



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Paragon 10N-31HZ
Company:	Anadarko Petroleum Corporation	TVD Reference:	KB=17' @ 5002.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KB=17' @ 5002.0ft (Original Well Elev)
Site:	Paragon Pad (S31-T2N-R65W)	North Reference:	Grid
Well:	Paragon 10N-31HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Project	DJ Wattenberg		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Paragon Pad (S31-T2N-R65W)			
Site Position:		Northing:	1,270,825.80 ft	Latitude:	40.074048
From:	Lat/Long	Easting:	3,223,070.84 ft	Longitude:	-104.702902
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.52 °

Well	Paragon 10N-31HZ					
Well Position	+N/-S	0.0 ft	Northing:	1,270,825.79 ft	Latitude:	40.074048
	+E/-W	0.0 ft	Easting:	3,223,070.84 ft	Longitude:	-104.702902
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,985.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/17/2013	8.50	66.72	52,727

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	358.57

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,350.3	3.01	207.10	1,350.2	-3.5	-1.8	2.00	2.00	0.00	207.10	
6,426.0	3.01	207.10	6,418.9	-240.4	-123.0	0.00	0.00	0.00	0.00	
6,576.2	0.00	0.00	6,569.1	-243.9	-124.8	2.00	-2.00	0.00	180.00	Paragon 10N-31HZ V
7,472.3	89.61	359.59	7,142.0	325.2	-128.9	10.00	10.00	-0.05	359.59	
14,258.0	89.61	359.59	7,188.0	7,110.5	-177.2	0.00	0.00	0.00	0.00	Paragon 10N-31HZ P

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Site:	Paragon Pad (S31-T2N-R65W)	North Reference:	Grid
Well:	Paragon 10N-31HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
0.1	0.00	0.00	0.1	0.0	0.0	0.0	0.00	0.00	SHL - 290' FSL, 1612' FEL
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,057.0	0.00	0.00	1,057.0	0.0	0.0	0.0	0.00	0.00	Fox Hills Base
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1,200' MD
1,300.0	2.00	207.10	1,300.0	-1.6	-0.8	-1.5	2.00	2.00	
1,350.3	3.01	207.10	1,350.2	-3.5	-1.8	-3.5	2.00	2.00	EOB @ Inc. = 3.01°
1,400.0	3.01	207.10	1,399.9	-5.8	-3.0	-5.8	0.00	0.00	
1,500.0	3.01	207.10	1,499.7	-10.5	-5.4	-10.4	0.00	0.00	
1,600.0	3.01	207.10	1,599.6	-15.2	-7.8	-15.0	0.00	0.00	
1,700.0	3.01	207.10	1,699.5	-19.8	-10.1	-19.6	0.00	0.00	
1,800.0	3.01	207.10	1,799.3	-24.5	-12.5	-24.2	0.00	0.00	
1,900.0	3.01	207.10	1,899.2	-29.2	-14.9	-28.8	0.00	0.00	
2,000.0	3.01	207.10	1,999.0	-33.8	-17.3	-33.4	0.00	0.00	
2,100.0	3.01	207.10	2,098.9	-38.5	-19.7	-38.0	0.00	0.00	
2,200.0	3.01	207.10	2,198.8	-43.2	-22.1	-42.6	0.00	0.00	
2,300.0	3.01	207.10	2,298.6	-47.8	-24.5	-47.2	0.00	0.00	
2,400.0	3.01	207.10	2,398.5	-52.5	-26.9	-51.8	0.00	0.00	
2,500.0	3.01	207.10	2,498.4	-57.2	-29.3	-56.4	0.00	0.00	
2,600.0	3.01	207.10	2,598.2	-61.8	-31.6	-61.0	0.00	0.00	
2,700.0	3.01	207.10	2,698.1	-66.5	-34.0	-65.6	0.00	0.00	
2,800.0	3.01	207.10	2,797.9	-71.2	-36.4	-70.2	0.00	0.00	
2,900.0	3.01	207.10	2,897.8	-75.8	-38.8	-74.8	0.00	0.00	
3,000.0	3.01	207.10	2,997.7	-80.5	-41.2	-79.4	0.00	0.00	
3,100.0	3.01	207.10	3,097.5	-85.2	-43.6	-84.1	0.00	0.00	
3,200.0	3.01	207.10	3,197.4	-89.8	-46.0	-88.7	0.00	0.00	
3,300.0	3.01	207.10	3,297.2	-94.5	-48.4	-93.3	0.00	0.00	
3,400.0	3.01	207.10	3,397.1	-99.2	-50.7	-97.9	0.00	0.00	
3,500.0	3.01	207.10	3,497.0	-103.8	-53.1	-102.5	0.00	0.00	
3,600.0	3.01	207.10	3,596.8	-108.5	-55.5	-107.1	0.00	0.00	
3,700.0	3.01	207.10	3,696.7	-113.2	-57.9	-111.7	0.00	0.00	
3,800.0	3.01	207.10	3,796.6	-117.8	-60.3	-116.3	0.00	0.00	
3,900.0	3.01	207.10	3,896.4	-122.5	-62.7	-120.9	0.00	0.00	
4,000.0	3.01	207.10	3,996.3	-127.2	-65.1	-125.5	0.00	0.00	
4,100.0	3.01	207.10	4,096.1	-131.8	-67.5	-130.1	0.00	0.00	
4,200.0	3.01	207.10	4,196.0	-136.5	-69.8	-134.7	0.00	0.00	
4,203.0	3.01	207.10	4,199.0	-136.6	-69.9	-134.9	0.00	0.00	Parkman
4,300.0	3.01	207.10	4,295.9	-141.2	-72.2	-139.3	0.00	0.00	
4,400.0	3.01	207.10	4,395.7	-145.8	-74.6	-143.9	0.00	0.00	
4,500.0	3.01	207.10	4,495.6	-150.5	-77.0	-148.5	0.00	0.00	
4,593.5	3.01	207.10	4,589.0	-154.9	-79.2	-152.8	0.00	0.00	Sussex
4,600.0	3.01	207.10	4,595.5	-155.2	-79.4	-153.1	0.00	0.00	

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Wellbore:	HZ		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,700.0	3.01	207.10	4,695.3	-159.8	-81.8	-157.8	0.00	0.00	
4,800.0	3.01	207.10	4,795.2	-164.5	-84.2	-162.4	0.00	0.00	
4,900.0	3.01	207.10	4,895.0	-169.2	-86.6	-167.0	0.00	0.00	
5,000.0	3.01	207.10	4,994.9	-173.8	-89.0	-171.6	0.00	0.00	
5,100.0	3.01	207.10	5,094.8	-178.5	-91.3	-176.2	0.00	0.00	
5,200.0	3.01	207.10	5,194.6	-183.2	-93.7	-180.8	0.00	0.00	
5,300.0	3.01	207.10	5,294.5	-187.8	-96.1	-185.4	0.00	0.00	
5,400.0	3.01	207.10	5,394.4	-192.5	-98.5	-190.0	0.00	0.00	
5,500.0	3.01	207.10	5,494.2	-197.2	-100.9	-194.6	0.00	0.00	
5,600.0	3.01	207.10	5,594.1	-201.8	-103.3	-199.2	0.00	0.00	
5,700.0	3.01	207.10	5,693.9	-206.5	-105.7	-203.8	0.00	0.00	
5,800.0	3.01	207.10	5,793.8	-211.2	-108.1	-208.4	0.00	0.00	
5,900.0	3.01	207.10	5,893.7	-215.8	-110.4	-213.0	0.00	0.00	
6,000.0	3.01	207.10	5,993.5	-220.5	-112.8	-217.6	0.00	0.00	
6,100.0	3.01	207.10	6,093.4	-225.2	-115.2	-222.2	0.00	0.00	
6,200.0	3.01	207.10	6,193.3	-229.8	-117.6	-226.8	0.00	0.00	
6,300.0	3.01	207.10	6,293.1	-234.5	-120.0	-231.4	0.00	0.00	
6,400.0	3.01	207.10	6,393.0	-239.2	-122.4	-236.1	0.00	0.00	
6,426.0	3.01	207.10	6,418.9	-240.4	-123.0	-237.2	0.00	0.00	Start 2° Drop
6,500.0	1.52	207.10	6,492.9	-243.0	-124.3	-239.8	2.00	-2.00	
6,576.2	0.00	0.00	6,569.1	-243.9	-124.8	-240.7	2.00	-2.00	Start 10° Build
6,600.0	2.38	359.59	6,592.9	-243.4	-124.8	-240.2	10.00	10.00	
6,650.0	7.38	359.59	6,642.7	-239.2	-124.8	-236.0	10.00	10.00	
6,700.0	12.38	359.59	6,691.9	-230.6	-124.9	-227.4	10.00	10.00	
6,750.0	17.38	359.59	6,740.2	-217.7	-125.0	-214.6	10.00	10.00	
6,800.0	22.38	359.59	6,787.2	-200.7	-125.1	-197.6	10.00	10.00	
6,850.0	27.38	359.59	6,832.6	-179.7	-125.3	-176.5	10.00	10.00	
6,900.0	32.38	359.59	6,875.9	-154.8	-125.4	-151.6	10.00	10.00	
6,950.0	37.38	359.59	6,916.9	-126.2	-125.6	-123.1	10.00	10.00	
7,000.0	42.38	359.59	6,955.3	-94.2	-125.9	-91.0	10.00	10.00	
7,046.0	46.98	359.59	6,988.0	-61.8	-126.1	-58.7	10.00	10.00	Sharon Springs
7,050.0	47.38	359.59	6,990.7	-58.9	-126.1	-55.8	10.00	10.00	
7,100.0	52.38	359.59	7,022.9	-20.7	-126.4	-17.5	10.00	10.00	
7,113.4	53.72	359.59	7,031.0	-10.0	-126.5	-6.8	10.00	10.00	Niobrara A
7,150.0	57.38	359.59	7,051.7	20.2	-126.7	23.3	10.00	10.00	
7,200.0	62.38	359.59	7,076.8	63.4	-127.0	66.6	10.00	10.00	
7,250.0	67.38	359.59	7,098.0	108.7	-127.3	111.8	10.00	10.00	
7,300.0	72.38	359.59	7,115.2	155.6	-127.6	158.7	10.00	10.00	
7,324.2	74.79	359.59	7,122.0	178.8	-127.8	181.9	10.00	10.00	Niobrara B Chalk
7,350.0	77.38	359.59	7,128.2	203.9	-128.0	207.0	10.00	10.00	
7,400.0	82.38	359.59	7,137.0	253.1	-128.3	256.2	10.00	10.00	
7,450.0	87.38	359.59	7,141.5	302.8	-128.7	306.0	10.00	10.00	
7,472.3	89.61	359.59	7,142.0	325.1	-128.9	328.2	10.00	10.00	LP @ 7,142' TVD, 89.61° - 7" - 620' FSL, 1732'
7,500.0	89.61	359.59	7,142.2	352.8	-129.1	355.9	0.01	0.01	
7,600.0	89.61	359.59	7,142.9	452.8	-129.8	455.9	0.00	0.00	
7,700.0	89.61	359.59	7,143.6	552.8	-130.5	555.9	0.00	0.00	
7,800.0	89.61	359.59	7,144.3	652.8	-131.2	655.9	0.00	0.00	
7,900.0	89.61	359.59	7,144.9	752.8	-131.9	755.9	0.00	0.00	
8,000.0	89.61	359.59	7,145.6	852.8	-132.6	855.8	0.00	0.00	
8,100.0	89.61	359.59	7,146.3	952.8	-133.3	955.8	0.00	0.00	
8,200.0	89.61	359.59	7,147.0	1,052.8	-134.0	1,055.8	0.00	0.00	
8,300.0	89.61	359.59	7,147.6	1,152.8	-134.8	1,155.8	0.00	0.00	

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Project:	DJ Wattenberg	MD Reference:	KB=17' @ 5002.0ft (Original Well Elev)
Site:	Paragon Pad (S31-T2N-R65W)	North Reference:	Grid
Well:	Paragon 10N-31HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,400.0	89.61	359.59	7,148.3	1,252.8	-135.5	1,255.8	0.00	0.00	
8,500.0	89.61	359.59	7,149.0	1,352.8	-136.2	1,355.8	0.00	0.00	
8,600.0	89.61	359.59	7,149.7	1,452.8	-136.9	1,455.7	0.00	0.00	
8,700.0	89.61	359.59	7,150.4	1,552.8	-137.6	1,555.7	0.00	0.00	
8,800.0	89.61	359.59	7,151.0	1,652.8	-138.3	1,655.7	0.00	0.00	
8,900.0	89.61	359.59	7,151.7	1,752.8	-139.0	1,755.7	0.00	0.00	
9,000.0	89.61	359.59	7,152.4	1,852.8	-139.7	1,855.7	0.00	0.00	
9,100.0	89.61	359.59	7,153.1	1,952.8	-140.5	1,955.6	0.00	0.00	
9,200.0	89.61	359.59	7,153.7	2,052.7	-141.2	2,055.6	0.00	0.00	
9,300.0	89.61	359.59	7,154.4	2,152.7	-141.9	2,155.6	0.00	0.00	
9,400.0	89.61	359.59	7,155.1	2,252.7	-142.6	2,255.6	0.00	0.00	
9,500.0	89.61	359.59	7,155.8	2,352.7	-143.3	2,355.6	0.00	0.00	
9,600.0	89.61	359.59	7,156.5	2,452.7	-144.0	2,455.6	0.00	0.00	
9,700.0	89.61	359.59	7,157.1	2,552.7	-144.7	2,555.5	0.00	0.00	
9,800.0	89.61	359.59	7,157.8	2,652.7	-145.4	2,655.5	0.00	0.00	
9,900.0	89.61	359.59	7,158.5	2,752.7	-146.2	2,755.5	0.00	0.00	
10,000.0	89.61	359.59	7,159.2	2,852.7	-146.9	2,855.5	0.00	0.00	
10,100.0	89.61	359.59	7,159.8	2,952.7	-147.6	2,955.5	0.00	0.00	
10,200.0	89.61	359.59	7,160.5	3,052.7	-148.3	3,055.4	0.00	0.00	
10,300.0	89.61	359.59	7,161.2	3,152.7	-149.0	3,155.4	0.00	0.00	
10,400.0	89.61	359.59	7,161.9	3,252.7	-149.7	3,255.4	0.00	0.00	
10,500.0	89.61	359.59	7,162.5	3,352.7	-150.4	3,355.4	0.00	0.00	
10,600.0	89.61	359.59	7,163.2	3,452.7	-151.2	3,455.4	0.00	0.00	
10,700.0	89.61	359.59	7,163.9	3,552.7	-151.9	3,555.4	0.00	0.00	
10,800.0	89.61	359.59	7,164.6	3,652.7	-152.6	3,655.3	0.00	0.00	
10,900.0	89.61	359.59	7,165.3	3,752.7	-153.3	3,755.3	0.00	0.00	
11,000.0	89.61	359.59	7,165.9	3,852.7	-154.0	3,855.3	0.00	0.00	
11,100.0	89.61	359.59	7,166.6	3,952.7	-154.7	3,955.3	0.00	0.00	
11,200.0	89.61	359.59	7,167.3	4,052.6	-155.4	4,055.3	0.00	0.00	
11,300.0	89.61	359.59	7,168.0	4,152.6	-156.1	4,155.2	0.00	0.00	
11,400.0	89.61	359.59	7,168.6	4,252.6	-156.9	4,255.2	0.00	0.00	
11,500.0	89.61	359.59	7,169.3	4,352.6	-157.6	4,355.2	0.00	0.00	
11,600.0	89.61	359.59	7,170.0	4,452.6	-158.3	4,455.2	0.00	0.00	
11,700.0	89.61	359.59	7,170.7	4,552.6	-159.0	4,555.2	0.00	0.00	
11,800.0	89.61	359.59	7,171.4	4,652.6	-159.7	4,655.2	0.00	0.00	
11,900.0	89.61	359.59	7,172.0	4,752.6	-160.4	4,755.1	0.00	0.00	
12,000.0	89.61	359.59	7,172.7	4,852.6	-161.1	4,855.1	0.00	0.00	
12,100.0	89.61	359.59	7,173.4	4,952.6	-161.8	4,955.1	0.00	0.00	
12,200.0	89.61	359.59	7,174.1	5,052.6	-162.6	5,055.1	0.00	0.00	
12,300.0	89.61	359.59	7,174.7	5,152.6	-163.3	5,155.1	0.00	0.00	
12,400.0	89.61	359.59	7,175.4	5,252.6	-164.0	5,255.0	0.00	0.00	
12,500.0	89.61	359.59	7,176.1	5,352.6	-164.7	5,355.0	0.00	0.00	
12,600.0	89.61	359.59	7,176.8	5,452.6	-165.4	5,455.0	0.00	0.00	
12,700.0	89.61	359.59	7,177.4	5,552.6	-166.1	5,555.0	0.00	0.00	
12,800.0	89.61	359.59	7,178.1	5,652.6	-166.8	5,655.0	0.00	0.00	
12,900.0	89.61	359.59	7,178.8	5,752.6	-167.5	5,755.0	0.00	0.00	
13,000.0	89.61	359.59	7,179.5	5,852.6	-168.3	5,854.9	0.00	0.00	
13,100.0	89.61	359.59	7,180.2	5,952.6	-169.0	5,954.9	0.00	0.00	
13,200.0	89.61	359.59	7,180.8	6,052.6	-169.7	6,054.9	0.00	0.00	
13,300.0	89.61	359.59	7,181.5	6,152.5	-170.4	6,154.9	0.00	0.00	
13,400.0	89.61	359.59	7,182.2	6,252.5	-171.1	6,254.9	0.00	0.00	
13,500.0	89.61	359.59	7,182.9	6,352.5	-171.8	6,354.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Paragon 10N-31HZ
Company:	Anadarko Petroleum Corporation	TVD Reference:	KB=17' @ 5002.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KB=17' @ 5002.0ft (Original Well Elev)
Site:	Paragon Pad (S31-T2N-R65W)	North Reference:	Grid
Well:	Paragon 10N-31HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
13,600.0	89.61	359.59	7,183.5	6,452.5	-172.5	6,454.8	0.00	0.00	
13,700.0	89.61	359.59	7,184.2	6,552.5	-173.3	6,554.8	0.00	0.00	
13,800.0	89.61	359.59	7,184.9	6,652.5	-174.0	6,654.8	0.00	0.00	
13,900.0	89.61	359.59	7,185.6	6,752.5	-174.7	6,754.8	0.00	0.00	
14,000.0	89.61	359.59	7,186.3	6,852.5	-175.4	6,854.8	0.00	0.00	
14,100.0	89.61	359.59	7,186.9	6,952.5	-176.1	6,954.7	0.00	0.00	
14,110.3	89.61	359.59	7,187.0	6,962.9	-176.2	6,965.1	0.00	0.00	Niobrara C
14,200.0	89.61	359.59	7,187.6	7,052.5	-176.8	7,054.7	0.00	0.00	
14,258.0	89.61	359.59	7,188.0	7,110.5	-177.2	7,112.7	0.00	0.00	TD @ 14,258' MD - PBHL - 2198' FSL, 1732' FEL

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Paragon 10N-31HZ PBH - plan hits target center - Point	0.00	0.00	7,188.0	7,110.5	-177.2	1,277,936.29	3,222,893.61	40.093571	-104.703307
Paragon 10N-31HZ VP - plan hits target center - Point	0.00	0.00	6,569.1	-243.9	-124.8	1,270,581.89	3,222,946.04	40.073382	-104.703356

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
7,472.3	7,142.0	7" - 620' FSL, 1732' FEL		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,057.0	1,057.0	Fox Hills Base			
4,203.0	4,199.0	Parkman			
4,593.5	4,589.0	Sussex			
7,046.0	6,988.0	Sharon Springs			
7,113.4	7,031.0	Niobrara A			
7,324.2	7,122.0	Niobrara B Chalk			
14,110.3	7,187.0	Niobrara C			

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Paragon 10N-31HZ
Company:	Anadarko Petroleum Corporation	TVD Reference:	KB=17' @ 5002.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KB=17' @ 5002.0ft (Original Well Elev)
Site:	Paragon Pad (S31-T2N-R65W)	North Reference:	Grid
Well:	Paragon 10N-31HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
0.1	0.1	0.0	0.0	SHL - 290' FSL, 1612' FEL
1,200.0	1,200.0	0.0	0.0	KOP @ 1,200' MD
1,350.3	1,350.2	-3.5	-1.8	EOB @ Inc. = 3.01°
6,426.0	6,418.9	-240.4	-123.0	Start 2° Drop
6,576.2	6,569.1	-243.9	-124.8	Start 10° Build
7,472.3	7,142.0	325.2	-128.9	LP @ 7,142' TVD, 89.61°
14,258.0	7,188.0	7,110.5	-177.2	TD @ 14,258' MD
14,258.0	7,188.0	7,110.5	-177.2	PBHL - 2198' FSL, 1732' FEL