CAERUS OIL AND GAS LLC

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.0	
3	1269.9	24.60	86.17	1245.0	11.6	172.9	3.00	86.17	173.3	
4	6860.3	24.60	86.17	6328.0	167.1	2494.6	0.00	0.00	2500.2	
5	7680.2	0.00	0.00	7123.0	178.7	2667.6	3.00	180.00	2673.5	
6	9713.2	0.00	0.00	9156.0	178.7	2667.6	0.00	0.00	2673.5	PUCKETT 23C-30 PBHL

Project: Garfield County, CO (UTM 12
Site: S30-T6S-R96W (MESA I25)
Well: PUCKETT 23C-30
Wellbore: OH
Design: PLAN #1

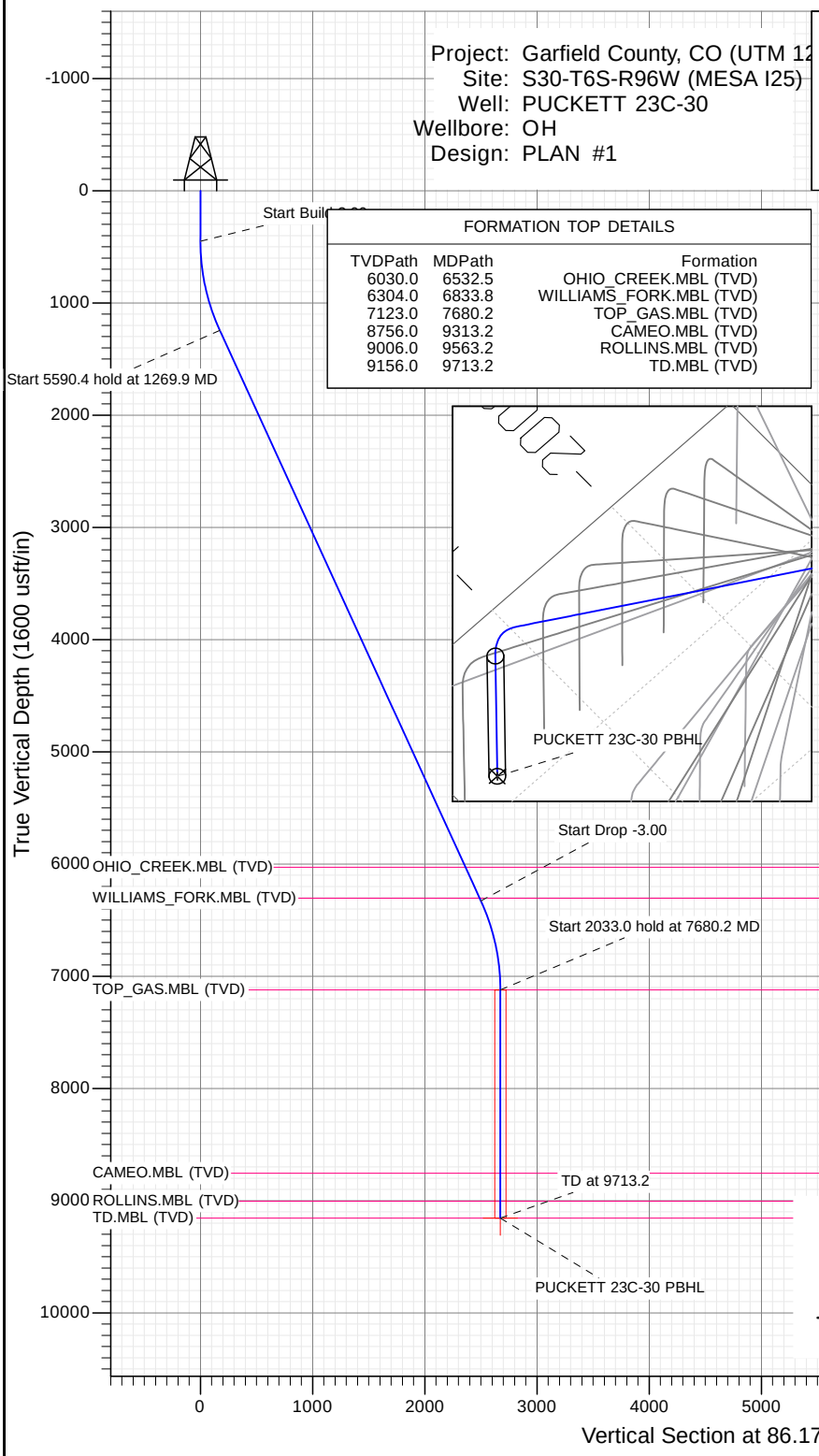
PLAN #1
PUCKETT 23C-30
16XXX; LR
30' KB @ 8270.0usft
Ground Level @ 8240.0
NAD 1927 - Western US
Well PUCKETT 23C-30, True North

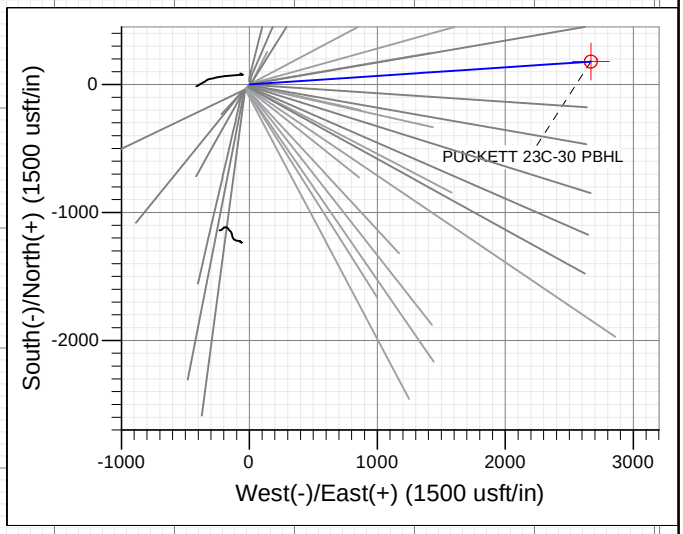
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
TD	No Target (Freehand)	86.17	Slot	0.0	0.0	0.0

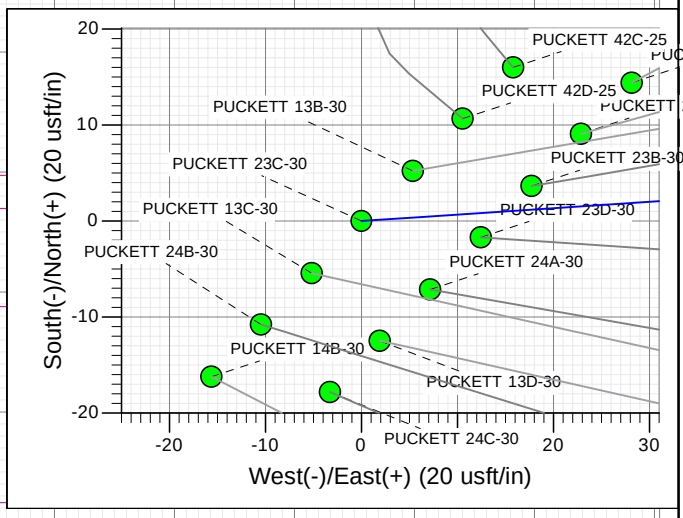
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PUCKETT 23C-30 PBHL	9156.0	178.7	2667.6	39.491978	-108.152034

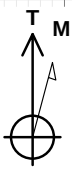
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6030.0	6532.5	OHIO_CREEK.MBL (TVD)
6304.0	6833.8	WILLIAMS_FORK.MBL (TVD)
7123.0	7680.2	TOP_GAS.MBL (TVD)
8756.0	9313.2	CAMEO.MBL (TVD)
9006.0	9563.2	ROLLINS.MBL (TVD)
9156.0	9713.2	TD.MBL (TVD)









Azimuths to True North
Magnetic North: 9.80°

Magnetic Field
Strength: 51880.1snT
Dip Angle: 65.83°
Date: 2/19/2016
Model: HDGM

CASING DETAILS

No casing data is available

CATHEDRAL

WELL DETAILS: PUCKETT 23C-30

Ground Level: 8240.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14353508.40	2441295.30	39.491488	-108.161483



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well PUCKETT 23C-30
Company:	Caerus Oil & Gas	**TVD Reference:**	30' KB @ 8270.0usft
Project:	Garfield County, CO (UTM 12N)	**MD Reference:**	30' KB @ 8270.0usft
Site:	S30-T6S-R96W (MESA I25)	**North Reference:**	True
Well:	PUCKETT 23C-30	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

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 S30-T6S-R96W (MESA I25)

Site Position:		**Northing:**	14,353,462.90 usft	**Latitude:**	39.491366
From:	Map	**Easting:**	2,441,267.20 usft	**Longitude:**	-108.161587
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.81 °

Well PUCKETT 23C-30

Well Position	**+N/-S**	0.0 usft	**Northing:**	14,353,508.40 usft	**Latitude:**	39.491488
	+E/-W	0.0 usft	**Easting:**	2,441,295.30 usft	**Longitude:**	-108.161483
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	8,240.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/19/2016	9.80	65.83	51,880

Design PLAN #1

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	86.17

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	
450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,269.9	24.60	86.17	1,245.0	11.6	172.9	3.00	3.00	0.00	86.17	
6,860.3	24.60	86.17	6,328.0	167.1	2,494.6	0.00	0.00	0.00	0.00	
7,680.2	0.00	0.00	7,123.0	178.7	2,667.6	3.00	-3.00	0.00	180.00	
9,713.2	0.00	0.00	9,156.0	178.7	2,667.6	0.00	0.00	0.00	0.00	PUCKETT 23C-30 PE

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well PUCKETT 23C-30
Company:	Caerus Oil & Gas	**TVD Reference:**	30' KB @ 8270.0usft
Project:	Garfield County, CO (UTM 12N)	**MD Reference:**	30' KB @ 8270.0usft
Site:	S30-T6S-R96W (MESA I25)	**North Reference:**	True
Well:	PUCKETT 23C-30	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	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
0.0	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	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	Start Build 3.00
500.0	1.50	86.17	500.0	0.0	0.7	0.7	3.00	3.00	
600.0	4.50	86.17	599.8	0.4	5.9	5.9	3.00	3.00	
700.0	7.50	86.17	699.3	1.1	16.3	16.3	3.00	3.00	
800.0	10.50	86.17	798.0	2.1	31.9	32.0	3.00	3.00	
900.0	13.50	86.17	895.8	3.5	52.7	52.8	3.00	3.00	
1,000.0	16.50	86.17	992.4	5.3	78.5	78.6	3.00	3.00	
1,100.0	19.50	86.17	1,087.5	7.3	109.3	109.5	3.00	3.00	
1,200.0	22.50	86.17	1,180.9	9.7	145.1	145.4	3.00	3.00	
1,269.9	24.60	86.17	1,245.0	11.6	172.9	173.3	3.00	3.00	Start 5590.4 hold at 1269.9 MD
1,300.0	24.60	86.17	1,272.3	12.4	185.4	185.8	0.00	0.00	
1,400.0	24.60	86.17	1,363.2	15.2	226.9	227.5	0.00	0.00	
1,500.0	24.60	86.17	1,454.2	18.0	268.5	269.1	0.00	0.00	
1,600.0	24.60	86.17	1,545.1	20.8	310.0	310.7	0.00	0.00	
1,700.0	24.60	86.17	1,636.0	23.6	351.5	352.3	0.00	0.00	
1,800.0	24.60	86.17	1,726.9	26.3	393.1	394.0	0.00	0.00	
1,900.0	24.60	86.17	1,817.9	29.1	434.6	435.6	0.00	0.00	
2,000.0	24.60	86.17	1,908.8	31.9	476.1	477.2	0.00	0.00	
2,100.0	24.60	86.17	1,999.7	34.7	517.7	518.8	0.00	0.00	
2,200.0	24.60	86.17	2,090.6	37.5	559.2	560.4	0.00	0.00	
2,300.0	24.60	86.17	2,181.6	40.2	600.7	602.1	0.00	0.00	
2,400.0	24.60	86.17	2,272.5	43.0	642.3	643.7	0.00	0.00	
2,500.0	24.60	86.17	2,363.4	45.8	683.8	685.3	0.00	0.00	
2,600.0	24.60	86.17	2,454.3	48.6	725.3	726.9	0.00	0.00	
2,700.0	24.60	86.17	2,545.3	51.4	766.8	768.6	0.00	0.00	
2,800.0	24.60	86.17	2,636.2	54.2	808.4	810.2	0.00	0.00	
2,900.0	24.60	86.17	2,727.1	56.9	849.9	851.8	0.00	0.00	
3,000.0	24.60	86.17	2,818.1	59.7	891.4	893.4	0.00	0.00	
3,100.0	24.60	86.17	2,909.0	62.5	933.0	935.1	0.00	0.00	
3,200.0	24.60	86.17	2,999.9	65.3	974.5	976.7	0.00	0.00	
3,300.0	24.60	86.17	3,090.8	68.1	1,016.0	1,018.3	0.00	0.00	
3,400.0	24.60	86.17	3,181.8	70.9	1,057.6	1,059.9	0.00	0.00	
3,500.0	24.60	86.17	3,272.7	73.6	1,099.1	1,101.6	0.00	0.00	
3,600.0	24.60	86.17	3,363.6	76.4	1,140.6	1,143.2	0.00	0.00	
3,700.0	24.60	86.17	3,454.5	79.2	1,182.2	1,184.8	0.00	0.00	
3,800.0	24.60	86.17	3,545.5	82.0	1,223.7	1,226.4	0.00	0.00	
3,900.0	24.60	86.17	3,636.4	84.8	1,265.2	1,268.0	0.00	0.00	
4,000.0	24.60	86.17	3,727.3	87.5	1,306.7	1,309.7	0.00	0.00	
4,100.0	24.60	86.17	3,818.2	90.3	1,348.3	1,351.3	0.00	0.00	
4,200.0	24.60	86.17	3,909.2	93.1	1,389.8	1,392.9	0.00	0.00	
4,300.0	24.60	86.17	4,000.1	95.9	1,431.3	1,434.5	0.00	0.00	
4,400.0	24.60	86.17	4,091.0	98.7	1,472.9	1,476.2	0.00	0.00	
4,500.0	24.60	86.17	4,181.9	101.5	1,514.4	1,517.8	0.00	0.00	
4,600.0	24.60	86.17	4,272.9	104.2	1,555.9	1,559.4	0.00	0.00	
4,700.0	24.60	86.17	4,363.8	107.0	1,597.5	1,601.0	0.00	0.00	
4,800.0	24.60	86.17	4,454.7	109.8	1,639.0	1,642.7	0.00	0.00	
4,900.0	24.60	86.17	4,545.6	112.6	1,680.5	1,684.3	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well PUCKETT 23C-30
Company:	Caerus Oil & Gas	**TVD Reference:**	30' KB @ 8270.0usft
Project:	Garfield County, CO (UTM 12N)	**MD Reference:**	30' KB @ 8270.0usft
Site:	S30-T6S-R96W (MESA I25)	**North Reference:**	True
Well:	PUCKETT 23C-30	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	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
5,000.0	24.60	86.17	4,636.6	115.4	1,722.0	1,725.9	0.00	0.00	
5,100.0	24.60	86.17	4,727.5	118.1	1,763.6	1,767.5	0.00	0.00	
5,200.0	24.60	86.17	4,818.4	120.9	1,805.1	1,809.2	0.00	0.00	
5,300.0	24.60	86.17	4,909.3	123.7	1,846.6	1,850.8	0.00	0.00	
5,400.0	24.60	86.17	5,000.3	126.5	1,888.2	1,892.4	0.00	0.00	
5,500.0	24.60	86.17	5,091.2	129.3	1,929.7	1,934.0	0.00	0.00	
5,600.0	24.60	86.17	5,182.1	132.1	1,971.2	1,975.7	0.00	0.00	
5,700.0	24.60	86.17	5,273.0	134.8	2,012.8	2,017.3	0.00	0.00	
5,800.0	24.60	86.17	5,364.0	137.6	2,054.3	2,058.9	0.00	0.00	
5,900.0	24.60	86.17	5,454.9	140.4	2,095.8	2,100.5	0.00	0.00	
6,000.0	24.60	86.17	5,545.8	143.2	2,137.4	2,142.1	0.00	0.00	
6,100.0	24.60	86.17	5,636.7	146.0	2,178.9	2,183.8	0.00	0.00	
6,200.0	24.60	86.17	5,727.7	148.8	2,220.4	2,225.4	0.00	0.00	
6,300.0	24.60	86.17	5,818.6	151.5	2,261.9	2,267.0	0.00	0.00	
6,400.0	24.60	86.17	5,909.5	154.3	2,303.5	2,308.6	0.00	0.00	
6,500.0	24.60	86.17	6,000.4	157.1	2,345.0	2,350.3	0.00	0.00	
6,532.5	24.60	86.17	6,030.0	158.0	2,358.5	2,363.8	0.00	0.00	OHIO_CREEK.MBL (TVD)
6,600.0	24.60	86.17	6,091.4	159.9	2,386.5	2,391.9	0.00	0.00	
6,700.0	24.60	86.17	6,182.3	162.7	2,428.1	2,433.5	0.00	0.00	
6,800.0	24.60	86.17	6,273.2	165.4	2,469.6	2,475.1	0.00	0.00	
6,833.8	24.60	86.17	6,304.0	166.4	2,483.7	2,489.2	0.00	0.00	WILLIAMS_FORK.MBL (TVD)
6,860.3	24.60	86.17	6,328.0	167.1	2,494.6	2,500.2	0.00	0.00	Start Drop -3.00
6,900.0	23.41	86.17	6,364.3	168.2	2,510.8	2,516.4	3.00	-3.00	
7,000.0	20.41	86.17	6,457.1	170.7	2,548.0	2,553.7	3.00	-3.00	
7,100.0	17.41	86.17	6,551.7	172.9	2,580.3	2,586.1	3.00	-3.00	
7,200.0	14.41	86.17	6,647.8	174.7	2,607.6	2,613.5	3.00	-3.00	
7,300.0	11.41	86.17	6,745.3	176.2	2,629.9	2,635.8	3.00	-3.00	
7,400.0	8.41	86.17	6,843.8	177.3	2,647.1	2,653.0	3.00	-3.00	
7,500.0	5.41	86.17	6,943.1	178.1	2,659.1	2,665.0	3.00	-3.00	
7,600.0	2.41	86.17	7,042.8	178.6	2,665.9	2,671.9	3.00	-3.00	
7,680.2	0.00	0.00	7,123.0	178.7	2,667.6	2,673.5	3.00	-3.00	Start 2033.0 hold at 7680.2 MD - TOP_GAS.ME
7,700.0	0.00	0.00	7,142.8	178.7	2,667.6	2,673.5	0.00	0.00	
7,800.0	0.00	0.00	7,242.8	178.7	2,667.6	2,673.5	0.00	0.00	
7,900.0	0.00	0.00	7,342.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,000.0	0.00	0.00	7,442.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,100.0	0.00	0.00	7,542.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,200.0	0.00	0.00	7,642.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,300.0	0.00	0.00	7,742.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,400.0	0.00	0.00	7,842.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,500.0	0.00	0.00	7,942.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,600.0	0.00	0.00	8,042.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,700.0	0.00	0.00	8,142.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,800.0	0.00	0.00	8,242.8	178.7	2,667.6	2,673.5	0.00	0.00	
8,900.0	0.00	0.00	8,342.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,000.0	0.00	0.00	8,442.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,100.0	0.00	0.00	8,542.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,200.0	0.00	0.00	8,642.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,300.0	0.00	0.00	8,742.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,313.2	0.00	0.00	8,756.0	178.7	2,667.6	2,673.5	0.00	0.00	CAMEO.MBL (TVD)
9,400.0	0.00	0.00	8,842.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,500.0	0.00	0.00	8,942.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,563.2	0.00	0.00	9,006.0	178.7	2,667.6	2,673.5	0.00	0.00	ROLLINS.MBL (TVD)

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Company:	Caerus Oil & Gas	**TVD Reference:**	30' KB @ 8270.0usft
Project:	Garfield County, CO (UTM 12N)	**MD Reference:**	30' KB @ 8270.0usft
Site:	S30-T6S-R96W (MESA I25)	**North Reference:**	True
Well:	PUCKETT 23C-30	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	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
9,600.0	0.00	0.00	9,042.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,700.0	0.00	0.00	9,142.8	178.7	2,667.6	2,673.5	0.00	0.00	
9,713.2	0.00	0.00	9,156.0	178.7	2,667.6	2,673.5	0.00	0.00	TD at 9713.2 - TD.MBL (TVD)

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 23C-30 PBHl - plan hits target center - Circle (radius 50.0)	0.00	0.00	9,156.0	178.7	2,667.6	14,353,771.10	2,443,955.90	39.491978	-108.152034

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,532.5	6,030.0	OHIO_CREEK.MBL (TVD)			
6,833.8	6,304.0	WILLIAMS_FORK.MBL (TVD)			
7,680.2	7,123.0	TOP_GAS.MBL (TVD)			
9,313.2	8,756.0	CAMEO.MBL (TVD)			
9,563.2	9,006.0	ROLLINS.MBL (TVD)			
9,713.2	9,156.0	TD.MBL (TVD)			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
450.0	450.0	0.0	0.0	Start Build 3.00
1,269.9	1,245.0	11.6	172.9	Start 5590.4 hold at 1269.9 MD
6,860.3	6,328.0	167.1	2,494.6	Start Drop -3.00
7,680.2	7,123.0	178.7	2,667.6	Start 2033.0 hold at 7680.2 MD
9,713.2	9,156.0	178.7	2,667.6	TD at 9713.2