

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_UNDERHILL 16-17HZ PAD

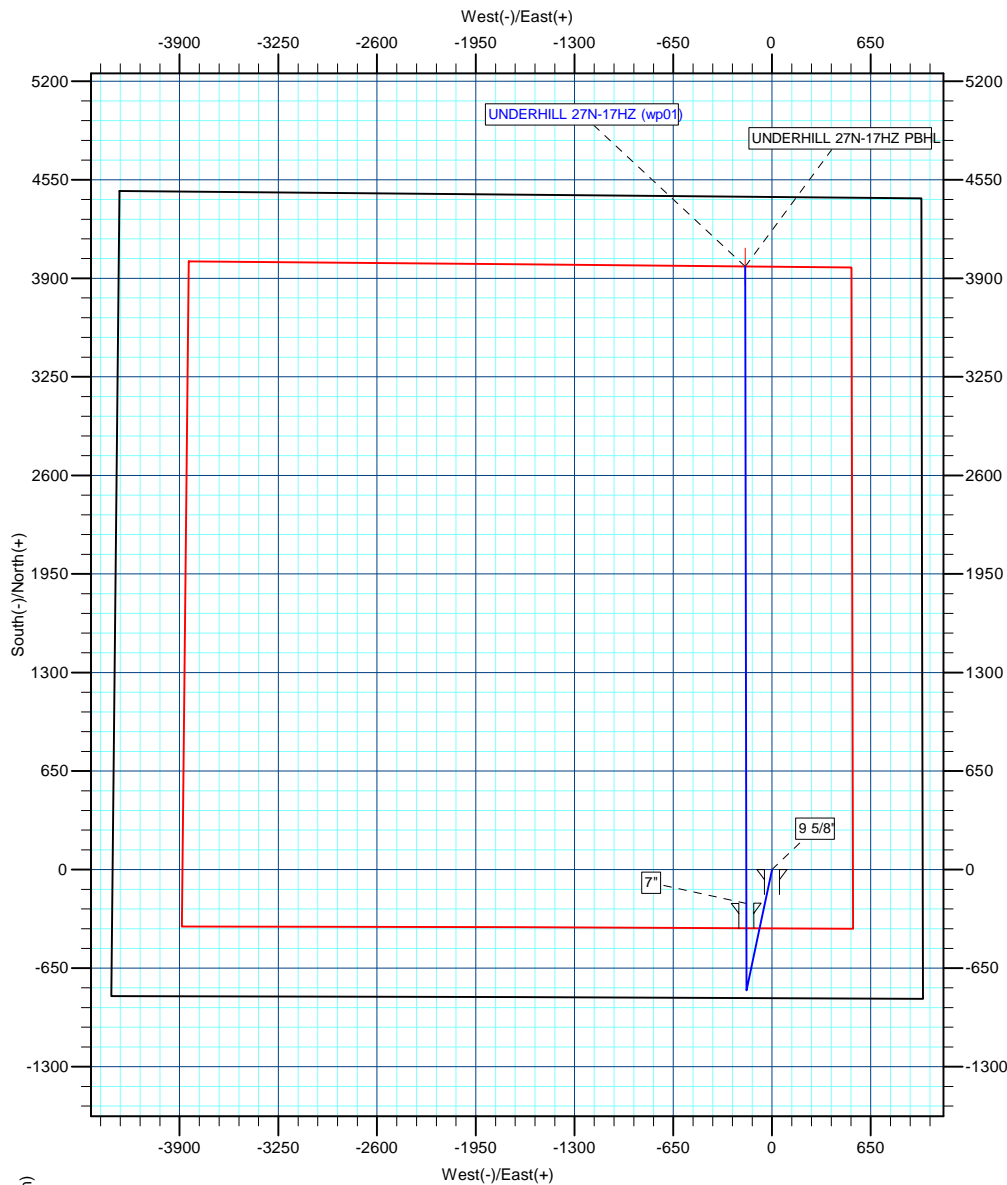
UNDERHILL 27N-17HZ

UNDERHILL 27N-17HZ

Plan: UNDERHILL 27N-17HZ (wp01)

Standard Planning Report

05 November, 2012



Azimuths to True North
Magnetic North: 8.72°

Magnetic Field
Strength: 52782.0snT
Dip Angle: 66.69°
Date: 10/31/2012
Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83
Site: WELD UNDERHILL 16-17HZ PAD
Well: UNDERHILL 27N-17HZ
Wellbore: UNDERHILL 27N-17HZ
Section: Sec. 17 T1N R67W
SHL: 848' FSL 992' FEL
Design: UNDERHILL 27N-17HZ (wp01)
Latitude: 40.046111
Longitude: -104.908603
GL: 5104.00
KB: 17' RKB + 5104' GL @ 5121.00ft

WELL DETAILS: UNDERHILL 27N-17HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	5104.00 Latitude	Longitude	Slot
0.00	0.00	1260196.00	3165568.74	40.046111	-104.908603	

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
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00
1458.55	10.17	191.90	1455.88	-44.05	-9.29	2.00	191.90	-43.60
5561.26	10.17	191.90	5494.12	-752.95	-158.71	0.00	0.00	-745.18
6069.81	0.00	0.00	6000.00	-797.00	-168.00	2.00	180.00	-788.78
7057.85	0.00	0.00	6988.04	-797.00	-168.00	0.00	0.00	-788.78
7958.55	90.07	359.90	7561.00	-223.34	-169.00	10.00	359.90	-215.64
2160.18	90.07	359.90	7556.00	3978.28	-176.35	0.00	-173.62	3982.18

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

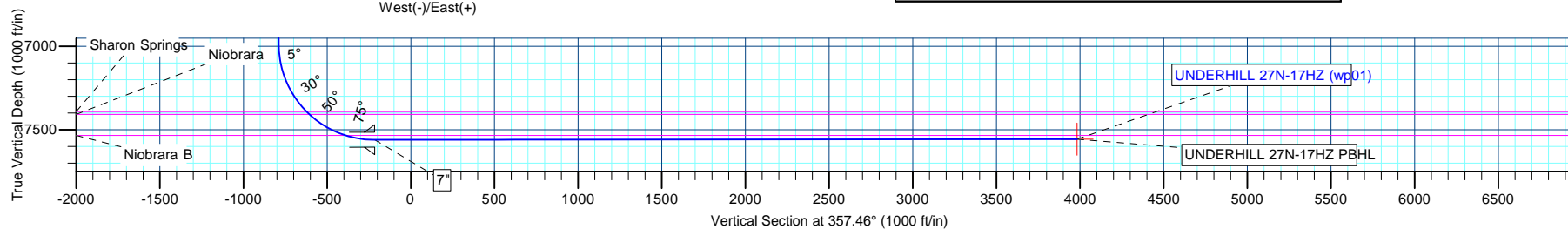
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
UNDERHILL 27N-17HZ PBHL	7556.00	3978.28	-176.35	40.057032	-104.909233	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4646.00	4699.60	Sussex
5255.00	5318.32	Shannon
7391.00	7504.77	Sharon Springs
7408.00	7529.20	Niobrara
7534.00	7781.26	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
917.00	917.00	9 5/8"	9-5/8
7561.00	7958.55	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well UNDERHILL 27N-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5104' GL @ 5121.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5104' GL @ 5121.00ft
Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 27N-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 27N-17HZ		
Design:	UNDERHILL 27N-17HZ (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_UNDERHILL 16-17HZ PAD, Sec. 17 T1N R67W			
Site Position:		Northing:	1,260,179.32 usft	Latitude: 40.046063
From:	Lat/Long	Easting:	3,165,687.56 usft	Longitude: -104.908179
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.38 °

Well	UNDERHILL 27N-17HZ			
Well Position	+N/-S	17.47 ft	Northing:	1,260,196.00 usft
	+E/-W	-118.71 ft	Easting:	3,165,568.74 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	
			Ground Level:	5,104.00 ft

Wellbore	UNDERHILL 27N-17HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/31/2012	8.72	66.69	52,782

Design	UNDERHILL 27N-17HZ (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	357.46

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	
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,458.55	10.17	191.90	1,455.88	-44.05	-9.29	2.00	2.00	0.00	191.90	
5,561.26	10.17	191.90	5,494.12	-752.95	-158.71	0.00	0.00	0.00	0.00	
6,069.81	0.00	0.00	6,000.00	-797.00	-168.00	2.00	-2.00	0.00	180.00	
7,057.85	0.00	0.00	6,988.04	-797.00	-168.00	0.00	0.00	0.00	0.00	
7,958.55	90.07	359.90	7,561.00	-223.34	-169.00	10.00	10.00	0.00	359.90	
12,160.18	90.07	359.90	7,556.00	3,978.28	-176.35	0.00	0.00	0.00	-173.62	UNDERHILL 27N-17H

Anadarko Petroleum Corp

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5104' GL @ 5121.00ft
Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 27N-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 27N-17HZ		
Design:	UNDERHILL 27N-17HZ (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
917.00	0.00	0.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,000.00	1.00	191.90	1,000.00	-0.43	-0.09	-0.42	2.00	2.00	0.00
1,100.00	3.00	191.90	1,099.93	-3.84	-0.81	-3.80	2.00	2.00	0.00
1,200.00	5.00	191.90	1,199.68	-10.67	-2.25	-10.56	2.00	2.00	0.00
1,300.00	7.00	191.90	1,299.13	-20.89	-4.40	-20.68	2.00	2.00	0.00
1,400.00	9.00	191.90	1,398.15	-34.51	-7.27	-34.16	2.00	2.00	0.00
1,458.55	10.17	191.90	1,455.88	-44.05	-9.29	-43.60	2.00	2.00	0.00
Start 4102.72 hold at 1458.55 MD									
1,500.00	10.17	191.90	1,496.68	-51.21	-10.80	-50.69	0.00	0.00	0.00
1,600.00	10.17	191.90	1,595.11	-68.49	-14.44	-67.79	0.00	0.00	0.00
1,700.00	10.17	191.90	1,693.54	-85.77	-18.08	-84.89	0.00	0.00	0.00
1,800.00	10.17	191.90	1,791.97	-103.05	-21.72	-101.99	0.00	0.00	0.00
1,900.00	10.17	191.90	1,890.40	-120.33	-25.36	-119.09	0.00	0.00	0.00
2,000.00	10.17	191.90	1,988.82	-137.61	-29.01	-136.19	0.00	0.00	0.00
2,100.00	10.17	191.90	2,087.25	-154.89	-32.65	-153.29	0.00	0.00	0.00
2,200.00	10.17	191.90	2,185.68	-172.17	-36.29	-170.39	0.00	0.00	0.00
2,300.00	10.17	191.90	2,284.11	-189.44	-39.93	-187.49	0.00	0.00	0.00
2,400.00	10.17	191.90	2,382.54	-206.72	-43.58	-204.59	0.00	0.00	0.00
2,500.00	10.17	191.90	2,480.97	-224.00	-47.22	-221.69	0.00	0.00	0.00
2,600.00	10.17	191.90	2,579.40	-241.28	-50.86	-238.79	0.00	0.00	0.00
2,700.00	10.17	191.90	2,677.82	-258.56	-54.50	-255.89	0.00	0.00	0.00
2,800.00	10.17	191.90	2,776.25	-275.84	-58.14	-272.99	0.00	0.00	0.00
2,900.00	10.17	191.90	2,874.68	-293.12	-61.79	-290.09	0.00	0.00	0.00
3,000.00	10.17	191.90	2,973.11	-310.40	-65.43	-307.19	0.00	0.00	0.00
3,100.00	10.17	191.90	3,071.54	-327.67	-69.07	-324.29	0.00	0.00	0.00
3,200.00	10.17	191.90	3,169.97	-344.95	-72.71	-341.39	0.00	0.00	0.00
3,300.00	10.17	191.90	3,268.40	-362.23	-76.35	-358.49	0.00	0.00	0.00
3,400.00	10.17	191.90	3,366.82	-379.51	-80.00	-375.60	0.00	0.00	0.00
3,500.00	10.17	191.90	3,465.25	-396.79	-83.64	-392.70	0.00	0.00	0.00
3,600.00	10.17	191.90	3,563.68	-414.07	-87.28	-409.80	0.00	0.00	0.00
3,700.00	10.17	191.90	3,662.11	-431.35	-90.92	-426.90	0.00	0.00	0.00
3,800.00	10.17	191.90	3,760.54	-448.63	-94.57	-444.00	0.00	0.00	0.00
3,900.00	10.17	191.90	3,858.97	-465.90	-98.21	-461.10	0.00	0.00	0.00
4,000.00	10.17	191.90	3,957.40	-483.18	-101.85	-478.20	0.00	0.00	0.00
4,100.00	10.17	191.90	4,055.82	-500.46	-105.49	-495.30	0.00	0.00	0.00
4,200.00	10.17	191.90	4,154.25	-517.74	-109.13	-512.40	0.00	0.00	0.00
4,300.00	10.17	191.90	4,252.68	-535.02	-112.78	-529.50	0.00	0.00	0.00
4,400.00	10.17	191.90	4,351.11	-552.30	-116.42	-546.60	0.00	0.00	0.00
4,500.00	10.17	191.90	4,449.54	-569.58	-120.06	-563.70	0.00	0.00	0.00
4,600.00	10.17	191.90	4,547.97	-586.86	-123.70	-580.80	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5104' GL @ 5121.00ft
Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 27N-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 27N-17HZ		
Design:	UNDERHILL 27N-17HZ (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)
4,699.60	10.17	191.90	4,646.00	-604.06	-127.33	-597.83	0.00	0.00	0.00
Sussex									
4,700.00	10.17	191.90	4,646.40	-604.13	-127.35	-597.90	0.00	0.00	0.00
4,800.00	10.17	191.90	4,744.82	-621.41	-130.99	-615.00	0.00	0.00	0.00
4,900.00	10.17	191.90	4,843.25	-638.69	-134.63	-632.10	0.00	0.00	0.00
5,000.00	10.17	191.90	4,941.68	-655.97	-138.27	-649.20	0.00	0.00	0.00
5,100.00	10.17	191.90	5,040.11	-673.25	-141.91	-666.30	0.00	0.00	0.00
5,200.00	10.17	191.90	5,138.54	-690.53	-145.56	-683.40	0.00	0.00	0.00
5,300.00	10.17	191.90	5,236.97	-707.81	-149.20	-700.50	0.00	0.00	0.00
5,318.32	10.17	191.90	5,255.00	-710.97	-149.87	-703.64	0.00	0.00	0.00
Shannon									
5,400.00	10.17	191.90	5,335.40	-725.09	-152.84	-717.61	0.00	0.00	0.00
5,500.00	10.17	191.90	5,433.82	-742.36	-156.48	-734.71	0.00	0.00	0.00
5,561.26	10.17	191.90	5,494.12	-752.95	-158.71	-745.18	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	9.40	191.90	5,532.30	-759.39	-160.07	-751.56	2.00	-2.00	0.00
5,700.00	7.40	191.90	5,631.22	-773.68	-163.08	-765.70	2.00	-2.00	0.00
5,800.00	5.40	191.90	5,730.59	-784.58	-165.38	-776.48	2.00	-2.00	0.00
5,900.00	3.40	191.90	5,830.29	-792.08	-166.96	-783.91	2.00	-2.00	0.00
6,000.00	1.40	191.90	5,930.20	-796.17	-167.82	-787.95	2.00	-2.00	0.00
6,069.81	0.00	0.00	6,000.00	-797.00	-168.00	-788.78	2.00	-2.00	0.00
Start 988.04 hold at 6069.81 MD									
6,100.00	0.00	0.00	6,030.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,200.00	0.00	0.00	6,130.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,300.00	0.00	0.00	6,230.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,400.00	0.00	0.00	6,330.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,500.00	0.00	0.00	6,430.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,600.00	0.00	0.00	6,530.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,700.00	0.00	0.00	6,630.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,800.00	0.00	0.00	6,730.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
6,900.00	0.00	0.00	6,830.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
7,000.00	0.00	0.00	6,930.19	-797.00	-168.00	-788.78	0.00	0.00	0.00
7,057.85	0.00	0.00	6,988.04	-797.00	-168.00	-788.78	0.00	0.00	0.00
Start Build 10.00									
7,100.00	4.22	359.90	7,030.16	-795.45	-168.00	-787.23	10.00	10.00	0.00
7,150.00	9.22	359.90	7,079.80	-789.60	-168.01	-781.39	10.00	10.00	0.00
7,200.00	14.22	359.90	7,128.74	-779.46	-168.03	-771.25	10.00	10.00	0.00
7,250.00	19.22	359.90	7,176.61	-765.08	-168.06	-756.89	10.00	10.00	0.00
7,300.00	24.22	359.90	7,223.05	-746.59	-168.09	-738.41	10.00	10.00	0.00
7,350.00	29.22	359.90	7,267.70	-724.11	-168.13	-715.96	10.00	10.00	0.00
7,400.00	34.22	359.90	7,310.22	-697.84	-168.17	-689.71	10.00	10.00	0.00
7,450.00	39.22	359.90	7,350.29	-667.96	-168.23	-659.85	10.00	10.00	0.00
7,500.00	44.22	359.90	7,387.60	-634.69	-168.28	-626.62	10.00	10.00	0.00
7,504.77	44.69	359.90	7,391.00	-631.36	-168.29	-623.28	10.00	10.00	0.00
Sharon Springs									
7,529.20	47.14	359.90	7,408.00	-613.80	-168.32	-605.75	10.00	10.00	0.00
Niobrara									
7,550.00	49.22	359.90	7,421.87	-598.31	-168.35	-590.27	10.00	10.00	0.00
7,600.00	54.22	359.90	7,452.84	-559.07	-168.42	-551.07	10.00	10.00	0.00
7,650.00	59.22	359.90	7,480.27	-517.29	-168.49	-509.32	10.00	10.00	0.00
7,700.00	64.22	359.90	7,503.95	-473.27	-168.57	-465.34	10.00	10.00	0.00
7,750.00	69.22	359.90	7,523.71	-427.36	-168.65	-419.47	10.00	10.00	0.00
7,781.26	72.34	359.90	7,534.00	-397.85	-168.70	-389.99	10.00	10.00	0.00

Anadarko Petroleum Corp

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5104' GL @ 5121.00ft
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Well:	UNDERHILL 27N-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 27N-17HZ		
Design:	UNDERHILL 27N-17HZ (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)
Niobrara B									
7,800.00	74.22	359.90	7,539.39	-379.90	-168.73	-372.06	10.00	10.00	0.00
7,850.00	79.22	359.90	7,550.88	-331.25	-168.81	-323.45	10.00	10.00	0.00
7,900.00	84.22	359.90	7,558.08	-281.79	-168.90	-274.03	10.00	10.00	0.00
7,950.00	89.22	359.90	7,560.95	-231.89	-168.99	-224.18	10.00	10.00	0.00
7,958.55	90.07	359.90	7,561.00	-223.34	-169.00	-215.64	10.00	10.00	0.00
Start DLS 0.00 TFO -173.62 - 7"									
8,000.00	90.07	359.90	7,560.95	-181.89	-169.07	-174.22	0.00	0.00	0.00
8,100.00	90.07	359.90	7,560.83	-81.89	-169.25	-74.31	0.00	0.00	0.00
8,200.00	90.07	359.90	7,560.70	18.11	-169.42	25.60	0.00	0.00	0.00
8,300.00	90.07	359.90	7,560.58	118.11	-169.60	125.50	0.00	0.00	0.00
8,400.00	90.07	359.90	7,560.46	218.11	-169.77	225.41	0.00	0.00	0.00
8,500.00	90.07	359.90	7,560.34	318.11	-169.95	325.32	0.00	0.00	0.00
8,600.00	90.07	359.90	7,560.22	418.11	-170.12	425.23	0.00	0.00	0.00
8,700.00	90.07	359.90	7,560.10	518.11	-170.30	525.14	0.00	0.00	0.00
8,800.00	90.07	359.90	7,559.98	618.11	-170.47	625.05	0.00	0.00	0.00
8,900.00	90.07	359.90	7,559.86	718.11	-170.65	724.96	0.00	0.00	0.00
9,000.00	90.07	359.90	7,559.73	818.11	-170.82	824.87	0.00	0.00	0.00
9,100.00	90.07	359.90	7,559.61	918.11	-170.99	924.78	0.00	0.00	0.00
9,200.00	90.07	359.90	7,559.49	1,018.11	-171.17	1,024.69	0.00	0.00	0.00
9,300.00	90.07	359.90	7,559.37	1,118.11	-171.34	1,124.60	0.00	0.00	0.00
9,400.00	90.07	359.90	7,559.25	1,218.11	-171.52	1,224.51	0.00	0.00	0.00
9,500.00	90.07	359.90	7,559.13	1,318.11	-171.69	1,324.42	0.00	0.00	0.00
9,600.00	90.07	359.90	7,559.01	1,418.11	-171.87	1,424.33	0.00	0.00	0.00
9,700.00	90.07	359.90	7,558.89	1,518.11	-172.04	1,524.24	0.00	0.00	0.00
9,800.00	90.07	359.90	7,558.77	1,618.11	-172.22	1,624.15	0.00	0.00	0.00
9,900.00	90.07	359.90	7,558.66	1,718.11	-172.39	1,724.06	0.00	0.00	0.00
10,000.00	90.07	359.90	7,558.54	1,818.11	-172.57	1,823.96	0.00	0.00	0.00
10,100.00	90.07	359.90	7,558.42	1,918.11	-172.74	1,923.87	0.00	0.00	0.00
10,200.00	90.07	359.90	7,558.30	2,018.11	-172.92	2,023.78	0.00	0.00	0.00
10,300.00	90.07	359.90	7,558.18	2,118.11	-173.09	2,123.69	0.00	0.00	0.00
10,400.00	90.07	359.90	7,558.06	2,218.11	-173.27	2,223.60	0.00	0.00	0.00
10,500.00	90.07	359.90	7,557.94	2,318.10	-173.44	2,323.51	0.00	0.00	0.00
10,600.00	90.07	359.90	7,557.82	2,418.10	-173.62	2,423.42	0.00	0.00	0.00
10,700.00	90.07	359.90	7,557.71	2,518.10	-173.79	2,523.33	0.00	0.00	0.00
10,800.00	90.07	359.90	7,557.59	2,618.10	-173.97	2,623.24	0.00	0.00	0.00
10,900.00	90.07	359.90	7,557.47	2,718.10	-174.14	2,723.15	0.00	0.00	0.00
11,000.00	90.07	359.90	7,557.35	2,818.10	-174.32	2,823.06	0.00	0.00	0.00
11,100.00	90.07	359.90	7,557.24	2,918.10	-174.49	2,922.97	0.00	0.00	0.00
11,200.00	90.07	359.90	7,557.12	3,018.10	-174.67	3,022.88	0.00	0.00	0.00
11,300.00	90.07	359.90	7,557.00	3,118.10	-174.84	3,122.79	0.00	0.00	0.00
11,400.00	90.07	359.90	7,556.88	3,218.10	-175.02	3,222.70	0.00	0.00	0.00
11,500.00	90.07	359.90	7,556.77	3,318.10	-175.19	3,322.61	0.00	0.00	0.00
11,600.00	90.07	359.90	7,556.65	3,418.10	-175.37	3,422.52	0.00	0.00	0.00
11,700.00	90.07	359.90	7,556.53	3,518.10	-175.54	3,522.42	0.00	0.00	0.00
11,800.00	90.07	359.90	7,556.42	3,618.10	-175.72	3,622.33	0.00	0.00	0.00
11,900.00	90.07	359.90	7,556.30	3,718.10	-175.89	3,722.24	0.00	0.00	0.00
12,000.00	90.07	359.90	7,556.19	3,818.10	-176.07	3,822.15	0.00	0.00	0.00
12,100.00	90.07	359.90	7,556.07	3,918.10	-176.24	3,922.06	0.00	0.00	0.00
12,160.18	90.07	359.90	7,556.00	3,978.28	-176.35	3,982.18	0.00	0.00	0.00
TD at 12160.18 - UNDERHILL 27N-17HZ PBHL									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well UNDERHILL 27N-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5104' GL @ 5121.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5104' GL @ 5121.00ft
Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 27N-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 27N-17HZ		
Design:	UNDERHILL 27N-17HZ (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
UNDERHILL 27N-17HZ	0.00	0.00	7,556.00	3,978.28	-176.35	1,264,173.01	3,165,365.87	40.057032	-104.909233
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
917.00	917.00	9 5/8"		9-5/8	12-1/4
7,958.55	7,561.00	7"		7	7-1/2

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
4,699.60	4,646.00	Sussex				
5,318.32	5,255.00	Shannon				
7,504.77	7,391.00	Sharon Springs				
7,529.20	7,408.00	Niobrara				
7,781.26	7,534.00	Niobrara B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
950.00	950.00	0.00	0.00	Start Build 2.00	
1,458.55	1,455.88	-44.05	-9.29	Start 4102.72 hold at 1458.55 MD	
5,561.26	5,494.12	-752.95	-158.71	Start Drop -2.00	
6,069.81	6,000.00	-797.00	-168.00	Start 988.04 hold at 6069.81 MD	
7,057.85	6,988.04	-797.00	-168.00	Start Build 10.00	
7,958.55	7,561.00	-223.34	-169.00	Start DLS 0.00 TFO -173.62	
12,160.18	7,556.00	3,978.28	-176.35	TD at 12160.18	