CAERUS OIL AND GAS LLC

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0		KOP @ 300'
3	646.7	10.40	62.85	644.8	14.3	27.9	3.00	62.85	31.4		EOB; INC=10.4°
4	6757.5	10.40	62.85	6655.2	517.7	1009.7	0.00	0.00	1134.7		Start Drop -3.00
5	7104.2	0.00	0.00	7000.0	532.0	1037.6	3.00	180.00	1166.1	PUCKETT 12B-1 TGT 2	EOD; INC=0°
6	7233.6	1.29	240.00	7129.3	531.3	1036.4	1.00	240.00	1164.6		
7	9029.7	1.29	240.00	8925.0	511.0	1001.3	0.00	0.00	1124.1	PUCKETT 12B-1 BHL NEW	TD at 9029.7

PLAN #2
PUCKETT 12B-1
15XXX; LR
30' KB @ 8507.0usft (H&P 330)
Ground Level @ 8477.0
NAD 1927 (NADCON CONUS)
Well PUCKETT 12B-1, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	PUCKETT 12B-1 BHL NEW	62.96	Slot	0.0	0.0	0.0

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PUCKETT 12B-1 TGT 2	7000.0	532.0	1037.6	39.477233	-108.175952
PUCKETT 12B-1 TGT	7402.0	350.1	1331.5	39.476733	-108.174911
PUCKETT 12B-1 BHL NEW	8925.0	511.0	1001.3	39.477175	-108.176081
PUCKETT 12B-1 BHL	8927.0	350.1	1331.5	39.476733	-108.174911

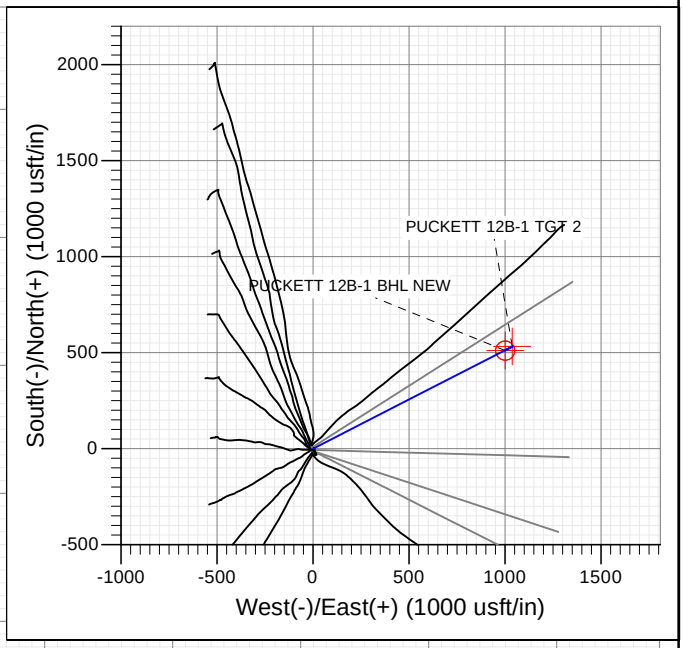
Project: Garfield County, CO
Site: S2-T7S-R97W (Mesa H2)
Well: PUCKETT 12B-1
Wellbore: DD
Design: PLAN #2

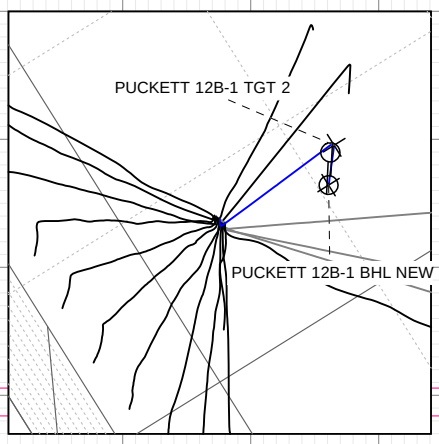
T M
Azimuths to True North
Magnetic North: 9.87°

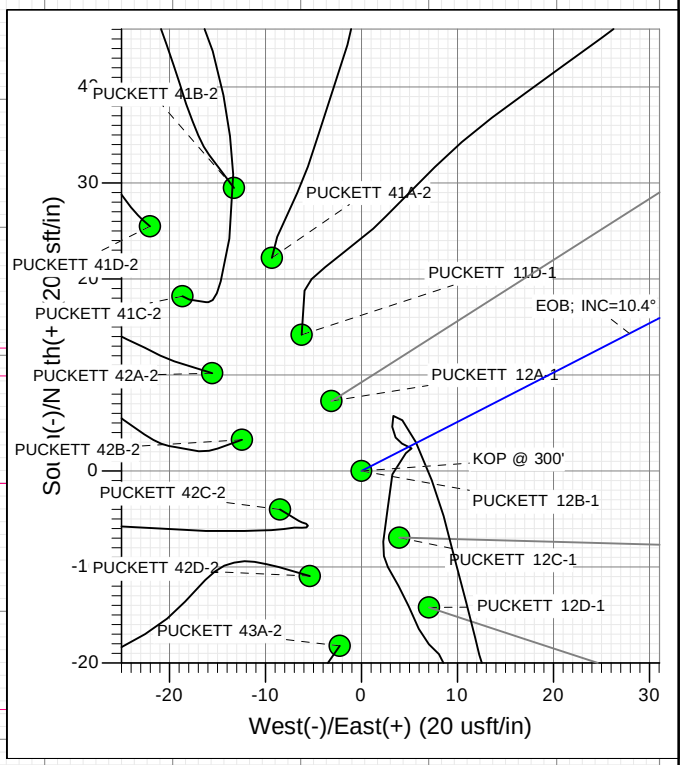
Magnetic Field
Strength: 51934.5snT
Dip Angle: 65.82°
Date: 6/12/2015
Model: HDGM

KOP @ 300'
EOB; INC=10.4°
OHIOCREEK
WILLIAMS FORK
Start Drop -3.00
EOD; INC=0°
TOG
PUCKETT 12B-1 TGT 2
ROLLINS
TD at 9029.7
PUCKETT 12B-1 BHL NEW

True Vertical Depth (1500 usft/in)
Vertical Section at 62.96° (1500 usft/in)







CATHEDRAL

WELL DETAILS: PUCKETT 12B-1

Ground Level: 8477.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	609321.98	1243680.46	39.475772	-108.179628

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well PUCKETT 12B-1
Company:	Caerus Oil & Gas (NAD 27)	**TVD Reference:**	30' KB @ 8507.0usft (H&P 330)
Project:	Garfield County, CO	**MD Reference:**	30' KB @ 8507.0usft (H&P 330)
Site:	S2-T7S-R97W (Mesa H2)	**North Reference:**	True
Well:	PUCKETT 12B-1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	DD		
Design:	PLAN #2		

Project Garfield County, CO

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site S2-T7S-R97W (Mesa H2)

Site Position:		**Northing:**	609,295.74 usft	**Latitude:**	39.475700
From:	Lat/Long	**Easting:**	1,243,680.53 usft	**Longitude:**	-108.179625
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-1.69 °

Well PUCKETT 12B-1

Well Position	**+N/-S**	0.0 usft	**Northing:**	609,321.98 usft	**Latitude:**	39.475772
	+E/-W	0.0 usft	**Easting:**	1,243,680.46 usft	**Longitude:**	-108.179628
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	8,477.0 usft

Wellbore DD

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/22/2014	10.01	65.60	51,866

Design PLAN #2

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	62.96

Plan Sections

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
646.7	10.40	62.85	644.8	14.3	27.9	3.00	3.00	0.00	62.85	
6,757.5	10.40	62.85	6,655.2	517.7	1,009.7	0.00	0.00	0.00	0.00	
7,104.2	0.00	0.00	7,000.0	532.0	1,037.6	3.00	-3.00	0.00	180.00	PUCKETT 12B-1 TGT
7,233.6	1.29	240.00	7,129.3	531.3	1,036.4	1.00	1.00	-92.78	240.00	
9,029.7	1.29	240.00	8,925.0	511.0	1,001.3	0.00	0.00	0.00	0.00	PUCKETT 12B-1 BHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well PUCKETT 12B-1
Company:	Caerus Oil & Gas (NAD 27)	**TVD Reference:**	30' KB @ 8507.0usft (H&P 330)
Project:	Garfield County, CO	**MD Reference:**	30' KB @ 8507.0usft (H&P 330)
Site:	S2-T7S-R97W (Mesa H2)	**North Reference:**	True
Well:	PUCKETT 12B-1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	DD		
Design:	PLAN #2		

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300'
400.0	3.00	62.85	400.0	1.2	2.3	2.6	3.00	3.00	
500.0	6.00	62.85	499.6	4.8	9.3	10.5	3.00	3.00	
600.0	9.00	62.85	598.8	10.7	20.9	23.5	3.00	3.00	
646.7	10.40	62.85	644.8	14.3	27.9	31.4	3.00	3.00	EOB; INC=10.4°
700.0	10.40	62.85	697.2	18.7	36.5	41.0	0.00	0.00	
800.0	10.40	62.85	795.6	26.9	52.6	59.1	0.00	0.00	
900.0	10.40	62.85	893.9	35.2	68.6	77.1	0.00	0.00	
1,000.0	10.40	62.85	992.3	43.4	84.7	95.2	0.00	0.00	
1,100.0	10.40	62.85	1,090.6	51.7	100.8	113.2	0.00	0.00	
1,200.0	10.40	62.85	1,189.0	59.9	116.8	131.3	0.00	0.00	
1,300.0	10.40	62.85	1,287.4	68.1	132.9	149.3	0.00	0.00	
1,400.0	10.40	62.85	1,385.7	76.4	149.0	167.4	0.00	0.00	
1,500.0	10.40	62.85	1,484.1	84.6	165.0	185.4	0.00	0.00	
1,600.0	10.40	62.85	1,582.4	92.9	181.1	203.5	0.00	0.00	
1,700.0	10.40	62.85	1,680.8	101.1	197.2	221.6	0.00	0.00	
1,800.0	10.40	62.85	1,779.1	109.3	213.2	239.6	0.00	0.00	
1,900.0	10.40	62.85	1,877.5	117.6	229.3	257.7	0.00	0.00	
2,000.0	10.40	62.85	1,975.9	125.8	245.4	275.7	0.00	0.00	
2,100.0	10.40	62.85	2,074.2	134.0	261.4	293.8	0.00	0.00	
2,200.0	10.40	62.85	2,172.6	142.3	277.5	311.8	0.00	0.00	
2,300.0	10.40	62.85	2,270.9	150.5	293.5	329.9	0.00	0.00	
2,400.0	10.40	62.85	2,369.3	158.8	309.6	347.9	0.00	0.00	
2,500.0	10.40	62.85	2,467.6	167.0	325.7	366.0	0.00	0.00	
2,600.0	10.40	62.85	2,566.0	175.2	341.7	384.1	0.00	0.00	
2,700.0	10.40	62.85	2,664.4	183.5	357.8	402.1	0.00	0.00	
2,800.0	10.40	62.85	2,762.7	191.7	373.9	420.2	0.00	0.00	
2,900.0	10.40	62.85	2,861.1	199.9	389.9	438.2	0.00	0.00	
3,000.0	10.40	62.85	2,959.4	208.2	406.0	456.3	0.00	0.00	
3,100.0	10.40	62.85	3,057.8	216.4	422.1	474.3	0.00	0.00	
3,200.0	10.40	62.85	3,156.1	224.7	438.1	492.4	0.00	0.00	
3,300.0	10.40	62.85	3,254.5	232.9	454.2	510.4	0.00	0.00	
3,400.0	10.40	62.85	3,352.8	241.1	470.3	528.5	0.00	0.00	
3,500.0	10.40	62.85	3,451.2	249.4	486.3	546.6	0.00	0.00	
3,600.0	10.40	62.85	3,549.6	257.6	502.4	564.6	0.00	0.00	
3,700.0	10.40	62.85	3,647.9	265.8	518.5	582.7	0.00	0.00	
3,800.0	10.40	62.85	3,746.3	274.1	534.5	600.7	0.00	0.00	
3,900.0	10.40	62.85	3,844.6	282.3	550.6	618.8	0.00	0.00	
4,000.0	10.40	62.85	3,943.0	290.6	566.7	636.8	0.00	0.00	
4,100.0	10.40	62.85	4,041.3	298.8	582.7	654.9	0.00	0.00	
4,200.0	10.40	62.85	4,139.7	307.0	598.8	672.9	0.00	0.00	
4,300.0	10.40	62.85	4,238.1	315.3	614.9	691.0	0.00	0.00	
4,400.0	10.40	62.85	4,336.4	323.5	630.9	709.0	0.00	0.00	
4,500.0	10.40	62.85	4,434.8	331.8	647.0	727.1	0.00	0.00	
4,600.0	10.40	62.85	4,533.1	340.0	663.1	745.2	0.00	0.00	
4,700.0	10.40	62.85	4,631.5	348.2	679.1	763.2	0.00	0.00	
4,800.0	10.40	62.85	4,729.8	356.5	695.2	781.3	0.00	0.00	
4,900.0	10.40	62.85	4,828.2	364.7	711.3	799.3	0.00	0.00	
5,000.0	10.40	62.85	4,926.6	372.9	727.3	817.4	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well PUCKETT 12B-1
Company:	Caerus Oil & Gas (NAD 27)	**TVD Reference:**	30' KB @ 8507.0usft (H&P 330)
Project:	Garfield County, CO	**MD Reference:**	30' KB @ 8507.0usft (H&P 330)
Site:	S2-T7S-R97W (Mesa H2)	**North Reference:**	True
Well:	PUCKETT 12B-1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	DD		
Design:	PLAN #2		

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
5,100.0	10.40	62.85	5,024.9	381.2	743.4	835.4	0.00	0.00	
5,200.0	10.40	62.85	5,123.3	389.4	759.5	853.5	0.00	0.00	
5,300.0	10.40	62.85	5,221.6	397.7	775.5	871.5	0.00	0.00	
5,400.0	10.40	62.85	5,320.0	405.9	791.6	889.6	0.00	0.00	
5,500.0	10.40	62.85	5,418.3	414.1	807.7	907.7	0.00	0.00	
5,600.0	10.40	62.85	5,516.7	422.4	823.7	925.7	0.00	0.00	
5,700.0	10.40	62.85	5,615.1	430.6	839.8	943.8	0.00	0.00	
5,800.0	10.40	62.85	5,713.4	438.8	855.9	961.8	0.00	0.00	
5,900.0	10.40	62.85	5,811.8	447.1	871.9	979.9	0.00	0.00	
6,000.0	10.40	62.85	5,910.1	455.3	888.0	997.9	0.00	0.00	
6,034.4	10.40	62.85	5,944.0	458.2	893.5	1,004.1	0.00	0.00	OHIOCREEK
6,100.0	10.40	62.85	6,008.5	463.6	904.1	1,016.0	0.00	0.00	
6,200.0	10.40	62.85	6,106.8	471.8	920.1	1,034.0	0.00	0.00	
6,255.1	10.40	62.85	6,161.0	476.3	929.0	1,044.0	0.00	0.00	WILLIAMS FORK
6,300.0	10.40	62.85	6,205.2	480.0	936.2	1,052.1	0.00	0.00	
6,400.0	10.40	62.85	6,303.5	488.3	952.3	1,070.2	0.00	0.00	
6,500.0	10.40	62.85	6,401.9	496.5	968.3	1,088.2	0.00	0.00	
6,600.0	10.40	62.85	6,500.3	504.8	984.4	1,106.3	0.00	0.00	
6,700.0	10.40	62.85	6,598.6	513.0	1,000.5	1,124.3	0.00	0.00	
6,757.5	10.40	62.85	6,655.2	517.7	1,009.7	1,134.7	0.00	0.00	Start Drop -3.00
6,800.0	9.13	62.85	6,697.1	521.0	1,016.1	1,141.9	3.00	-3.00	
6,900.0	6.13	62.85	6,796.2	527.1	1,027.9	1,155.2	3.00	-3.00	
7,000.0	3.13	62.85	6,895.8	530.7	1,035.1	1,163.2	3.00	-3.00	
7,100.0	0.13	62.85	6,995.8	532.0	1,037.6	1,166.1	3.00	-3.00	
7,104.2	0.00	0.00	7,000.0	532.0	1,037.6	1,166.1	3.00	-3.00	EOD; INC=0°
7,105.2	0.01	240.00	7,001.0	532.0	1,037.6	1,166.1	1.00	1.00	TOG
7,200.0	0.96	240.00	7,095.8	531.6	1,036.9	1,165.3	1.00	1.00	
7,233.6	1.29	240.00	7,129.3	531.3	1,036.4	1,164.6	1.00	1.00	
7,300.0	1.29	240.00	7,195.7	530.6	1,035.1	1,163.1	0.00	0.00	
7,400.0	1.29	240.00	7,295.7	529.4	1,033.1	1,160.9	0.00	0.00	
7,500.0	1.29	240.00	7,395.7	528.3	1,031.2	1,158.6	0.00	0.00	
7,600.0	1.29	240.00	7,495.7	527.2	1,029.2	1,156.4	0.00	0.00	
7,700.0	1.29	240.00	7,595.6	526.1	1,027.3	1,154.1	0.00	0.00	
7,800.0	1.29	240.00	7,695.6	524.9	1,025.3	1,151.9	0.00	0.00	
7,900.0	1.29	240.00	7,795.6	523.8	1,023.3	1,149.6	0.00	0.00	
8,000.0	1.29	240.00	7,895.6	522.7	1,021.4	1,147.4	0.00	0.00	
8,100.0	1.29	240.00	7,995.5	521.5	1,019.4	1,145.1	0.00	0.00	
8,200.0	1.29	240.00	8,095.5	520.4	1,017.5	1,142.8	0.00	0.00	
8,300.0	1.29	240.00	8,195.5	519.3	1,015.5	1,140.6	0.00	0.00	
8,400.0	1.29	240.00	8,295.5	518.2	1,013.6	1,138.3	0.00	0.00	
8,500.0	1.29	240.00	8,395.4	517.0	1,011.6	1,136.1	0.00	0.00	
8,600.0	1.29	240.00	8,495.4	515.9	1,009.7	1,133.8	0.00	0.00	
8,700.0	1.29	240.00	8,595.4	514.8	1,007.7	1,131.6	0.00	0.00	
8,800.0	1.29	240.00	8,695.4	513.6	1,005.7	1,129.3	0.00	0.00	
8,871.7	1.29	240.00	8,767.0	512.8	1,004.3	1,127.7	0.00	0.00	ROLLINS
8,900.0	1.29	240.00	8,795.3	512.5	1,003.8	1,127.1	0.00	0.00	
9,000.0	1.29	240.00	8,895.3	511.4	1,001.8	1,124.8	0.00	0.00	
9,029.7	1.29	240.00	8,925.0	511.0	1,001.3	1,124.1	0.00	0.00	TD at 9029.7

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well PUCKETT 12B-1
Company:	Caerus Oil & Gas (NAD 27)	**TVD Reference:**	30' KB @ 8507.0usft (H&P 330)
Project:	Garfield County, CO	**MD Reference:**	30' KB @ 8507.0usft (H&P 330)
Site:	S2-T7S-R97W (Mesa H2)	**North Reference:**	True
Well:	PUCKETT 12B-1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	DD		
Design:	PLAN #2		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PUCKETT 12B-1 TGT - plan misses target center by 349.3usft at 7502.4usft MD (7398.1 TVD, 528.3 N, 1031.1 E) - Point	0.00	0.00	7,402.0	350.1	1,331.5	609,632.63	1,245,021.74	39.476733	-108.174911
PUCKETT 12B-1 BHL N - plan hits target center - Circle (radius 50.0)	0.00	0.00	8,925.0	511.0	1,001.3	609,803.27	1,244,696.35	39.477175	-108.176081
PUCKETT 12B-1 TGT 2 - plan hits target center - Point	0.00	0.00	7,000.0	532.0	1,037.6	609,823.19	1,244,733.33	39.477233	-108.175952
PUCKETT 12B-1 BHL - plan misses target center by 367.4usft at 9027.1usft MD (8922.4 TVD, 511.1 N, 1001.3 E) - Circle (radius 50.0)	0.00	0.00	8,927.0	350.1	1,331.5	609,632.63	1,245,021.74	39.476733	-108.174911

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,034.4	5,944.0	OHIOCREEK		0.00	
6,255.1	6,161.0	WILLIAMS FORK		0.00	
7,105.2	7,001.0	TOG		0.00	
8,871.7	8,767.0	ROLLINS		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
300.0	300.0	0.0	0.0	KOP @ 300'
646.7	644.8	14.3	27.9	EOB; INC=10.4°
6,757.5	6,655.2	517.7	1,009.7	Start Drop -3.00
7,104.2	7,000.0	532.0	1,037.6	EOD; INC=0°
9,029.7	8,925.0	531.3	1,036.4	TD at 9029.7