



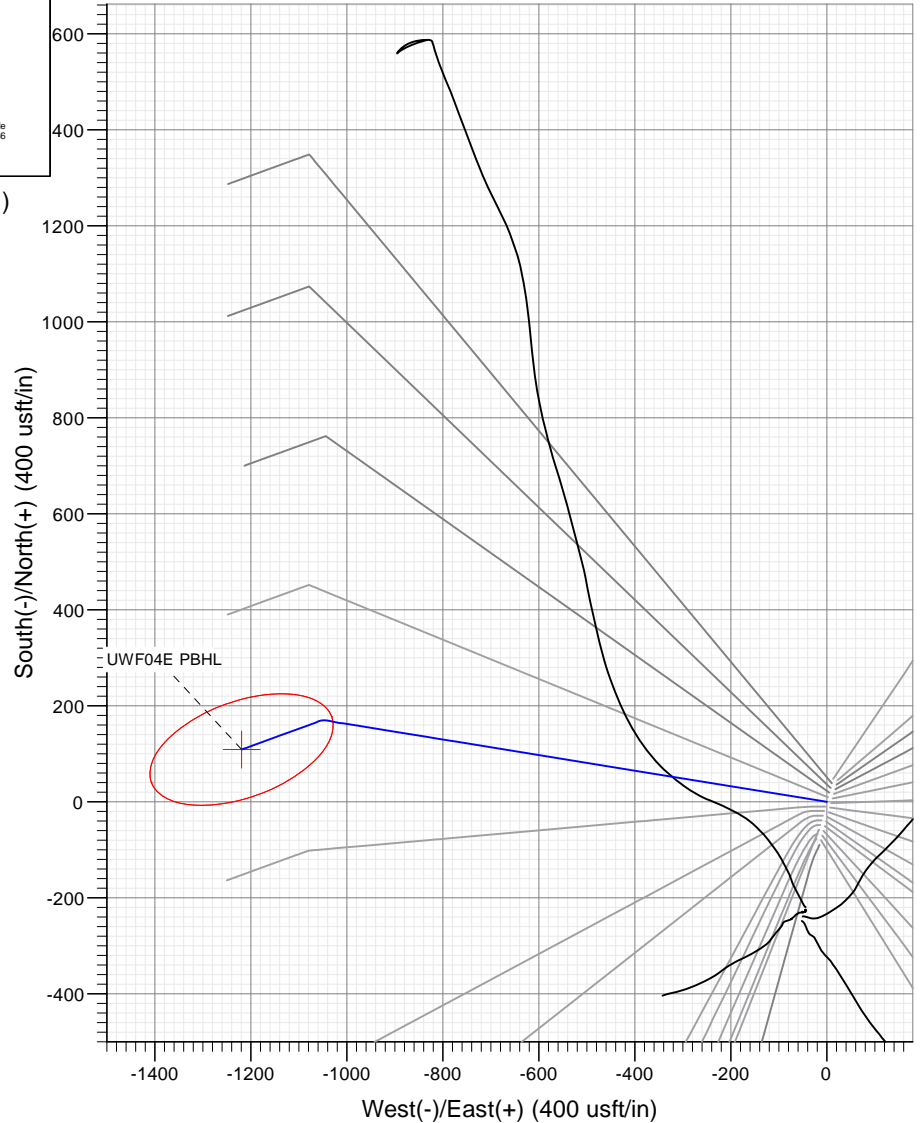
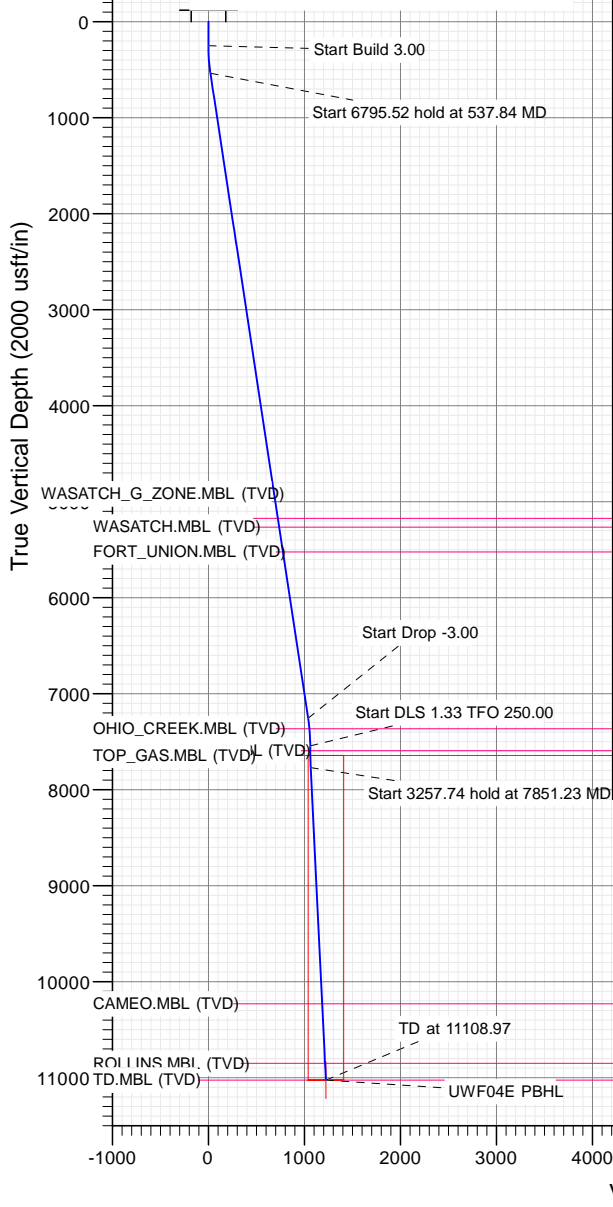
## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	537.84	8.64	279.23	536.76	3.47	-21.37	3.00	279.23	21.59	
4	7333.37	8.64	279.23	7255.24	167.14	-1028.47	0.00	0.00	1039.27	
5	7621.21	0.00	0.00	7542.00	170.61	-1049.84	3.00	180.00	1060.86	
6	7851.23	3.06	250.00	7771.91	168.51	-1055.62	1.33	250.00	1066.43	
7	11108.97	3.06	250.00	11025.00	108.97	-1219.17	0.00	0.00	1224.03	UWF04E PBHL

PLAN #1  
UWF04E-04H H04 596  
30 KS @ 8300.00ust  
Ground Level @ 8270.00  
NAD 1987 - Western US  
Well UWF04E-04H H04 596, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From
TD	No Target (Freehand)	275.11	Slot	0.00	0.00	0.00	TVD
Name	UWF04E PBHL	TVD	+N/-S	+E/-W	Latitude	Longitude	
		11025.00	108.97	-1219.17	39.646431	-108.168666	

Project: Garfield County, CO (UTM 12N)  
Site: S4-T5S-R96W (H04)  
Well: UWF04E-04H H04 596  
Wellbore: OH  
Design: PLAN #1



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5172.00	5226.24	WASATCH_G_ZONE.MBL (TVD)
5264.00	5319.29	WASATCH.MBL (TVD)
5522.00	5580.25	FORT_UNION.MBL (TVD)
7365.00	7443.96	OHIO_CREEK.MBL (TVD)
7592.00	7671.21	WILLIAMS_FORK.MBL (TVD)
7642.00	7721.22	TOP_GAS.MBL (TVD)
10230.00	10312.84	CAMEO.MBL (TVD)
10850.00	10933.72	ROLLINS.MBL (TVD)
11025.00	11108.97	TD.MBL (TVD)



Azimuths to True North  
Magnetic North: 9.72°

Magnetic Field  
Strength: 51509.4snT  
Dip Angle: 65.93°  
Date: 8/31/2017  
Model: HDGM

Vertical Section at 275.11° (2000 usft/in)

WELL DETAILS: UWF04E-04H H04 596

8270.00  
+N/-S 0.00 +E/-W 0.00 Northing 14409802.90 Easting 2438712.50 Latitude 39.646132 Longitude -108.164338

CATHEDRAL



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well UWF04E-04H H04 596
<b>Company:</b>	Caerus Oil & Gas	<b>TVD Reference:</b>	30' KB @ 8300.00usft
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8300.00usft
<b>Site:</b>	S4-T5S-R96W (H04)	<b>North Reference:</b>	True
<b>Well:</b>	UWF04E-04H H04 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

<b>Project</b>	Garfield County, CO (UTM 12N)		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 - Western US		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

Site		S4-T5S-R96W (H04)			
Site Position:		Northing:	14,409,713.20 usft	Latitude:	39.645887
From:	Map	Easting:	2,438,700.39 usft	Longitude:	-108.164391
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.81 °

Well	UWF04E-04H H04 596					
Well Position	+N/-S	0.00 usft	Northing:	14,409,802.90 usft	Latitude:	39.646132
	+E/-W	0.00 usft	Easting:	2,438,712.50 usft	Longitude:	-108.164338
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	8,270.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	HDGM	8/31/2017	9.72	65.93	51,509.40000000

<b>Design</b>	PLAN #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	275.11

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
537.84	8.64	279.23	536.76	3.47	-21.37	3.00	3.00	0.00	279.23	
7,333.37	8.64	279.23	7,255.24	167.14	-1,028.47	0.00	0.00	0.00	0.00	
7,621.21	0.00	0.00	7,542.00	170.61	-1,049.84	3.00	-3.00	0.00	180.00	
7,851.23	3.06	250.00	7,771.91	168.51	-1,055.62	1.33	1.33	-47.82	250.00	
11,108.97	3.06	250.00	11,025.00	108.97	-1,219.17	0.00	0.00	0.00	0.00	UWF04E PBHL

# Cathedral Energy Services

## Planning Report

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<b>Company:</b>	Caerus Oil & Gas	<b>TVD Reference:</b>	30' KB @ 8300.00usft
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8300.00usft
<b>Site:</b>	S4-T5S-R96W (H04)	<b>North Reference:</b>	True
<b>Well:</b>	UWF04E-04H H04 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
300.00	1.50	279.23	299.99	0.10	-0.65	0.65	3.00	3.00	
400.00	4.50	279.23	399.85	0.94	-5.81	5.87	3.00	3.00	
500.00	7.50	279.23	499.29	2.62	-16.13	16.30	3.00	3.00	
537.84	8.64	279.23	536.76	3.47	-21.37	21.59	3.00	3.00	
600.00	8.64	279.23	598.21	4.97	-30.58	30.90	0.00	0.00	
700.00	8.64	279.23	697.07	7.38	-45.40	45.88	0.00	0.00	
800.00	8.64	279.23	795.94	9.79	-60.22	60.85	0.00	0.00	
900.00	8.64	279.23	894.81	12.20	-75.04	75.83	0.00	0.00	
1,000.00	8.64	279.23	993.67	14.60	-89.86	90.80	0.00	0.00	
1,100.00	8.64	279.23	1,092.54	17.01	-104.68	105.78	0.00	0.00	
1,200.00	8.64	279.23	1,191.41	19.42	-119.50	120.76	0.00	0.00	
1,300.00	8.64	279.23	1,290.27	21.83	-134.32	135.73	0.00	0.00	
1,400.00	8.64	279.23	1,389.14	24.24	-149.14	150.71	0.00	0.00	
1,500.00	8.64	279.23	1,488.00	26.65	-163.96	165.68	0.00	0.00	
1,600.00	8.64	279.23	1,586.87	29.05	-178.78	180.66	0.00	0.00	
1,700.00	8.64	279.23	1,685.74	31.46	-193.60	195.63	0.00	0.00	
1,800.00	8.64	279.23	1,784.60	33.87	-208.42	210.61	0.00	0.00	
1,900.00	8.64	279.23	1,883.47	36.28	-223.24	225.59	0.00	0.00	
2,000.00	8.64	279.23	1,982.34	38.69	-238.06	240.56	0.00	0.00	
2,100.00	8.64	279.23	2,081.20	41.10	-252.88	255.54	0.00	0.00	
2,200.00	8.64	279.23	2,180.07	43.50	-267.70	270.51	0.00	0.00	
2,300.00	8.64	279.23	2,278.94	45.91	-282.52	285.49	0.00	0.00	
2,400.00	8.64	279.23	2,377.80	48.32	-297.34	300.46	0.00	0.00	
2,500.00	8.64	279.23	2,476.67	50.73	-312.16	315.44	0.00	0.00	
2,600.00	8.64	279.23	2,575.53	53.14	-326.98	330.41	0.00	0.00	
2,700.00	8.64	279.23	2,674.40	55.55	-341.80	345.39	0.00	0.00	
2,800.00	8.64	279.23	2,773.27	57.95	-356.62	360.37	0.00	0.00	
2,900.00	8.64	279.23	2,872.13	60.36	-371.44	375.34	0.00	0.00	
3,000.00	8.64	279.23	2,971.00	62.77	-386.26	390.32	0.00	0.00	
3,100.00	8.64	279.23	3,069.87	65.18	-401.08	405.29	0.00	0.00	
3,200.00	8.64	279.23	3,168.73	67.59	-415.90	420.27	0.00	0.00	
3,300.00	8.64	279.23	3,267.60	70.00	-430.72	435.24	0.00	0.00	
3,400.00	8.64	279.23	3,366.47	72.41	-445.54	450.22	0.00	0.00	
3,500.00	8.64	279.23	3,465.33	74.81	-460.36	465.20	0.00	0.00	
3,600.00	8.64	279.23	3,564.20	77.22	-475.18	480.17	0.00	0.00	
3,700.00	8.64	279.23	3,663.07	79.63	-490.00	495.15	0.00	0.00	
3,800.00	8.64	279.23	3,761.93	82.04	-504.82	510.12	0.00	0.00	
3,900.00	8.64	279.23	3,860.80	84.45	-519.64	525.10	0.00	0.00	
4,000.00	8.64	279.23	3,959.66	86.86	-534.46	540.07	0.00	0.00	
4,100.00	8.64	279.23	4,058.53	89.26	-549.28	555.05	0.00	0.00	
4,200.00	8.64	279.23	4,157.40	91.67	-564.10	570.02	0.00	0.00	
4,300.00	8.64	279.23	4,256.26	94.08	-578.92	585.00	0.00	0.00	
4,400.00	8.64	279.23	4,355.13	96.49	-593.74	599.98	0.00	0.00	
4,500.00	8.64	279.23	4,454.00	98.90	-608.56	614.95	0.00	0.00	
4,600.00	8.64	279.23	4,552.86	101.31	-623.38	629.93	0.00	0.00	
4,700.00	8.64	279.23	4,651.73	103.71	-638.20	644.90	0.00	0.00	
4,800.00	8.64	279.23	4,750.60	106.12	-653.02	659.88	0.00	0.00	
4,900.00	8.64	279.23	4,849.46	108.53	-667.84	674.85	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well UWF04E-04H H04 596
<b>Company:</b>	Caerus Oil & Gas	<b>TVD Reference:</b>	30' KB @ 8300.00usft
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8300.00usft
<b>Site:</b>	S4-T5S-R96W (H04)	<b>North Reference:</b>	True
<b>Well:</b>	UWF04E-04H H04 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,000.00	8.64	279.23	4,948.33	110.94	-682.66	689.83	0.00	0.00	
5,100.00	8.64	279.23	5,047.19	113.35	-697.48	704.81	0.00	0.00	
5,200.00	8.64	279.23	5,146.06	115.76	-712.30	719.78	0.00	0.00	
5,226.24	8.64	279.23	5,172.00	116.39	-716.19	723.71	0.00	0.00	WASATCH_G_ZONE.MBL (TVD)
5,300.00	8.64	279.23	5,244.93	118.17	-727.12	734.76	0.00	0.00	
5,319.29	8.64	279.23	5,264.00	118.63	-729.98	737.65	0.00	0.00	WASATCH.MBL (TVD)
5,400.00	8.64	279.23	5,343.79	120.57	-741.94	749.73	0.00	0.00	
5,500.00	8.64	279.23	5,442.66	122.98	-756.76	764.71	0.00	0.00	
5,580.25	8.64	279.23	5,522.00	124.91	-768.66	776.73	0.00	0.00	FORT_UNION.MBL (TVD)
5,600.00	8.64	279.23	5,541.53	125.39	-771.58	779.68	0.00	0.00	
5,700.00	8.64	279.23	5,640.39	127.80	-786.40	794.66	0.00	0.00	
5,800.00	8.64	279.23	5,739.26	130.21	-801.22	809.63	0.00	0.00	
5,900.00	8.64	279.23	5,838.13	132.62	-816.04	824.61	0.00	0.00	
6,000.00	8.64	279.23	5,936.99	135.02	-830.86	839.59	0.00	0.00	
6,100.00	8.64	279.23	6,035.86	137.43	-845.68	854.56	0.00	0.00	
6,200.00	8.64	279.23	6,134.73	139.84	-860.50	869.54	0.00	0.00	
6,300.00	8.64	279.23	6,233.59	142.25	-875.32	884.51	0.00	0.00	
6,400.00	8.64	279.23	6,332.46	144.66	-890.14	899.49	0.00	0.00	
6,500.00	8.64	279.23	6,431.32	147.07	-904.96	914.46	0.00	0.00	
6,600.00	8.64	279.23	6,530.19	149.47	-919.78	929.44	0.00	0.00	
6,700.00	8.64	279.23	6,629.06	151.88	-934.60	944.42	0.00	0.00	
6,800.00	8.64	279.23	6,727.92	154.29	-949.42	959.39	0.00	0.00	
6,900.00	8.64	279.23	6,826.79	156.70	-964.24	974.37	0.00	0.00	
7,000.00	8.64	279.23	6,925.66	159.11	-979.07	989.34	0.00	0.00	
7,100.00	8.64	279.23	7,024.52	161.52	-993.89	1,004.32	0.00	0.00	
7,200.00	8.64	279.23	7,123.39	163.93	-1,008.71	1,019.29	0.00	0.00	
7,300.00	8.64	279.23	7,222.26	166.33	-1,023.53	1,034.27	0.00	0.00	
7,333.37	8.64	279.23	7,255.24	167.14	-1,028.47	1,039.27	0.00	0.00	
7,400.00	6.64	279.23	7,321.28	168.56	-1,037.21	1,048.10	3.00	-3.00	
7,443.96	5.32	279.23	7,365.00	169.29	-1,041.73	1,052.66	3.00	-3.00	OHIO_CREEK.MBL (TVD)
7,500.00	3.64	279.23	7,420.87	169.99	-1,046.04	1,057.02	3.00	-3.00	
7,600.00	0.64	279.23	7,520.79	170.59	-1,049.72	1,060.74	3.00	-3.00	
7,621.21	0.00	0.00	7,542.00	170.61	-1,049.84	1,060.86	3.00	-3.00	
7,671.21	0.67	250.00	7,592.00	170.51	-1,050.11	1,061.12	1.33	1.33	WILLIAMS_FORK.MBL (TVD)
7,700.00	1.05	250.00	7,620.78	170.36	-1,050.52	1,061.51	1.33	1.33	
7,721.22	1.33	250.00	7,642.00	170.21	-1,050.93	1,061.91	1.33	1.33	TOP_GAS.MBL (TVD)
7,800.00	2.38	250.00	7,720.74	169.34	-1,053.33	1,064.22	1.33	1.33	
7,851.23	3.06	250.00	7,771.91	168.51	-1,055.62	1,066.43	1.33	1.33	
7,900.00	3.06	250.00	7,820.61	167.62	-1,058.06	1,068.78	0.00	0.00	
8,000.00	3.06	250.00	7,920.47	165.79	-1,063.08	1,073.62	0.00	0.00	
8,100.00	3.06	250.00	8,020.32	163.96	-1,068.10	1,078.46	0.00	0.00	
8,200.00	3.06	250.00	8,120.18	162.13	-1,073.12	1,083.30	0.00	0.00	
8,300.00	3.06	250.00	8,220.04	160.31	-1,078.15	1,088.14	0.00	0.00	
8,400.00	3.06	250.00	8,319.90	158.48	-1,083.17	1,092.97	0.00	0.00	
8,500.00	3.06	250.00	8,419.75	156.65	-1,088.19	1,097.81	0.00	0.00	
8,600.00	3.06	250.00	8,519.61	154.82	-1,093.21	1,102.65	0.00	0.00	
8,700.00	3.06	250.00	8,619.47	153.00	-1,098.23	1,107.49	0.00	0.00	
8,800.00	3.06	250.00	8,719.32	151.17	-1,103.25	1,112.32	0.00	0.00	
8,900.00	3.06	250.00	8,819.18	149.34	-1,108.27	1,117.16	0.00	0.00	
9,000.00	3.06	250.00	8,919.04	147.51	-1,113.29	1,122.00	0.00	0.00	
9,100.00	3.06	250.00	9,018.90	145.68	-1,118.31	1,126.84	0.00	0.00	
9,200.00	3.06	250.00	9,118.75	143.86	-1,123.33	1,131.68	0.00	0.00	

# Cathedral Energy Services

## Planning Report

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<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8300.00usft
<b>Site:</b>	S4-T5S-R96W (H04)	<b>North Reference:</b>	True
<b>Well:</b>	UWF04E-04H H04 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,300.00	3.06	250.00	9,218.61	142.03	-1,128.35	1,136.51	0.00	0.00	
9,400.00	3.06	250.00	9,318.47	140.20	-1,133.37	1,141.35	0.00	0.00	
9,500.00	3.06	250.00	9,418.32	138.37	-1,138.39	1,146.19	0.00	0.00	
9,600.00	3.06	250.00	9,518.18	136.55	-1,143.41	1,151.03	0.00	0.00	
9,700.00	3.06	250.00	9,618.04	134.72	-1,148.43	1,155.86	0.00	0.00	
9,800.00	3.06	250.00	9,717.90	132.89	-1,153.45	1,160.70	0.00	0.00	
9,900.00	3.06	250.00	9,817.75	131.06	-1,158.47	1,165.54	0.00	0.00	
10,000.00	3.06	250.00	9,917.61	129.24	-1,163.49	1,170.38	0.00	0.00	
10,100.00	3.06	250.00	10,017.47	127.41	-1,168.51	1,175.21	0.00	0.00	
10,200.00	3.06	250.00	10,117.32	125.58	-1,173.53	1,180.05	0.00	0.00	
10,300.00	3.06	250.00	10,217.18	123.75	-1,178.55	1,184.89	0.00	0.00	
10,312.84	3.06	250.00	10,230.00	123.52	-1,179.20	1,185.51	0.00	0.00	CAMEO.MBL (TVD)
10,400.00	3.06	250.00	10,317.04	121.93	-1,183.57	1,189.73	0.00	0.00	
10,500.00	3.06	250.00	10,416.90	120.10	-1,188.59	1,194.57	0.00	0.00	
10,600.00	3.06	250.00	10,516.75	118.27	-1,193.61	1,199.40	0.00	0.00	
10,700.00	3.06	250.00	10,616.61	116.44	-1,198.63	1,204.24	0.00	0.00	
10,800.00	3.06	250.00	10,716.47	114.61	-1,203.65	1,209.08	0.00	0.00	
10,900.00	3.06	250.00	10,816.33	112.79	-1,208.67	1,213.92	0.00	0.00	
10,933.72	3.06	250.00	10,850.00	112.17	-1,210.37	1,215.55	0.00	0.00	ROLLINS.MBL (TVD)
11,000.00	3.06	250.00	10,916.18	110.96	-1,213.70	1,218.75	0.00	0.00	
11,100.00	3.06	250.00	11,016.04	109.13	-1,218.72	1,223.59	0.00	0.00	
11,108.97	3.06	250.00	11,025.00	108.97	-1,219.17	1,224.03	0.00	0.00	TD.MBL (TVD)

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
UWF04E PBHL	0.00	0.00	11,025.00	108.97	-1,219.17	14,409,873.30	2,437,490.50	39.646431	-108.168666
- plan hits target center									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									

### Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,226.24	5,172.00	WASATCH_G_ZONE.MBL (TVD)			
5,319.29	5,264.00	WASATCH.MBL (TVD)			
5,580.25	5,522.00	FORT_UNION.MBL (TVD)			
7,443.96	7,365.00	OHIO_CREEK.MBL (TVD)			
7,671.21	7,592.00	WILLIAMS_FORK.MBL (TVD)			
7,721.22	7,642.00	TOP_GAS.MBL (TVD)			
10,312.84	10,230.00	CAMEO.MBL (TVD)			
10,933.72	10,850.00	ROLLINS.MBL (TVD)			
11,108.97	11,025.00	TD.MBL (TVD)			