

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_THOMASON 29-15HZ

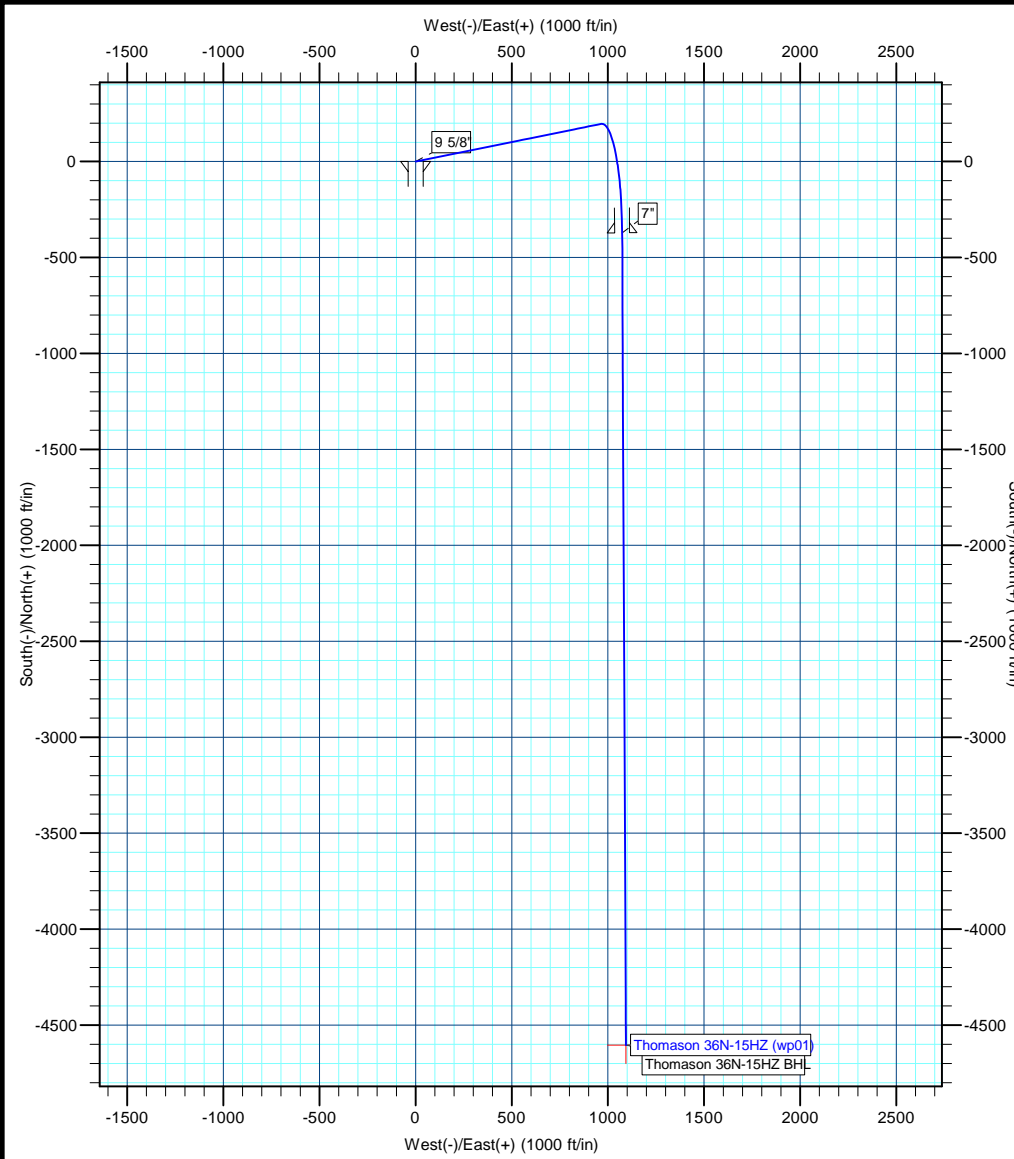
Thomason 36N-15HZ

Thomason 36N-15HZ

Plan: Thomason 36N-15HZ (wp01)

Standard Planning Report

28 March, 2012



Azimuths to True North
 Magnetic North: 8.68°
 Magnetic Field Strength: 52926.2snT
 Dip Angle: 66.84°
 Date: 3/28/2012
 Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83
Site: WELD_THOMASON 29-15HZ
Well: Thomason 36N-15HZ
Wellbore: Thomason 36N-15HZ
Section:
SHL:
Design: Thomason 36N-15HZ (wp01)
Latitude: 40.145290
Longitude: -104.654459
GL: 4863.00
KB: gl + rkb @ 4880.00ft



WELL DETAILS: Thomason 36N-15HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4863.00 Latitude	Longitude	Slot
0.00	0.00	1296899.54	3236373.10	40.145290	-104.654459	

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
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00
1378.38	10.57	78.50	1375.38	9.69	47.61	2.00	78.50	1.58
6485.72	10.57	78.50	6396.10	196.46	965.45	0.00	0.00	31.96
7402.57	89.63	179.76	6980.00	-372.00	1074.00	10.00	101.14	610.12
7406.48	89.59	179.74	6980.03	-375.92	1074.02	1.00	-146.91	613.94
11634.82	89.59	179.74	7010.00	-4604.10	1093.55	0.00	0.00	4732.18

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

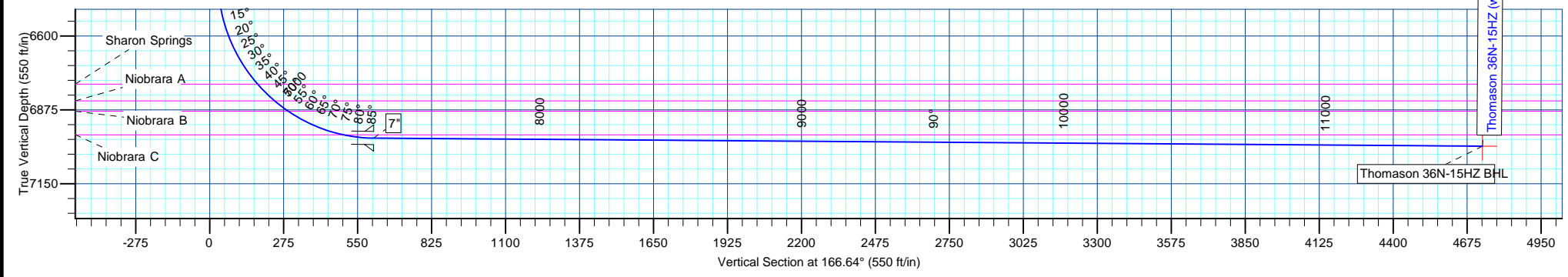
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Thomason 36N-15HZ BHL	7010.00	-4604.10	1093.55	40.132651	-104.650548	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3842.00	3887.55	Parkman
4415.00	4470.43	Sussex
6779.00	6906.78	Sharon Springs
6841.00	6995.18	Niobrara A
6880.00	7059.77	Niobrara B
6968.00	7287.86	Niobrara C

CASING DETAILS

TVD	MD	Name	Size
700.00	700.00	9 5/8"	9-5/8
6980.00	7402.57	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 36N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 36N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 36N-15HZ		
Design:	Thomason 36N-15HZ (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 29-15HZ				
Site Position:		Northing:	1,296,898.99 usft	Latitude:	40.145290
From:	Lat/Long	Easting:	3,236,313.00 usft	Longitude:	-104.654674
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Thomason 36N-15HZ					
Well Position	+N/-S	-0.02 ft	Northing:	1,296,899.54 usft	Latitude:	40.145290
	+E/-W	60.10 ft	Easting:	3,236,373.11 usft	Longitude:	-104.654459
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,863.00 ft

Wellbore	Thomason 36N-15HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	3/28/2012	(°)	(°)	(nT)
			8.68	66.84	52,926

Design	Thomason 36N-15HZ (wp01)				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	166.64	

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	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,378.38	10.57	78.50	1,375.38	9.69	47.61	2.00	2.00	0.00	78.50	
6,485.72	10.57	78.50	6,396.10	196.46	965.45	0.00	0.00	0.00	0.00	
7,402.57	89.63	179.76	6,980.00	-372.00	1,074.00	10.00	8.62	11.04	101.14	
7,406.49	89.59	179.74	6,980.03	-375.92	1,074.02	1.00	-0.84	-0.55	-146.91	
11,634.82	89.59	179.74	7,010.00	-4,604.10	1,093.55	0.00	0.00	0.00	0.00	Thomason 36N-15HZ

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 36N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 36N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 36N-15HZ		
Design:	Thomason 36N-15HZ (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	
9 5/8"										
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 2.00										
900.00	1.00	78.50	900.00	0.09	0.43	0.01	2.00	2.00	0.00	
1,000.00	3.00	78.50	999.93	0.78	3.85	0.13	2.00	2.00	0.00	
1,100.00	5.00	78.50	1,099.68	2.17	10.68	0.35	2.00	2.00	0.00	
1,200.00	7.00	78.50	1,199.13	4.26	20.92	0.69	2.00	2.00	0.00	
1,300.00	9.00	78.50	1,298.15	7.03	34.56	1.14	2.00	2.00	0.00	
1,378.38	10.57	78.50	1,375.38	9.69	47.61	1.58	2.00	2.00	0.00	
Start 5107.34 hold at 1378.38 MD										
1,400.00	10.57	78.50	1,396.64	10.48	51.50	1.70	0.00	0.00	0.00	
1,500.00	10.57	78.50	1,494.95	14.14	69.47	2.30	0.00	0.00	0.00	
1,600.00	10.57	78.50	1,593.25	17.79	87.44	2.89	0.00	0.00	0.00	
1,700.00	10.57	78.50	1,691.55	21.45	105.41	3.49	0.00	0.00	0.00	
1,800.00	10.57	78.50	1,789.86	25.11	123.38	4.08	0.00	0.00	0.00	
1,900.00	10.57	78.50	1,888.16	28.76	141.35	4.68	0.00	0.00	0.00	
2,000.00	10.57	78.50	1,986.47	32.42	159.32	5.27	0.00	0.00	0.00	
2,100.00	10.57	78.50	2,084.77	36.08	177.30	5.87	0.00	0.00	0.00	
2,200.00	10.57	78.50	2,183.07	39.74	195.27	6.46	0.00	0.00	0.00	
2,300.00	10.57	78.50	2,281.38	43.39	213.24	7.06	0.00	0.00	0.00	
2,400.00	10.57	78.50	2,379.68	47.05	231.21	7.65	0.00	0.00	0.00	
2,500.00	10.57	78.50	2,477.99	50.71	249.18	8.25	0.00	0.00	0.00	
2,600.00	10.57	78.50	2,576.29	54.36	267.15	8.84	0.00	0.00	0.00	
2,700.00	10.57	78.50	2,674.59	58.02	285.12	9.44	0.00	0.00	0.00	
2,800.00	10.57	78.50	2,772.90	61.68	303.09	10.03	0.00	0.00	0.00	
2,900.00	10.57	78.50	2,871.20	65.33	321.06	10.63	0.00	0.00	0.00	
3,000.00	10.57	78.50	2,969.51	68.99	339.04	11.22	0.00	0.00	0.00	
3,100.00	10.57	78.50	3,067.81	72.65	357.01	11.82	0.00	0.00	0.00	
3,200.00	10.57	78.50	3,166.11	76.31	374.98	12.41	0.00	0.00	0.00	
3,300.00	10.57	78.50	3,264.42	79.96	392.95	13.01	0.00	0.00	0.00	
3,400.00	10.57	78.50	3,362.72	83.62	410.92	13.60	0.00	0.00	0.00	
3,500.00	10.57	78.50	3,461.03	87.28	428.89	14.20	0.00	0.00	0.00	
3,600.00	10.57	78.50	3,559.33	90.93	446.86	14.79	0.00	0.00	0.00	
3,700.00	10.57	78.50	3,657.63	94.59	464.83	15.39	0.00	0.00	0.00	
3,800.00	10.57	78.50	3,755.94	98.25	482.80	15.98	0.00	0.00	0.00	
3,887.55	10.57	78.50	3,842.00	101.45	498.54	16.50	0.00	0.00	0.00	
Parkman										
3,900.00	10.57	78.50	3,854.24	101.90	500.77	16.58	0.00	0.00	0.00	
4,000.00	10.57	78.50	3,952.55	105.56	518.75	17.17	0.00	0.00	0.00	
4,100.00	10.57	78.50	4,050.85	109.22	536.72	17.77	0.00	0.00	0.00	
4,200.00	10.57	78.50	4,149.15	112.87	554.69	18.36	0.00	0.00	0.00	
4,300.00	10.57	78.50	4,247.46	116.53	572.66	18.96	0.00	0.00	0.00	
4,400.00	10.57	78.50	4,345.76	120.19	590.63	19.55	0.00	0.00	0.00	
4,470.43	10.57	78.50	4,415.00	122.76	603.29	19.97	0.00	0.00	0.00	
Sussex										

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 36N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 36N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 36N-15HZ		
Design:	Thomason 36N-15HZ (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)
4,500.00	10.57	78.50	4,444.07	123.85	608.60	20.15	0.00	0.00	0.00
4,600.00	10.57	78.50	4,542.37	127.50	626.57	20.74	0.00	0.00	0.00
4,700.00	10.57	78.50	4,640.67	131.16	644.54	21.34	0.00	0.00	0.00
4,800.00	10.57	78.50	4,738.98	134.82	662.51	21.93	0.00	0.00	0.00
4,900.00	10.57	78.50	4,837.28	138.47	680.48	22.53	0.00	0.00	0.00
5,000.00	10.57	78.50	4,935.59	142.13	698.46	23.12	0.00	0.00	0.00
5,100.00	10.57	78.50	5,033.89	145.79	716.43	23.72	0.00	0.00	0.00
5,200.00	10.57	78.50	5,132.19	149.44	734.40	24.31	0.00	0.00	0.00
5,300.00	10.57	78.50	5,230.50	153.10	752.37	24.91	0.00	0.00	0.00
5,400.00	10.57	78.50	5,328.80	156.76	770.34	25.50	0.00	0.00	0.00
5,500.00	10.57	78.50	5,427.11	160.42	788.31	26.10	0.00	0.00	0.00
5,600.00	10.57	78.50	5,525.41	164.07	806.28	26.69	0.00	0.00	0.00
5,700.00	10.57	78.50	5,623.71	167.73	824.25	27.29	0.00	0.00	0.00
5,800.00	10.57	78.50	5,722.02	171.39	842.22	27.88	0.00	0.00	0.00
5,900.00	10.57	78.50	5,820.32	175.04	860.20	28.48	0.00	0.00	0.00
6,000.00	10.57	78.50	5,918.62	178.70	878.17	29.07	0.00	0.00	0.00
6,100.00	10.57	78.50	6,016.93	182.36	896.14	29.67	0.00	0.00	0.00
6,200.00	10.57	78.50	6,115.23	186.01	914.11	30.26	0.00	0.00	0.00
6,300.00	10.57	78.50	6,213.54	189.67	932.08	30.85	0.00	0.00	0.00
6,400.00	10.57	78.50	6,311.84	193.33	950.05	31.45	0.00	0.00	0.00
6,485.72	10.57	78.50	6,396.10	196.46	965.45	31.96	0.00	0.00	0.00
Start DLS 10.00 TFO 101.14									
6,500.00	10.39	86.29	6,410.15	196.81	968.02	32.22	10.00	-1.27	54.59
6,600.00	13.93	132.33	6,508.11	189.26	985.96	43.71	10.00	3.55	46.03
6,700.00	21.87	152.71	6,603.28	164.54	1,003.45	71.80	10.00	7.93	20.38
6,800.00	30.99	162.09	6,692.77	123.39	1,019.95	115.65	10.00	9.12	9.38
6,900.00	40.49	167.45	6,773.87	67.06	1,034.95	173.92	10.00	9.50	5.36
6,906.78	41.14	167.74	6,779.00	62.73	1,035.90	178.35	10.00	9.61	4.21
Sharon Springs									
6,995.18	49.69	170.90	6,841.00	0.91	1,047.43	241.16	10.00	9.67	3.57
Niobrara A									
7,000.00	50.16	171.05	6,844.11	-2.73	1,048.01	244.84	10.00	9.72	3.07
7,059.77	55.98	172.73	6,880.00	-50.01	1,054.72	292.39	10.00	9.74	2.82
Niobrara B									
7,100.00	59.92	173.74	6,901.34	-83.87	1,058.73	326.26	10.00	9.77	2.51
7,200.00	69.72	175.95	6,943.85	-173.89	1,066.78	415.70	10.00	9.80	2.21
7,287.86	78.35	177.66	6,968.00	-258.14	1,071.46	498.75	10.00	9.82	1.95
Niobrara C									
7,300.00	79.54	177.89	6,970.33	-270.05	1,071.92	510.45	10.00	9.83	1.87
7,400.00	89.37	179.71	6,979.98	-369.43	1,073.99	607.62	10.00	9.83	1.82
7,402.57	89.63	179.76	6,980.00	-372.00	1,074.00	610.12	9.99	9.82	1.80
Start DLS 1.00 TFO -146.91 - 7"									
7,406.49	89.59	179.74	6,980.03	-375.92	1,074.02	613.94	1.00	-0.84	-0.55
Start 4228.33 hold at 7406.48 MD									
7,500.00	89.59	179.74	6,980.69	-469.43	1,074.45	705.02	0.00	0.00	0.00
7,600.00	89.59	179.74	6,981.40	-569.43	1,074.91	802.41	0.00	0.00	0.00
7,700.00	89.59	179.74	6,982.11	-669.42	1,075.37	899.81	0.00	0.00	0.00
7,800.00	89.59	179.74	6,982.82	-769.42	1,075.84	997.21	0.00	0.00	0.00
7,900.00	89.59	179.74	6,983.53	-869.42	1,076.30	1,094.60	0.00	0.00	0.00
8,000.00	89.59	179.74	6,984.23	-969.41	1,076.76	1,192.00	0.00	0.00	0.00
8,100.00	89.59	179.74	6,984.94	-1,069.41	1,077.22	1,289.40	0.00	0.00	0.00
8,200.00	89.59	179.74	6,985.65	-1,169.41	1,077.68	1,386.79	0.00	0.00	0.00
8,300.00	89.59	179.74	6,986.36	-1,269.40	1,078.15	1,484.19	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 36N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 36N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 36N-15HZ		
Design:	Thomason 36N-15HZ (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)	
8,400.00	89.59	179.74	6,987.07	-1,369.40	1,078.61	1,581.59	0.00	0.00	0.00	
8,500.00	89.59	179.74	6,987.78	-1,469.39	1,079.07	1,678.98	0.00	0.00	0.00	
8,600.00	89.59	179.74	6,988.49	-1,569.39	1,079.53	1,776.38	0.00	0.00	0.00	
8,700.00	89.59	179.74	6,989.20	-1,669.39	1,079.99	1,873.78	0.00	0.00	0.00	
8,800.00	89.59	179.74	6,989.91	-1,769.38	1,080.46	1,971.17	0.00	0.00	0.00	
8,900.00	89.59	179.74	6,990.61	-1,869.38	1,080.92	2,068.57	0.00	0.00	0.00	
9,000.00	89.59	179.74	6,991.32	-1,969.38	1,081.38	2,165.96	0.00	0.00	0.00	
9,100.00	89.59	179.74	6,992.03	-2,069.37	1,081.84	2,263.36	0.00	0.00	0.00	
9,200.00	89.59	179.74	6,992.74	-2,169.37	1,082.30	2,360.76	0.00	0.00	0.00	
9,300.00	89.59	179.74	6,993.45	-2,269.37	1,082.77	2,458.15	0.00	0.00	0.00	
9,400.00	89.59	179.74	6,994.16	-2,369.36	1,083.23	2,555.55	0.00	0.00	0.00	
9,500.00	89.59	179.74	6,994.87	-2,469.36	1,083.69	2,652.95	0.00	0.00	0.00	
9,600.00	89.59	179.74	6,995.58	-2,569.36	1,084.15	2,750.34	0.00	0.00	0.00	
9,700.00	89.59	179.74	6,996.28	-2,669.35	1,084.61	2,847.74	0.00	0.00	0.00	
9,800.00	89.59	179.74	6,996.99	-2,769.35	1,085.08	2,945.14	0.00	0.00	0.00	
9,900.00	89.59	179.74	6,997.70	-2,869.34	1,085.54	3,042.53	0.00	0.00	0.00	
10,000.00	89.59	179.74	6,998.41	-2,969.34	1,086.00	3,139.93	0.00	0.00	0.00	
10,100.00	89.59	179.74	6,999.12	-3,069.34	1,086.46	3,237.33	0.00	0.00	0.00	
10,200.00	89.59	179.74	6,999.83	-3,169.33	1,086.92	3,334.72	0.00	0.00	0.00	
10,300.00	89.59	179.74	7,000.54	-3,269.33	1,087.39	3,432.12	0.00	0.00	0.00	
10,400.00	89.59	179.74	7,001.25	-3,369.33	1,087.85	3,529.52	0.00	0.00	0.00	
10,500.00	89.59	179.74	7,001.96	-3,469.32	1,088.31	3,626.91	0.00	0.00	0.00	
10,600.00	89.59	179.74	7,002.66	-3,569.32	1,088.77	3,724.31	0.00	0.00	0.00	
10,700.00	89.59	179.74	7,003.37	-3,669.32	1,089.23	3,821.71	0.00	0.00	0.00	
10,800.00	89.59	179.74	7,004.08	-3,769.31	1,089.69	3,919.10	0.00	0.00	0.00	
10,900.00	89.59	179.74	7,004.79	-3,869.31	1,090.16	4,016.50	0.00	0.00	0.00	
11,000.00	89.59	179.74	7,005.50	-3,969.30	1,090.62	4,113.90	0.00	0.00	0.00	
11,100.00	89.59	179.74	7,006.21	-4,069.30	1,091.08	4,211.29	0.00	0.00	0.00	
11,200.00	89.59	179.74	7,006.92	-4,169.30	1,091.54	4,308.69	0.00	0.00	0.00	
11,300.00	89.59	179.74	7,007.63	-4,269.29	1,092.00	4,406.09	0.00	0.00	0.00	
11,400.00	89.59	179.74	7,008.34	-4,369.29	1,092.47	4,503.48	0.00	0.00	0.00	
11,500.00	89.59	179.74	7,009.04	-4,469.29	1,092.93	4,600.88	0.00	0.00	0.00	
11,600.00	89.59	179.74	7,009.75	-4,569.28	1,093.39	4,698.28	0.00	0.00	0.00	
11,634.82	89.59	179.74	7,010.00	-4,604.10	1,093.55	4,732.18	0.00	0.00	0.00	
TD at 11634.82 - Thomason 36N-15HZ BHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Thomason 36N-15HZ BI - hit/miss target - Shape - Point	0.00	0.00	7,010.00	-4,604.10	1,093.55	1,292,306.09	3,237,510.51	40.132651	-104.650548	

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
700.00	700.00	9 5/8"	9-5/8	12-1/4	
7,402.57	6,980.00	7"	7	8-3/4	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 36N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 36N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 36N-15HZ		
Design:	Thomason 36N-15HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,887.55	3,842.00	Parkman				
4,470.43	4,415.00	Sussex				
6,906.78	6,779.00	Sharon Springs				
6,995.18	6,841.00	Niobrara A				
7,059.77	6,880.00	Niobrara B				
7,287.86	6,968.00	Niobrara C				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
850.00	850.00	0.00	0.00	Start Build 2.00	
1,378.38	1,375.38	9.69	47.61	Start 5107.34 hold at 1378.38 MD	
6,485.72	6,396.10	196.46	965.45	Start DLS 10.00 TFO 101.14	
7,402.57	6,980.00	-372.00	1,074.00	Start DLS 1.00 TFO -146.91	
7,406.49	6,980.03	-375.92	1,074.02	Start 4228.33 hold at 7406.48 MD	
11,634.82	7,010.00	-4,604.10	1,093.55	TD at 11634.82	