPE: Water LIQUID BASE: Water (All units are imperial.)
 DENSITY: 8 lb/gal VISCOSITY: 27 sec/qt
 SAND: 0.010 WATER LOSS: 0.00 cc/30min LIQUID RATE: 0.00 gal/min
 SOLIDS: 0.400 PLASTIC VISC: 1.0 cP GAS TYPE:
 OIL: 0.000 YIELD POINT: 4.0 lb/100 ft² GAS RATE: 0.00 cu ft/min
 TEMP: 157 °F pH: 8.4

TIME INFORMATION:

CIRCULATING HOURS: 9.83
 REAMING HOURS: 0.00
 TIME DRILL HOURS: 0.00
 MOTOR DRILL HOURS: 27.83
 MOTOR HOURS THIS RUN: 37.67
 PREVIOUS HOURS: 0.00
 TOTAL MOTOR HOURS: 37.67
 TOTAL BRT HOURS: 37.67

MOTOR EVALUATION COMMENTS:

Weatherford motor SN (675-40981) performed as expected. This Motor had a total of 37.67 hours on it. Company man was concerned that the motor was getting week due to minor stalling in rotation and sliding but I believe it was the Sussex formation. that we just transitioned through. Motor looked good when laid down and there was no squat in the motor when squat tested.

REASON FOR BHA CHANGE:

Inspect drillstring and BHA for pressure loss and stalls, pressure spikes rotating and sliding due to Sussex formation.

COMMENTS FROM LAST DAY RAN:

Drill Ahead F/ 4868' - 6415'

We continued to slide aprox. 20ft per stand up and to the left to maintain 8° INC to drop point of nudge and counteract moderate push right/South from 4868' to 5131' MD.

**BHA 1 - Build & Hold Section, Motor #675-40981**

Around 4900' MD we started experiencing differential spikes up to 1300psi when rotating. Survey at 4903' MD showed a 13 degree right swing in AZM South indicating a change in formation and possible indicator of pressure spikes.

At 5131' MD, while sliding, pressure began to spike again followed by a 500psi pressure loss from 2300psi off bottom to 1800psi. Shakers were monitored for signs of rubber but nothing was found. Strong reactive torque from motor and ability of weight to drill off showed motor was functioning. Pressure was steadily regained and the company rep. decided to continue drilling to 5153' MD.

At 04:00, 5153' MD, Company Rep. decided to TOOH to inspect drillstring and BHA.

Motor and bit looked excellent, no problems found. Differential spikes were due to Sussex formation which is very normal for this area. Company man was informed that I didn't think a trip was necessary but they decided to anyway to troubleshoot Pressure loss, which was back to normal before tripping.

Once picking up the new motor and began drilling we experienced a 500 psi pressure drop shortly followed by an excessive pressure increase. Pressure increase is believed to be by plugging of the jets from stator rubber due to the fact we were getting black rubber over the shakers.

**Weatherford®**

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 2 - Build & Hold Section, Motor #675-41002

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307 SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Scott Coulter, Rusty Komrs

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

GENERAL INFORMATION:

BHA #: 2
DATE IN: 2012/07/25
DATE OUT: 2012/07/26
ANGLE IN: 7.82 °
ANGLE OUT: 0.98 °
ORIENTING HRS: 0.83
START DEPTH: 5153.00 ft
END DEPTH: 6607.00 ft
HOLE MADE: 1454.00 ft
AVG ROP: 142.97 ft/hr
ROTATING HRS: 9.33

MOTOR INFORMATION:

MANFCT: Weatherford
SERIAL #: 675-41002
MODEL: LE7850
LOBE: 7/8
SETTING: 1.50 °
BIT TO BEND: 6.22 ft
KICKPAD: No
STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: VM513
BIT PRESS DROP: 0.00 psi
MTR PRESS DROP: 0.00 psi
IADC BIT GRADE: 1 / 2 / BT / G / X / I / FC / TD
TOTAL FLOW RATE: 525.84 gal/min
NOZZLES: 0.863 in² TFA
PUMP PRESS: (OFF) 4000.00 psi
(ON) 4500.00 psi

MUD INFORMATION:

MUD TYPE: Water
DENSITY: 9 lb/gal
SAND: 0.040
SOLIDS: 3.700
OIL: 0.000
TEMP: 134 °F
LIQUID BASE: Water
VISCOSITY: 38 sec/qt
WATER LOSS: 8.00 cc/30min
PLASTIC VISC: 13.0 cP
YIELD POINT: 14.0 lb/100 ft²
pH: 8.3
LIQUID RATE: 0.00 gal/min
GAS TYPE:
GAS RATE: 0.00 cu ft/min
 (All units are imperial.)

TIME INFORMATION:

CIRCULATING HOURS: 4.67
REAMING HOURS: 0.00
TIME DRILL HOURS: 0.00
MOTOR DRILL HOURS: 10.17
MOTOR HOURS THIS RUN: 14.83
PREVIOUS HOURS: 0.00
TOTAL MOTOR HOURS: 14.83
TOTAL BRT HOURS: 14.50

MOTOR EVALUATION COMMENTS:

Weatherford Motor 7850 SN (675-41002) Performed poorly. Once picking up the new motor and began drilling we experienced a 500 psi pressure drop shortly followed by an excessive pressure increase. Pressure increase is believed to be plugging of the jets from stator rubber due to the fact we were getting black rubber over the shakers. This motor only had a total of 14.5 hours on it. This Motor had no squat in it when Squat tested. It is recommended this motor be gone through once in the shop. There was stator rubber plugging the jets.

REASON FOR BHA CHANGE:

POOH to P/U Curve Assembly

COMMENTS FROM LAST DAY RAN:

Drill Ahead F/ 6386' - 6607'. TD Verticle Section. POOH to P/U Curve assembly.



Weatherford®

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 2 - Build & Hold Section, Motor #675-41002

Once picking up the new motor and began drilling we experienced a 500 psi pressure drop shortly followed by an excessive pressure increase. Pressure increase is believed to be by plugging of the jets from stator rubber due to the fact we were getting black rubber over the shakers.

**Weatherford®**

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 3 - Build Section, Motor #675-4037

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307 SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Brian Trani

MWD Supervisor: Jett Hunter, Rusty Komrs

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

GENERAL INFORMATION:

BHA #: 3
DATE IN: 2012/07/26
DATE OUT: 2012/07/28
ANGLE IN: 0.16 °
ANGLE OUT: 83.55 °
ORIENTING HRS: 20.50
START DEPTH: 6607.00 ft
END DEPTH: 7611.00 ft
HOLE MADE: 1004.00 ft
AVG ROP: 37.65 ft/hr
ROTATING HRS: 6.17

MOTOR INFORMATION:

MANFCT: Weatherford
SERIAL #: 675-4037
MODEL: LE7850
LOBE: 7/8
SETTING: 2.38 °
BIT TO BEND: 6.25 ft
KICKPAD: YES
STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: FXD54
BIT PRESS DROP: 0.00 psi
MTR PRESS DROP: 0.00 psi
IADC BIT GRADE: 1 / 1 / NO / A / X / I / CT / TD
TOTAL FLOW RATE: 547.75 gal/min
NOZZLES: 1.011 in² TFA
PUMP PRESS: (OFF) 3000.00 psi
(ON) 3300.00 psi

MUD INFORMATION:

MUD TYPE: Water
DENSITY: 10 lb/gal
SAND: 0.050
SOLIDS: 7.100
OIL: 1.000
TEMP: 168 °F
LIQUID BASE: Water
VISCOSITY: 40 sec/qt
WATER LOSS: 1.00 cc/30min
PLASTIC VISC: 17.0 cP
YIELD POINT: 15.0 lb/100 ft²
pH: 8.7
LIQUID RATE: 0.00 gal/min
GAS TYPE:
GAS RATE: 0.00 cu ft/min
 (All units are imperial.)

TIME INFORMATION:

CIRCULATING HOURS: 8.92
REAMING HOURS: 0.00
TIME DRILL HOURS: 0.00
MOTOR DRILL HOURS: 26.67
MOTOR HOURS THIS RUN: 35.58
PREVIOUS HOURS: 0.00
TOTAL MOTOR HOURS: 35.58
TOTAL BRT HOURS: 35.58

MOTOR EVALUATION COMMENTS:

Weatherford Motor 7850 SN (675-4037) Performed as expected. This motor had a total of 35.58 hours on it. Motor looked good and drained good when laid down. There was no squat in this motor when squat tested.

REASON FOR BHA CHANGE:

TD Curve

COMMENTS FROM LAST DAY RAN:

Drill ahead in curve T/ 7611'. Curve landed

POOH to run casing

Lay down directional tools and WOO.

**Weatherford®**

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 4 - Lateral 1 Section, Motor #475-3966

FILE #: 4026338

WELL NAME: Camp 9N-30HZ

SERVICE CO.: Weatherford Drilling Services

JOB TYPE: Horizontal

COMPANY: Anadarko Petroleum Corporation

SURVEY TYPE: HEL LWD

RIG & NO: Helmerich & Payne 307

SURFACE LOCATION: Weld County

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca

MWD Supervisor: Jett Hunter, Rusty Komrs

BHA SURVEY TYPE: HEL LWD

HOLE SIZE: 6.125 in

GENERAL INFORMATION:

BHA #: 4
DATE IN: 2012/07/29
DATE OUT: 2012/08/02
ANGLE IN: 87.66 °
ANGLE OUT: 88.46 °
ORIENTING HRS: 19.17
START DEPTH: 7611.00 ft
END DEPTH: 13125.00 ft
HOLE MADE: 5514.00 ft
AVG ROP: 94.13 ft/hr
ROTATING HRS: 39.42

MOTOR INFORMATION:

MANFCT: Weatherford
SERIAL #: 475-3966
MODEL: ME6770
LOBE: 6/7
SETTING: 1.50 °
BIT TO BEND: 6.13 ft
KICKPAD: No
STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: FXD54
BIT PRESS DROP: 0.00 psi
MTR PRESS DROP: 0.00 psi
IADC BIT GRADE: 1 / 3 / BT / G / X / I / BT / BHA
TOTAL FLOW RATE: 298.00 gal/min
NOZZLES: 0.61 in² TFA
PUMP PRESS: (OFF) 3500.00 psi
(ON) 4500.00 psi

MUD INFORMATION:

MUD TYPE: Water
DENSITY: 10 lb/gal
SAND: 0.600
SOLIDS: 8.800
OIL: 3.000
TEMP: 144 °F
LIQUID BASE: Water
VISCOSITY: 41 sec/qt
WATER LOSS: 5.60 cc/30min
PLASTIC VISC: 15.0 cP
YIELD POINT: 13.0 lb/100 ft²
pH: 8.5
LIQUID RATE: 0.00 gal/min
GAS TYPE:
GAS RATE: 0.00 cu ft/min
 (All units are imperial.)

TIME INFORMATION:

CIRCULATING HOURS: 12.42
REAMING HOURS: 0.00
TIME DRILL HOURS: 0.00
MOTOR DRILL HOURS: 58.58
MOTOR HOURS THIS RUN: 71.00
PREVIOUS HOURS: 0.00
TOTAL MOTOR HOURS: 71.00
TOTAL BRT HOURS: 71.00

MOTOR EVALUATION COMMENTS:

This Motor ran as good as expected with 299 gpm through it giving us a rpm of 246 with a weight on bit of 16000 and a steady diff press of 700 psi. motor was drilling good and steady and the rop dropped off from 80' to 0'. This motor only had 58 drilling HRs

REASON FOR BHA CHANGE:

Change bit and motor.

COMMENTS FROM LAST DAY RAN:

Drill F/ 13125 to

**Weatherford®**

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 5 - Lateral 2 Section, Motor #475-4074

FILE #: 4026338 WELL NAME: Camp 9N-30HZ SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Anadarko Petroleum Corporation SURVEY TYPE: HEL LWD
 RIG & NO: Helmerich & Payne 307 SURFACE LOCATION: Weld County FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Josh Monroe, Charles Apodaca
 MWD Supervisor: Jett Hunter, Rusty Komrs

BHA SURVEY TYPE: HEL LWD

HOLE SIZE: 6.125 in

GENERAL INFORMATION:

BHA #: 5 START DEPTH: 13125.00 ft
 DATE IN: 2012/08/02 END DEPTH: 14252.00 ft
 DATE OUT: 2012/08/03 HOLE MADE: 1127.00 ft
 ANGLE IN: 88.46 ° AVG ROP: 94.55 ft/hr
 ANGLE OUT: 88.03 °
 ORIENTING HRS: 4.00 ROTATING HRS: 7.92

MOTOR INFORMATION:

MANFCT: Weatherford
 SERIAL #: 475-4074
 MODEL: Hyperline
 LOBE: 6/7 BIT TO BEND: 6.14 ft
 SETTING: 1.50 ° KICKPAD: No
 STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: FXD54 IADC BIT GRADE: 1 / 1 / WT / A / X / I / NO / TD
 BIT PRESS DROP: 0.00 psi TOTAL FLOW RATE: 286.00 gal/min PUMP PRESS: (OFF) 3750.00 psi
 MTR PRESS DROP: 0.00 psi NOZZLES: 0.61 in² TFA (ON) 4200.00 psi

MUD INFORMATION:

MUD TYPE: Water LIQUID BASE: Water (All units are imperial.)
 DENSITY: 10 lb/gal VISCOSITY: 40 sec/qt
 SAND: 0.000 WATER LOSS: 5.60 cc/30min LIQUID RATE: 0.00 gal/min
 SOLIDS: 0.000 PLASTIC VISC: 12.0 cP GAS TYPE:
 OIL: 0.000 YIELD POINT: 0.1 lb/100 ft² GAS RATE: 0.00 cu ft/min
 TEMP: 180 °F pH: 9.2

TIME INFORMATION:

CIRCULATING HOURS: 6.00
 REAMING HOURS: 1.08
 TIME DRILL HOURS: 0.00
 MOTOR DRILL HOURS: 11.92
 MOTOR HOURS THIS RUN: 19.00
 PREVIOUS HOURS: 0.00
 TOTAL MOTOR HOURS: 19.00
 TOTAL BRT HOURS: 19.00

MOTOR EVALUATION COMMENTS:

This motor only drilled 1000 ft of hole and only has 19 hrs on it. it ran as expected. we Ran 18000 wt on bit and 298 gpm @ .82 rpg =246 rpm.

REASON FOR BHA CHANGE:

T.D. Lateral section pull out of the hole to run linner.

COMMENTS FROM LAST DAY RAN:

Finished laying down BHA 5 and loaded lwd tools on truck for TX.