

US ROCKIES REGION PLANNING

COLORADO CENTRAL ZONE - 83

ARAPAHOE_WATKINS 6 PAD

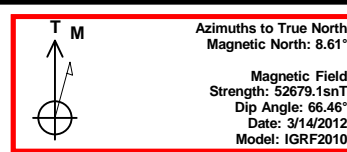
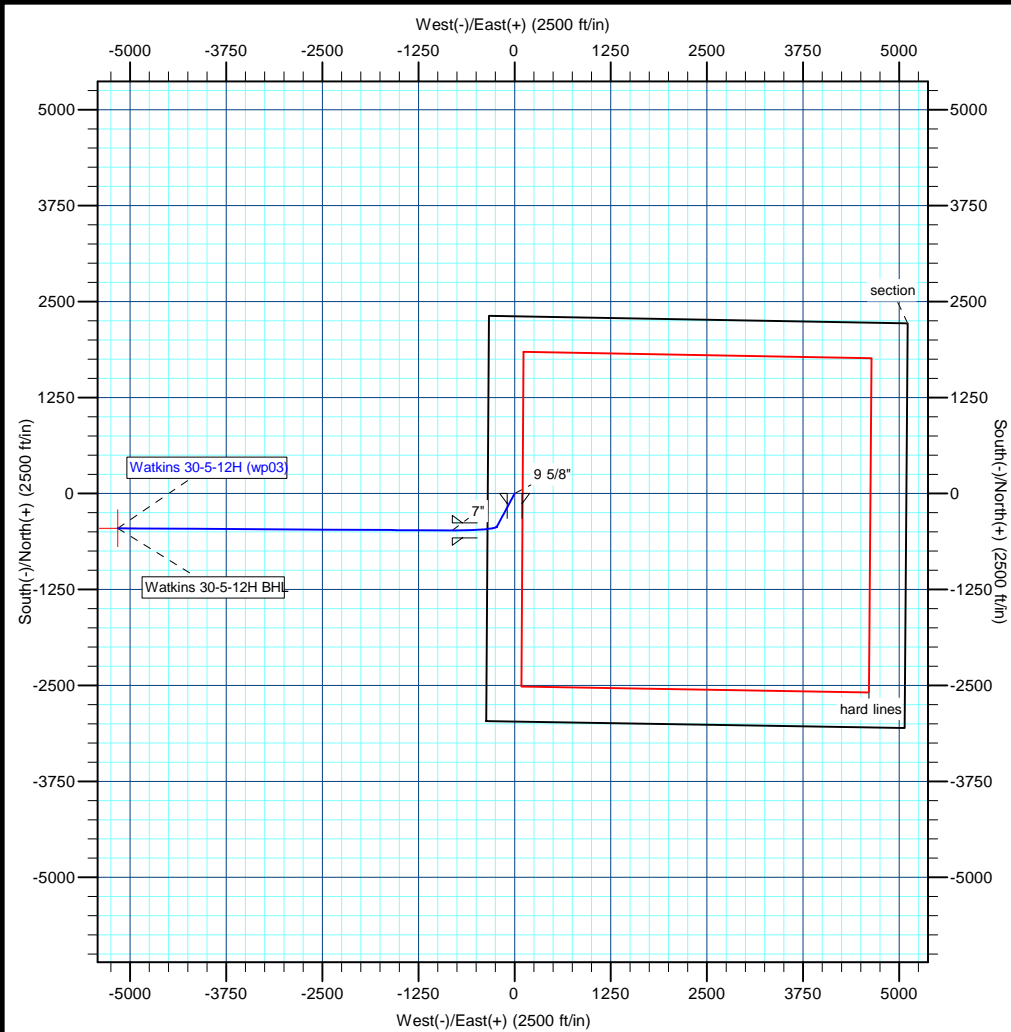
Watkins 30-5-12H

Watkins 30-5-12H

Plan: Watkins 30-5-12H (wp03)

Standard Planning Report

19 March, 2012



Project: COLORADO CENTRAL ZONE - 83
Site: ARAPAHOE WATKINS 6 PAD
Well: Watkins 30-5-12H
Wellbore: Watkins 30-5-12H
Section:
SHL:
Design: Watkins 30-5-12H (wp03)
Latitude: 39.675386
Longitude: -104.602255
GL: 5771.00
KB: gl + rkb @ 5796.00ft

WELL DETAILS: Watkins 30-5-12H

+N/-S	+E/-W	Northing	Ground Level: Easting	5771.00 Latitude	39.675386 Longitude	Slot
0.00	0.00	1672136.72	3252694.25			

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2150.00	0.00	0.00	2150.00	0.00	0.00	0.00	0.00	0.00
2430.59	5.61	208.11	2430.14	-12.11	-6.47	2.00	208.11	7.50
7310.40	5.61	208.11	7286.56	-433.00	-231.31	0.00	0.00	268.29
8190.34	90.64	270.00	7831.00	-480.72	-810.00	10.00	61.95	848.94
8226.74	90.66	270.37	7830.59	-480.60	-846.40	1.01	86.58	885.19
12540.08	90.66	270.37	7781.00	-452.97	-5159.37	0.00	0.00	5179.22

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

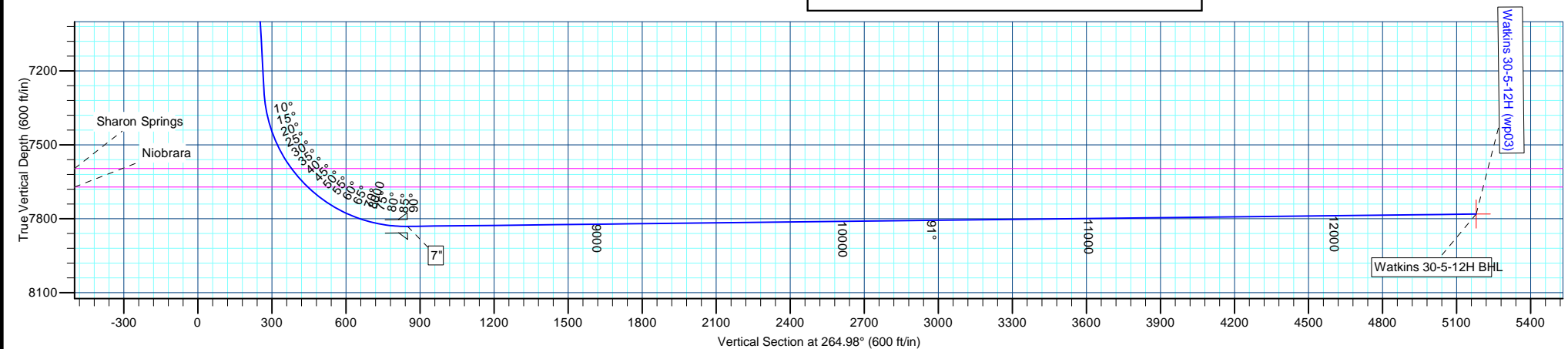
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Watkins 30-5-12H BHL	7781.00	-452.97	-5159.37	39.674141	-104.620584	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1863.00	1863.00	Fox Hills
5132.00	5145.46	Sussex
6202.00	6220.61	Shannon
7596.00	7644.27	Sharon Springs
7671.00	7744.19	Niobrara

CASING DETAILS

TVD	MD	Name	Size
2010.00	2010.00	9 5/8"	9-5/8
7831.00	8190.34	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-12H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 5796.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	gl + rkb @ 5796.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-12H		
Design:	Watkins 30-5-12H (wp03)		

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

Site	ARAPAHOE_WATKINS 6 PAD			
Site Position:		Northing:	1,672,196.84 usft	Latitude: 39.675551
From:	Lat/Long	Easting:	3,252,694.22 usft	Longitude: -104.602253
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.57 °

Well	Watkins 30-5-12H			
Well Position	+N/-S	-60.12 ft	Northing:	1,672,136.72 usft
	+E/-W	-0.56 ft	Easting:	3,252,694.25 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 39.675386
				Longitude: -104.602255
				Ground Level: 5,771.00 ft

Wellbore	Watkins 30-5-12H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/14/2012	8.61	66.46	52,679

Design	Watkins 30-5-12H (wp03)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	264.98

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,150.00	0.00	0.00	2,150.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,430.59	5.61	208.11	2,430.14	-12.11	-6.47	2.00	2.00	0.00	208.11	
7,310.40	5.61	208.11	7,286.56	-433.00	-231.31	0.00	0.00	0.00	0.00	
8,190.34	90.64	270.00	7,831.00	-480.72	-810.00	10.00	9.66	7.03	61.95	
8,226.74	90.66	270.37	7,830.59	-480.60	-846.40	1.01	0.06	1.01	86.58	
12,540.08	90.66	270.37	7,781.00	-452.97	-5,159.37	0.00	0.00	0.00	0.00	Watkins 30-5-12H BH

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-12H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 5796.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	gl + rkb @ 5796.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-12H		
Design:	Watkins 30-5-12H (wp03)		

Planned 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	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,863.00	0.00	0.00	1,863.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,010.00	0.00	0.00	2,010.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,150.00	0.00	0.00	2,150.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,200.00	1.00	208.11	2,200.00	-0.38	-0.21	0.24	2.00	2.00	0.00
2,300.00	3.00	208.11	2,299.93	-3.46	-1.85	2.15	2.00	2.00	0.00
2,400.00	5.00	208.11	2,399.68	-9.62	-5.14	5.96	2.00	2.00	0.00
2,430.59	5.61	208.11	2,430.14	-12.11	-6.47	7.50	2.00	2.00	0.00
Start 4879.81 hold at 2430.59 MD									
2,500.00	5.61	208.11	2,499.22	-18.10	-9.67	11.21	0.00	0.00	0.00
2,600.00	5.61	208.11	2,598.74	-26.72	-14.27	16.56	0.00	0.00	0.00
2,700.00	5.61	208.11	2,698.26	-35.35	-18.88	21.90	0.00	0.00	0.00
2,800.00	5.61	208.11	2,797.78	-43.97	-23.49	27.25	0.00	0.00	0.00
2,900.00	5.61	208.11	2,897.30	-52.60	-28.10	32.59	0.00	0.00	0.00
3,000.00	5.61	208.11	2,996.82	-61.22	-32.70	37.93	0.00	0.00	0.00
3,100.00	5.61	208.11	3,096.34	-69.85	-37.31	43.28	0.00	0.00	0.00
3,200.00	5.61	208.11	3,195.86	-78.47	-41.92	48.62	0.00	0.00	0.00
3,300.00	5.61	208.11	3,295.38	-87.10	-46.53	53.97	0.00	0.00	0.00
3,400.00	5.61	208.11	3,394.91	-95.72	-51.13	59.31	0.00	0.00	0.00
3,500.00	5.61	208.11	3,494.43	-104.35	-55.74	64.65	0.00	0.00	0.00
3,600.00	5.61	208.11	3,593.95	-112.97	-60.35	70.00	0.00	0.00	0.00
3,700.00	5.61	208.11	3,693.47	-121.60	-64.96	75.34	0.00	0.00	0.00
3,800.00	5.61	208.11	3,792.99	-130.22	-69.56	80.69	0.00	0.00	0.00
3,900.00	5.61	208.11	3,892.51	-138.85	-74.17	86.03	0.00	0.00	0.00
4,000.00	5.61	208.11	3,992.03	-147.47	-78.78	91.38	0.00	0.00	0.00
4,100.00	5.61	208.11	4,091.55	-156.10	-83.39	96.72	0.00	0.00	0.00
4,200.00	5.61	208.11	4,191.07	-164.73	-87.99	102.06	0.00	0.00	0.00
4,300.00	5.61	208.11	4,290.59	-173.35	-92.60	107.41	0.00	0.00	0.00
4,400.00	5.61	208.11	4,390.11	-181.98	-97.21	112.75	0.00	0.00	0.00
4,500.00	5.61	208.11	4,489.63	-190.60	-101.82	118.10	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-12H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 5796.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	gl + rkb @ 5796.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-12H		
Design:	Watkins 30-5-12H (wp03)		

Planned 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)
4,600.00	5.61	208.11	4,589.15	-199.23	-106.42	123.44	0.00	0.00	0.00
4,700.00	5.61	208.11	4,688.68	-207.85	-111.03	128.79	0.00	0.00	0.00
4,800.00	5.61	208.11	4,788.20	-216.48	-115.64	134.13	0.00	0.00	0.00
4,900.00	5.61	208.11	4,887.72	-225.10	-120.25	139.47	0.00	0.00	0.00
5,000.00	5.61	208.11	4,987.24	-233.73	-124.85	144.82	0.00	0.00	0.00
5,100.00	5.61	208.11	5,086.76	-242.35	-129.46	150.16	0.00	0.00	0.00
5,145.46	5.61	208.11	5,132.00	-246.27	-131.56	152.59	0.00	0.00	0.00
Sussex									
5,200.00	5.61	208.11	5,186.28	-250.98	-134.07	155.51	0.00	0.00	0.00
5,300.00	5.61	208.11	5,285.80	-259.60	-138.68	160.85	0.00	0.00	0.00
5,400.00	5.61	208.11	5,385.32	-268.23	-143.28	166.19	0.00	0.00	0.00
5,500.00	5.61	208.11	5,484.84	-276.85	-147.89	171.54	0.00	0.00	0.00
5,600.00	5.61	208.11	5,584.36	-285.48	-152.50	176.88	0.00	0.00	0.00
5,700.00	5.61	208.11	5,683.88	-294.10	-157.11	182.23	0.00	0.00	0.00
5,800.00	5.61	208.11	5,783.40	-302.73	-161.71	187.57	0.00	0.00	0.00
5,900.00	5.61	208.11	5,882.92	-311.35	-166.32	192.92	0.00	0.00	0.00
6,000.00	5.61	208.11	5,982.44	-319.98	-170.93	198.26	0.00	0.00	0.00
6,100.00	5.61	208.11	6,081.97	-328.60	-175.54	203.60	0.00	0.00	0.00
6,200.00	5.61	208.11	6,181.49	-337.23	-180.14	208.95	0.00	0.00	0.00
6,220.61	5.61	208.11	6,202.00	-339.01	-181.09	210.05	0.00	0.00	0.00
Shannon									
6,300.00	5.61	208.11	6,281.01	-345.85	-184.75	214.29	0.00	0.00	0.00
6,400.00	5.61	208.11	6,380.53	-354.48	-189.36	219.64	0.00	0.00	0.00
6,500.00	5.61	208.11	6,480.05	-363.10	-193.97	224.98	0.00	0.00	0.00
6,600.00	5.61	208.11	6,579.57	-371.73	-198.57	230.32	0.00	0.00	0.00
6,700.00	5.61	208.11	6,679.09	-380.35	-203.18	235.67	0.00	0.00	0.00
6,800.00	5.61	208.11	6,778.61	-388.98	-207.79	241.01	0.00	0.00	0.00
6,900.00	5.61	208.11	6,878.13	-397.60	-212.40	246.36	0.00	0.00	0.00
7,000.00	5.61	208.11	6,977.65	-406.23	-217.00	251.70	0.00	0.00	0.00
7,100.00	5.61	208.11	7,077.17	-414.86	-221.61	257.05	0.00	0.00	0.00
7,200.00	5.61	208.11	7,176.69	-423.48	-226.22	262.39	0.00	0.00	0.00
7,300.00	5.61	208.11	7,276.21	-432.11	-230.83	267.73	0.00	0.00	0.00
7,310.40	5.61	208.11	7,286.56	-433.00	-231.31	268.29	0.00	0.00	0.00
Start DLS 10.00 TFO 61.95									
7,400.00	12.60	247.15	7,375.05	-440.68	-242.40	280.01	10.00	7.80	43.57
7,500.00	22.14	257.65	7,470.40	-448.97	-270.94	309.16	10.00	9.53	10.50
7,600.00	31.95	261.96	7,559.37	-456.71	-315.66	354.39	10.00	9.81	4.31
7,644.27	36.33	263.18	7,596.00	-459.91	-340.29	379.21	10.00	9.88	2.75
Sharon Springs									
7,700.00	41.85	264.39	7,639.24	-463.69	-375.21	414.32	10.00	9.91	2.18
7,744.19	46.23	265.19	7,671.00	-466.47	-405.79	445.03	10.00	9.92	1.79
Niobrara									
7,800.00	51.77	266.03	7,707.60	-469.68	-447.77	487.13	10.00	9.93	1.52
7,900.00	61.72	267.27	7,762.36	-474.51	-531.15	570.62	10.00	9.95	1.24
8,000.00	71.68	268.30	7,801.87	-478.02	-622.81	662.23	10.00	9.96	1.03
8,100.00	81.64	269.22	7,824.92	-480.11	-719.97	759.20	10.00	9.96	0.91
8,190.34	90.64	270.00	7,831.00	-480.72	-810.00	848.94	10.00	9.96	0.87
Start DLS 1.01 TFO 86.58 - 7"									
8,200.00	90.64	270.10	7,830.89	-480.71	-819.66	858.57	1.01	0.06	1.01
8,226.74	90.66	270.37	7,830.59	-480.60	-846.40	885.19	1.01	0.06	1.01
Start 4313.35 hold at 8226.74 MD									
8,300.00	90.66	270.37	7,829.75	-480.13	-919.66	958.12	0.00	0.00	0.00
8,400.00	90.66	270.37	7,828.60	-479.49	-1,019.65	1,057.68	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-12H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 5796.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	gl + rkb @ 5796.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-12H		
Design:	Watkins 30-5-12H (wp03)		

Planned 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)
8,500.00	90.66	270.37	7,827.45	-478.85	-1,119.64	1,157.23	0.00	0.00	0.00
8,600.00	90.66	270.37	7,826.30	-478.21	-1,219.63	1,256.78	0.00	0.00	0.00
8,700.00	90.66	270.37	7,825.15	-477.57	-1,319.62	1,356.33	0.00	0.00	0.00
8,800.00	90.66	270.37	7,824.00	-476.93	-1,419.61	1,455.89	0.00	0.00	0.00
8,900.00	90.66	270.37	7,822.85	-476.29	-1,519.60	1,555.44	0.00	0.00	0.00
9,000.00	90.66	270.37	7,821.70	-475.65	-1,619.60	1,654.99	0.00	0.00	0.00
9,100.00	90.66	270.37	7,820.55	-475.01	-1,719.59	1,754.54	0.00	0.00	0.00
9,200.00	90.66	270.37	7,819.40	-474.37	-1,819.58	1,854.09	0.00	0.00	0.00
9,300.00	90.66	270.37	7,818.25	-473.73	-1,919.57	1,953.65	0.00	0.00	0.00
9,400.00	90.66	270.37	7,817.10	-473.09	-2,019.56	2,053.20	0.00	0.00	0.00
9,500.00	90.66	270.37	7,815.95	-472.45	-2,119.55	2,152.75	0.00	0.00	0.00
9,600.00	90.66	270.37	7,814.80	-471.81	-2,219.54	2,252.30	0.00	0.00	0.00
9,700.00	90.66	270.37	7,813.65	-471.17	-2,319.53	2,351.85	0.00	0.00	0.00
9,800.00	90.66	270.37	7,812.50	-470.52	-2,419.53	2,451.41	0.00	0.00	0.00
9,900.00	90.66	270.37	7,811.35	-469.88	-2,519.52	2,550.96	0.00	0.00	0.00
10,000.00	90.66	270.37	7,810.20	-469.24	-2,619.51	2,650.51	0.00	0.00	0.00
10,100.00	90.66	270.37	7,809.05	-468.60	-2,719.50	2,750.06	0.00	0.00	0.00
10,200.00	90.66	270.37	7,807.90	-467.96	-2,819.49	2,849.62	0.00	0.00	0.00
10,300.00	90.66	270.37	7,806.75	-467.32	-2,919.48	2,949.17	0.00	0.00	0.00
10,400.00	90.66	270.37	7,805.60	-466.68	-3,019.47	3,048.72	0.00	0.00	0.00
10,500.00	90.66	270.37	7,804.45	-466.04	-3,119.47	3,148.27	0.00	0.00	0.00
10,600.00	90.66	270.37	7,803.30	-465.40	-3,219.46	3,247.82	0.00	0.00	0.00
10,700.00	90.66	270.37	7,802.15	-464.76	-3,319.45	3,347.38	0.00	0.00	0.00
10,800.00	90.66	270.37	7,801.01	-464.12	-3,419.44	3,446.93	0.00	0.00	0.00
10,900.00	90.66	270.37	7,799.86	-463.48	-3,519.43	3,546.48	0.00	0.00	0.00
11,000.00	90.66	270.37	7,798.71	-462.84	-3,619.42	3,646.03	0.00	0.00	0.00
11,100.00	90.66	270.37	7,797.56	-462.20	-3,719.41	3,745.58	0.00	0.00	0.00
11,200.00	90.66	270.37	7,796.41	-461.56	-3,819.40	3,845.14	0.00	0.00	0.00
11,300.00	90.66	270.37	7,795.26	-460.92	-3,919.40	3,944.69	0.00	0.00	0.00
11,400.00	90.66	270.37	7,794.11	-460.28	-4,019.39	4,044.24	0.00	0.00	0.00
11,500.00	90.66	270.37	7,792.96	-459.63	-4,119.38	4,143.79	0.00	0.00	0.00
11,600.00	90.66	270.37	7,791.81	-458.99	-4,219.37	4,243.35	0.00	0.00	0.00
11,700.00	90.66	270.37	7,790.66	-458.35	-4,319.36	4,342.90	0.00	0.00	0.00
11,800.00	90.66	270.37	7,789.51	-457.71	-4,419.35	4,442.45	0.00	0.00	0.00
11,900.00	90.66	270.37	7,788.36	-457.07	-4,519.34	4,542.00	0.00	0.00	0.00
12,000.00	90.66	270.37	7,787.21	-456.43	-4,619.34	4,641.55	0.00	0.00	0.00
12,100.00	90.66	270.37	7,786.06	-455.79	-4,719.33	4,741.11	0.00	0.00	0.00
12,200.00	90.66	270.37	7,784.91	-455.15	-4,819.32	4,840.66	0.00	0.00	0.00
12,300.00	90.66	270.37	7,783.76	-454.51	-4,919.31	4,940.21	0.00	0.00	0.00
12,400.00	90.66	270.37	7,782.61	-453.87	-5,019.30	5,039.76	0.00	0.00	0.00
12,500.00	90.66	270.37	7,781.46	-453.23	-5,119.29	5,139.31	0.00	0.00	0.00
12,540.08	90.66	270.37	7,781.00	-452.97	-5,159.37	5,179.22	0.00	0.00	0.00
TD at 12540.08 - Watkins 30-5-12H BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Watkins 30-5-12H BHL	0.00	0.00	7,781.00	-452.97	-5,159.37	1,671,632.79	3,247,539.62	39.674141	-104.620584
- plan hits target center									
- Point									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-12H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 5796.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	gl + rkb @ 5796.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-12H		
Design:	Watkins 30-5-12H (wp03)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,010.00	2,010.00	9 5/8"	9-5/8	12-1/4	
8,190.34	7,831.00	7"	7	8-3/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,863.00	1,863.00	Fox Hills			
5,145.46	5,132.00	Sussex			
6,220.61	6,202.00	Shannon			
7,644.27	7,596.00	Sharon Springs			
7,744.19	7,671.00	Niobrara			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,150.00	2,150.00	0.00	0.00	Start Build 2.00	
2,430.59	2,430.14	-12.11	-6.47	Start 4879.81 hold at 2430.59 MD	
7,310.40	7,286.56	-433.00	-231.31	Start DLS 10.00 TFO 61.95	
8,190.34	7,831.00	-480.72	-810.00	Start DLS 1.01 TFO 86.58	
8,226.74	7,830.59	-480.60	-846.40	Start 4313.35 hold at 8226.74 MD	
12,540.08	7,781.00	-452.97	-5,159.37	TD at 12540.08	