

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Thomason 16-9HZ Pad

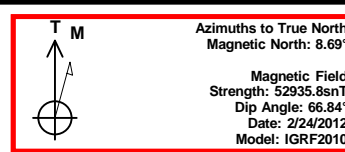
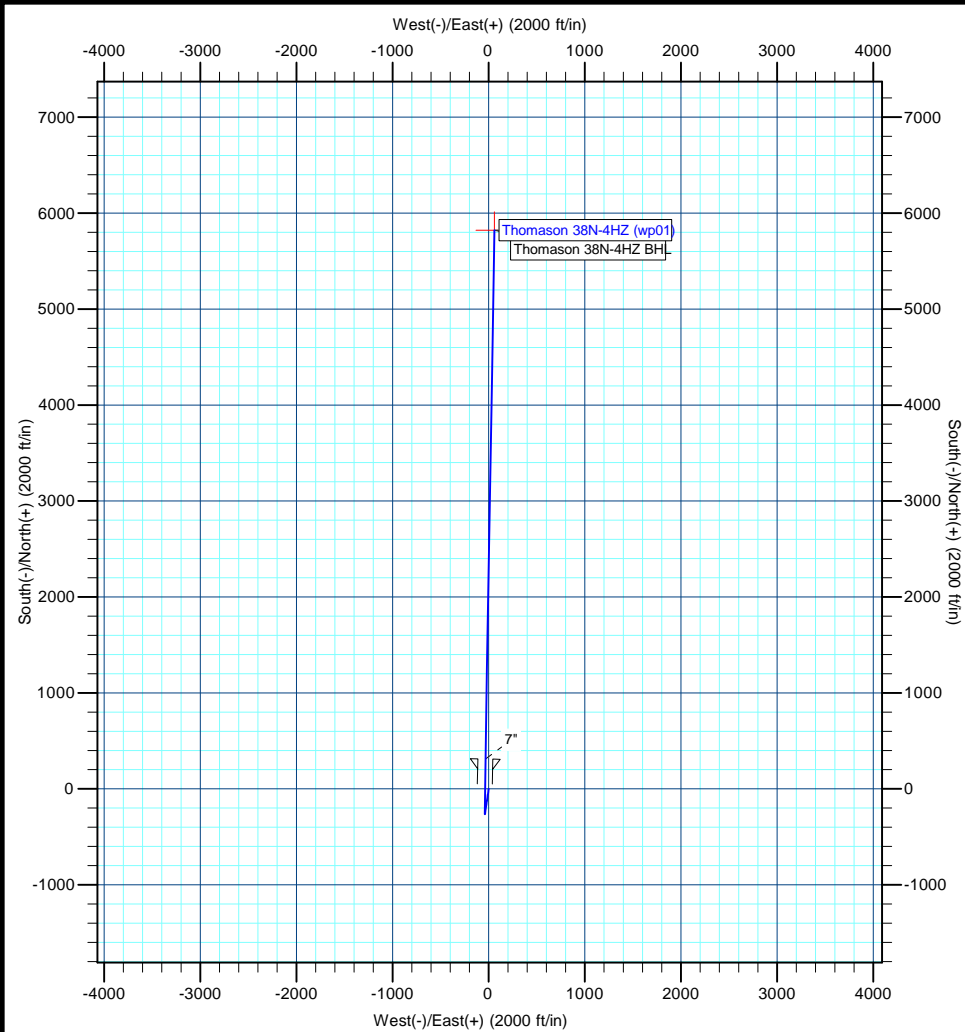
Thomason 38N-4HZ

Thomason 38N-4HZ

Plan: Thomason 38N-4HZ (wp01)

Standard Planning Report

27 February, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD Thomason 16-9HZ Pad
Well: Thomason 38N-4HZ
Wellbore: Thomason 38N-4HZ
Section:
SHL:
Design: Thomason 38N-4HZ (wp01)
Latitude: 40.146867
Longitude: -104.660734
GL: 4870.00
KB: gl + rkb @ 4886.00ft

WELL DETAILS: Thomason 38N-4HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4870.00 Latitude	Longitude	Slot
0.00	0.00	1297457.33	3234613.53	40.146867	-104.660734	

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
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00
1144.09	2.88	188.47	1144.03	-3.58	-0.53	2.00	188.47	-3.59
6381.18	2.88	188.47	6374.50	-264.01	-39.32	0.00	0.00	-264.40
7311.53	90.18	0.93	6976.00	310.00	-34.00	10.00	172.45	309.63
7316.84	90.19	0.98	6975.98	315.32	-33.91	1.00	79.20	314.95
2825.41	90.19	0.98	6958.00	5823.05	60.37	0.00	0.00	5823.36

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

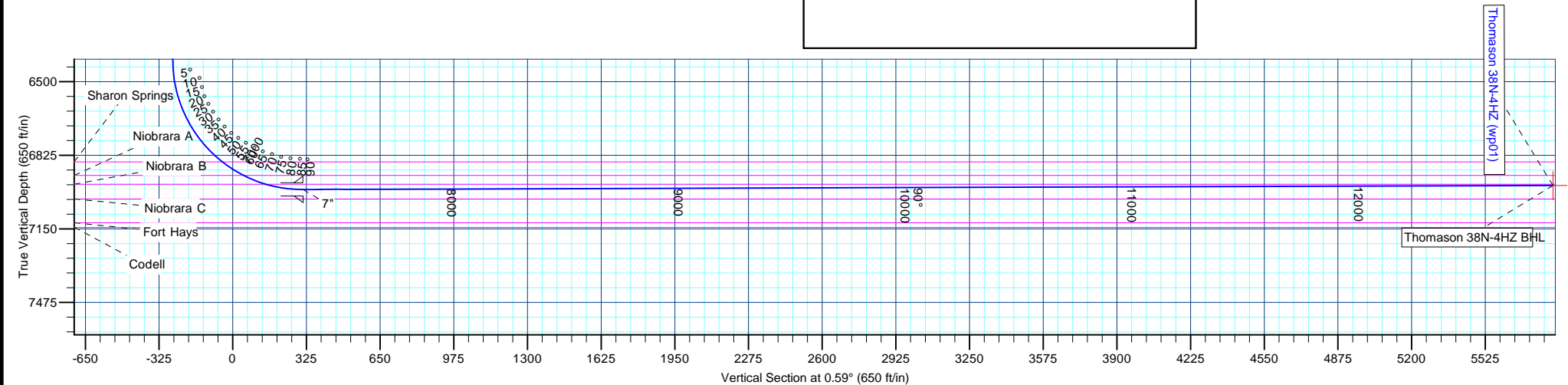
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Thomason 38N-4HZ BHL	6958.00	5823.05	60.37	40.162852	-104.660518	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3859.00	3862.50	Parkman
4238.00	4241.98	Sussex
6854.00	6928.87	Sharon Springs
6914.00	7040.73	Niobrara A
6953.00	7146.85	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
6976.00	7311.53	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 38N-4HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 38N-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 38N-4HZ		
Design:	Thomason 38N-4HZ (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_Thomason 16-9HZ Pad			
Site Position:		Northing:	1,297,429.20 usft	Latitude:	40.146790
From:	Lat/Long	Easting:	3,234,603.45 usft	Longitude:	-104.660771
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	Thomason 38N-4HZ					
Well Position	+N/-S	28.04 ft	Northing:	1,297,457.33 usft	Latitude:	40.146867
	+E/-W	10.34 ft	Easting:	3,234,613.53 usft	Longitude:	-104.660734
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,870.00 ft

Wellbore	Thomason 38N-4HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/24/2012	8.69	66.84	52,936

Design	Thomason 38N-4HZ (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	0.59

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,144.09	2.88	188.47	1,144.03	-3.58	-0.53	2.00	2.00	0.00	188.47	
6,381.18	2.88	188.47	6,374.50	-264.01	-39.32	0.00	0.00	0.00	0.00	
7,311.53	90.18	0.93	6,976.00	310.00	-34.00	10.00	9.38	18.54	172.45	
7,316.84	90.19	0.98	6,975.98	315.32	-33.91	1.00	0.19	0.98	79.20	
12,825.41	90.19	0.98	6,958.00	5,823.05	60.37	0.00	0.00	0.00	0.00	Thomason 38N-4HZ t

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 38N-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 38N-4HZ		
Design:	Thomason 38N-4HZ (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
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	2.00	188.47	1,099.98	-1.73	-0.26	-1.73	2.00	2.00	0.00
1,144.09	2.88	188.47	1,144.03	-3.58	-0.53	-3.59	2.00	2.00	0.00
1,200.00	2.88	188.47	1,199.87	-6.36	-0.95	-6.37	0.00	0.00	0.00
1,300.00	2.88	188.47	1,299.74	-11.34	-1.69	-11.35	0.00	0.00	0.00
1,400.00	2.88	188.47	1,399.62	-16.31	-2.43	-16.33	0.00	0.00	0.00
1,500.00	2.88	188.47	1,499.49	-21.28	-3.17	-21.31	0.00	0.00	0.00
1,600.00	2.88	188.47	1,599.36	-26.25	-3.91	-26.29	0.00	0.00	0.00
1,700.00	2.88	188.47	1,699.24	-31.23	-4.65	-31.27	0.00	0.00	0.00
1,800.00	2.88	188.47	1,799.11	-36.20	-5.39	-36.25	0.00	0.00	0.00
1,900.00	2.88	188.47	1,898.98	-41.17	-6.13	-41.23	0.00	0.00	0.00
2,000.00	2.88	188.47	1,998.86	-46.14	-6.87	-46.21	0.00	0.00	0.00
2,100.00	2.88	188.47	2,098.73	-51.12	-7.61	-51.19	0.00	0.00	0.00
2,200.00	2.88	188.47	2,198.60	-56.09	-8.35	-56.17	0.00	0.00	0.00
2,300.00	2.88	188.47	2,298.48	-61.06	-9.09	-61.15	0.00	0.00	0.00
2,400.00	2.88	188.47	2,398.35	-66.04	-9.83	-66.13	0.00	0.00	0.00
2,500.00	2.88	188.47	2,498.22	-71.01	-10.57	-71.11	0.00	0.00	0.00
2,600.00	2.88	188.47	2,598.10	-75.98	-11.31	-76.09	0.00	0.00	0.00
2,700.00	2.88	188.47	2,697.97	-80.95	-12.06	-81.07	0.00	0.00	0.00
2,800.00	2.88	188.47	2,797.85	-85.93	-12.80	-86.05	0.00	0.00	0.00
2,900.00	2.88	188.47	2,897.72	-90.90	-13.54	-91.03	0.00	0.00	0.00
3,000.00	2.88	188.47	2,997.59	-95.87	-14.28	-96.01	0.00	0.00	0.00
3,100.00	2.88	188.47	3,097.47	-100.84	-15.02	-100.99	0.00	0.00	0.00
3,200.00	2.88	188.47	3,197.34	-105.82	-15.76	-105.97	0.00	0.00	0.00
3,300.00	2.88	188.47	3,297.21	-110.79	-16.50	-110.95	0.00	0.00	0.00
3,400.00	2.88	188.47	3,397.09	-115.76	-17.24	-115.93	0.00	0.00	0.00
3,500.00	2.88	188.47	3,496.96	-120.74	-17.98	-120.91	0.00	0.00	0.00
3,600.00	2.88	188.47	3,596.83	-125.71	-18.72	-125.90	0.00	0.00	0.00
3,700.00	2.88	188.47	3,696.71	-130.68	-19.46	-130.88	0.00	0.00	0.00
3,800.00	2.88	188.47	3,796.58	-135.65	-20.20	-135.86	0.00	0.00	0.00
3,862.50	2.88	188.47	3,859.00	-138.76	-20.66	-138.97	0.00	0.00	0.00
Parkman									
3,900.00	2.88	188.47	3,896.45	-140.63	-20.94	-140.84	0.00	0.00	0.00
4,000.00	2.88	188.47	3,996.33	-145.60	-21.68	-145.82	0.00	0.00	0.00
4,100.00	2.88	188.47	4,096.20	-150.57	-22.42	-150.80	0.00	0.00	0.00
4,200.00	2.88	188.47	4,196.07	-155.54	-23.16	-155.78	0.00	0.00	0.00
4,241.98	2.88	188.47	4,238.00	-157.63	-23.47	-157.87	0.00	0.00	0.00
Sussex									
4,300.00	2.88	188.47	4,295.95	-160.52	-23.90	-160.76	0.00	0.00	0.00
4,400.00	2.88	188.47	4,395.82	-165.49	-24.64	-165.74	0.00	0.00	0.00
4,500.00	2.88	188.47	4,495.70	-170.46	-25.38	-170.72	0.00	0.00	0.00
4,600.00	2.88	188.47	4,595.57	-175.43	-26.13	-175.70	0.00	0.00	0.00
4,700.00	2.88	188.47	4,695.44	-180.41	-26.87	-180.68	0.00	0.00	0.00
4,800.00	2.88	188.47	4,795.32	-185.38	-27.61	-185.66	0.00	0.00	0.00

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Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 38N-4HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 38N-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 38N-4HZ		
Design:	Thomason 38N-4HZ (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)
4,900.00	2.88	188.47	4,895.19	-190.35	-28.35	-190.64	0.00	0.00	0.00
5,000.00	2.88	188.47	4,995.06	-195.33	-29.09	-195.62	0.00	0.00	0.00
5,100.00	2.88	188.47	5,094.94	-200.30	-29.83	-200.60	0.00	0.00	0.00
5,200.00	2.88	188.47	5,194.81	-205.27	-30.57	-205.58	0.00	0.00	0.00
5,300.00	2.88	188.47	5,294.68	-210.24	-31.31	-210.56	0.00	0.00	0.00
5,400.00	2.88	188.47	5,394.56	-215.22	-32.05	-215.54	0.00	0.00	0.00
5,500.00	2.88	188.47	5,494.43	-220.19	-32.79	-220.52	0.00	0.00	0.00
5,600.00	2.88	188.47	5,594.30	-225.16	-33.53	-225.50	0.00	0.00	0.00
5,700.00	2.88	188.47	5,694.18	-230.13	-34.27	-230.48	0.00	0.00	0.00
5,800.00	2.88	188.47	5,794.05	-235.11	-35.01	-235.46	0.00	0.00	0.00
5,900.00	2.88	188.47	5,893.93	-240.08	-35.75	-240.44	0.00	0.00	0.00
6,000.00	2.88	188.47	5,993.80	-245.05	-36.49	-245.42	0.00	0.00	0.00
6,100.00	2.88	188.47	6,093.67	-250.02	-37.23	-250.40	0.00	0.00	0.00
6,200.00	2.88	188.47	6,193.55	-255.00	-37.97	-255.38	0.00	0.00	0.00
6,300.00	2.88	188.47	6,293.42	-259.97	-38.71	-260.36	0.00	0.00	0.00
6,381.18	2.88	188.47	6,374.50	-264.01	-39.32	-264.40	0.00	0.00	0.00
6,400.00	1.05	202.14	6,393.30	-264.63	-39.45	-265.03	10.00	-9.76	72.66
6,500.00	9.03	358.54	6,492.93	-257.61	-39.99	-258.02	10.00	7.99	156.40
6,600.00	19.03	359.83	6,589.82	-233.40	-40.24	-233.81	10.00	10.00	1.28
6,700.00	29.03	0.25	6,681.04	-192.74	-40.19	-193.14	10.00	10.00	0.42
6,800.00	39.03	0.46	6,763.82	-136.85	-39.83	-137.26	10.00	10.00	0.22
6,900.00	49.03	0.60	6,835.63	-67.45	-39.18	-67.85	10.00	10.00	0.14
6,928.87	51.91	0.63	6,854.00	-45.18	-38.94	-45.58	10.00	10.00	0.11
Sharon Springs									
7,000.00	59.03	0.70	6,894.29	13.37	-38.26	12.98	10.00	10.00	0.10
7,040.73	63.10	0.74	6,914.00	49.01	-37.81	48.62	10.00	10.00	0.09
Niobrara A									
7,100.00	69.03	0.78	6,938.04	103.15	-37.10	102.76	10.00	10.00	0.08
7,146.85	73.71	0.82	6,953.00	147.53	-36.48	147.14	10.00	10.00	0.07
Niobrara B									
7,200.00	79.02	0.85	6,965.52	199.16	-35.72	198.78	10.00	10.00	0.07
7,300.00	89.02	0.92	6,975.92	298.48	-34.19	298.11	10.00	10.00	0.07
7,311.53	90.18	0.93	6,976.00	310.00	-34.00	309.64	10.00	10.00	0.07
7"									
7,316.84	90.19	0.98	6,975.98	315.32	-33.91	314.95	1.00	0.19	0.98
7,400.00	90.19	0.98	6,975.71	398.46	-32.49	398.10	0.00	0.00	0.00
7,500.00	90.19	0.98	6,975.39	498.45	-30.78	498.10	0.00	0.00	0.00
7,600.00	90.19	0.98	6,975.06	598.43	-29.07	598.10	0.00	0.00	0.00
7,700.00	90.19	0.98	6,974.73	698.42	-27.35	698.09	0.00	0.00	0.00
7,800.00	90.19	0.98	6,974.41	798.40	-25.64	798.09	0.00	0.00	0.00
7,900.00	90.19	0.98	6,974.08	898.39	-23.93	898.09	0.00	0.00	0.00
8,000.00	90.19	0.98	6,973.75	998.37	-22.22	998.09	0.00	0.00	0.00
8,100.00	90.19	0.98	6,973.43	1,098.36	-20.51	1,098.08	0.00	0.00	0.00
8,200.00	90.19	0.98	6,973.10	1,198.34	-18.80	1,198.08	0.00	0.00	0.00
8,300.00	90.19	0.98	6,972.77	1,298.32	-17.08	1,298.08	0.00	0.00	0.00
8,400.00	90.19	0.98	6,972.45	1,398.31	-15.37	1,398.08	0.00	0.00	0.00
8,500.00	90.19	0.98	6,972.12	1,498.29	-13.66	1,498.07	0.00	0.00	0.00
8,600.00	90.19	0.98	6,971.79	1,598.28	-11.95	1,598.07	0.00	0.00	0.00
8,700.00	90.19	0.98	6,971.47	1,698.26	-10.24	1,698.07	0.00	0.00	0.00
8,800.00	90.19	0.98	6,971.14	1,798.25	-8.53	1,798.06	0.00	0.00	0.00
8,900.00	90.19	0.98	6,970.81	1,898.23	-6.82	1,898.06	0.00	0.00	0.00
9,000.00	90.19	0.98	6,970.49	1,998.22	-5.10	1,998.06	0.00	0.00	0.00
9,100.00	90.19	0.98	6,970.16	2,098.20	-3.39	2,098.06	0.00	0.00	0.00

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Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 38N-4HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 38N-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 38N-4HZ		
Design:	Thomason 38N-4HZ (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)
9,200.00	90.19	0.98	6,969.84	2,198.19	-1.68	2,198.05	0.00	0.00	0.00
9,300.00	90.19	0.98	6,969.51	2,298.17	0.03	2,298.05	0.00	0.00	0.00
9,400.00	90.19	0.98	6,969.18	2,398.16	1.74	2,398.05	0.00	0.00	0.00
9,500.00	90.19	0.98	6,968.86	2,498.14	3.45	2,498.04	0.00	0.00	0.00
9,600.00	90.19	0.98	6,968.53	2,598.13	5.17	2,598.04	0.00	0.00	0.00
9,700.00	90.19	0.98	6,968.20	2,698.11	6.88	2,698.04	0.00	0.00	0.00
9,800.00	90.19	0.98	6,967.88	2,798.10	8.59	2,798.04	0.00	0.00	0.00
9,900.00	90.19	0.98	6,967.55	2,898.08	10.30	2,898.03	0.00	0.00	0.00
10,000.00	90.19	0.98	6,967.22	2,998.07	12.01	2,998.03	0.00	0.00	0.00
10,100.00	90.19	0.98	6,966.90	3,098.05	13.72	3,098.03	0.00	0.00	0.00
10,200.00	90.19	0.98	6,966.57	3,198.04	15.43	3,198.02	0.00	0.00	0.00
10,300.00	90.19	0.98	6,966.24	3,298.02	17.15	3,298.02	0.00	0.00	0.00
10,400.00	90.19	0.98	6,965.92	3,398.01	18.86	3,398.02	0.00	0.00	0.00
10,500.00	90.19	0.98	6,965.59	3,497.99	20.57	3,498.02	0.00	0.00	0.00
10,600.00	90.19	0.98	6,965.27	3,597.98	22.28	3,598.01	0.00	0.00	0.00
10,700.00	90.19	0.98	6,964.94	3,697.96	23.99	3,698.01	0.00	0.00	0.00
10,800.00	90.19	0.98	6,964.61	3,797.95	25.70	3,798.01	0.00	0.00	0.00
10,900.00	90.19	0.98	6,964.29	3,897.93	27.41	3,898.01	0.00	0.00	0.00
11,000.00	90.19	0.98	6,963.96	3,997.92	29.13	3,998.00	0.00	0.00	0.00
11,100.00	90.19	0.98	6,963.63	4,097.90	30.84	4,098.00	0.00	0.00	0.00
11,200.00	90.19	0.98	6,963.31	4,197.88	32.55	4,198.00	0.00	0.00	0.00
11,300.00	90.19	0.98	6,962.98	4,297.87	34.26	4,297.99	0.00	0.00	0.00
11,400.00	90.19	0.98	6,962.65	4,397.85	35.97	4,397.99	0.00	0.00	0.00
11,500.00	90.19	0.98	6,962.33	4,497.84	37.68	4,497.99	0.00	0.00	0.00
11,600.00	90.19	0.98	6,962.00	4,597.82	39.40	4,597.99	0.00	0.00	0.00
11,700.00	90.19	0.98	6,961.67	4,697.81	41.11	4,697.98	0.00	0.00	0.00
11,800.00	90.19	0.98	6,961.35	4,797.79	42.82	4,797.98	0.00	0.00	0.00
11,900.00	90.19	0.98	6,961.02	4,897.78	44.53	4,897.98	0.00	0.00	0.00
12,000.00	90.19	0.98	6,960.69	4,997.76	46.24	4,997.97	0.00	0.00	0.00
12,100.00	90.19	0.98	6,960.37	5,097.75	47.95	5,097.97	0.00	0.00	0.00
12,200.00	90.19	0.98	6,960.04	5,197.73	49.66	5,197.97	0.00	0.00	0.00
12,300.00	90.19	0.98	6,959.72	5,297.72	51.38	5,297.97	0.00	0.00	0.00
12,400.00	90.19	0.98	6,959.39	5,397.70	53.09	5,397.96	0.00	0.00	0.00
12,500.00	90.19	0.98	6,959.06	5,497.69	54.80	5,497.96	0.00	0.00	0.00
12,600.00	90.19	0.98	6,958.74	5,597.67	56.51	5,597.96	0.00	0.00	0.00
12,700.00	90.19	0.98	6,958.41	5,697.66	58.22	5,697.95	0.00	0.00	0.00
12,800.00	90.19	0.98	6,958.08	5,797.64	59.93	5,797.95	0.00	0.00	0.00
12,825.41	90.19	0.98	6,958.00	5,823.05	60.37	5,823.36	0.00	0.00	0.00
Thomason 38N-4HZ 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									
Thomason 38N-4HZ BH	0.00	0.00	6,958.00	5,823.05	60.37	1,303,280.68	3,234,618.78	40.162852	-104.660518
- plan hits target center									
- Point									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 38N-4HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 38N-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 38N-4HZ		
Design:	Thomason 38N-4HZ (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,311.53	6,976.00	7"	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,862.50	3,859.00	Parkman				
4,241.98	4,238.00	Sussex				
6,928.87	6,854.00	Sharon Springs				
7,040.73	6,914.00	Niobrara A				
7,146.85	6,953.00	Niobrara B				