

# **Ursa Operating Company, LLC**

**Rockies Region**

**McLin C**

**McLin C17**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**24 June, 2013**



# Payzone Directional

## Planning Report



<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well McLin C17
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	McLin C17 @ 5741.4ft (Original Well Elev)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	McLin C17 @ 5741.4ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	True
<b>Well:</b>	McLin C17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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

Site		McLin C			
Site Position:		Northing:	494,718.69 m	Latitude:	39° 31' 30.857 N
From:	Lat/Long	Easting:	733,248.01 m	Longitude:	107° 36' 25.703 W
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.33 °

Well	McLin C17, SHL LAT: 39.525144433 LONG: -107.607194576					
Well Position	+N/-S	-34.2 ft	Northing:	494,708.39 m	Latitude:	39° 31' 30.520 N
	+E/-W	-15.5 ft	Easting:	733,243.05 m	Longitude:	107° 36' 25.900 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,741.4 ft	Ground Level:	5,726.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	6/24/2013	9.88	65.79	52,152

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	240.53

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,686.7	17.03	240.53	1,679.5	-35.3	-62.5	3.50	3.50	0.00	240.53	
4,296.1	17.03	240.53	4,174.5	-411.4	-728.0	0.00	0.00	0.00	0.00	
4,782.7	0.00	0.00	4,654.0	-446.7	-790.5	3.50	-3.50	0.00	180.00	C17 TGT
7,379.7	0.00	0.00	7,251.0	-446.7	-790.5	0.00	0.00	0.00	0.00	C17 BHL TGT

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<b>Site:</b>	McLin C	<b>North Reference:</b>	True
<b>Well:</b>	McLin C17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 3.50									
1,300.0	3.50	240.53	1,299.9	-1.5	-2.7	3.1	3.50	3.50	0.00
1,400.0	7.00	240.53	1,399.5	-6.0	-10.6	12.2	3.50	3.50	0.00
1,500.0	10.50	240.53	1,498.3	-13.5	-23.9	27.4	3.50	3.50	0.00
1,600.0	14.00	240.53	1,596.0	-23.9	-42.3	48.6	3.50	3.50	0.00
1,686.7	17.03	240.53	1,679.5	-35.3	-62.5	71.8	3.50	3.50	0.00
Start 2609.4 hold at 1686.7 MD									
1,700.0	17.03	240.53	1,692.3	-37.2	-65.9	75.7	0.00	0.00	0.00
1,800.0	17.03	240.53	1,787.9	-51.7	-91.4	105.0	0.00	0.00	0.00
1,900.0	17.03	240.53	1,883.5	-66.1	-116.9	134.3	0.00	0.00	0.00
2,000.0	17.03	240.53	1,979.1	-80.5	-142.4	163.6	0.00	0.00	0.00
2,100.0	17.03	240.53	2,074.7	-94.9	-167.9	192.9	0.00	0.00	0.00
2,200.0	17.03	240.53	2,170.3	-109.3	-193.4	222.2	0.00	0.00	0.00
2,300.0	17.03	240.53	2,266.0	-123.7	-218.9	251.5	0.00	0.00	0.00
2,400.0	17.03	240.53	2,361.6	-138.1	-244.4	280.8	0.00	0.00	0.00
2,500.0	17.03	240.53	2,457.2	-152.5	-269.9	310.1	0.00	0.00	0.00
2,600.0	17.03	240.53	2,552.8	-166.9	-295.5	339.4	0.00	0.00	0.00
2,700.0	17.03	240.53	2,648.4	-181.4	-321.0	368.7	0.00	0.00	0.00
2,800.0	17.03	240.53	2,744.0	-195.8	-346.5	397.9	0.00	0.00	0.00
2,900.0	17.03	240.53	2,839.6	-210.2	-372.0	427.2	0.00	0.00	0.00
3,000.0	17.03	240.53	2,935.2	-224.6	-397.5	456.5	0.00	0.00	0.00
3,100.0	17.03	240.53	3,030.9	-239.0	-423.0	485.8	0.00	0.00	0.00
3,200.0	17.03	240.53	3,126.5	-253.4	-448.5	515.1	0.00	0.00	0.00
3,300.0	17.03	240.53	3,222.1	-267.8	-474.0	544.4	0.00	0.00	0.00
3,400.0	17.03	240.53	3,317.7	-282.2	-499.5	573.7	0.00	0.00	0.00
3,409.7	17.03	240.53	3,327.0	-283.6	-502.0	576.6	0.00	0.00	0.00
WF									
3,500.0	17.03	240.53	3,413.3	-296.6	-525.0	603.0	0.00	0.00	0.00
3,600.0	17.03	240.53	3,508.9	-311.1	-550.5	632.3	0.00	0.00	0.00
3,700.0	17.03	240.53	3,604.5	-325.5	-576.0	661.6	0.00	0.00	0.00
3,800.0	17.03	240.53	3,700.2	-339.9	-601.5	690.9	0.00	0.00	0.00
3,900.0	17.03	240.53	3,795.8	-354.3	-627.0	720.2	0.00	0.00	0.00
4,000.0	17.03	240.53	3,891.4	-368.7	-652.5	749.5	0.00	0.00	0.00
4,100.0	17.03	240.53	3,987.0	-383.1	-678.0	778.8	0.00	0.00	0.00
4,200.0	17.03	240.53	4,082.6	-397.5	-703.5	808.1	0.00	0.00	0.00
4,296.1	17.03	240.53	4,174.5	-411.4	-728.0	836.2	0.00	0.00	0.00
Start Drop -3.50									
4,300.0	16.90	240.53	4,178.2	-411.9	-729.0	837.3	3.50	-3.50	0.00
4,400.0	13.40	240.53	4,274.7	-424.8	-751.8	863.5	3.50	-3.50	0.00
4,500.0	9.90	240.53	4,372.7	-434.7	-769.3	883.7	3.50	-3.50	0.00
4,600.0	6.40	240.53	4,471.6	-441.7	-781.7	897.8	3.50	-3.50	0.00

# Payzone Directional

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<b>Site:</b>	McLin C	<b>North Reference:</b>	True
<b>Well:</b>	McLin C17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	2.90	240.53	4,571.3	-445.7	-788.7	905.9	3.50	-3.50	0.00
4,782.7	0.00	0.00	4,654.0	-446.7	-790.5	908.0	3.50	-3.50	0.00
Start 2597.0 hold at 4782.7 MD - Top of Gas									
4,800.0	0.00	0.00	4,671.3	-446.7	-790.5	908.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,771.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,000.0	0.00	0.00	4,871.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,100.0	0.00	0.00	4,971.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,071.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,171.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,271.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,371.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,471.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,571.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,671.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,771.3	-446.7	-790.5	908.0	0.00	0.00	0.00
5,902.7	0.00	0.00	5,774.0	-446.7	-790.5	908.0	0.00	0.00	0.00
Cameo									
6,000.0	0.00	0.00	5,871.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,100.0	0.00	0.00	5,971.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,071.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,171.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,271.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,371.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,471.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,571.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,671.3	-446.7	-790.5	908.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,771.3	-446.7	-790.5	908.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,871.3	-446.7	-790.5	908.0	0.00	0.00	0.00
7,079.7	0.00	0.00	6,951.0	-446.7	-790.5	908.0	0.00	0.00	0.00
Rollins									
7,100.0	0.00	0.00	6,971.3	-446.7	-790.5	908.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,071.3	-446.7	-790.5	908.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,171.3	-446.7	-790.5	908.0	0.00	0.00	0.00
7,379.7	0.00	0.00	7,251.0	-446.7	-790.5	908.0	0.00	0.00	0.00
TD at 7379.7									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,409.7	3,327.0	WF		0.00	
4,782.7	4,654.0	Top of Gas		0.00	
5,902.7	5,774.0	Cameo		0.00	
7,079.7	6,951.0	Rollins		0.00	

# Payzone Directional

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	McLin C17 @ 5741.4ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	True
<b>Well:</b>	McLin C17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.0	1,200.0	0.0	0.0	Start Build 3.50
1,686.7	1,679.5	-35.3	-62.5	Start 2609.4 hold at 1686.7 MD
4,296.1	4,174.5	-411.4	-728.0	Start Drop -3.50
4,782.7	4,654.0	-446.7	-790.5	Start 2597.0 hold at 4782.7 MD
7,379.7	7,251.0	-446.7	-790.5	TD at 7379.7



Well Name:McLin C17  
Surface Location: McLin C  
North American Datum 1983 , US State Plane 1983, Colorado Central Zone  
Ground Elevation: 5726.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 494708.39 733243.05 39° 31' 30.520 N 107° 36' 25.900 W  
Original Well Elev McLin C17 @ 5741.4ft (Original Well Elev)



Azimuths to True North  
Magnetic North: 9.88°  
Magnetic Field  
Strength: 52152.5nT  
Dip Angle: 65.79°  
Date: 6/24/2013  
Model: IGRF200510

McLin C  
McLin C17  
Design #1  
21:34, June 24 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
C17 TGT	4654.0	-446.7	-790.5	494577.86	732999.00	39° 31' 26.105 N	107° 36' 35.989 W	Point
C17 BHL TGT	7251.0	-446.7	-790.5	494577.86	732999.00	39° 31' 26.105 N	107° 36' 35.989 W	Point

#### 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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1686.7	17.03	240.53	1679.5	-35.3	-62.5	3.50	240.53	71.8	
4	4296.1	17.03	240.53	4174.5	-411.4	-728.0	0.00	0.00	836.2	
5	4782.7	0.00	0.00	4654.0	-446.7	-790.5	3.50	180.00	908.0	C17 TGT
6	7379.7	0.00	0.00	7251.0	-446.7	-790.5	0.00	0.00	908.0	C17 BHL TGT

#### ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	Start Build 3.50
1679.5	1686.7	Start 2609.4 hold at 1686.7 MD
4174.5	4296.1	Start Drop -3.50
4654.0	4782.7	Start 2597.0 hold at 4782.7 MD
7251.0	7379.7	TD at 7379.7

#### FORMATION TOP DETAILS

TVDP	MD	Formation
3327.0	3409.7	WF
4654.0	4782.7	Top of Gas
5774.0	5902.7	Cameo
6951.0	7079.7	Rollins

