

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 22B-36-795
Company:	Caerus Oil & Gas	TVD Reference:	KB @ 8902.0usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	KB @ 8902.0usft
Site:	S36-T7S-R95W (36G)	North Reference:	True
Well:	22B-36-795	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		S36-T7S-R95W (36G)			
Site Position:		Northing:	14,320,581.60 usft	Latitude:	39.395498
From:	Map	Easting:	2,504,539.60 usft	Longitude:	-107.941574
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.94 °

Well	22B-36-795					
Well Position	+N/-S	0.0 usft	Northing:	14,320,656.90 usft	Latitude:	39.395704
	+E/-W	0.0 usft	Easting:	2,504,547.20 usft	Longitude:	-107.941538
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,872.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/28/2015	9.40	65.60	51,873

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	275.21	

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
640.0	13.20	275.21	636.1	4.6	-50.2	3.00	3.00	0.00	275.21	
7,609.9	13.20	275.21	7,421.9	149.2	-1,635.2	0.00	0.00	0.00	0.00	
8,049.9	0.00	0.00	7,858.0	153.8	-1,685.5	3.00	-3.00	0.00	180.00	
10,165.9	0.00	0.00	9,974.0	153.8	-1,685.5	0.00	0.00	0.00	0.00	22B-36-795 PBHL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 22B-36-795
Company:	Caerus Oil & Gas	TVD Reference:	KB @ 8902.0usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	KB @ 8902.0usft
Site:	S36-T7S-R95W (36G)	North Reference:	True
Well:	22B-36-795	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	Start Build 3.00
300.0	3.00	275.21	300.0	0.2	-2.6	2.6	3.00	3.00	
400.0	6.00	275.21	399.6	1.0	-10.4	10.5	3.00	3.00	
500.0	9.00	275.21	498.8	2.1	-23.4	23.5	3.00	3.00	
600.0	12.00	275.21	597.1	3.8	-41.6	41.7	3.00	3.00	
640.0	13.20	275.21	636.1	4.6	-50.2	50.5	3.00	3.00	Start 6969.9 hold at 640.0 MD
700.0	13.20	275.21	694.5	5.8	-63.9	64.2	0.00	0.00	
800.0	13.20	275.21	791.9	7.9	-86.6	87.0	0.00	0.00	
900.0	13.20	275.21	889.2	10.0	-109.4	109.8	0.00	0.00	
1,000.0	13.20	275.21	986.6	12.1	-132.1	132.7	0.00	0.00	
1,100.0	13.20	275.21	1,084.0	14.1	-154.9	155.5	0.00	0.00	
1,200.0	13.20	275.21	1,181.3	16.2	-177.6	178.3	0.00	0.00	
1,300.0	13.20	275.21	1,278.7	18.3	-200.3	201.2	0.00	0.00	
1,400.0	13.20	275.21	1,376.0	20.4	-223.1	224.0	0.00	0.00	
1,500.0	13.20	275.21	1,473.4	22.4	-245.8	246.8	0.00	0.00	
1,600.0	13.20	275.21	1,570.8	24.5	-268.6	269.7	0.00	0.00	
1,700.0	13.20	275.21	1,668.1	26.6	-291.3	292.5	0.00	0.00	
1,800.0	13.20	275.21	1,765.5	28.7	-314.0	315.3	0.00	0.00	
1,900.0	13.20	275.21	1,862.8	30.7	-336.8	338.2	0.00	0.00	
2,000.0	13.20	275.21	1,960.2	32.8	-359.5	361.0	0.00	0.00	
2,100.0	13.20	275.21	2,057.5	34.9	-382.3	383.8	0.00	0.00	
2,200.0	13.20	275.21	2,154.9	37.0	-405.0	406.7	0.00	0.00	
2,300.0	13.20	275.21	2,252.3	39.0	-427.7	429.5	0.00	0.00	
2,400.0	13.20	275.21	2,349.6	41.1	-450.5	452.3	0.00	0.00	
2,500.0	13.20	275.21	2,447.0	43.2	-473.2	475.2	0.00	0.00	
2,600.0	13.20	275.21	2,544.3	45.3	-496.0	498.0	0.00	0.00	
2,700.0	13.20	275.21	2,641.7	47.3	-518.7	520.8	0.00	0.00	
2,800.0	13.20	275.21	2,739.1	49.4	-541.4	543.7	0.00	0.00	
2,900.0	13.20	275.21	2,836.4	51.5	-564.2	566.5	0.00	0.00	
3,000.0	13.20	275.21	2,933.8	53.6	-586.9	589.4	0.00	0.00	
3,100.0	13.20	275.21	3,031.1	55.6	-609.7	612.2	0.00	0.00	
3,200.0	13.20	275.21	3,128.5	57.7	-632.4	635.0	0.00	0.00	
3,300.0	13.20	275.21	3,225.8	59.8	-655.1	657.9	0.00	0.00	
3,400.0	13.20	275.21	3,323.2	61.9	-677.9	680.7	0.00	0.00	
3,500.0	13.20	275.21	3,420.6	63.9	-700.6	703.5	0.00	0.00	
3,600.0	13.20	275.21	3,517.9	66.0	-723.4	726.4	0.00	0.00	
3,700.0	13.20	275.21	3,615.3	68.1	-746.1	749.2	0.00	0.00	
3,800.0	13.20	275.21	3,712.6	70.2	-768.8	772.0	0.00	0.00	
3,900.0	13.20	275.21	3,810.0	72.2	-791.6	794.9	0.00	0.00	
4,000.0	13.20	275.21	3,907.3	74.3	-814.3	817.7	0.00	0.00	
4,100.0	13.20	275.21	4,004.7	76.4	-837.1	840.5	0.00	0.00	
4,200.0	13.20	275.21	4,102.1	78.5	-859.8	863.4	0.00	0.00	
4,300.0	13.20	275.21	4,199.4	80.5	-882.5	886.2	0.00	0.00	
4,400.0	13.20	275.21	4,296.8	82.6	-905.3	909.0	0.00	0.00	
4,500.0	13.20	275.21	4,394.1	84.7	-928.0	931.9	0.00	0.00	
4,600.0	13.20	275.21	4,491.5	86.8	-950.8	954.7	0.00	0.00	
4,700.0	13.20	275.21	4,588.9	88.8	-973.5	977.5	0.00	0.00	
4,800.0	13.20	275.21	4,686.2	90.9	-996.2	1,000.4	0.00	0.00	
4,900.0	13.20	275.21	4,783.6	93.0	-1,019.0	1,023.2	0.00	0.00	
5,000.0	13.20	275.21	4,880.9	95.1	-1,041.7	1,046.0	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 22B-36-795
Company:	Caerus Oil & Gas	TVD Reference:	KB @ 8902.0usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	KB @ 8902.0usft
Site:	S36-T7S-R95W (36G)	North Reference:	True
Well:	22B-36-795	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
5,100.0	13.20	275.21	4,978.3	97.1	-1,064.5	1,068.9	0.00	0.00	
5,200.0	13.20	275.21	5,075.6	99.2	-1,087.2	1,091.7	0.00	0.00	
5,300.0	13.20	275.21	5,173.0	101.3	-1,109.9	1,114.5	0.00	0.00	
5,400.0	13.20	275.21	5,270.4	103.4	-1,132.7	1,137.4	0.00	0.00	
5,500.0	13.20	275.21	5,367.7	105.4	-1,155.4	1,160.2	0.00	0.00	
5,600.0	13.20	275.21	5,465.1	107.5	-1,178.2	1,183.0	0.00	0.00	
5,700.0	13.20	275.21	5,562.4	109.6	-1,200.9	1,205.9	0.00	0.00	
5,800.0	13.20	275.21	5,659.8	111.7	-1,223.6	1,228.7	0.00	0.00	
5,900.0	13.20	275.21	5,757.2	113.7	-1,246.4	1,251.6	0.00	0.00	
6,000.0	13.20	275.21	5,854.5	115.8	-1,269.1	1,274.4	0.00	0.00	
6,100.0	13.20	275.21	5,951.9	117.9	-1,291.9	1,297.2	0.00	0.00	
6,200.0	13.20	275.21	6,049.2	120.0	-1,314.6	1,320.1	0.00	0.00	
6,300.0	13.20	275.21	6,146.6	122.0	-1,337.3	1,342.9	0.00	0.00	
6,400.0	13.20	275.21	6,243.9	124.1	-1,360.1	1,365.7	0.00	0.00	
6,500.0	13.20	275.21	6,341.3	126.2	-1,382.8	1,388.6	0.00	0.00	
6,600.0	13.20	275.21	6,438.7	128.3	-1,405.6	1,411.4	0.00	0.00	
6,700.0	13.20	275.21	6,536.0	130.3	-1,428.3	1,434.2	0.00	0.00	
6,800.0	13.20	275.21	6,633.4	132.4	-1,451.0	1,457.1	0.00	0.00	
6,900.0	13.20	275.21	6,730.7	134.5	-1,473.8	1,479.9	0.00	0.00	
7,000.0	13.20	275.21	6,828.1	136.6	-1,496.5	1,502.7	0.00	0.00	
7,034.8	13.20	275.21	6,862.0	137.3	-1,504.4	1,510.7	0.00	0.00	OHIO_CREEK
7,100.0	13.20	275.21	6,925.4	138.6	-1,519.3	1,525.6	0.00	0.00	
7,200.0	13.20	275.21	7,022.8	140.7	-1,542.0	1,548.4	0.00	0.00	
7,300.0	13.20	275.21	7,120.2	142.8	-1,564.7	1,571.2	0.00	0.00	
7,400.0	13.20	275.21	7,217.5	144.9	-1,587.5	1,594.1	0.00	0.00	
7,479.6	13.20	275.21	7,295.0	146.5	-1,605.6	1,612.2	0.00	0.00	WILLIAMS_FORK
7,500.0	13.20	275.21	7,314.9	146.9	-1,610.2	1,616.9	0.00	0.00	
7,600.0	13.20	275.21	7,412.2	149.0	-1,633.0	1,639.7	0.00	0.00	
7,609.9	13.20	275.21	7,421.9	149.2	-1,635.2	1,642.0	0.00	0.00	Start Drop -3.00
7,700.0	10.50	275.21	7,510.0	150.9	-1,653.6	1,660.5	3.00	-3.00	
7,800.0	7.50	275.21	7,608.8	152.3	-1,669.2	1,676.1	3.00	-3.00	
7,900.0	4.50	275.21	7,708.2	153.3	-1,679.6	1,686.6	3.00	-3.00	
8,000.0	1.50	275.21	7,808.1	153.8	-1,684.8	1,691.8	3.00	-3.00	
8,049.9	0.00	0.00	7,858.0	153.8	-1,685.5	1,692.5	3.00	-3.00	Start 2116.0 hold at 8049.9 MD
8,100.0	0.00	0.00	7,908.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,149.9	0.00	0.00	7,958.0	153.8	-1,685.5	1,692.5	0.00	0.00	TOP_GAS
8,200.0	0.00	0.00	8,008.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,300.0	0.00	0.00	8,108.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,400.0	0.00	0.00	8,208.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,500.0	0.00	0.00	8,308.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,600.0	0.00	0.00	8,408.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,700.0	0.00	0.00	8,508.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,800.0	0.00	0.00	8,608.1	153.8	-1,685.5	1,692.5	0.00	0.00	
8,900.0	0.00	0.00	8,708.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,000.0	0.00	0.00	8,808.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,100.0	0.00	0.00	8,908.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,200.0	0.00	0.00	9,008.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,300.0	0.00	0.00	9,108.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,400.0	0.00	0.00	9,208.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,500.0	0.00	0.00	9,308.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,600.0	0.00	0.00	9,408.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,700.0	0.00	0.00	9,508.1	153.8	-1,685.5	1,692.5	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 22B-36-795
Company:	Caerus Oil & Gas	TVD Reference:	KB @ 8902.0usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	KB @ 8902.0usft
Site:	S36-T7S-R95W (36G)	North Reference:	True
Well:	22B-36-795	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
9,760.9	0.00	0.00	9,569.0	153.8	-1,685.5	1,692.5	0.00	0.00	CAMEO
9,800.0	0.00	0.00	9,608.1	153.8	-1,685.5	1,692.5	0.00	0.00	
9,900.0	0.00	0.00	9,708.1	153.8	-1,685.5	1,692.5	0.00	0.00	
10,000.0	0.00	0.00	9,808.1	153.8	-1,685.5	1,692.5	0.00	0.00	
10,015.9	0.00	0.00	9,824.0	153.8	-1,685.5	1,692.5	0.00	0.00	ROLLINS
10,100.0	0.00	0.00	9,908.1	153.8	-1,685.5	1,692.5	0.00	0.00	
10,165.9	0.00	0.00	9,974.0	153.8	-1,685.5	1,692.5	0.00	0.00	TD at 10165.9

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
22B-36-795 PBHL - plan hits target center - Circle (radius 50.0)	0.00	0.00	9,974.0	153.8	-1,685.5	14,320,753.50	2,502,857.50	39.396126	-107.947499

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,034.8	6,862.0	OHIO_CREEK			
7,479.6	7,295.0	WILLIAMS_FORK			
8,149.9	7,958.0	TOP_GAS			
9,760.9	9,569.0	CAMEO			
10,015.9	9,824.0	ROLLINS			
10,165.9	9,974.0	TD			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.0	200.0	0.0	0.0	Start Build 3.00
640.0	636.1	4.6	-50.2	Start 6969.9 hold at 640.0 MD
7,609.9	7,421.9	149.2	-1,635.2	Start Drop -3.00
8,049.9	7,858.0	153.8	-1,685.5	Start 2116.0 hold at 8049.9 MD
10,165.9	9,974.0	153.8	-1,685.5	TD at 10165.9