

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Raymond 27-29HZ Pad

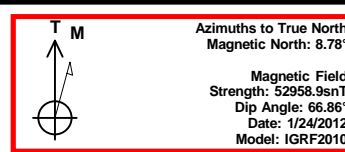
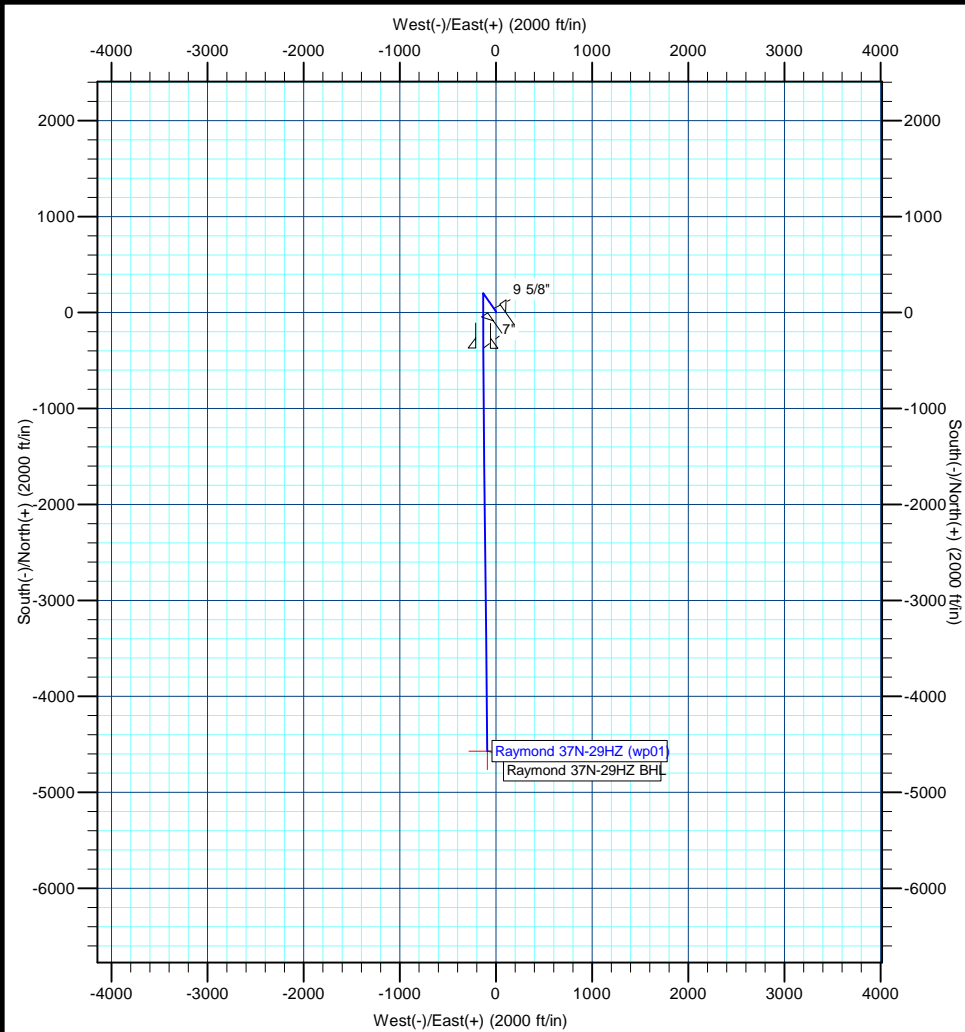
Raymond 37N-29HZ

Raymond 37N-29HZ

Plan: Raymond 37N-29HZ (wp01)

Standard Planning Report

14 March, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD Raymond 27-29HZ Pad
Well: Raymond 37N-29HZ
Wellbore: Raymond 37N-29HZ
Section:
SHL:
Design: Raymond 37N-29HZ (wp01)
Latitude: 40.202410
Longitude: -104.796338
GL: 4925.00
KB: gl + rkb @ 4942.00ft

WELL DETAILS: Raymond 37N-29HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4925.00 Latitude	Longitude	Slot
0.00	0.00	1317360.20	3196546.28	40.202410	-104.796338	

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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00
450.00	5.00	325.00	449.68	10.90	0.00	2.00	0.00	-10.90
900.00	5.00	325.00	897.97	43.03	-22.50	0.00	0.00	-42.57
3015.00	5.00	325.00	3004.92	194.03	-128.23	0.00	0.00	-191.41
3266.76	0.05	184.13	3256.36	202.92	-134.53	2.00	-179.67	-200.17
6623.89	0.05	184.13	6613.49	200.28	-134.72	0.00	0.00	-197.53
7522.76	89.93	180.02	7186.00	-372.00	-135.00	10.00	-4.10	374.64
7584.49	89.92	179.41	7186.08	-433.73	-134.69	1.00	-91.27	436.35
1722.00	89.92	179.41	7192.00	-4571.02	-91.91	0.00	0.00	4571.94

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

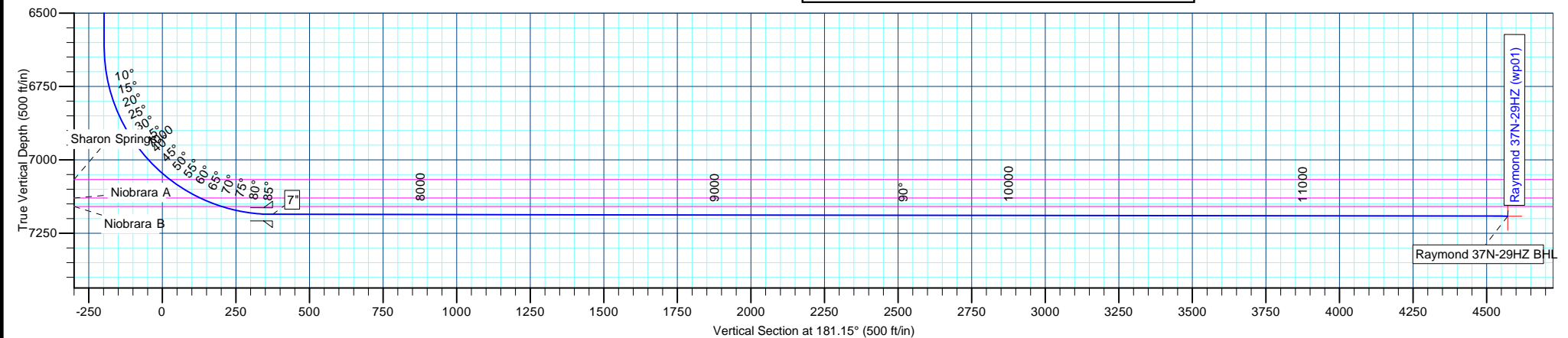
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Raymond 37N-29HZ BHL	7192.00	-4571.02	-91.91	40.189862	-104.796667	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3142.00	3152.37	Parkman
4369.00	4379.40	Sussex
7067.00	7147.45	Sharon Springs
7130.00	7268.01	Niobrara A
7159.00	7346.84	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
900.00	902.04	9 5/8"	9-5/8
7186.00	7522.76	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 37N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 37N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 37N-29HZ		
Design:	Raymond 37N-29HZ (wp01)		

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_Raymond 27-29HZ Pad											
Site Position:						Northing:			1,317,360.20 usft			Latitude:			40.202408		
From:			Lat/Long			Easting:			3,196,636.22 usft			Longitude:			-104.796016		
Position Uncertainty:			0.00 ft			Slot Radius:			13-3/16 "			Grid Convergence:			0.45		

Well	Raymond 37N-29HZ					
Well Position	+N-S	0.72 ft	Northing:	1,317,360.20 usft	Latitude:	40.202410
	+E-W	-89.94 ft	Easting:	3,196,546.28 usft	Longitude:	-104.796338
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,925.00 ft

Wellbore	Raymond 37N-29HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/24/2012	8.78	66.86	52,959

Design	Raymond 37N-29HZ (wp01)			
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	181.15

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
450.00	5.00	325.00	449.68	10.90	0.00	2.00	2.00	0.00	0.00	
900.00	5.00	325.00	897.97	43.03	-22.50	0.00	0.00	0.00	0.00	
3,015.00	5.00	325.00	3,004.92	194.03	-128.23	0.00	0.00	0.00	0.00	
3,266.76	0.05	184.13	3,256.36	202.92	-134.53	2.00	-1.97	-55.95	-179.67	
6,623.89	0.05	184.13	6,613.49	200.28	-134.72	0.00	0.00	0.00	0.00	
7,522.76	89.93	180.02	7,186.00	-372.00	-135.00	10.00	10.00	-0.46	-4.10	
7,584.49	89.92	179.41	7,186.08	-433.73	-134.69	1.00	-0.02	-1.00	-91.27	
11,722.00	89.92	179.41	7,192.00	-4,571.02	-91.91	0.00	0.00	0.00	0.00	Raymond 37N-29H.

Anadarko Petroleum Corp

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 37N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 37N-29HZ		
Design:	Raymond 37N-29HZ (wp01)		

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
Start Build 2.00									
300.00	2.00	0.00	299.98	1.75	0.00	-1.74	2.00	2.00	0.00
400.00	4.00	0.00	399.84	6.98	0.00	-6.98	2.00	2.00	0.00
450.00	5.00	325.00	449.68	10.90	0.00	-10.90	5.73	2.00	-70.00
Start 450.00 hold at 450.00 MD									
500.00	5.00	325.00	499.49	14.47	-2.50	-14.42	0.00	0.00	0.00
600.00	5.00	325.00	599.11	21.61	-7.50	-21.46	0.00	0.00	0.00
700.00	5.00	325.00	698.73	28.75	-12.50	-28.49	0.00	0.00	0.00
800.00	5.00	325.00	798.35	35.89	-17.50	-35.53	0.00	0.00	0.00
900.00	5.00	325.00	897.97	43.03	-22.50	-42.57	0.00	0.00	0.00
Start 2115.00 hold at 900.00 MD									
902.04	5.00	325.00	900.00	43.17	-22.60	-42.71	0.00	0.00	0.00
9 5/8"									
1,000.00	5.00	325.00	997.59	50.17	-27.49	-49.61	0.00	0.00	0.00
1,100.00	5.00	325.00	1,097.21	57.31	-32.49	-56.64	0.00	0.00	0.00
1,200.00	5.00	325.00	1,196.83	64.45	-37.49	-63.68	0.00	0.00	0.00
1,300.00	5.00	325.00	1,296.45	71.59	-42.49	-70.72	0.00	0.00	0.00
1,400.00	5.00	325.00	1,396.07	78.73	-47.49	-77.75	0.00	0.00	0.00
1,500.00	5.00	325.00	1,495.69	85.86	-52.49	-84.79	0.00	0.00	0.00
1,600.00	5.00	325.00	1,595.31	93.00	-57.49	-91.83	0.00	0.00	0.00
1,700.00	5.00	325.00	1,694.93	100.14	-62.49	-98.87	0.00	0.00	0.00
1,800.00	5.00	325.00	1,794.55	107.28	-67.49	-105.90	0.00	0.00	0.00
1,900.00	5.00	325.00	1,894.16	114.42	-72.49	-112.94	0.00	0.00	0.00
2,000.00	5.00	325.00	1,993.78	121.56	-77.49	-119.98	0.00	0.00	0.00
2,100.00	5.00	325.00	2,093.40	128.70	-82.48	-127.02	0.00	0.00	0.00
2,200.00	5.00	325.00	2,193.02	135.84	-87.48	-134.05	0.00	0.00	0.00
2,300.00	5.00	325.00	2,292.64	142.98	-92.48	-141.09	0.00	0.00	0.00
2,400.00	5.00	325.00	2,392.26	150.12	-97.48	-148.13	0.00	0.00	0.00
2,500.00	5.00	325.00	2,491.88	157.26	-102.48	-155.17	0.00	0.00	0.00
2,600.00	5.00	325.00	2,591.50	164.40	-107.48	-162.20	0.00	0.00	0.00
2,700.00	5.00	325.00	2,691.12	171.54	-112.48	-169.24	0.00	0.00	0.00
2,800.00	5.00	325.00	2,790.74	178.68	-117.48	-176.28	0.00	0.00	0.00
2,900.00	5.00	325.00	2,890.36	185.82	-122.48	-183.32	0.00	0.00	0.00
3,000.00	5.00	325.00	2,989.98	192.96	-127.48	-190.35	0.00	0.00	0.00
3,015.00	5.00	325.00	3,004.92	194.03	-128.23	-191.41	0.00	0.00	0.00
Start DLS 2.00 TFO -179.67									
3,100.00	3.30	324.83	3,089.70	199.06	-131.76	-196.37	2.00	-2.00	-0.20
3,152.37	2.25	324.60	3,142.00	201.13	-133.22	-198.41	2.00	-2.00	-0.44
Parkman									
3,200.00	1.30	324.07	3,189.61	202.33	-134.08	-199.60	2.00	-2.00	-1.11
3,266.76	0.05	184.13	3,256.36	202.92	-134.53	-200.17	2.00	-1.88	-209.63
Start 3357.13 hold at 3266.76 MD									
3,300.00	0.05	184.13	3,289.60	202.89	-134.53	-200.15	0.00	0.00	0.00
3,400.00	0.05	184.13	3,389.60	202.82	-134.54	-200.07	0.00	0.00	0.00
3,500.00	0.05	184.13	3,489.60	202.74	-134.54	-199.99	0.00	0.00	0.00
3,600.00	0.05	184.13	3,589.60	202.66	-134.55	-199.91	0.00	0.00	0.00
3,700.00	0.05	184.13	3,689.60	202.58	-134.55	-199.83	0.00	0.00	0.00
3,800.00	0.05	184.13	3,789.60	202.50	-134.56	-199.75	0.00	0.00	0.00
3,900.00	0.05	184.13	3,889.60	202.42	-134.57	-199.67	0.00	0.00	0.00
4,000.00	0.05	184.13	3,989.60	202.34	-134.57	-199.60	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 37N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 37N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 37N-29HZ		
Design:	Raymond 37N-29HZ (wp01)		

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)
4,100.00	0.05	184.13	4,089.60	202.26	-134.58	-199.52	0.00	0.00	0.00
4,200.00	0.05	184.13	4,189.60	202.18	-134.58	-199.44	0.00	0.00	0.00
4,300.00	0.05	184.13	4,289.60	202.11	-134.59	-199.36	0.00	0.00	0.00
4,379.40	0.05	184.13	4,369.00	202.04	-134.59	-199.30	0.00	0.00	0.00
Sussex									
4,400.00	0.05	184.13	4,389.60	202.03	-134.59	-199.28	0.00	0.00	0.00
4,500.00	0.05	184.13	4,489.60	201.95	-134.60	-199.20	0.00	0.00	0.00
4,600.00	0.05	184.13	4,589.60	201.87	-134.61	-199.12	0.00	0.00	0.00
4,700.00	0.05	184.13	4,689.60	201.79	-134.61	-199.04	0.00	0.00	0.00
4,800.00	0.05	184.13	4,789.60	201.71	-134.62	-198.97	0.00	0.00	0.00
4,900.00	0.05	184.13	4,889.60	201.63	-134.62	-198.89	0.00	0.00	0.00
5,000.00	0.05	184.13	4,989.60	201.55	-134.63	-198.81	0.00	0.00	0.00
5,100.00	0.05	184.13	5,089.60	201.48	-134.63	-198.73	0.00	0.00	0.00
5,200.00	0.05	184.13	5,189.60	201.40	-134.64	-198.65	0.00	0.00	0.00
5,300.00	0.05	184.13	5,289.60	201.32	-134.65	-198.57	0.00	0.00	0.00
5,400.00	0.05	184.13	5,389.60	201.24	-134.65	-198.49	0.00	0.00	0.00
5,500.00	0.05	184.13	5,489.60	201.16	-134.66	-198.41	0.00	0.00	0.00
5,600.00	0.05	184.13	5,589.60	201.08	-134.66	-198.33	0.00	0.00	0.00
5,700.00	0.05	184.13	5,689.60	201.00	-134.67	-198.26	0.00	0.00	0.00
5,800.00	0.05	184.13	5,789.60	200.92	-134.67	-198.18	0.00	0.00	0.00
5,900.00	0.05	184.13	5,889.60	200.85	-134.68	-198.10	0.00	0.00	0.00
6,000.00	0.05	184.13	5,989.60	200.77	-134.69	-198.02	0.00	0.00	0.00
6,100.00	0.05	184.13	6,089.60	200.69	-134.69	-197.94	0.00	0.00	0.00
6,200.00	0.05	184.13	6,189.60	200.61	-134.70	-197.86	0.00	0.00	0.00
6,300.00	0.05	184.13	6,289.60	200.53	-134.70	-197.78	0.00	0.00	0.00
6,400.00	0.05	184.13	6,389.60	200.45	-134.71	-197.70	0.00	0.00	0.00
6,500.00	0.05	184.13	6,489.60	200.37	-134.71	-197.62	0.00	0.00	0.00
6,600.00	0.05	184.13	6,589.60	200.29	-134.72	-197.55	0.00	0.00	0.00
6,623.89	0.05	184.13	6,613.49	200.28	-134.72	-197.53	0.00	0.00	0.00
Start DLS 10.00 TFO -4.10									
6,700.00	7.66	180.05	6,689.38	195.17	-134.73	-192.42	10.00	10.00	-5.36
6,800.00	17.66	180.03	6,786.82	173.29	-134.74	-170.54	10.00	10.00	-0.01
6,900.00	27.66	180.03	6,878.99	134.81	-134.76	-132.08	10.00	10.00	0.00
7,000.00	37.66	180.03	6,963.07	80.92	-134.79	-78.20	10.00	10.00	0.00
7,100.00	47.66	180.03	7,036.52	13.25	-134.83	-10.54	10.00	10.00	0.00
7,147.45	52.40	180.03	7,067.00	-23.11	-134.84	25.81	10.00	10.00	0.00
Sharon Springs									
7,200.00	57.66	180.03	7,097.11	-66.15	-134.86	68.85	10.00	10.00	0.00
7,268.01	64.46	180.03	7,130.00	-125.63	-134.89	128.32	10.00	10.00	0.00
Niobrara A									
7,300.00	67.66	180.03	7,142.98	-154.86	-134.90	157.55	10.00	10.00	0.00
7,346.84	72.34	180.03	7,159.00	-198.87	-134.92	201.54	10.00	10.00	0.00
Niobrara B									
7,400.00	77.66	180.03	7,172.75	-250.20	-134.95	252.86	10.00	10.00	0.00
7,500.00	87.66	180.02	7,185.52	-349.25	-134.99	351.89	10.00	10.00	0.00
7,522.76	89.93	180.02	7,186.00	-372.00	-135.00	374.64	10.00	10.00	0.00
Start DLS 1.00 TFO -91.27 - 7"									
7,584.49	89.92	179.41	7,186.08	-433.73	-134.69	436.35	1.00	-0.02	-1.00
Start 4137.51 hold at 7584.49 MD									
7,600.00	89.92	179.41	7,186.10	-449.24	-134.53	451.86	0.00	0.00	0.00
7,700.00	89.92	179.41	7,186.25	-549.24	-133.50	551.81	0.00	0.00	0.00
7,800.00	89.92	179.41	7,186.39	-649.23	-132.47	651.76	0.00	0.00	0.00
7,900.00	89.92	179.41	7,186.53	-749.23	-131.43	751.72	0.00	0.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 37N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 37N-29HZ		
Design:	Raymond 37N-29HZ (wp01)		

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)
8,000.00	89.92	179.41	7,186.68	-849.22	-130.40	851.67	0.00	0.00	0.00
8,100.00	89.92	179.41	7,186.82	-949.21	-129.36	951.62	0.00	0.00	0.00
8,200.00	89.92	179.41	7,186.96	-1,049.21	-128.33	1,051.58	0.00	0.00	0.00
8,300.00	89.92	179.41	7,187.10	-1,149.20	-127.30	1,151.53	0.00	0.00	0.00
8,400.00	89.92	179.41	7,187.25	-1,249.20	-126.26	1,251.48	0.00	0.00	0.00
8,500.00	89.92	179.41	7,187.39	-1,349.19	-125.23	1,351.44	0.00	0.00	0.00
8,600.00	89.92	179.41	7,187.53	-1,449.19	-124.19	1,451.39	0.00	0.00	0.00
8,700.00	89.92	179.41	7,187.68	-1,549.18	-123.16	1,551.34	0.00	0.00	0.00
8,800.00	89.92	179.41	7,187.82	-1,649.18	-122.13	1,651.30	0.00	0.00	0.00
8,900.00	89.92	179.41	7,187.96	-1,749.17	-121.09	1,751.25	0.00	0.00	0.00
9,000.00	89.92	179.41	7,188.11	-1,849.17	-120.06	1,851.21	0.00	0.00	0.00
9,100.00	89.92	179.41	7,188.25	-1,949.16	-119.02	1,951.16	0.00	0.00	0.00
9,200.00	89.92	179.41	7,188.39	-2,049.15	-117.99	2,051.11	0.00	0.00	0.00
9,300.00	89.92	179.41	7,188.54	-2,149.15	-116.96	2,151.07	0.00	0.00	0.00
9,400.00	89.92	179.41	7,188.68	-2,249.14	-115.92	2,251.02	0.00	0.00	0.00
9,500.00	89.92	179.41	7,188.82	-2,349.14	-114.89	2,350.97	0.00	0.00	0.00
9,600.00	89.92	179.41	7,188.96	-2,449.13	-113.85	2,450.93	0.00	0.00	0.00
9,700.00	89.92	179.41	7,189.11	-2,549.13	-112.82	2,550.88	0.00	0.00	0.00
9,800.00	89.92	179.41	7,189.25	-2,649.12	-111.79	2,650.83	0.00	0.00	0.00
9,900.00	89.92	179.41	7,189.39	-2,749.12	-110.75	2,750.79	0.00	0.00	0.00
10,000.00	89.92	179.41	7,189.54	-2,849.11	-109.72	2,850.74	0.00	0.00	0.00
10,100.00	89.92	179.41	7,189.68	-2,949.11	-108.68	2,950.69	0.00	0.00	0.00
10,200.00	89.92	179.41	7,189.82	-3,049.10	-107.65	3,050.65	0.00	0.00	0.00
10,300.00	89.92	179.41	7,189.97	-3,149.09	-106.62	3,150.60	0.00	0.00	0.00
10,400.00	89.92	179.41	7,190.11	-3,249.09	-105.58	3,250.56	0.00	0.00	0.00
10,500.00	89.92	179.41	7,190.25	-3,349.08	-104.55	3,350.51	0.00	0.00	0.00
10,600.00	89.92	179.41	7,190.40	-3,449.08	-103.52	3,450.46	0.00	0.00	0.00
10,700.00	89.92	179.41	7,190.54	-3,549.07	-102.48	3,550.42	0.00	0.00	0.00
10,800.00	89.92	179.41	7,190.68	-3,649.07	-101.45	3,650.37	0.00	0.00	0.00
10,900.00	89.92	179.41	7,190.82	-3,749.06	-100.41	3,750.32	0.00	0.00	0.00
11,000.00	89.92	179.41	7,190.97	-3,849.06	-99.38	3,850.28	0.00	0.00	0.00
11,100.00	89.92	179.41	7,191.11	-3,949.05	-98.35	3,950.23	0.00	0.00	0.00
11,200.00	89.92	179.41	7,191.25	-4,049.05	-97.31	4,050.18	0.00	0.00	0.00
11,300.00	89.92	179.41	7,191.40	-4,149.04	-96.28	4,150.14	0.00	0.00	0.00
11,400.00	89.92	179.41	7,191.54	-4,249.03	-95.24	4,250.09	0.00	0.00	0.00
11,500.00	89.92	179.41	7,191.68	-4,349.03	-94.21	4,350.04	0.00	0.00	0.00
11,600.00	89.92	179.41	7,191.83	-4,449.02	-93.18	4,450.00	0.00	0.00	0.00
11,700.00	89.92	179.41	7,191.97	-4,549.02	-92.14	4,549.95	0.00	0.00	0.00
11,722.00	89.92	179.41	7,192.00	-4,571.02	-91.91	4,571.94	0.00	0.00	0.00
TD at 11722.00 - Raymond 37N-29HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Raymond 37N-29HZ I	0.00	0.00	7,192.00	-4,571.02	-91.91	1,312,788.61	3,196,490.64	40.189862	-104.796667
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 37N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 37N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 37N-29HZ		
Design:	Raymond 37N-29HZ (wp01)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
902.04	900.00	9 5/8"	9-5/8	12-1/4
7,522.76	7,186.00	7"	7	8-3/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,152.37	3,142.00	Parkman			
4,379.40	4,369.00	Sussex			
7,147.45	7,067.00	Sharon Springs			
7,268.01	7,130.00	Niobrara A			
7,346.84	7,159.00	Niobrara B			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	Start Build 2.00
450.00	449.68	10.90	0.00	Start 450.00 hold at 450.00 MD
900.00	897.97	43.03	-22.50	Start 2115.00 hold at 900.00 MD
3,015.00	3,004.92	194.03	-128.23	Start DLS 2.00 TFO -179.67
3,266.76	3,256.36	202.92	-134.53	Start 3357.13 hold at 3266.76 MD
6,623.89	6,613.49	200.28	-134.72	Start DLS 10.00 TFO -4.10
7,522.76	7,186.00	-372.00	-135.00	Start DLS 1.00 TFO -91.27
7,584.49	7,186.08	-433.73	-134.69	Start 4137.51 hold at 7584.49 MD
11,722.00	7,192.00	-4,571.02	-91.91	TD at 11722.00