



Ursa Operating Company, LLC

Rockies Region

CSF Q

CSF 41B-15-07-91

Wellbore #1

Plan: Design #1

Standard Planning Report

18 February, 2014



Database:	MasterDB	Local Co-ordinate Reference:	Well CSF 41B-15-07-91
Company:	Ursa Operating Company, LLC	TVD Reference:	CSF 41B-15-07-91 @ 7300.4usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	CSF 41B-15-07-91 @ 7300.4usft (PAD Est KB)
Site:	CSF Q	North Reference:	True
Well:	CSF 41B-15-07-91	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Rockies Region		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		CSF Q			
Site Position:		Northing:	1,597,555.05 usft	Latitude:	39° 27' 22.939 N
From:	Lat/Long	Easting:	2,425,142.43 usft	Longitude:	107° 32' 9.881 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.28 °

Well	CSF 41B-15-07-91, SHL LAT: 39.45638531 LONG: -107.5361189					
Well Position	+N/-S	4.8 usft	Northing:	1,597,560.15 usft	Latitude:	39° 27' 22.987 N
	+E/-W	-11.5 usft	Easting:	2,425,131.03 usft	Longitude:	107° 32' 10.028 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	7,300.4 usft	Ground Level:	7,285.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/13/2014	9.79	65.72	52,008

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	138.38	

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.0	3.00	50.00	1,299.9	5.0	6.0	1.00	1.00	0.00	50.00	
1,856.9	19.31	139.23	1,846.0	-55.9	78.0	3.50	2.93	16.02	97.75	
5,857.6	19.31	139.23	5,621.7	-1,057.9	941.8	0.00	0.00	0.00	0.00	
6,409.3	0.00	0.00	6,163.0	-1,127.6	1,002.0	3.50	-3.50	0.00	180.00	CSF 41B-15-07-91 T
8,274.3	0.00	0.00	8,028.0	-1,127.6	1,002.0	0.00	0.00	0.00	0.00	

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Project:	Rockies Region	MD Reference:	CSF 41B-15-07-91 @ 7300.4usft (PAD Est KB)
Site:	CSF Q	North Reference:	True
Well:	CSF 41B-15-07-91	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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 (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 1.00									
1,100.0	1.00	50.00	1,100.0	0.6	0.7	0.0	1.00	1.00	0.00
1,200.0	2.00	50.00	1,200.0	2.2	2.7	0.1	1.00	1.00	0.00
1,300.0	3.00	50.00	1,299.9	5.0	6.0	0.2	1.00	1.00	0.00
Start DLS 3.50 TFO 97.75									
1,400.0	4.29	103.96	1,399.7	5.8	11.7	3.4	3.50	1.29	53.96
1,500.0	7.23	123.60	1,499.2	1.4	20.5	12.6	3.50	2.94	19.64
1,600.0	10.52	131.52	1,598.0	-8.1	32.6	27.7	3.50	3.29	7.92
1,700.0	13.91	135.65	1,695.7	-22.7	47.9	48.8	3.50	3.39	4.14
1,800.0	17.34	138.19	1,792.0	-42.5	66.2	75.7	3.50	3.43	2.53
1,856.9	19.31	139.23	1,846.0	-55.9	78.0	93.6	3.50	3.45	1.84
Start 4000.7 hold at 1856.9 MD									
1,900.0	19.31	139.23	1,886.7	-66.7	87.3	107.8	0.00	0.00	0.00
2,000.0	19.31	139.23	1,981.0	-91.7	108.9	140.9	0.00	0.00	0.00
2,100.0	19.31	139.23	2,075.4	-116.8	130.5	174.0	0.00	0.00	0.00
2,200.0	19.31	139.23	2,169.8	-141.8	152.1	207.0	0.00	0.00	0.00
2,300.0	19.31	139.23	2,264.2	-166.9	173.7	240.1	0.00	0.00	0.00
2,400.0	19.31	139.23	2,358.5	-191.9	195.3	273.2	0.00	0.00	0.00
2,500.0	19.31	139.23	2,452.9	-217.0	216.9	306.2	0.00	0.00	0.00
2,600.0	19.31	139.23	2,547.3	-242.0	238.4	339.3	0.00	0.00	0.00
2,700.0	19.31	139.23	2,641.7	-267.1	260.0	372.4	0.00	0.00	0.00
2,800.0	19.31	139.23	2,736.0	-292.1	281.6	405.4	0.00	0.00	0.00
2,900.0	19.31	139.23	2,830.4	-317.1	303.2	438.5	0.00	0.00	0.00
3,000.0	19.31	139.23	2,924.8	-342.2	324.8	471.5	0.00	0.00	0.00
3,100.0	19.31	139.23	3,019.2	-367.2	346.4	504.6	0.00	0.00	0.00
3,200.0	19.31	139.23	3,113.5	-392.3	368.0	537.7	0.00	0.00	0.00
3,300.0	19.31	139.23	3,207.9	-417.3	389.6	570.7	0.00	0.00	0.00
3,400.0	19.31	139.23	3,302.3	-442.4	411.2	603.8	0.00	0.00	0.00
3,500.0	19.31	139.23	3,396.7	-467.4	432.8	636.9	0.00	0.00	0.00
3,600.0	19.31	139.23	3,491.0	-492.5	454.4	669.9	0.00	0.00	0.00
3,700.0	19.31	139.23	3,585.4	-517.5	476.0	703.0	0.00	0.00	0.00
3,800.0	19.31	139.23	3,679.8	-542.5	497.5	736.1	0.00	0.00	0.00
3,900.0	19.31	139.23	3,774.2	-567.6	519.1	769.1	0.00	0.00	0.00
3,966.6	19.31	139.23	3,837.0	-584.3	533.5	791.1	0.00	0.00	0.00
Williams Fork									
4,000.0	19.31	139.23	3,868.5	-592.6	540.7	802.2	0.00	0.00	0.00
4,100.0	19.31	139.23	3,962.9	-617.7	562.3	835.2	0.00	0.00	0.00
4,200.0	19.31	139.23	4,057.3	-642.7	583.9	868.3	0.00	0.00	0.00
4,300.0	19.31	139.23	4,151.7	-667.8	605.5	901.4	0.00	0.00	0.00
4,400.0	19.31	139.23	4,246.0	-692.8	627.1	934.4	0.00	0.00	0.00
4,500.0	19.31	139.23	4,340.4	-717.9	648.7	967.5	0.00	0.00	0.00

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Site:	CSF Q	North Reference:	True
Well:	CSF 41B-15-07-91	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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 (°/100usft)	Turn Rate (°/100usft)
4,600.0	19.31	139.23	4,434.8	-742.9	670.3	1,000.6	0.00	0.00	0.00
4,700.0	19.31	139.23	4,529.2	-767.9	691.9	1,033.6	0.00	0.00	0.00
4,800.0	19.31	139.23	4,623.5	-793.0	713.5	1,066.7	0.00	0.00	0.00
4,900.0	19.31	139.23	4,717.9	-818.0	735.1	1,099.7	0.00	0.00	0.00
5,000.0	19.31	139.23	4,812.3	-843.1	756.7	1,132.8	0.00	0.00	0.00
5,100.0	19.31	139.23	4,906.7	-868.1	778.2	1,165.9	0.00	0.00	0.00
5,200.0	19.31	139.23	5,001.0	-893.2	799.8	1,198.9	0.00	0.00	0.00
5,300.0	19.31	139.23	5,095.4	-918.2	821.4	1,232.0	0.00	0.00	0.00
5,400.0	19.31	139.23	5,189.8	-943.3	843.0	1,265.1	0.00	0.00	0.00
5,500.0	19.31	139.23	5,284.2	-968.3	864.6	1,298.1	0.00	0.00	0.00
5,600.0	19.31	139.23	5,378.5	-993.3	886.2	1,331.2	0.00	0.00	0.00
5,700.0	19.31	139.23	5,472.9	-1,018.4	907.8	1,364.3	0.00	0.00	0.00
5,800.0	19.31	139.23	5,567.3	-1,043.4	929.4	1,397.3	0.00	0.00	0.00
5,857.6	19.31	139.23	5,621.7	-1,057.9	941.8	1,416.4	0.00	0.00	0.00
Start Drop -3.50									
5,900.0	17.83	139.23	5,661.8	-1,068.1	950.6	1,429.9	3.50	-3.50	0.00
6,000.0	14.33	139.23	5,757.9	-1,089.1	968.7	1,457.6	3.50	-3.50	0.00
6,100.0	10.83	139.23	5,855.5	-1,105.5	982.9	1,479.3	3.50	-3.50	0.00
6,200.0	7.33	139.23	5,954.2	-1,117.5	993.2	1,495.1	3.50	-3.50	0.00
6,300.0	3.83	139.23	6,053.7	-1,124.8	999.6	1,504.8	3.50	-3.50	0.00
6,409.3	0.00	0.00	6,163.0	-1,127.6	1,002.0	1,508.5	3.50	-3.50	0.00
Start 1865.0 hold at 6409.3 MD - Top of Gas - CSF 41B-15-07-91 TGT									
6,500.0	0.00	0.00	6,253.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
6,558.3	0.00	0.00	6,312.0	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
Cameo									
6,600.0	0.00	0.00	6,353.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
6,700.0	0.00	0.00	6,453.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,553.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
6,900.0	0.00	0.00	6,653.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,753.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,100.0	0.00	0.00	6,853.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,200.0	0.00	0.00	6,953.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,300.0	0.00	0.00	7,053.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,400.0	0.00	0.00	7,153.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,500.0	0.00	0.00	7,253.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,600.0	0.00	0.00	7,353.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,700.0	0.00	0.00	7,453.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,800.0	0.00	0.00	7,553.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,900.0	0.00	0.00	7,653.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
7,974.3	0.00	0.00	7,728.0	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
Rollins									
8,000.0	0.00	0.00	7,753.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
8,100.0	0.00	0.00	7,853.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
8,200.0	0.00	0.00	7,953.7	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
8,274.3	0.00	0.00	8,028.0	-1,127.6	1,002.0	1,508.5	0.00	0.00	0.00
TD at 8274.3									

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Project:	Rockies Region	MD Reference:	CSF 41B-15-07-91 @ 7300.4usft (PAD Est KB)
Site:	CSF Q	North Reference:	True
Well:	CSF 41B-15-07-91	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
CSF 41B-15-07-91 TGT	0.00	0.00	6,163.0	-1,127.6	1,002.0	1,596,410.36	2,426,107.47	39° 27' 11.842 N	107° 31' 57.254 W
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D1,865.0)									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,966.6	3,837.0	Williams Fork		0.00	
6,409.3	6,163.0	Top of Gas		0.00	
6,558.3	6,312.0	Cameo		0.00	
7,974.3	7,728.0	Rollins		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,000.0	1,000.0	0.0	0.0	Start Build 1.00
1,300.0	1,299.9	5.0	6.0	Start DLS 3.50 TFO 97.75
1,856.9	1,846.0	-55.9	78.0	Start 4000.7 hold at 1856.9 MD
5,857.6	5,621.7	-1,057.9	941.8	Start Drop -3.50
6,409.3	6,163.0	-1,127.6	1,002.0	Start 1865.0 hold at 6409.3 MD
8,274.3	8,028.0	-1,127.6	1,002.0	TD at 8274.3



Well Name:CSF 41B-15-07-91
Surface Location: CSF Q
North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
Ground Elevation: 7285.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1597560.15 2425131.02 39° 27' 22.987 N 107° 32' 10.028 W
PAD Est KB CSF 41B-15-07-91 @ 7300.4usft (PAD Est KB)



Azimuths to True North
Magnetic North: 9.79°
Magnetic Field
Strength: 52007.6snT
Dip Angle: 65.72°
Date: 2/13/2014
Model: IGRF2010

CSF Q
CSF 41B-15-07-91
Design #1
11:41, February 18 2014

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
41B-15-07-91 TGT	6163.0	-1127.6	1002.0	1596410.37	2426107.47	39° 27' 11.842 N	107° 31' 57.254 W	Rectangle (Sides: L40.0 W100.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1300.0	3.00	50.00	1299.9	5.0	6.0	1.00	50.00	0.2	
4	1856.9	19.31	139.23	1846.0	-55.9	78.0	3.50	97.75	93.6	
5	5857.6	19.31	139.23	5621.7	-1057.9	941.8	0.00	0.00	1416.4	
6	6409.3	0.00	0.00	6163.0	-1127.6	1002.0	3.50	180.00	1508.5	CSF 41B-15-07-91 TGT
7	8274.3	0.00	0.00	8028.0	-1127.6	1002.0	0.00	0.00	1508.5	

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	Start Build 1.00
1299.9	1300.0	Start DLS 3.50 TFO 97.75
1846.0	1856.9	Start 4000.7 hold at 1856.9 MD
5621.7	5857.6	Start Drop -3.50
6163.0	6409.3	Start 1865.0 hold at 6409.3 MD
8028.0	8274.3	TD at 8274.3

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3837.0	3966.6	Williams Fork	0.00	
6163.0	6409.3	Top of Gas	0.00	
6312.0	6558.3	Cameo	0.00	
7728.0	7974.3	Rollins	0.00	

