

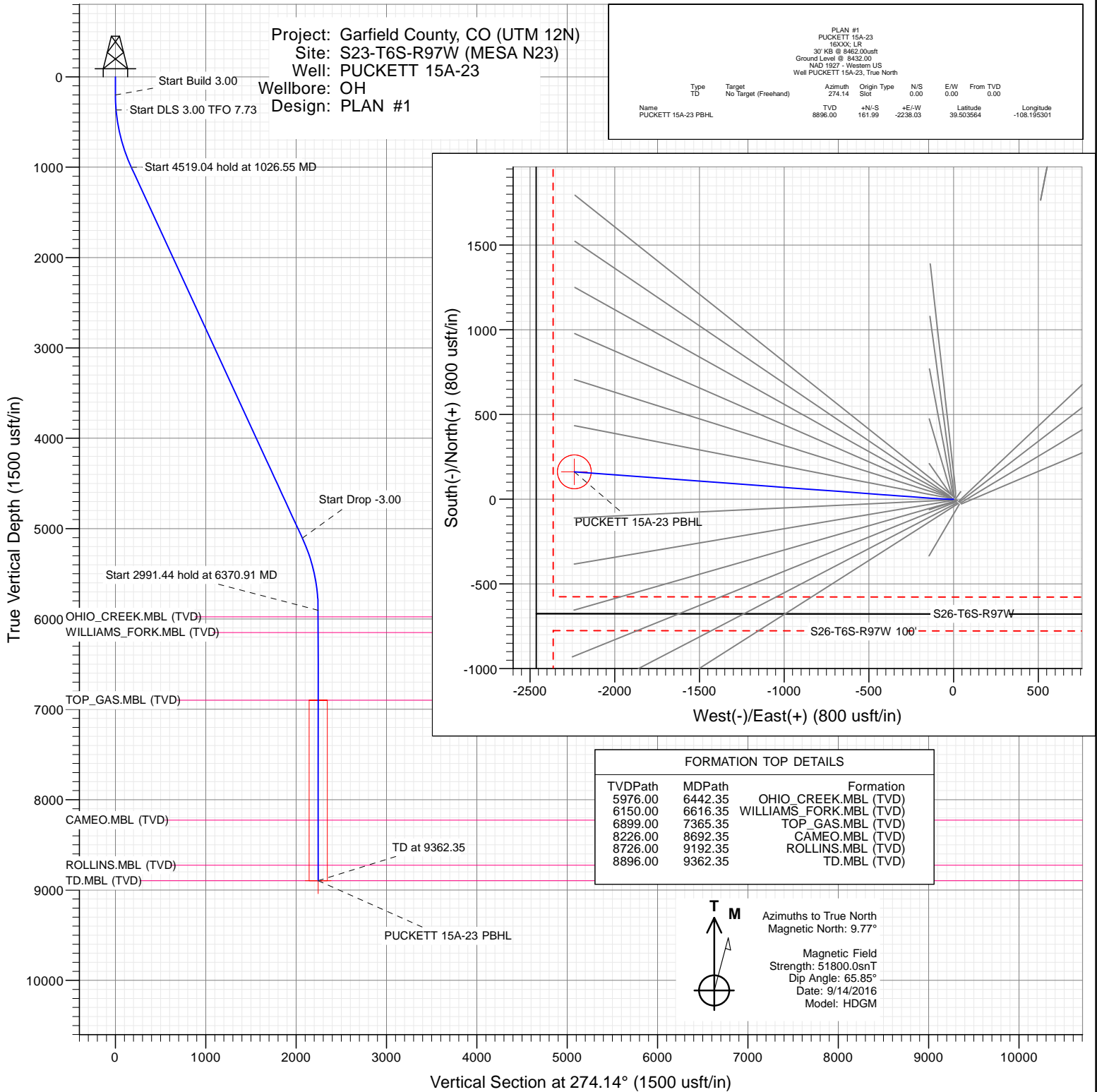


## SECTION DETAILS

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	366.67	5.00	268.00	366.46	-0.25	-7.26	3.00	268.00	7.23	
4	1026.55	24.76	274.24	1001.08	9.05	-175.48	3.00	7.73	175.68	
5	5545.59	24.76	274.24	5104.69	149.01	-2062.94	0.00	0.00	2068.32	
6	6370.91	0.00	0.00	5904.56	161.99	-2238.03	3.00	180.00	2243.89	
7	9362.35	0.00	0.00	8896.00	161.99	-2238.03	0.00	0.00	2243.89	PUCKETT 15A-23 PBHL

Project: Garfield County, CO (UTM 12N)  
Site: S23-T6S-R97W (MESA N23)  
Well: PUCKETT 15A-23  
Wellbore: OH  
Design: PLAN #1

PLAN #1						
PUCKETT 15A-23						
16XX LR						
30' KB @ 8462.00msh						
Ground Level @ 8452.00						
NAD 1927 - Western US						
Well PUCKETT 15A-23, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
TD	No Target (Freehand)	274.14	Slot		0.00	0.00
Name		TVD	+N/-S	+E/-W	Latitude	Longitude
PUCKETT 15A-23 PBHL		8896.00	161.99	-2238.03	39.503564	-108.195301



## WELL DETAILS: PUCKETT 15A-23

+N/-S	+E/-W	Northing	Ground Level:	8432.00	Latitude	Longitude
0.00	0.00	14357515.00	Easting	2433857.00	39.503119	-108.187373

CATHEDRAL



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 15A-23
<b>Company:</b>	Caerus Oil & Gas	<b>TVD Reference:</b>	30' KB @ 8462.00usft
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8462.00usft
<b>Site:</b>	S23-T6S-R97W (MESA N23)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 15A-23	<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		S23-T6S-R97W (MESA N23)			
Site Position:		Northing:	14,357,518.00 usft	Latitude:	39.503127
From:	Map	Easting:	2,433,869.00 usft	Longitude:	-108.187330
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.79 °

Well	PUCKETT 15A-23					
Well Position	+N/-S	0.00 usft	Northing:	14,357,515.00 usft	Latitude:	39.503119
	+E/-W	0.00 usft	Easting:	2,433,857.00 usft	Longitude:	-108.187373
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	8,432.00 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	9/14/2016	9.77	65.85	51,800

<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	274.14

<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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
366.67	5.00	268.00	366.46	-0.25	-7.26	3.00	3.00	0.00	268.00	
1,026.55	24.76	274.24	1,001.08	9.05	-175.48	3.00	2.99	0.95	7.73	
5,545.59	24.76	274.24	5,104.69	149.01	-2,062.94	0.00	0.00	0.00	0.00	
6,370.91	0.00	0.00	5,904.56	161.99	-2,238.03	3.00	-3.00	0.00	180.00	
9,362.35	0.00	0.00	8,896.00	161.99	-2,238.03	0.00	0.00	0.00	0.00	PUCKETT 15A-23 PE

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 15A-23
<b>Company:</b>	Caerus Oil & Gas	<b>TVD Reference:</b>	30' KB @ 8462.00usft
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8462.00usft
<b>Site:</b>	S23-T6S-R97W (MESA N23)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 15A-23	<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	Start Build 3.00
300.00	3.00	268.00	299.95	-0.09	-2.62	2.60	3.00	3.00	
366.67	5.00	268.00	366.46	-0.25	-7.26	7.23	3.00	3.00	Start DLS 3.00 TFO 7.73
400.00	5.99	269.29	399.63	-0.33	-10.45	10.40	3.00	2.98	
500.00	8.98	271.44	498.77	-0.19	-23.48	23.40	3.00	2.99	
600.00	11.97	272.53	597.09	0.46	-41.65	41.57	3.00	2.99	
700.00	14.97	273.18	694.33	1.64	-64.91	64.86	3.00	3.00	
800.00	17.97	273.63	790.22	3.33	-93.21	93.20	3.00	3.00	
900.00	20.97	273.94	884.49	5.54	-126.45	126.52	3.00	3.00	
1,000.00	23.96	274.19	976.89	8.25	-164.56	164.73	3.00	3.00	
1,026.55	24.76	274.24	1,001.08	9.05	-175.48	175.68	3.00	3.00	Start 4519.04 hold at 1026.55 MD
1,100.00	24.76	274.24	1,067.78	11.33	-206.16	206.44	0.00	0.00	
1,200.00	24.76	274.24	1,158.58	14.43	-247.93	248.32	0.00	0.00	
1,300.00	24.76	274.24	1,249.39	17.52	-289.70	290.21	0.00	0.00	
1,400.00	24.76	274.24	1,340.20	20.62	-331.46	332.09	0.00	0.00	
1,500.00	24.76	274.24	1,431.00	23.72	-373.23	373.97	0.00	0.00	
1,600.00	24.76	274.24	1,521.81	26.81	-415.00	415.85	0.00	0.00	
1,700.00	24.76	274.24	1,612.62	29.91	-456.76	457.73	0.00	0.00	
1,800.00	24.76	274.24	1,703.43	33.01	-498.53	499.61	0.00	0.00	
1,900.00	24.76	274.24	1,794.23	36.10	-540.30	541.49	0.00	0.00	
2,000.00	24.76	274.24	1,885.04	39.20	-582.06	583.38	0.00	0.00	
2,100.00	24.76	274.24	1,975.85	42.30	-623.83	625.26	0.00	0.00	
2,200.00	24.76	274.24	2,066.65	45.40	-665.60	667.14	0.00	0.00	
2,300.00	24.76	274.24	2,157.46	48.49	-707.36	709.02	0.00	0.00	
2,400.00	24.76	274.24	2,248.27	51.59	-749.13	750.90	0.00	0.00	
2,500.00	24.76	274.24	2,339.08	54.69	-790.90	792.78	0.00	0.00	
2,600.00	24.76	274.24	2,429.88	57.78	-832.67	834.66	0.00	0.00	
2,700.00	24.76	274.24	2,520.69	60.88	-874.43	876.55	0.00	0.00	
2,800.00	24.76	274.24	2,611.50	63.98	-916.20	918.43	0.00	0.00	
2,900.00	24.76	274.24	2,702.30	67.08	-957.97	960.31	0.00	0.00	
3,000.00	24.76	274.24	2,793.11	70.17	-999.73	1,002.19	0.00	0.00	
3,100.00	24.76	274.24	2,883.92	73.27	-1,041.50	1,044.07	0.00	0.00	
3,200.00	24.76	274.24	2,974.73	76.37	-1,083.27	1,085.95	0.00	0.00	
3,300.00	24.76	274.24	3,065.53	79.46	-1,125.03	1,127.83	0.00	0.00	
3,400.00	24.76	274.24	3,156.34	82.56	-1,166.80	1,169.72	0.00	0.00	
3,500.00	24.76	274.24	3,247.15	85.66	-1,208.57	1,211.60	0.00	0.00	
3,600.00	24.76	274.24	3,337.95	88.75	-1,250.33	1,253.48	0.00	0.00	
3,700.00	24.76	274.24	3,428.76	91.85	-1,292.10	1,295.36	0.00	0.00	
3,800.00	24.76	274.24	3,519.57	94.95	-1,333.87	1,337.24	0.00	0.00	
3,900.00	24.76	274.24	3,610.38	98.05	-1,375.63	1,379.12	0.00	0.00	
4,000.00	24.76	274.24	3,701.18	101.14	-1,417.40	1,421.00	0.00	0.00	
4,100.00	24.76	274.24	3,791.99	104.24	-1,459.17	1,462.89	0.00	0.00	
4,200.00	24.76	274.24	3,882.80	107.34	-1,500.93	1,504.77	0.00	0.00	
4,300.00	24.76	274.24	3,973.61	110.43	-1,542.70	1,546.65	0.00	0.00	
4,400.00	24.76	274.24	4,064.41	113.53	-1,584.47	1,588.53	0.00	0.00	
4,500.00	24.76	274.24	4,155.22	116.63	-1,626.23	1,630.41	0.00	0.00	
4,600.00	24.76	274.24	4,246.03	119.72	-1,668.00	1,672.29	0.00	0.00	
4,700.00	24.76	274.24	4,336.83	122.82	-1,709.77	1,714.17	0.00	0.00	
4,800.00	24.76	274.24	4,427.64	125.92	-1,751.54	1,756.06	0.00	0.00	
4,900.00	24.76	274.24	4,518.45	129.02	-1,793.30	1,797.94	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 PUCKETT 15A-23
<b>Company:</b>	Caerus Oil & Gas	<b>TVD Reference:</b>	30' KB @ 8462.00usft
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8462.00usft
<b>Site:</b>	S23-T6S-R97W (MESA N23)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 15A-23	<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	24.76	274.24	4,609.26	132.11	-1,835.07	1,839.82	0.00	0.00	
5,100.00	24.76	274.24	4,700.06	135.21	-1,876.84	1,881.70	0.00	0.00	
5,200.00	24.76	274.24	4,790.87	138.31	-1,918.60	1,923.58	0.00	0.00	
5,300.00	24.76	274.24	4,881.68	141.40	-1,960.37	1,965.46	0.00	0.00	
5,400.00	24.76	274.24	4,972.48	144.50	-2,002.14	2,007.34	0.00	0.00	
5,500.00	24.76	274.24	5,063.29	147.60	-2,043.90	2,049.23	0.00	0.00	
5,545.59	24.76	274.24	5,104.69	149.01	-2,062.94	2,068.32	0.00	0.00	Start Drop -3.00
5,600.00	23.13	274.24	5,154.42	150.64	-2,084.96	2,090.40	3.00	-3.00	
5,700.00	20.13	274.24	5,247.37	153.37	-2,121.72	2,127.25	3.00	-3.00	
5,800.00	17.13	274.24	5,342.12	155.73	-2,153.57	2,159.19	3.00	-3.00	
5,900.00	14.13	274.24	5,438.41	157.72	-2,180.43	2,186.12	3.00	-3.00	
6,000.00	11.13	274.24	5,535.98	159.34	-2,202.23	2,207.98	3.00	-3.00	
6,100.00	8.13	274.24	5,634.56	160.57	-2,218.90	2,224.70	3.00	-3.00	
6,200.00	5.13	274.24	5,733.88	161.43	-2,230.41	2,236.24	3.00	-3.00	
6,300.00	2.13	274.24	5,833.67	161.90	-2,236.72	2,242.57	3.00	-3.00	
6,370.91	0.00	0.00	5,904.56	161.99	-2,238.03	2,243.89	3.00	-3.00	Start 2991.44 hold at 6370.91 MD
6,400.00	0.00	0.00	5,933.65	161.99	-2,238.03	2,243.89	0.00	0.00	
6,442.35	0.00	0.00	5,976.00	161.99	-2,238.03	2,243.89	0.00	0.00	OHIO_CREEK.MBL (TVD)
6,500.00	0.00	0.00	6,033.65	161.99	-2,238.03	2,243.89	0.00	0.00	
6,600.00	0.00	0.00	6,133.65	161.99	-2,238.03	2,243.89	0.00	0.00	
6,616.35	0.00	0.00	6,150.00	161.99	-2,238.03	2,243.89	0.00	0.00	WILLIAMS_FORK.MBL (TVD)
6,700.00	0.00	0.00	6,233.65	161.99	-2,238.03	2,243.89	0.00	0.00	
6,800.00	0.00	0.00	6,333.65	161.99	-2,238.03	2,243.89	0.00	0.00	
6,900.00	0.00	0.00	6,433.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,000.00	0.00	0.00	6,533.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,100.00	0.00	0.00	6,633.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,200.00	0.00	0.00	6,733.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,300.00	0.00	0.00	6,833.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,365.35	0.00	0.00	6,899.00	161.99	-2,238.03	2,243.89	0.00	0.00	TOP_GAS.MBL (TVD)
7,400.00	0.00	0.00	6,933.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,500.00	0.00	0.00	7,033.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,600.00	0.00	0.00	7,133.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,700.00	0.00	0.00	7,233.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,800.00	0.00	0.00	7,333.65	161.99	-2,238.03	2,243.89	0.00	0.00	
7,900.00	0.00	0.00	7,433.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,000.00	0.00	0.00	7,533.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,100.00	0.00	0.00	7,633.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,200.00	0.00	0.00	7,733.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,300.00	0.00	0.00	7,833.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,400.00	0.00	0.00	7,933.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,500.00	0.00	0.00	8,033.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,600.00	0.00	0.00	8,133.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,692.35	0.00	0.00	8,226.00	161.99	-2,238.03	2,243.89	0.00	0.00	CAMEO.MBL (TVD)
8,700.00	0.00	0.00	8,233.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,800.00	0.00	0.00	8,333.65	161.99	-2,238.03	2,243.89	0.00	0.00	
8,900.00	0.00	0.00	8,433.65	161.99	-2,238.03	2,243.89	0.00	0.00	
9,000.00	0.00	0.00	8,533.65	161.99	-2,238.03	2,243.89	0.00	0.00	
9,100.00	0.00	0.00	8,633.65	161.99	-2,238.03	2,243.89	0.00	0.00	
9,192.35	0.00	0.00	8,726.00	161.99	-2,238.03	2,243.89	0.00	0.00	ROLLINS.MBL (TVD)
9,200.00	0.00	0.00	8,733.65	161.99	-2,238.03	2,243.89	0.00	0.00	
9,300.00	0.00	0.00	8,833.65	161.99	-2,238.03	2,243.89	0.00	0.00	
9,362.35	0.00	0.00	8,896.00	161.99	-2,238.03	2,243.89	0.00	0.00	TD at 9362.35 - TD.MBL (TVD)

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 15A-23
<b>Company:</b>	Caerus Oil & Gas	<b>TVD Reference:</b>	30' KB @ 8462.00usft
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>MD Reference:</b>	30' KB @ 8462.00usft
<b>Site:</b>	S23-T6S-R97W (MESA N23)	<b>North Reference:</b>	True
<b>Well:</b>	PUCKETT 15A-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
PUCKETT 15A-23 PBHL	0.00	0.00	8,896.00	161.99	-2,238.03	14,357,607.00	2,431,615.00	39.503564	-108.195301
- plan hits target center									
- Circle (radius 100.00)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
6,442.35	5,976.00	OHIO_CREEK.MBL (TVD)				
6,616.35	6,150.00	WILLIAMS_FORK.MBL (TVD)				
7,365.35	6,899.00	TOP_GAS.MBL (TVD)				
8,692.35	8,226.00	CAMEO.MBL (TVD)				
9,192.35	8,726.00	ROLLINS.MBL (TVD)				
9,362.35	8,896.00	TD.MBL (TVD)				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	Start Build 3.00	
366.67	366.46	-0.25	-7.26	Start DLS 3.00 TFO 7.73	
1,026.55	1,001.08	9.05	-175.48	Start 4519.04 hold at 1026.55 MD	
5,545.59	5,104.69	149.01	-2,062.94	Start Drop -3.00	
6,370.91	5,904.56	161.99	-2,238.03	Start 2991.44 hold at 6370.91 MD	
9,362.35	8,896.00	161.99	-2,238.03	TD at 9362.35	