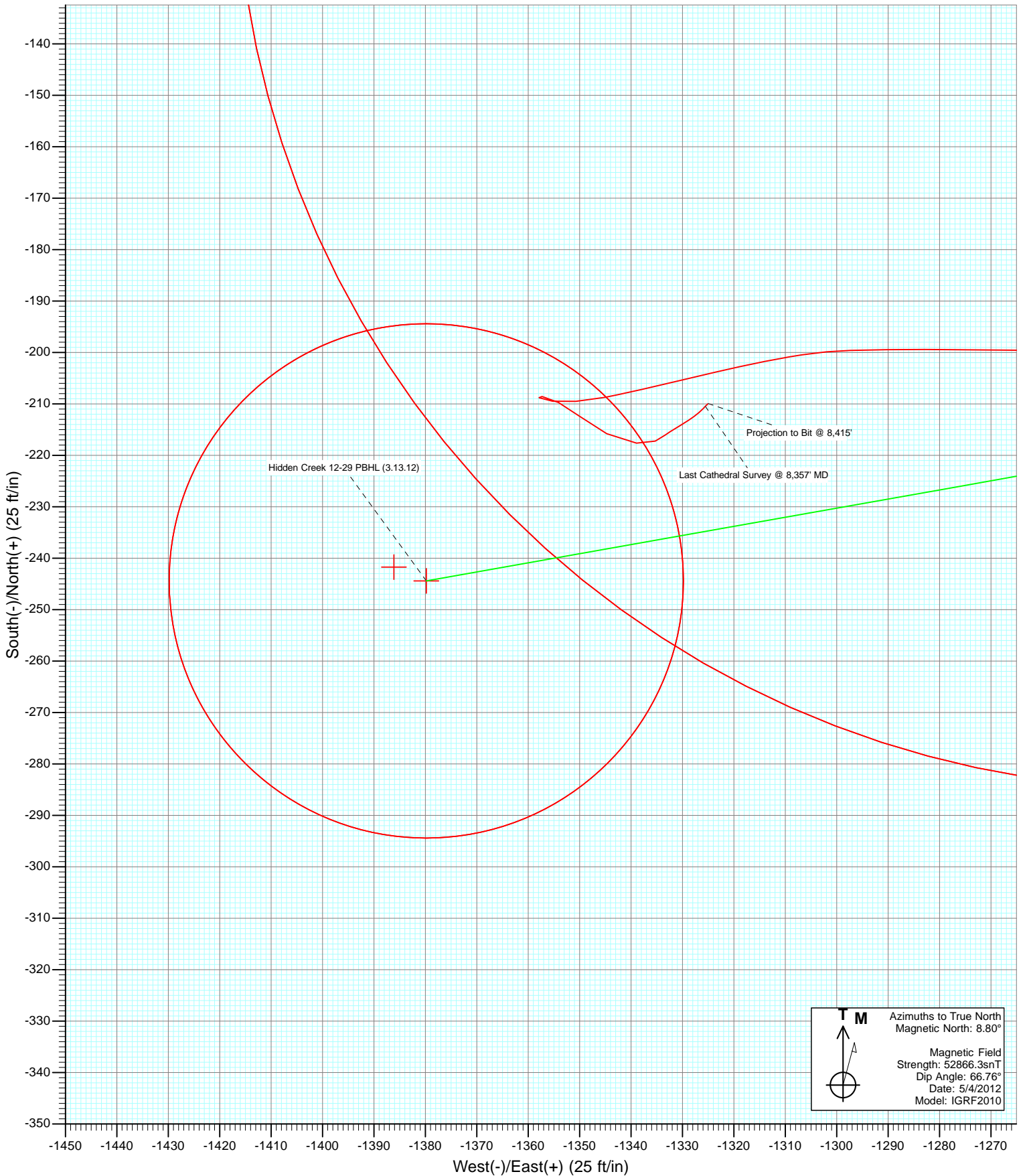


Azimuths to True North
Magnetic North: 8.80°

Magnetic Field
Strength: 52866.3snT
Dip Angle: 66.76°
Date: 5/4/2012
Model: IGRF2010

Type	Target	Target	Origin	Type	N/S	E/W	From TVD
Type	Target	Hidden Creek 12-29 PBHL (3.13.12)	259.96	Slot	0.0	0.0	0.0
		DD					
		Hidden Creek 12-29					
		125267; 15505; DN					
		KB=15' @ 5045.0ft (Xtreme 14)					
		CL @ 5200.0					
		North American Datum 1983					
		Well Hidden Creek 12-29, True North					
Type	Target	TVD	+N/-S	+E/-W	Latitude	Longitude	
Hidden Creek Ctr Legal Box 11		-8430.0	-257.8	-68.6	40.107545	-104.916789	
Hidden Creek Ctr Legal Box 12		-8430.0	-241.7	-1386.1	40.107589	-104.921489	
Hidden Creek Ctr Legal Box 13		-8430.0	-1567.1	-1390.8	40.103951	-104.921516	
Hidden Creek Ctr Legal Box 14		-8430.0	-1583.0	-72.8	40.103907	-104.916804	
Hidden Creek Ctr Legal Box 19		-8430.0	-915.2	-718.1	40.105741	-104.919111	
Hidden Creek 12-29 PBHL (3.13.12)		8218.0	-244.4	-1379.8	40.107582	-104.921477	



Cathedral Energy Services

Survey Report

Company: Anadarko Petroleum Corporation	Local Co-ordinate Reference: Well Hidden Creek 12-29
Project: DJ Wattenberg	TVD Reference: KB=15' @ 5045.0ft (Xtreme 14)
Site: NESW Sec29-T2N-R67W (Hidden Creek)	MD Reference: KB=15' @ 5045.0ft (Xtreme 14)
Well: Hidden Creek 12-29	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: USA EDM 5000 Multi Users DB

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 NESW Sec29-T2N-R67W (Hidden Creek)				
Site Position:	Northing:	1,282,820.26 ft	Latitude:	40.108253
From: Lat/Long	Easting:	3,163,202.98 ft	Longitude:	-104.916544
Position Uncertainty: 0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.38 °

Well Hidden Creek 12-29				
Well Position	+N/-S	0.0 ft	Northing:	1,282,820.25 ft
	+E/-W	0.0 ft	Easting:	3,163,202.98 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	5,030.0 ft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/4/2012	8.80	66.76	52,866

Design DD				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	259.96

Survey Program		Date 5/15/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
111.0	8,415.0	Survey #1 (DD)	MWD	Geolink MWD

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
111.0	1.10	241.00	111.0	-0.5	-0.9	1.0	0.99	0.99	
204.0	2.20	248.00	204.0	-1.6	-3.4	3.6	1.20	1.18	
297.0	4.40	249.60	296.8	-3.5	-8.4	8.9	2.37	2.37	
406.0	6.10	251.30	405.3	-6.8	-17.8	18.7	1.57	1.56	
496.0	7.90	257.30	494.7	-9.7	-28.3	29.6	2.16	2.00	
585.0	8.80	256.50	582.7	-12.7	-40.9	42.5	1.02	1.01	
675.0	10.00	261.00	671.5	-15.5	-55.3	57.2	1.56	1.33	
764.0	10.70	264.30	759.1	-17.5	-71.2	73.2	1.03	0.79	
863.0	11.60	264.40	856.2	-19.4	-90.2	92.2	0.91	0.91	
971.0	12.10	267.10	961.9	-21.0	-112.4	114.3	0.69	0.46	
1,061.0	13.40	266.30	1,049.7	-22.2	-132.2	134.0	1.46	1.44	
1,150.0	12.70	264.50	1,136.4	-23.8	-152.2	154.0	0.91	-0.79	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Hidden Creek 12-29
Project:	DJ Wattenberg	TD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Site:	NESW Sec29-T2N-R67W (Hidden Creek)	MVD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Well:	Hidden Creek 12-29	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,240.0	13.10	264.90	1,224.1	-25.7	-172.2	174.1	0.46	0.44	
1,329.0	12.70	265.20	1,310.9	-27.4	-192.0	193.8	0.46	-0.45	
1,417.0	13.80	260.30	1,396.5	-29.9	-212.0	214.0	1.79	1.25	
1,505.0	13.50	253.60	1,482.0	-34.6	-232.2	234.7	1.83	-0.34	
1,593.0	12.20	258.60	1,567.8	-39.4	-251.2	254.2	1.94	-1.48	
1,683.0	11.40	258.40	1,655.9	-43.0	-269.2	272.6	0.89	-0.89	
1,772.0	11.30	251.80	1,743.2	-47.5	-286.1	290.0	1.46	-0.11	
1,859.0	9.80	250.60	1,828.7	-52.6	-301.2	305.8	1.74	-1.72	
1,948.0	10.20	254.50	1,916.4	-57.3	-315.9	321.1	0.88	0.45	
2,036.0	11.40	260.70	2,002.8	-60.7	-332.0	337.5	1.90	1.36	
2,124.0	12.40	257.40	2,088.9	-64.2	-349.8	355.7	1.37	1.14	
2,213.0	12.60	258.10	2,175.8	-68.3	-368.6	374.9	0.28	0.22	
2,302.0	12.00	255.40	2,262.8	-72.6	-387.1	393.8	0.93	-0.67	
2,389.0	12.50	259.20	2,347.8	-76.7	-405.1	412.3	1.09	0.57	
2,479.0	12.50	260.10	2,435.6	-80.2	-424.3	431.7	0.22	0.00	
2,567.0	10.90	262.50	2,521.8	-82.9	-441.9	449.6	1.90	-1.82	
2,656.0	11.20	258.20	2,609.2	-85.8	-458.7	466.6	0.99	0.34	
2,746.0	10.50	261.60	2,697.6	-88.8	-475.4	483.6	1.05	-0.78	
2,832.0	10.60	260.30	2,782.1	-91.2	-490.9	499.3	0.30	0.12	
2,922.0	12.20	257.60	2,870.3	-94.7	-508.4	517.1	1.87	1.78	
3,010.0	13.70	257.60	2,956.1	-98.9	-527.6	536.8	1.70	1.70	
3,098.0	12.70	263.20	3,041.8	-102.3	-547.4	556.9	1.84	-1.14	
3,188.0	13.10	265.60	3,129.5	-104.2	-567.4	576.9	0.74	0.44	
3,277.0	12.10	257.30	3,216.4	-107.1	-586.6	596.2	2.32	-1.12	
3,366.0	13.50	265.00	3,303.1	-110.0	-606.0	615.9	2.48	1.57	
3,454.0	13.00	262.70	3,388.8	-112.2	-626.1	636.0	0.83	-0.57	
3,542.0	11.70	259.70	3,474.8	-115.0	-644.7	654.8	1.65	-1.48	
3,629.0	12.60	264.30	3,559.8	-117.5	-662.8	673.1	1.52	1.03	
3,716.0	13.30	264.60	3,644.6	-119.4	-682.2	692.6	0.81	0.80	
3,804.0	13.40	261.40	3,730.2	-121.9	-702.3	712.8	0.85	0.11	
3,894.0	12.00	262.20	3,818.0	-124.7	-721.9	732.6	1.57	-1.56	
3,981.0	11.40	261.90	3,903.2	-127.2	-739.4	750.2	0.69	-0.69	
4,071.0	11.30	263.90	3,991.5	-129.4	-757.0	767.9	0.45	-0.11	
4,157.0	10.90	264.40	4,075.9	-131.1	-773.4	784.4	0.48	-0.47	
4,247.0	12.90	260.70	4,163.9	-133.5	-791.8	803.0	2.38	2.22	
4,335.0	15.70	259.40	4,249.2	-137.3	-813.2	824.7	3.20	3.18	
4,423.0	13.20	258.00	4,334.4	-141.6	-834.8	846.7	2.87	-2.84	
4,512.0	10.90	258.60	4,421.4	-145.3	-853.0	865.2	2.59	-2.58	
4,602.0	11.20	256.70	4,509.8	-149.0	-869.8	882.5	0.52	0.33	
4,692.0	9.80	255.00	4,598.2	-153.0	-885.7	898.8	1.59	-1.56	
4,780.0	8.60	256.70	4,685.1	-156.5	-899.3	912.9	1.40	-1.36	
4,867.0	12.70	258.20	4,770.6	-159.9	-915.0	928.9	4.72	4.71	
4,953.0	12.00	259.50	4,854.6	-163.5	-933.1	947.3	0.88	-0.81	
5,043.0	11.70	264.70	4,942.7	-166.0	-951.4	965.8	1.23	-0.33	
5,131.0	10.20	270.00	5,029.1	-166.9	-968.1	982.3	2.05	-1.70	
5,219.0	10.80	270.30	5,115.6	-166.8	-984.1	998.1	0.68	0.68	
5,307.0	11.30	267.00	5,202.0	-167.2	-1,000.9	1,014.8	0.92	0.57	
5,395.0	11.00	273.90	5,288.3	-167.1	-1,017.9	1,031.5	1.55	-0.34	
5,483.0	9.30	275.40	5,374.9	-165.9	-1,033.4	1,046.5	1.95	-1.93	
5,571.0	10.50	270.10	5,461.6	-165.2	-1,048.5	1,061.2	1.71	1.36	
5,660.0	15.40	271.60	5,548.4	-164.8	-1,068.4	1,080.8	5.52	5.50	
5,747.0	16.30	266.30	5,632.0	-165.3	-1,092.2	1,104.2	1.96	1.03	
5,834.0	14.40	261.80	5,715.9	-167.6	-1,115.0	1,127.2	2.58	-2.18	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Hidden Creek 12-29
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Site:	NESW Sec29-T2N-R67W (Hidden Creek)	MD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Well:	Hidden Creek 12-29	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
5,924.0	15.80	253.40	5,802.8	-172.7	-1,137.9	1,150.6	2.88	1.56	
6,013.0	15.00	247.00	5,888.7	-180.7	-1,160.1	1,173.8	2.11	-0.90	
6,101.0	15.50	252.50	5,973.6	-188.7	-1,181.8	1,196.6	1.74	0.57	
6,188.0	13.00	256.60	6,057.9	-194.5	-1,202.4	1,217.9	3.10	-2.87	
6,277.0	10.30	264.30	6,145.0	-197.6	-1,220.1	1,235.8	3.49	-3.03	
6,365.0	10.50	265.50	6,231.6	-199.0	-1,235.9	1,251.6	0.34	0.23	
6,453.0	10.00	270.00	6,318.2	-199.6	-1,251.5	1,267.1	1.07	-0.57	
6,543.0	10.40	270.70	6,406.8	-199.5	-1,267.4	1,282.8	0.47	0.44	
6,630.0	9.90	270.10	6,492.4	-199.4	-1,282.8	1,297.9	0.59	-0.57	
6,720.0	8.80	268.30	6,581.2	-199.6	-1,297.4	1,312.3	1.26	-1.22	
6,808.0	10.10	258.80	6,668.0	-201.3	-1,311.7	1,326.7	2.30	1.48	
6,897.0	8.50	256.90	6,755.8	-204.3	-1,325.8	1,341.1	1.83	-1.80	
6,987.0	6.30	256.50	6,845.1	-207.0	-1,337.0	1,352.6	2.45	-2.44	
7,077.0	4.20	259.60	6,934.7	-208.7	-1,345.1	1,360.9	2.35	-2.33	
7,164.0	3.30	265.40	7,021.5	-209.5	-1,350.7	1,366.5	1.12	-1.03	
7,254.0	2.50	276.30	7,111.4	-209.5	-1,355.2	1,371.0	1.08	-0.89	
7,341.0	1.20	303.10	7,198.4	-208.8	-1,357.9	1,373.5	1.76	-1.49	
7,431.0	1.80	102.10	7,288.3	-208.5	-1,357.3	1,372.9	3.28	0.67	
7,519.0	2.60	115.00	7,376.3	-209.7	-1,354.1	1,370.0	1.06	0.91	
7,607.0	3.60	128.90	7,464.1	-212.3	-1,350.2	1,366.5	1.41	1.14	
7,696.0	4.80	117.90	7,552.9	-215.8	-1,344.7	1,361.7	1.62	1.35	
7,784.0	3.30	92.90	7,640.7	-217.6	-1,338.9	1,356.4	2.59	-1.70	
7,872.0	1.60	64.80	7,728.6	-217.2	-1,335.3	1,352.7	2.31	-1.93	
7,962.0	1.30	51.20	7,818.6	-216.0	-1,333.4	1,350.6	0.51	-0.33	
8,049.0	2.00	61.00	7,905.5	-214.7	-1,331.3	1,348.3	0.86	0.80	
8,139.0	1.40	53.90	7,995.5	-213.3	-1,329.0	1,345.8	0.71	-0.67	
8,224.0	1.20	56.50	8,080.5	-212.2	-1,327.4	1,344.1	0.25	-0.24	
8,312.0	1.10	40.90	8,168.5	-211.0	-1,326.1	1,342.6	0.37	-0.11	
8,357.0	0.90	44.70	8,213.5	-210.4	-1,325.6	1,342.0	0.47	-0.44	Last Cathedral Survey @ 8,357' MD
8,415.0	0.64	49.60	8,271.5	-209.9	-1,325.0	1,341.3	0.46	-0.45	Projection to Bit @ 8,415'

Cathedral Energy Services

Survey Report

Company: Anadarko Petroleum Corporation	Local Co-ordinate Reference: Well Hidden Creek 12-29
Project: DJ Wattenberg	TVD Reference: KB=15' @ 5045.0ft (Xtreme 14)
Site: NESW Sec29-T2N-R67W (Hidden Creek)	MD Reference: KB=15' @ 5045.0ft (Xtreme 14)
Well: Hidden Creek 12-29	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target - Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Hidden Creek Ctr Legal - actual wellpath misses target center by 8686.5ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W400.0 H400.0 D0.0)	0.00	0.00	-8,430.0	-1,567.1	-1,390.8	1,281,244.01	3,161,822.51	40.103951	-104.921516
Hidden Creek 12-29 PBI - actual wellpath misses target center by 64.2ft at 8357.0ft MD (8213.5 TVD, -210.4 N, -1325.6 E) - Circle (radius 50.0)	0.00	0.00	8,218.0	-244.4	-1,379.8	1,282,566.80	3,161,824.80	40.107582	-104.921477
Hidden Creek Ctr Legal - actual wellpath misses target center by 8509.9ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W800.0 H800.0 D0.0)	0.00	0.00	-8,430.0	-915.2	-718.1	1,281,900.39	3,162,490.90	40.105741	-104.919111
Hidden Creek Ctr Legal - actual wellpath misses target center by 8546.6ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W400.0 H400.0 D0.0)	0.00	0.00	-8,430.0	-241.7	-1,386.1	1,282,569.44	3,161,818.50	40.107589	-104.921499
Hidden Creek Ctr Legal - actual wellpath misses target center by 8434.2ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W400.0 H400.0 D0.0)	0.00	0.00	-8,430.0	-257.8	-68.6	1,282,562.04	3,163,136.06	40.107545	-104.916789
Hidden Creek Ctr Legal - actual wellpath misses target center by 8577.6ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W400.0 H400.0 D0.0)	0.00	0.00	-8,430.0	-1,583.0	-72.8	1,281,236.84	3,163,140.64	40.103907	-104.916804

Design Annotations					
	Measured	Vertical	Local Coordinates		Comment
	Depth	Depth	+N/-S	+E/-W	
	(ft)	(ft)	(ft)	(ft)	
	8,357.0	8,213.5	-210.4	-1,325.6	Last Cathedral Survey @ 8,357' MD
	8,415.0	8,271.5	-209.9	-1,325.0	Projection to Bit @ 8,415'

Checked By: _____	Approved By: _____	Date: _____
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