

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Niles 13-28HZ pad

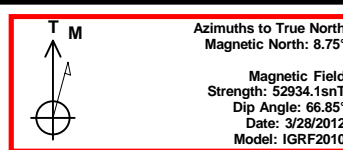
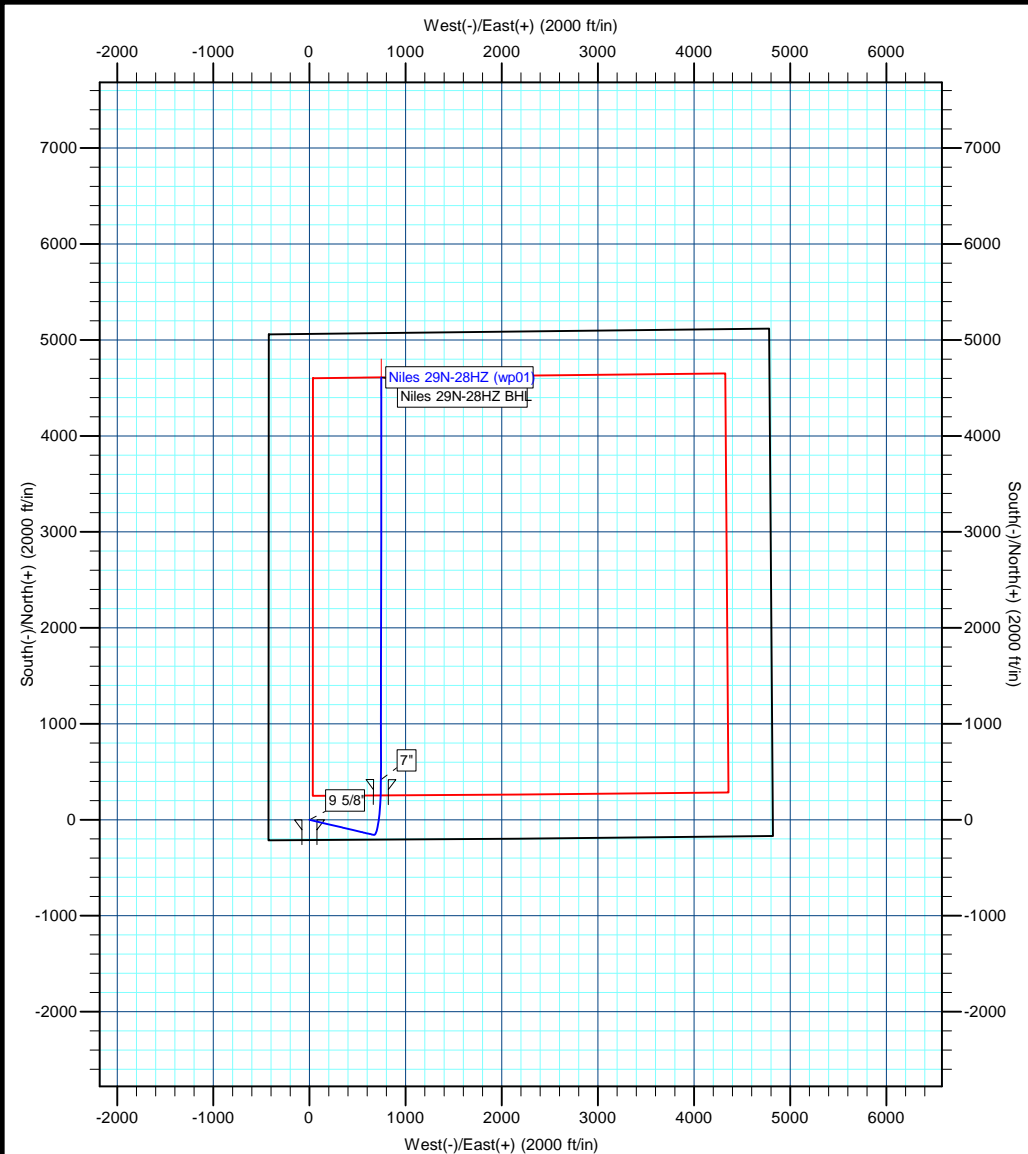
Niles 29N-28HZ

Niles 29N-28HZ

Plan: Niles 29N-28HZ (wp01)

Standard Planning Report

28 March, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD Niles 13-28HZ pad
Well: Niles 29N-28HZ
Wellbore: Niles 29N-28HZ
Section:
SHL:
Design: Niles 29N-28HZ (wp01)
Latitude: 40.189256
Longitude: -104.790075
GL: 4934.00
KB: gl + rkb @ 4959.00ft

WELL DETAILS: Niles 29N-28HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4934.00 Latitude	Longitude	Slot
0.00	0.00	1312582.52	3198333.98	40.189256	-104.790075	

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
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00
1466.79	7.34	103.29	1465.79	-5.39	22.82	2.00	103.29	-1.68
6665.47	7.34	103.29	6621.91	-157.99	668.83	0.00	0.00	-49.10
7585.57	90.34	0.04	7207.00	418.00	743.00	10.00	-103.10	531.34
7588.94	90.37	0.05	7206.98	421.37	743.00	1.00	7.08	534.67
11779.14	90.37	0.05	7180.00	4611.49	746.36	0.00	0.00	4671.50

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

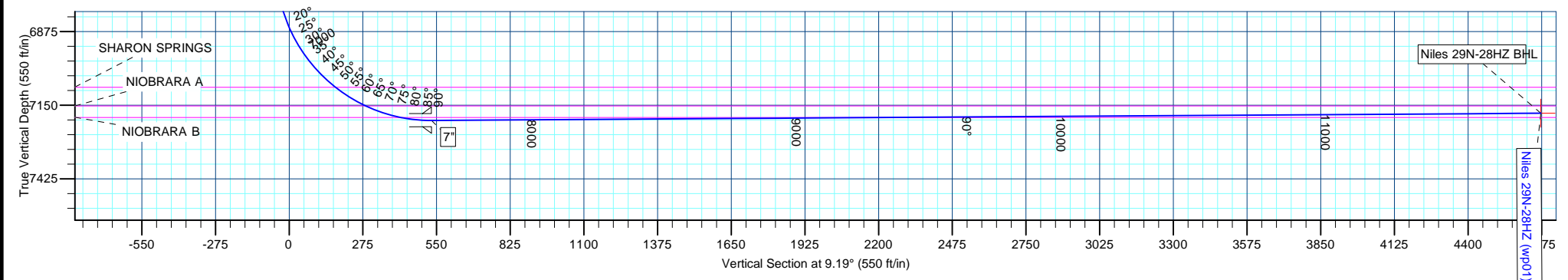
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Niles 29N-28HZ BHL	7180.00	4611.49	746.36	40.201915	-104.787403	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3977.00	3998.73	PARKMAN
4401.00	4426.22	SUSSEX
7083.00	7196.50	SHARON SPRINGS
7153.00	7330.41	NIOBRARA A
7196.00	7469.24	NIOBRARA B

CASING DETAILS

TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7207.00	7585.57	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 29N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4959.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4959.00ft
Site:	WELD_Niles 13-28HZ pad	North Reference:	True
Well:	Niles 29N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 29N-28HZ		
Design:	Niles 29N-28HZ (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_Niles 13-28HZ pad			
Site Position:		Northing:	1,312,582.29 usft	Latitude:	40.189256
From:	Lat/Long	Easting:	3,198,304.09 usft	Longitude:	-104.790182
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.46 °

Well	Niles 29N-28HZ					
Well Position	+N/-S	-0.01 ft	Northing:	1,312,582.52 usft	Latitude:	40.189256
	+E/-W	29.89 ft	Easting:	3,198,333.98 usft	Longitude:	-104.790075
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,934.00 ft

Wellbore	Niles 29N-28HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/28/2012	8.75	66.85	52,934

Design	Niles 29N-28HZ (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	9.19

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	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,466.79	7.34	103.29	1,465.79	-5.39	22.82	2.00	2.00	0.00	103.29	
6,665.47	7.34	103.29	6,621.91	-157.99	668.83	0.00	0.00	0.00	0.00	
7,585.57	90.34	0.04	7,207.00	418.00	743.00	10.00	9.02	-11.22	-103.10	
7,588.94	90.37	0.05	7,206.98	421.37	743.00	1.00	0.99	0.12	7.08	
11,779.15	90.37	0.05	7,180.00	4,611.49	746.36	0.00	0.00	0.00	0.00	Niles 29N-28HZ BHL

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 29N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4959.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4959.00ft
Site:	WELD_Niles 13-28HZ pad	North Reference:	True
Well:	Niles 29N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 29N-28HZ		
Design:	Niles 29N-28HZ (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
9 5/8"									
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	2.00	103.29	1,199.98	-0.40	1.70	-0.12	2.00	2.00	0.00
1,300.00	4.00	103.29	1,299.84	-1.60	6.79	-0.50	2.00	2.00	0.00
1,400.00	6.00	103.29	1,399.45	-3.61	15.27	-1.12	2.00	2.00	0.00
1,466.79	7.34	103.29	1,465.79	-5.39	22.82	-1.68	2.00	2.00	0.00
1,500.00	7.34	103.29	1,498.73	-6.37	26.95	-1.98	0.00	0.00	0.00
1,600.00	7.34	103.29	1,597.91	-9.30	39.37	-2.89	0.00	0.00	0.00
1,700.00	7.34	103.29	1,697.09	-12.24	51.80	-3.80	0.00	0.00	0.00
1,800.00	7.34	103.29	1,796.27	-15.17	64.23	-4.72	0.00	0.00	0.00
1,900.00	7.34	103.29	1,895.45	-18.11	76.65	-5.63	0.00	0.00	0.00
2,000.00	7.34	103.29	1,994.63	-21.04	89.08	-6.54	0.00	0.00	0.00
2,100.00	7.34	103.29	2,093.82	-23.98	101.51	-7.45	0.00	0.00	0.00
2,200.00	7.34	103.29	2,193.00	-26.91	113.93	-8.36	0.00	0.00	0.00
2,300.00	7.34	103.29	2,292.18	-29.85	126.36	-9.28	0.00	0.00	0.00
2,400.00	7.34	103.29	2,391.36	-32.78	138.78	-10.19	0.00	0.00	0.00
2,500.00	7.34	103.29	2,490.54	-35.72	151.21	-11.10	0.00	0.00	0.00
2,600.00	7.34	103.29	2,589.72	-38.65	163.64	-12.01	0.00	0.00	0.00
2,700.00	7.34	103.29	2,688.90	-41.59	176.06	-12.93	0.00	0.00	0.00
2,800.00	7.34	103.29	2,788.09	-44.52	188.49	-13.84	0.00	0.00	0.00
2,900.00	7.34	103.29	2,887.27	-47.46	200.92	-14.75	0.00	0.00	0.00
3,000.00	7.34	103.29	2,986.45	-50.40	213.34	-15.66	0.00	0.00	0.00
3,100.00	7.34	103.29	3,085.63	-53.33	225.77	-16.57	0.00	0.00	0.00
3,200.00	7.34	103.29	3,184.81	-56.27	238.20	-17.49	0.00	0.00	0.00
3,300.00	7.34	103.29	3,283.99	-59.20	250.62	-18.40	0.00	0.00	0.00
3,400.00	7.34	103.29	3,383.18	-62.14	263.05	-19.31	0.00	0.00	0.00
3,500.00	7.34	103.29	3,482.36	-65.07	275.48	-20.22	0.00	0.00	0.00
3,600.00	7.34	103.29	3,581.54	-68.01	287.90	-21.14	0.00	0.00	0.00
3,700.00	7.34	103.29	3,680.72	-70.94	300.33	-22.05	0.00	0.00	0.00
3,800.00	7.34	103.29	3,779.90	-73.88	312.75	-22.96	0.00	0.00	0.00
3,900.00	7.34	103.29	3,879.08	-76.81	325.18	-23.87	0.00	0.00	0.00
3,998.73	7.34	103.29	3,977.00	-79.71	337.45	-24.77	0.00	0.00	0.00
PARKMAN									
4,000.00	7.34	103.29	3,978.26	-79.75	337.61	-24.79	0.00	0.00	0.00
4,100.00	7.34	103.29	4,077.45	-82.68	350.03	-25.70	0.00	0.00	0.00
4,200.00	7.34	103.29	4,176.63	-85.62	362.46	-26.61	0.00	0.00	0.00
4,300.00	7.34	103.29	4,275.81	-88.55	374.89	-27.52	0.00	0.00	0.00
4,400.00	7.34	103.29	4,374.99	-91.49	387.31	-28.43	0.00	0.00	0.00
4,426.22	7.34	103.29	4,401.00	-92.26	390.57	-28.67	0.00	0.00	0.00
SUSSEX									
4,500.00	7.34	103.29	4,474.17	-94.42	399.74	-29.35	0.00	0.00	0.00
4,600.00	7.34	103.29	4,573.35	-97.36	412.17	-30.26	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 29N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4959.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4959.00ft
Site:	WELD_Niles 13-28HZ pad	North Reference:	True
Well:	Niles 29N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 29N-28HZ		
Design:	Niles 29N-28HZ (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)
4,700.00	7.34	103.29	4,672.53	-100.30	424.59	-31.17	0.00	0.00	0.00
4,800.00	7.34	103.29	4,771.72	-103.23	437.02	-32.08	0.00	0.00	0.00
4,900.00	7.34	103.29	4,870.90	-106.17	449.44	-33.00	0.00	0.00	0.00
5,000.00	7.34	103.29	4,970.08	-109.10	461.87	-33.91	0.00	0.00	0.00
5,100.00	7.34	103.29	5,069.26	-112.04	474.30	-34.82	0.00	0.00	0.00
5,200.00	7.34	103.29	5,168.44	-114.97	486.72	-35.73	0.00	0.00	0.00
5,300.00	7.34	103.29	5,267.62	-117.91	499.15	-36.64	0.00	0.00	0.00
5,400.00	7.34	103.29	5,366.81	-120.84	511.58	-37.56	0.00	0.00	0.00
5,500.00	7.34	103.29	5,465.99	-123.78	524.00	-38.47	0.00	0.00	0.00
5,600.00	7.34	103.29	5,565.17	-126.71	536.43	-39.38	0.00	0.00	0.00
5,700.00	7.34	103.29	5,664.35	-129.65	548.86	-40.29	0.00	0.00	0.00
5,800.00	7.34	103.29	5,763.53	-132.58	561.28	-41.21	0.00	0.00	0.00
5,900.00	7.34	103.29	5,862.71	-135.52	573.71	-42.12	0.00	0.00	0.00
6,000.00	7.34	103.29	5,961.89	-138.45	586.13	-43.03	0.00	0.00	0.00
6,100.00	7.34	103.29	6,061.08	-141.39	598.56	-43.94	0.00	0.00	0.00
6,200.00	7.34	103.29	6,160.26	-144.33	610.99	-44.86	0.00	0.00	0.00
6,300.00	7.34	103.29	6,259.44	-147.26	623.41	-45.77	0.00	0.00	0.00
6,400.00	7.34	103.29	6,358.62	-150.20	635.84	-46.68	0.00	0.00	0.00
6,500.00	7.34	103.29	6,457.80	-153.13	648.27	-47.59	0.00	0.00	0.00
6,600.00	7.34	103.29	6,556.98	-156.07	660.69	-48.50	0.00	0.00	0.00
6,665.47	7.34	103.29	6,621.91	-157.99	668.83	-49.10	0.00	0.00	0.00
6,700.00	7.36	76.04	6,656.17	-157.96	673.12	-48.39	10.00	0.07	-78.91
6,800.00	13.75	30.89	6,754.58	-146.19	685.47	-34.79	10.00	6.39	-45.15
6,900.00	22.87	17.37	6,849.46	-117.37	697.41	-4.44	10.00	9.12	-13.52
7,000.00	32.49	11.43	6,937.92	-72.38	708.56	41.75	10.00	9.62	-5.94
7,100.00	42.28	8.01	7,017.29	-12.60	718.59	102.37	10.00	9.78	-3.43
7,196.50	51.79	5.75	7,083.00	57.44	726.93	172.84	10.00	9.85	-2.34
SHARON SPRINGS									
7,200.00	52.13	5.68	7,085.15	60.17	727.21	175.59	10.00	9.87	-2.00
7,300.00	62.02	3.90	7,139.44	143.72	734.13	259.16	10.00	9.89	-1.78
7,330.41	65.03	3.43	7,153.00	170.88	735.87	286.26	10.00	9.90	-1.55
NIOBRARA A									
7,400.00	71.93	2.43	7,178.51	235.49	739.16	350.56	10.00	9.91	-1.44
7,469.24	78.79	1.51	7,196.00	302.41	741.45	416.98	10.00	9.92	-1.33
NIOBRARA B									
7,500.00	81.85	1.11	7,201.17	332.72	742.14	447.01	10.00	9.92	-1.28
7,585.57	90.34	0.04	7,207.00	418.00	743.00	531.34	10.00	9.92	-1.25
7"									
7,588.94	90.37	0.05	7,206.98	421.37	743.00	534.67	1.00	0.99	0.12
7,600.00	90.37	0.05	7,206.91	432.43	743.01	545.59	0.00	0.00	0.00
7,700.00	90.37	0.05	7,206.26	532.43	743.09	644.31	0.00	0.00	0.00
7,800.00	90.37	0.05	7,205.62	632.43	743.17	743.04	0.00	0.00	0.00
7,900.00	90.37	0.05	7,204.98	732.43	743.25	841.77	0.00	0.00	0.00
8,000.00	90.37	0.05	7,204.33	832.43	743.33	940.49	0.00	0.00	0.00
8,100.00	90.37	0.05	7,203.69	932.42	743.41	1,039.22	0.00	0.00	0.00
8,200.00	90.37	0.05	7,203.05	1,032.42	743.49	1,137.95	0.00	0.00	0.00
8,300.00	90.37	0.05	7,202.40	1,132.42	743.57	1,236.67	0.00	0.00	0.00
8,400.00	90.37	0.05	7,201.76	1,232.42	743.65	1,335.40	0.00	0.00	0.00
8,500.00	90.37	0.05	7,201.11	1,332.41	743.73	1,434.12	0.00	0.00	0.00
8,600.00	90.37	0.05	7,200.47	1,432.41	743.81	1,532.85	0.00	0.00	0.00
8,700.00	90.37	0.05	7,199.83	1,532.41	743.89	1,631.58	0.00	0.00	0.00
8,800.00	90.37	0.05	7,199.18	1,632.41	743.97	1,730.30	0.00	0.00	0.00
8,900.00	90.37	0.05	7,198.54	1,732.41	744.05	1,829.03	0.00	0.00	0.00
9,000.00	90.37	0.05	7,197.89	1,832.40	744.13	1,927.75	0.00	0.00	0.00

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Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 29N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4959.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4959.00ft
Site:	WELD_Niles 13-28HZ pad	North Reference:	True
Well:	Niles 29N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 29N-28HZ		
Design:	Niles 29N-28HZ (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)
9,100.00	90.37	0.05	7,197.25	1,932.40	744.21	2,026.48	0.00	0.00	0.00
9,200.00	90.37	0.05	7,196.61	2,032.40	744.29	2,125.21	0.00	0.00	0.00
9,300.00	90.37	0.05	7,195.96	2,132.40	744.37	2,223.93	0.00	0.00	0.00
9,400.00	90.37	0.05	7,195.32	2,232.40	744.45	2,322.66	0.00	0.00	0.00
9,500.00	90.37	0.05	7,194.67	2,332.39	744.53	2,421.39	0.00	0.00	0.00
9,600.00	90.37	0.05	7,194.03	2,432.39	744.61	2,520.11	0.00	0.00	0.00
9,700.00	90.37	0.05	7,193.39	2,532.39	744.69	2,618.84	0.00	0.00	0.00
9,800.00	90.37	0.05	7,192.74	2,632.39	744.77	2,717.56	0.00	0.00	0.00
9,900.00	90.37	0.05	7,192.10	2,732.39	744.85	2,816.29	0.00	0.00	0.00
10,000.00	90.37	0.05	7,191.46	2,832.38	744.93	2,915.02	0.00	0.00	0.00
10,100.00	90.37	0.05	7,190.81	2,932.38	745.01	3,013.74	0.00	0.00	0.00
10,200.00	90.37	0.05	7,190.17	3,032.38	745.09	3,112.47	0.00	0.00	0.00
10,300.00	90.37	0.05	7,189.52	3,132.38	745.17	3,211.19	0.00	0.00	0.00
10,400.00	90.37	0.05	7,188.88	3,232.37	745.25	3,309.92	0.00	0.00	0.00
10,500.00	90.37	0.05	7,188.24	3,332.37	745.33	3,408.65	0.00	0.00	0.00
10,600.00	90.37	0.05	7,187.59	3,432.37	745.41	3,507.37	0.00	0.00	0.00
10,700.00	90.37	0.05	7,186.95	3,532.37	745.49	3,606.10	0.00	0.00	0.00
10,800.00	90.37	0.05	7,186.30	3,632.37	745.57	3,704.83	0.00	0.00	0.00
10,900.00	90.37	0.05	7,185.66	3,732.36	745.65	3,803.55	0.00	0.00	0.00
11,000.00	90.37	0.05	7,185.02	3,832.36	745.73	3,902.28	0.00	0.00	0.00
11,100.00	90.37	0.05	7,184.37	3,932.36	745.81	4,001.00	0.00	0.00	0.00
11,200.00	90.37	0.05	7,183.73	4,032.36	745.89	4,099.73	0.00	0.00	0.00
11,300.00	90.37	0.05	7,183.09	4,132.36	745.97	4,198.46	0.00	0.00	0.00
11,400.00	90.37	0.05	7,182.44	4,232.35	746.05	4,297.18	0.00	0.00	0.00
11,500.00	90.37	0.05	7,181.80	4,332.35	746.13	4,395.91	0.00	0.00	0.00
11,600.00	90.37	0.05	7,181.15	4,432.35	746.21	4,494.63	0.00	0.00	0.00
11,700.00	90.37	0.05	7,180.51	4,532.35	746.29	4,593.36	0.00	0.00	0.00
11,779.15	90.37	0.05	7,180.00	4,611.49	746.36	4,671.50	0.00	0.00	0.00
Niles 29N-28HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Niles 29N-28HZ BHL	0.00	0.00	7,180.00	4,611.49	746.36	1,317,199.83	3,199,043.39	40.201915	-104.787403
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
900.00	900.00	9 5/8"	9-5/8	12-1/4	
7,585.57	7,207.00	7"	7	8-3/4	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 29N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4959.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4959.00ft
Site:	WELD_Niles 13-28HZ pad	North Reference:	True
Well:	Niles 29N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 29N-28HZ		
Design:	Niles 29N-28HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,998.73	3,977.00	PARKMAN		0.00		
4,426.22	4,401.00	SUSSEX		0.00		
7,196.50	7,083.00	SHARON SPRINGS		0.00		
7,330.41	7,153.00	NIOBRARA A		0.00		
7,469.24	7,196.00	NIOBRARA B		0.00		