



Ursa Operating Company, LLC

Rockies Region

McLin A

13B-12-06-92

Wellbore #1

Plan: Design #1

Standard Planning Report

25 February, 2014



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 13B-12-06-92
Company:	Ursa Operating Company, LLC	TVD Reference:	13B-12-06-92 @ 5621.4usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	13B-12-06-92 @ 5621.4usft (PAD Est KB)
Site:	McLin A	North Reference:	True
Well:	13B-12-06-92	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	McLin A					
Site Position:		Northing:	1,627,437.28 usft	Latitude:	39° 32' 13.196 N	
From:	Lat/Long	Easting:	2,402,964.77 usft	Longitude:	107° 37' 1.441 W	
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	13B-12-06-92, SHL LAT: 39.536962073 LONG: -107.617191063					
Well Position	+N/-S	-13.4 usft	Northing:	1,627,424.67 usft	Latitude:	39° 32' 13.063 N
	+E/-W	-35.0 usft	Easting:	2,402,929.46 usft	Longitude:	107° 37' 1.888 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,621.4 usft	Ground Level:	5,606.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/20/2014	9.84	65.77	52,053

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	308.46

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	
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,989.5	32.88	308.46	1,938.8	163.1	-205.4	3.50	3.50	0.00	308.46	
4,812.2	32.88	308.46	4,309.2	1,116.4	-1,405.4	0.00	0.00	0.00	0.00	
5,751.7	0.00	0.00	5,198.0	1,279.5	-1,610.8	3.50	-3.50	0.00	180.00	
7,766.7	0.00	0.00	7,213.0	1,279.5	-1,610.8	0.00	0.00	0.00	0.00	

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Project:	Rockies Region	MD Reference:	13B-12-06-92 @ 5621.4usft (PAD Est KB)
Site:	McLin A	North Reference:	True
Well:	13B-12-06-92	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
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	1.75	308.46	1,100.0	0.5	-0.6	0.8	3.50	3.50	0.00
Start Build 3.50									
1,200.0	5.25	308.46	1,199.8	4.3	-5.4	6.9	3.50	3.50	0.00
1,300.0	8.75	308.46	1,299.0	11.9	-14.9	19.1	3.50	3.50	0.00
1,400.0	12.25	308.46	1,397.3	23.2	-29.2	37.3	3.50	3.50	0.00
1,500.0	15.75	308.46	1,494.4	38.2	-48.1	61.5	3.50	3.50	0.00
1,600.0	19.25	308.46	1,589.7	56.9	-71.7	91.5	3.50	3.50	0.00
1,700.0	22.75	308.46	1,683.1	79.2	-99.7	127.4	3.50	3.50	0.00
1,800.0	26.25	308.46	1,774.0	105.0	-132.2	168.8	3.50	3.50	0.00
1,900.0	29.75	308.46	1,862.3	134.2	-168.9	215.8	3.50	3.50	0.00
1,989.5	32.88	308.46	1,938.8	163.1	-205.4	262.3	3.50	3.50	0.00
2,000.0	32.88	308.46	1,947.6	166.7	-209.8	268.0	0.00	0.00	0.00
2,055.6	32.88	308.46	1,994.3	185.5	-233.5	298.2	0.00	0.00	0.00
Start 2748.7 hold at 2055.6 MD									
2,100.0	32.88	308.46	2,031.6	200.4	-252.3	322.3	0.00	0.00	0.00
2,200.0	32.88	308.46	2,115.5	234.2	-294.9	376.6	0.00	0.00	0.00
2,300.0	32.88	308.46	2,199.5	268.0	-337.4	430.9	0.00	0.00	0.00
2,400.0	32.88	308.46	2,283.5	301.8	-379.9	485.1	0.00	0.00	0.00
2,500.0	32.88	308.46	2,367.5	335.5	-422.4	539.4	0.00	0.00	0.00
2,600.0	32.88	308.46	2,451.5	369.3	-464.9	593.7	0.00	0.00	0.00
2,700.0	32.88	308.46	2,535.4	403.1	-507.4	648.0	0.00	0.00	0.00
2,800.0	32.88	308.46	2,619.4	436.8	-549.9	702.3	0.00	0.00	0.00
2,900.0	32.88	308.46	2,703.4	470.6	-592.4	756.6	0.00	0.00	0.00
3,000.0	32.88	308.46	2,787.4	504.4	-635.0	810.9	0.00	0.00	0.00
3,100.0	32.88	308.46	2,871.3	538.2	-677.5	865.2	0.00	0.00	0.00
3,200.0	32.88	308.46	2,955.3	571.9	-720.0	919.5	0.00	0.00	0.00
3,300.0	32.88	308.46	3,039.3	605.7	-762.5	973.8	0.00	0.00	0.00
3,400.0	32.88	308.46	3,123.3	639.5	-805.0	1,028.1	0.00	0.00	0.00
3,500.0	32.88	308.46	3,207.2	673.2	-847.5	1,082.4	0.00	0.00	0.00
3,600.0	32.88	308.46	3,291.2	707.0	-890.0	1,136.7	0.00	0.00	0.00
3,700.0	32.88	308.46	3,375.2	740.8	-932.6	1,191.0	0.00	0.00	0.00
3,800.0	32.88	308.46	3,459.2	774.5	-975.1	1,245.3	0.00	0.00	0.00
3,900.0	32.88	308.46	3,543.2	808.3	-1,017.6	1,299.6	0.00	0.00	0.00
4,000.0	32.88	308.46	3,627.1	842.1	-1,060.1	1,353.8	0.00	0.00	0.00
4,100.0	32.88	308.46	3,711.1	875.9	-1,102.6	1,408.1	0.00	0.00	0.00
4,200.0	32.88	308.46	3,795.1	909.6	-1,145.1	1,462.4	0.00	0.00	0.00
4,300.0	32.88	308.46	3,879.1	943.4	-1,187.6	1,516.7	0.00	0.00	0.00
4,400.0	32.88	308.46	3,963.0	977.2	-1,230.1	1,571.0	0.00	0.00	0.00
4,500.0	32.88	308.46	4,047.0	1,010.9	-1,272.7	1,625.3	0.00	0.00	0.00
4,600.0	32.88	308.46	4,131.0	1,044.7	-1,315.2	1,679.6	0.00	0.00	0.00
4,700.0	32.88	308.46	4,215.0	1,078.5	-1,357.7	1,733.9	0.00	0.00	0.00
4,800.0	32.88	308.46	4,299.0	1,112.2	-1,400.2	1,788.2	0.00	0.00	0.00

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Site:	McLin A	North Reference:	True
Well:	13B-12-06-92	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)
4,804.3	32.88	308.46	4,302.5	1,113.7	-1,402.0	1,790.5	0.00	0.00	0.00
Start Drop -3.50									
4,812.2	32.88	308.46	4,309.2	1,116.4	-1,405.4	1,794.8	0.00	0.00	0.00
4,900.0	29.81	308.46	4,384.2	1,144.8	-1,441.1	1,840.5	3.50	-3.50	0.00
5,000.0	26.31	308.46	4,472.4	1,174.0	-1,478.0	1,887.5	3.50	-3.50	0.00
5,100.0	22.81	308.46	4,563.3	1,199.9	-1,510.5	1,929.1	3.50	-3.50	0.00
5,200.0	19.31	308.46	4,656.6	1,222.2	-1,538.6	1,965.0	3.50	-3.50	0.00
5,300.0	15.81	308.46	4,752.0	1,241.0	-1,562.3	1,995.2	3.50	-3.50	0.00
5,400.0	12.31	308.46	4,849.0	1,256.1	-1,581.3	2,019.5	3.50	-3.50	0.00
5,500.0	8.81	308.46	4,947.3	1,267.5	-1,595.6	2,037.8	3.50	-3.50	0.00
5,600.0	5.31	308.46	5,046.5	1,275.1	-1,605.3	2,050.1	3.50	-3.50	0.00
5,700.0	1.81	308.46	5,146.3	1,279.0	-1,610.1	2,056.3	3.50	-3.50	0.00
5,751.7	0.00	0.00	5,198.0	1,279.5	-1,610.8	2,057.1	3.50	-3.50	0.00
5,759.9	0.00	0.00	5,206.1	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
Start 2015.0 hold at 5759.9 MD									
5,800.0	0.00	0.00	5,246.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,346.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,446.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,100.0	0.00	0.00	5,546.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,200.0	0.00	0.00	5,646.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,300.0	0.00	0.00	5,746.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,400.0	0.00	0.00	5,846.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,500.0	0.00	0.00	5,946.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,046.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,700.0	0.00	0.00	6,146.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,246.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
6,900.0	0.00	0.00	6,346.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,446.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,100.0	0.00	0.00	6,546.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,200.0	0.00	0.00	6,646.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,300.0	0.00	0.00	6,746.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,400.0	0.00	0.00	6,846.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,500.0	0.00	0.00	6,946.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,046.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,700.0	0.00	0.00	7,146.3	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00
7,766.7	0.00	0.00	7,213.0	1,279.5	-1,610.8	2,057.1	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
13B-12-06-92 TGT	0.00	0.00	4,638.0	1,279.5	-1,610.8	1,628,741.37	2,401,348.95	39° 32' 25.709 N	107° 37' 22.449 W
- plan misses target center by 93.2usft at 5210.0usft MD (4666.1 TVD, 1224.3 N, -1541.2 E)									
- Rectangle (sides W100.0 H40.0 D2,575.0)									

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Project:	Rockies Region	MD Reference:	13B-12-06-92 @ 5621.4usft (PAD Est KB)
Site:	McLin A	North Reference:	True
Well:	13B-12-06-92	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,670.0	3,350.0	Williams Fork		0.00	
5,180.2	4,638.0	Top of Gas		0.00	
6,291.7	5,738.0	Cameo		0.00	
7,466.7	6,913.0	Rollins		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,100.0	1,100.0	0.5	-0.6	Start Build 3.50	
2,055.6	1,994.3	185.5	-233.5	Start 2748.7 hold at 2055.6 MD	
4,804.3	4,302.5	1,113.7	-1,402.0	Start Drop -3.50	
5,759.9	5,206.1	1,279.5	-1,610.8	Start 2015.0 hold at 5759.9 MD	
7,774.9				TD at 7774.9	



Well Name: 13B-12-06-92
Surface Location: McLin A
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5606.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1627424.67 2402929.45 39° 32' 13.063 N 107° 37' 1.888 W
PAD Est KB 13B-12-06-92 @ 5621.4usft (PAD Est KB)



Azimuths to True North
Magnetic North: 9.84°
Magnetic Field
Strength: 52052.5snT
Dip Angle: 65.77°
Date: 2/20/2014
Model: IGRF2010

McLin A
13B-12-06-92
Design #1
15:04, February 25 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
13B-12-06-92 TGT4638.0		1279.5	-1610.8	1628741.38	2401348.94	39° 32' 25.709 N	107° 37' 22.449 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	1050.0	0.00	0.00	1050.0	0.0	0.0	0.00	0.00	0.0	
3	1989.5	32.88	308.46	1938.8	163.1	-205.4	3.50	308.46	262.3	
4	4812.2	32.88	308.46	4309.2	1116.4	-1405.4	0.00	0.00	1794.8	
5	5751.7	0.00	0.00	5198.0	1279.5	-1610.8	3.50	180.00	2057.1	
6	7766.7	0.00	0.00	7213.0	1279.5	-1610.8	0.00	0.00	2057.1	

ANNOTATIONS

TVD	MD	Annotation
1100.0	1100.0	Start Build 3.50
1994.3	2055.6	Start 2748.7 hold at 2055.6 MD
4302.5	4804.3	Start Drop -3.50
5206.1	5759.9	Start 2015.0 hold at 5759.9 MD
	7774.9	TD at 7774.9

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3350.0	3670.0	Williams Fork	0.00	
4638.0	5180.2	Top of Gas	0.00	
5738.0	6291.7	Cameo	0.00	
6913.0	7466.7	Rollins	0.00	

