

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 34C-26
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8352.00usft
Site:	S26-T6S-R97W (MESA F26) (RIG: HP 330)	MD Reference:	30' KB @ 8352.00usft
Well:	PUCKETT 34C-26	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site		S26-T6S-R97W (MESA F26) (RIG: HP 330), Gravity = 0.9975g			
Site Position:		Northing:	14,354,512.70 usft	Latitude:	39.494943
From:	Map	Easting:	2,433,169.20 usft	Longitude:	-108.190140
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.79 °

Well	PUCKETT 34C-26					
Well Position	+N/-S	0.00 usft	Northing:	14,354,511.40 usft	Latitude:	39.494938
	+E/-W	0.00 usft	Easting:	2,433,181.60 usft	Longitude:	-108.190096
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	8,322.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	6/26/2018	9.65	65.77	51,605.90000000

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	121.92	

Survey Program	Date	7/2/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
142.00	2,453.00	Survey #1 (OH)	INC+TREND	Inclinometer + known azi trend	
2,616.00	9,616.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HDGM	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
142.00	1.14	101.14	141.99	-0.27	1.39	1.32	0.80	0.80	
171.00	1.96	103.65	170.98	-0.45	2.15	2.06	2.84	2.83	
232.00	3.69	105.28	231.90	-1.21	5.06	4.93	2.84	2.84	
292.00	5.58	94.99	291.71	-1.97	9.83	9.38	3.43	3.15	
383.00	8.35	94.38	382.03	-2.86	20.83	19.19	3.04	3.04	
473.00	9.40	104.75	470.95	-5.23	34.45	32.01	2.12	1.17	
566.00	11.03	109.14	562.48	-10.08	50.20	47.94	1.94	1.75	
660.00	12.17	115.56	654.56	-17.31	67.64	66.56	1.83	1.21	
755.00	14.50	113.19	746.99	-26.31	87.60	88.27	2.52	2.45	
849.00	17.40	112.22	837.36	-36.26	111.44	113.76	3.10	3.09	
944.00	19.60	119.51	927.46	-49.49	138.46	143.69	3.36	2.32	

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Well:	PUCKETT 34C-26	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	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
1,038.00	24.17	118.28	1,014.66	-66.38	169.14	178.66	4.89	4.86	
1,132.00	27.11	120.74	1,099.40	-86.45	204.51	219.29	3.33	3.13	
1,227.00	30.06	118.63	1,182.81	-108.92	244.01	264.70	3.28	3.11	
1,321.00	30.59	120.48	1,263.95	-132.33	285.29	312.12	1.14	0.56	
1,415.00	30.76	123.82	1,344.81	-157.85	325.87	360.05	1.82	0.18	
1,510.00	32.34	124.08	1,425.76	-185.61	367.10	409.73	1.67	1.66	
1,604.00	32.87	124.35	1,504.95	-214.09	408.99	460.34	0.58	0.56	
1,698.00	31.60	122.85	1,584.46	-241.84	450.74	510.45	1.60	-1.35	
1,793.00	29.00	116.61	1,666.50	-265.67	492.25	558.29	4.29	-2.74	
1,887.00	26.72	116.96	1,749.59	-285.46	531.47	602.04	2.43	-2.43	
1,981.00	25.66	118.72	1,833.94	-304.82	568.15	643.41	1.40	-1.13	
2,075.00	26.28	122.77	1,918.46	-325.87	603.50	684.54	2.00	0.66	
2,170.00	27.29	122.68	2,003.26	-349.01	639.52	727.35	1.06	1.06	
2,264.00	28.56	123.82	2,086.32	-373.15	676.33	771.36	1.47	1.35	
2,358.00	31.42	123.91	2,167.72	-399.33	715.34	818.31	3.04	3.04	
2,453.00	29.40	122.77	2,249.65	-425.77	755.50	866.38	2.21	-2.13	
2,616.00	26.46	120.57	2,393.65	-465.91	820.42	942.70	1.91	-1.80	
2,710.00	29.18	120.39	2,476.78	-488.15	858.23	986.56	2.89	2.89	
2,804.00	29.93	121.36	2,558.55	-511.95	898.02	1,032.91	0.95	0.80	
2,898.00	30.02	120.39	2,639.98	-536.05	938.33	1,079.87	0.52	0.10	
2,993.00	30.23	119.34	2,722.15	-559.79	979.68	1,127.52	0.60	0.22	
3,087.00	28.78	119.25	2,803.95	-582.44	1,020.05	1,173.76	1.54	-1.54	
3,182.00	29.14	119.07	2,887.07	-604.85	1,060.22	1,219.71	0.39	0.38	
3,276.00	29.62	118.46	2,968.98	-627.04	1,100.64	1,265.75	0.60	0.51	
3,371.00	29.75	118.37	3,051.52	-649.43	1,142.02	1,312.71	0.14	0.14	
3,465.00	31.07	119.60	3,132.58	-672.50	1,183.64	1,360.23	1.55	1.40	
3,559.00	31.25	122.50	3,213.03	-697.58	1,225.29	1,408.85	1.61	0.19	
3,654.00	31.95	123.38	3,293.94	-724.65	1,267.07	1,458.62	0.88	0.74	
3,748.00	32.34	122.24	3,373.53	-751.75	1,309.10	1,508.62	0.77	0.41	
3,842.00	32.21	122.33	3,453.01	-778.56	1,351.54	1,558.82	0.15	-0.14	
3,937.00	31.69	121.97	3,533.62	-805.31	1,394.10	1,609.09	0.58	-0.55	
4,031.00	31.73	119.87	3,613.59	-830.69	1,436.48	1,658.48	1.17	0.04	
4,125.00	31.64	118.90	3,693.58	-854.92	1,479.50	1,707.80	0.55	-0.10	
4,219.00	31.77	118.37	3,773.55	-878.59	1,522.86	1,757.12	0.33	0.14	
4,314.00	29.53	117.49	3,855.27	-901.29	1,565.64	1,805.43	2.40	-2.36	
4,408.00	29.31	119.69	3,937.15	-923.38	1,606.18	1,851.52	1.17	-0.23	
4,502.00	28.96	122.41	4,019.26	-946.97	1,645.38	1,897.27	1.46	-0.37	
4,597.00	28.52	122.77	4,102.56	-971.57	1,683.86	1,942.95	0.50	-0.46	
4,691.00	29.14	122.33	4,184.91	-995.96	1,722.07	1,988.27	0.70	0.66	
4,785.00	27.86	122.77	4,267.51	-1,020.09	1,759.88	2,033.12	1.38	-1.36	
4,880.00	27.86	122.41	4,351.50	-1,044.00	1,797.29	2,077.51	0.18	0.00	
4,975.00	28.87	122.77	4,435.10	-1,068.31	1,835.31	2,122.64	1.08	1.06	
5,069.00	29.58	124.17	4,517.13	-1,093.63	1,873.59	2,168.52	1.05	0.76	
5,163.00	29.93	122.59	4,598.74	-1,119.29	1,912.54	2,215.15	0.91	0.37	
5,258.00	29.40	122.50	4,681.29	-1,144.58	1,952.18	2,262.16	0.56	-0.56	
5,352.00	27.73	121.80	4,763.84	-1,168.51	1,990.23	2,307.11	1.81	-1.78	
5,446.00	26.68	121.54	4,847.44	-1,191.07	2,026.80	2,350.08	1.12	-1.12	
5,541.00	27.95	121.27	4,931.85	-1,213.78	2,064.01	2,393.67	1.34	1.34	
5,635.00	28.04	122.77	5,014.85	-1,237.18	2,101.41	2,437.79	0.76	0.10	
5,730.00	29.22	120.83	5,098.24	-1,261.15	2,140.10	2,483.30	1.58	1.24	
5,824.00	29.18	121.62	5,180.29	-1,284.92	2,179.32	2,529.16	0.41	-0.04	
5,918.00	28.70	119.07	5,262.56	-1,307.90	2,218.56	2,574.62	1.41	-0.51	
6,013.00	28.17	117.93	5,346.09	-1,329.49	2,258.31	2,619.77	0.80	-0.56	

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	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
6,107.00	27.60	118.28	5,429.18	-1,350.20	2,297.09	2,663.64	0.63	-0.61	
6,201.00	28.04	117.58	5,512.32	-1,370.74	2,335.85	2,707.40	0.58	0.47	
6,295.00	26.50	119.87	5,595.87	-1,391.42	2,373.62	2,750.39	1.98	-1.64	
6,390.00	24.39	119.07	5,681.65	-1,411.51	2,409.15	2,791.17	2.25	-2.22	
6,484.00	22.41	121.71	5,767.91	-1,430.36	2,441.36	2,828.48	2.38	-2.11	
6,578.00	21.49	122.06	5,855.10	-1,448.92	2,471.20	2,863.61	0.99	-0.98	
6,673.00	19.95	119.69	5,943.95	-1,466.18	2,500.03	2,897.21	1.85	-1.62	
6,767.00	17.80	121.62	6,032.90	-1,481.66	2,526.19	2,927.61	2.38	-2.29	
6,861.00	16.39	122.85	6,122.74	-1,496.39	2,549.57	2,955.23	1.55	-1.50	
6,955.00	13.10	126.55	6,213.63	-1,509.93	2,569.28	2,979.12	3.64	-3.50	
7,049.00	11.16	120.74	6,305.53	-1,520.92	2,585.66	2,998.84	2.44	-2.06	
7,143.00	9.32	120.83	6,398.03	-1,529.47	2,600.01	3,015.54	1.96	-1.96	
7,237.00	8.26	124.26	6,490.93	-1,537.18	2,612.13	3,029.90	1.26	-1.13	
7,331.00	7.12	116.17	6,584.08	-1,543.55	2,622.94	3,042.44	1.67	-1.21	
7,425.00	5.45	104.40	6,677.52	-1,547.23	2,632.49	3,052.50	2.24	-1.78	
7,519.00	3.69	110.81	6,771.22	-1,549.41	2,639.64	3,059.72	1.95	-1.87	
7,613.00	1.98	149.75	6,865.11	-1,551.89	2,643.29	3,064.13	2.64	-1.82	
7,707.00	2.51	200.90	6,959.04	-1,555.22	2,643.37	3,065.96	2.12	0.56	
7,802.00	2.46	227.88	7,053.96	-1,558.53	2,641.12	3,065.79	1.22	-0.05	
7,896.00	3.21	239.40	7,147.84	-1,561.22	2,637.36	3,064.03	1.00	0.80	
7,991.00	3.56	241.07	7,242.68	-1,564.00	2,632.49	3,061.36	0.38	0.37	
8,088.00	5.23	245.90	7,339.39	-1,567.26	2,625.81	3,057.42	1.76	1.72	
8,182.00	4.48	239.92	7,433.05	-1,570.85	2,618.73	3,053.31	0.96	-0.80	
8,276.00	3.08	230.96	7,526.85	-1,574.28	2,613.59	3,050.76	1.61	-1.49	
8,464.00	2.46	225.25	7,714.62	-1,580.31	2,606.80	3,048.18	0.36	-0.33	
8,651.00	2.37	246.43	7,901.46	-1,584.68	2,600.41	3,045.06	0.48	-0.05	
8,839.00	3.30	258.38	8,089.23	-1,587.32	2,591.54	3,038.94	0.58	0.49	
9,029.00	4.18	245.20	8,278.83	-1,591.33	2,579.90	3,031.18	0.64	0.46	
9,312.00	4.53	240.10	8,561.01	-1,601.22	2,560.85	3,020.24	0.18	0.12	
9,554.00	4.44	245.02	8,802.27	-1,609.94	2,544.07	3,010.61	0.16	-0.04	LAST SURVEY- 9554.00' MD
9,616.00	4.44	245.02	8,864.09	-1,611.97	2,539.72	3,007.99	0.00	0.00	PROJECTION TO BIT-9616.00' MD

Survey Report

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Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8352.00usft
Site:	S26-T6S-R97W (MESA F26) (RIG: HP 330)	MD Reference:	30' KB @ 8352.00usft
Well:	PUCKETT 34C-26	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
PUCKETT 34C-26 TGT	0.00	0.00	6,797.00	-1,565.39	2,674.33	14,353,030.22	2,435,903.47	39.490641	-108.180624
- actual wellpath misses target center by 36.61usft at 7546.52usft MD (6798.69 TVD, -1550.07 N, 2641.13 E)									
- Point									
PUCKETT 34C-26 BHL	0.00	0.00	8,848.00	-1,612.98	2,589.33	14,352,980.00	2,435,820.00	39.490511	-108.180925
- actual wellpath misses target center by 48.39usft at 9596.51usft MD (8844.66 TVD, -1611.33 N, 2541.09 E)									
- Ellipse (radii L100.00 W50.00 on 240.00 azi)									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
9,554.00	8,802.27	-1,609.94	2,544.07	LAST SURVEY- 9554.00' MD
9,616.00	8,864.09	-1,611.97	2,539.72	PROJECTION TO BIT-9616.00' MD

Checked By: _____ Approved By: _____ Date: _____