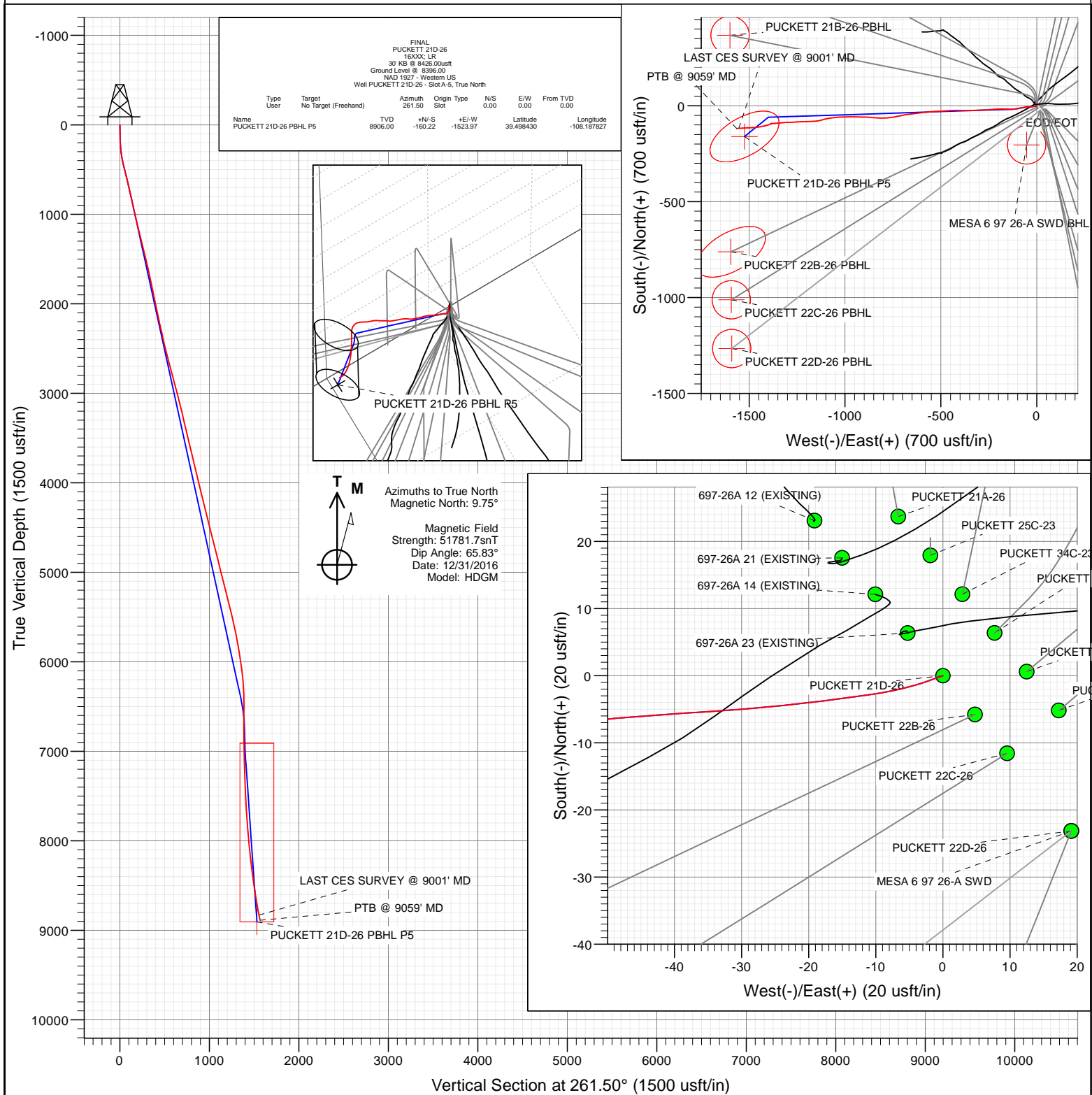




Project: Garfield County, CO (UTM 12N)  
Site: S26-T6S-R97W (697 26A)  
Well: PUCKETT 21D-26  
Wellbore: OH  
Design: FINAL



WELL DETAILS: PUCKETT 21D-26

+N/-S 0.00 +E/-W 0.00 Northing 14356010.90 Ground Level: 8396.00 Easting 2435300.35 Latitude 39.498870 Longitude -108.182429

A-5



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 21D-26 - Slot A-5
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8426.00usft
<b>Site:</b>	S26-T6S-R97W (697 26A)	<b>MD Reference:</b>	30' KB @ 8426.00usft
<b>Well:</b>	PUCKETT 21D-26	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	SURVEYS	<b>Database:</b>	USA EDM 5000 Multi Users DB

<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		S26-T6S-R97W (697 26A)			
Site Position:		Northing:	14,356,905.20 usft	Latitude:	39.501458
From:	Map	Easting:	2,433,730.50 usft	Longitude:	-108.187888
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.79 °

Well		PUCKETT 21D-26 - Slot A-5				
Well Position	+N/-S	0.00 usft	Northing:	14,356,010.90 usft	Latitude:	39.498870
	+E/-W	0.00 usft	Easting:	2,435,300.35 usft	Longitude:	-108.182429
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	8,396.00 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 (nT)</b>
	HDGM	12/31/2016	9.75	65.83	51,782

<b>Design</b>	SURVEYS				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	261.50	

<b>Survey Program</b>	<b>Date</b>	1/9/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
177.00	9,059.00	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usf)</b>	<b>Build Rate (°/100u)</b>	<b>Formations / Comments</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
177.00	1.89	250.48	176.97	-0.98	-2.75	2.87	1.07	1.07		
208.00	2.99	255.32	207.94	-1.35	-4.02	4.17	3.61	3.55		
238.00	4.31	254.88	237.88	-1.84	-5.86	6.07	4.40	4.40		
268.00	5.54	259.98	267.77	-2.39	-8.37	8.64	4.35	4.10		
360.00	10.28	263.40	358.87	-4.11	-20.91	21.29	5.18	5.15		
450.00	12.48	266.83	447.09	-5.57	-38.60	39.00	2.56	2.44		
542.00	13.93	262.88	536.66	-7.49	-59.51	59.97	1.86	1.58		
637.00	14.37	258.31	628.78	-11.30	-82.41	83.17	1.26	0.46		
731.00	13.32	259.62	720.05	-15.61	-104.48	105.64	1.17	-1.12		
826.00	12.09	267.36	812.73	-18.04	-125.19	126.48	2.21	-1.29		
920.00	12.09	272.72	904.64	-18.03	-144.85	145.93	1.19	0.00		
1,015.00	13.05	272.02	997.37	-17.18	-165.51	166.23	1.02	1.01		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 21D-26 - Slot A-5
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8426.00usft
<b>Site:</b>	S26-T6S-R97W (697 26A)	<b>MD Reference:</b>	30' KB @ 8426.00usft
<b>Well:</b>	PUCKETT 21D-26	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	SURVEYS	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,109.00	14.46	269.64	1,088.67	-16.88	-187.85	188.28	1.62	1.50	
1,204.00	14.37	266.83	1,180.68	-17.60	-211.48	211.76	0.74	-0.09	
1,298.00	13.49	263.75	1,271.91	-19.44	-234.03	234.33	1.22	-0.94	
1,393.00	13.40	265.51	1,364.31	-21.51	-256.02	256.39	0.44	-0.09	
1,487.00	13.62	267.53	1,455.71	-22.84	-277.94	278.26	0.55	0.23	
1,582.00	13.45	268.76	1,548.07	-23.56	-300.16	300.34	0.35	-0.18	
1,677.00	12.88	269.12	1,640.58	-23.96	-321.79	321.80	0.61	-0.60	
1,771.00	12.17	266.74	1,732.34	-24.69	-342.16	342.05	0.93	-0.76	
1,866.00	11.73	269.56	1,825.28	-25.33	-361.81	361.58	0.77	-0.46	
1,960.00	11.29	271.84	1,917.39	-25.11	-380.56	380.10	0.67	-0.47	
2,055.00	11.65	271.31	2,010.49	-24.59	-399.45	398.70	0.39	0.38	
2,150.00	12.79	270.17	2,103.34	-24.34	-419.55	418.54	1.23	1.20	
2,244.00	13.05	267.80	2,194.96	-24.72	-440.56	439.38	0.63	0.28	
2,387.00	11.87	265.60	2,334.59	-26.46	-471.36	470.10	0.89	-0.83	
2,481.00	12.61	267.71	2,426.45	-27.62	-491.25	489.94	0.92	0.79	
2,576.00	13.71	265.34	2,518.96	-28.95	-512.84	511.48	1.29	1.16	
2,670.00	14.99	267.71	2,610.02	-30.34	-536.09	534.68	1.50	1.36	
2,764.00	15.34	264.28	2,700.75	-32.06	-560.61	559.19	1.02	0.37	
2,859.00	15.78	265.16	2,792.27	-34.40	-585.98	584.63	0.53	0.46	
2,953.00	15.07	262.79	2,882.88	-37.02	-610.84	609.60	1.01	-0.76	
3,048.00	14.11	263.31	2,974.82	-39.91	-634.59	633.53	1.02	-1.01	
3,142.00	13.76	261.47	3,066.05	-42.91	-657.03	656.16	0.60	-0.37	
3,236.00	13.71	262.35	3,157.37	-46.05	-679.13	678.47	0.23	-0.05	
3,331.00	13.58	258.74	3,249.69	-49.73	-701.22	700.87	0.91	-0.14	
3,425.00	13.40	259.54	3,341.09	-53.86	-722.76	722.78	0.28	-0.19	
3,520.00	13.45	257.60	3,433.50	-58.23	-744.37	744.80	0.48	0.05	
3,614.00	13.54	262.61	3,524.91	-61.99	-765.96	766.71	1.25	0.10	
3,709.00	13.40	268.59	3,617.30	-63.69	-788.00	788.76	1.47	-0.15	
3,803.00	13.62	268.41	3,708.70	-64.27	-809.95	810.55	0.24	0.23	
3,897.00	14.15	275.00	3,799.95	-63.57	-832.46	832.72	1.77	0.56	
3,992.00	14.24	274.30	3,892.05	-61.69	-855.68	855.40	0.20	0.09	
4,086.00	14.06	274.04	3,983.20	-60.01	-878.60	877.82	0.20	-0.19	
4,181.00	13.58	270.70	4,075.45	-59.07	-901.26	900.09	0.98	-0.51	
4,275.00	13.10	271.84	4,166.92	-58.59	-922.94	921.47	0.58	-0.51	
4,370.00	14.15	270.52	4,259.24	-58.14	-945.32	943.53	1.15	1.11	
4,464.00	13.80	273.60	4,350.46	-57.33	-967.99	965.84	0.87	-0.37	
4,559.00	14.77	267.45	4,442.53	-57.16	-991.40	988.96	1.89	1.02	
4,653.00	14.41	265.51	4,533.50	-58.60	-1,015.03	1,012.55	0.65	-0.38	
4,747.00	14.55	265.86	4,624.51	-60.37	-1,038.47	1,035.99	0.18	0.15	
4,842.00	14.24	264.72	4,716.53	-62.31	-1,062.01	1,059.56	0.44	-0.33	
4,937.00	14.06	260.41	4,808.65	-65.31	-1,085.02	1,082.76	1.12	-0.19	
5,031.00	13.93	252.59	4,899.87	-70.60	-1,107.08	1,105.36	2.02	-0.14	
5,126.00	14.24	256.64	4,992.01	-76.72	-1,129.36	1,128.30	1.09	0.33	
5,220.00	13.76	265.95	5,083.23	-80.18	-1,151.76	1,150.96	2.45	-0.51	
5,315.00	13.84	266.57	5,175.49	-81.66	-1,174.37	1,173.55	0.18	0.08	
5,410.00	14.19	269.47	5,267.66	-82.44	-1,197.36	1,196.40	0.83	0.37	
5,504.00	14.41	267.18	5,358.75	-83.13	-1,220.56	1,219.45	0.65	0.23	
5,598.00	13.58	268.06	5,449.96	-84.07	-1,243.27	1,242.05	0.91	-0.88	
5,693.00	12.70	264.98	5,542.47	-85.37	-1,264.82	1,263.55	1.18	-0.93	
5,788.00	12.35	270.79	5,635.22	-86.14	-1,285.39	1,284.00	1.38	-0.37	
5,882.00	11.34	269.12	5,727.21	-86.14	-1,304.68	1,303.08	1.13	-1.07	
5,977.00	10.02	260.59	5,820.57	-87.64	-1,322.17	1,320.61	2.16	-1.39	
6,071.00	8.88	264.11	5,913.29	-89.72	-1,337.46	1,336.03	1.36	-1.21	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Caerus Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well PUCKETT 21D-26 - Slot A-5
<b>Project:</b>	Garfield County, CO (UTM 12N)	<b>TVD Reference:</b>	30' KB @ 8426.00usft
<b>Site:</b>	S26-T6S-R97W (697 26A)	<b>MD Reference:</b>	30' KB @ 8426.00usft
<b>Well:</b>	PUCKETT 21D-26	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	SURVEYS	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
6,166.00	7.95	268.50	6,007.27	-90.64	-1,351.32	1,349.88	1.19	-0.98	
6,260.00	7.60	265.07	6,100.41	-91.35	-1,364.01	1,362.53	0.62	-0.37	
6,355.00	5.98	268.94	6,194.74	-91.98	-1,375.22	1,373.71	1.77	-1.71	
6,449.00	3.43	274.48	6,288.42	-91.85	-1,382.92	1,381.31	2.75	-2.71	
6,544.00	0.79	254.17	6,383.34	-91.81	-1,386.38	1,384.73	2.85	-2.78	
6,638.00	0.57	156.70	6,477.34	-92.41	-1,386.82	1,385.25	1.10	-0.23	
6,733.00	0.53	112.32	6,572.33	-93.01	-1,386.23	1,384.75	0.44	-0.04	
6,922.00	0.70	218.31	6,761.33	-94.25	-1,386.13	1,384.84	0.52	0.09	
7,111.00	0.75	245.82	6,950.31	-95.67	-1,387.98	1,386.88	0.18	0.03	
7,300.00	1.85	253.47	7,139.26	-97.04	-1,392.03	1,391.09	0.59	0.58	
7,489.00	2.15	252.77	7,328.15	-98.96	-1,398.34	1,397.61	0.16	0.16	
7,677.00	2.86	250.13	7,515.97	-101.60	-1,406.12	1,405.70	0.38	0.38	
7,866.00	3.52	259.27	7,704.67	-104.28	-1,416.26	1,416.12	0.44	0.35	
8,055.00	4.92	259.36	7,893.16	-106.86	-1,429.92	1,430.02	0.74	0.74	
8,245.00	5.85	259.27	8,082.32	-110.16	-1,447.45	1,447.83	0.49	0.49	
8,434.00	6.72	263.75	8,270.18	-113.16	-1,467.90	1,468.51	0.53	0.46	
8,623.00	7.78	268.69	8,457.67	-114.66	-1,491.68	1,492.25	0.65	0.56	
8,812.00	9.62	266.22	8,644.49	-115.99	-1,520.23	1,520.68	0.99	0.97	
9,001.00	10.94	266.48	8,830.45	-118.13	-1,553.89	1,554.29	0.70	0.70	LAST CES SURVEY @ 9001' MD
9,059.00	10.94	266.48	8,887.39	-118.81	-1,564.88	1,565.26	0.00	0.00	PTB @ 9059' MD

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									
PUCKETT 21D-26 PBHI	0.00	0.00	8,906.00	-160.22	-1,523.97	14,355,803.07	2,433,782.14	39.498430	-108.187827
- actual wellpath misses target center by 61.11usft at 9059.00usft MD (8887.39 TVD, -118.81 N, -1564.88 E)									
- Ellipse (radii L200.00 W100.00 on 240.00 azi)									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
9,001.00	8,830.45	-118.13	-1,553.89	LAST CES SURVEY @ 9001' MD	
9,059.00	8,887.39	-118.81	-1,564.88	PTB @ 9059' MD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_