

Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 32B-24-07-96

Wellbore #1

Plan: Design #1

Standard Planning Report

06 June, 2013



Payzone Directional

Planning Report



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well BAT 32B-24-07-96
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 32B-24-07-96 @ 5197.9ft (EST KB)
Project:	Rockies Region	MD Reference:	BAT 32B-24-07-96 @ 5197.9ft (EST KB)
Site:	Speakman A	North Reference:	True
Well:	BAT 32B-24-07-96	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		Speakman A			
Site Position:		Northing:	484,154.15 m	Latitude:	39° 25' 15.663 N
From:	Lat/Long	Easting:	693,950.13 m	Longitude:	108° 3' 38.016 W
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.61 °

Well	BAT 32B-24-07-96, SHL LAT: 39.420992315 LONG: -108.060530094					
Well Position	+N/-S	-9.2 ft	Northing:	484,151.27 m	Latitude:	39° 25' 15.572 N
	+E/-W	8.5 ft	Easting:	693,952.63 m	Longitude:	108° 3' 37.908 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,197.9 ft	Ground Level:	5,182.5 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/4/2013	10.09	65.63	52,049

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	39.60

Plan Sections										
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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,357.8	40.52	39.60	1,263.7	302.6	250.3	3.50	3.50	0.00	39.60	
3,332.0	40.52	39.60	2,764.3	1,290.9	1,068.0	0.00	0.00	0.00	0.00	
4,489.8	0.00	0.00	3,828.0	1,593.5	1,318.3	3.50	-3.50	0.00	180.00	BAT 32B-24-07-96 TC
6,594.8	0.00	0.00	5,933.0	1,593.5	1,318.3	0.00	0.00	0.00	0.00	BAT 32B-24-07-96 Bf

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Project:	Rockies Region	MD Reference:	BAT 32B-24-07-96 @ 5197.9ft (EST KB)
Site:	Speakman A	North Reference:	True
Well:	BAT 32B-24-07-96	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
Start Build 3.50									
300.0	3.50	39.60	299.9	2.4	1.9	3.1	3.50	3.50	0.00
400.0	7.00	39.60	399.5	9.4	7.8	12.2	3.50	3.50	0.00
500.0	10.50	39.60	498.3	21.1	17.5	27.4	3.50	3.50	0.00
600.0	14.00	39.60	596.0	37.5	31.0	48.6	3.50	3.50	0.00
700.0	17.50	39.60	692.3	58.4	48.3	75.8	3.50	3.50	0.00
800.0	21.00	39.60	786.7	83.8	69.3	108.7	3.50	3.50	0.00
900.0	24.50	39.60	878.9	113.6	94.0	147.4	3.50	3.50	0.00
1,000.0	28.00	39.60	968.5	147.6	122.1	191.6	3.50	3.50	0.00
1,100.0	31.50	39.60	1,055.3	185.9	153.8	241.2	3.50	3.50	0.00
1,200.0	35.00	39.60	1,139.0	228.1	188.7	296.1	3.50	3.50	0.00
1,300.0	38.50	39.60	1,219.1	274.2	226.8	355.9	3.50	3.50	0.00
1,357.8	40.52	39.60	1,263.7	302.6	250.3	392.7	3.50	3.50	0.00
Start 1974.2 hold at 1357.8 MD									
1,400.0	40.52	39.60	1,295.7	323.7	267.8	420.1	0.00	0.00	0.00
1,500.0	40.52	39.60	1,371.8	373.7	309.2	485.0	0.00	0.00	0.00
1,600.0	40.52	39.60	1,447.8	423.8	350.6	550.0	0.00	0.00	0.00
1,700.0	40.52	39.60	1,523.8	473.9	392.0	615.0	0.00	0.00	0.00
1,800.0	40.52	39.60	1,599.8	523.9	433.4	680.0	0.00	0.00	0.00
1,900.0	40.52	39.60	1,675.8	574.0	474.9	745.0	0.00	0.00	0.00
2,000.0	40.52	39.60	1,751.8	624.1	516.3	809.9	0.00	0.00	0.00
2,100.0	40.52	39.60	1,827.8	674.1	557.7	874.9	0.00	0.00	0.00
2,200.0	40.52	39.60	1,903.8	724.2	599.1	939.9	0.00	0.00	0.00
2,300.0	40.52	39.60	1,979.9	774.3	640.5	1,004.9	0.00	0.00	0.00
2,400.0	40.52	39.60	2,055.9	824.3	681.9	1,069.8	0.00	0.00	0.00
2,500.0	40.52	39.60	2,131.9	874.4	723.4	1,134.8	0.00	0.00	0.00
2,600.0	40.52	39.60	2,207.9	924.4	764.8	1,199.8	0.00	0.00	0.00
2,700.0	40.52	39.60	2,283.9	974.5	806.2	1,264.8	0.00	0.00	0.00
2,800.0	40.52	39.60	2,359.9	1,024.6	847.6	1,329.7	0.00	0.00	0.00
2,900.0	40.52	39.60	2,435.9	1,074.6	889.0	1,394.7	0.00	0.00	0.00
3,000.0	40.52	39.60	2,512.0	1,124.7	930.5	1,459.7	0.00	0.00	0.00
3,100.0	40.52	39.60	2,588.0	1,174.8	971.9	1,524.7	0.00	0.00	0.00
3,200.0	40.52	39.60	2,664.0	1,224.8	1,013.3	1,589.6	0.00	0.00	0.00
3,290.8	40.52	39.60	2,733.0	1,270.3	1,050.9	1,648.6	0.00	0.00	0.00
WF									
3,300.0	40.52	39.60	2,740.0	1,274.9	1,054.7	1,654.6	0.00	0.00	0.00
3,332.0	40.52	39.60	2,764.3	1,290.9	1,068.0	1,675.4	0.00	0.00	0.00
Start Drop -3.50									
3,400.0	38.14	39.60	2,816.9	1,324.1	1,095.4	1,718.5	3.50	-3.50	0.00
3,500.0	34.64	39.60	2,897.4	1,369.8	1,133.2	1,777.8	3.50	-3.50	0.00
3,600.0	31.14	39.60	2,981.3	1,411.7	1,167.9	1,832.1	3.50	-3.50	0.00
3,700.0	27.64	39.60	3,068.5	1,449.5	1,199.1	1,881.2	3.50	-3.50	0.00
3,800.0	24.14	39.60	3,158.4	1,483.1	1,227.0	1,924.9	3.50	-3.50	0.00
3,900.0	20.64	39.60	3,250.9	1,512.5	1,251.3	1,963.0	3.50	-3.50	0.00
4,000.0	17.14	39.60	3,345.4	1,537.4	1,271.9	1,995.3	3.50	-3.50	0.00
4,100.0	13.64	39.60	3,441.8	1,557.9	1,288.8	2,021.9	3.50	-3.50	0.00
4,200.0	10.14	39.60	3,539.7	1,573.8	1,301.9	2,042.5	3.50	-3.50	0.00
4,300.0	6.64	39.60	3,638.6	1,585.0	1,311.2	2,057.1	3.50	-3.50	0.00
4,400.0	3.14	39.60	3,738.2	1,591.6	1,316.7	2,065.6	3.50	-3.50	0.00
4,489.8	0.00	0.00	3,828.0	1,593.5	1,318.3	2,068.1	3.50	-3.50	0.00

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Project:	Rockies Region	MD Reference:	BAT 32B-24-07-96 @ 5197.9ft (EST KB)
Site:	Speakman A	North Reference:	True
Well:	BAT 32B-24-07-96	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
Start 2105.0 hold at 4489.8 MD - Top Perf									
4,500.0	0.00	0.00	3,838.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
4,600.0	0.00	0.00	3,938.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
4,700.0	0.00	0.00	4,038.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
4,800.0	0.00	0.00	4,138.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
4,900.0	0.00	0.00	4,238.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,000.0	0.00	0.00	4,338.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,100.0	0.00	0.00	4,438.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,200.0	0.00	0.00	4,538.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,300.0	0.00	0.00	4,638.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,400.0	0.00	0.00	4,738.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,500.0	0.00	0.00	4,838.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,600.0	0.00	0.00	4,938.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,038.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,773.8	0.00	0.00	5,112.0	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
Cameo									
5,800.0	0.00	0.00	5,138.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,238.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,338.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
6,100.0	0.00	0.00	5,438.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
6,200.0	0.00	0.00	5,538.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
6,294.8	0.00	0.00	5,633.0	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
Rollins									
6,300.0	0.00	0.00	5,638.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
6,400.0	0.00	0.00	5,738.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
6,500.0	0.00	0.00	5,838.2	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
6,594.8	0.00	0.00	5,933.0	1,593.5	1,318.3	2,068.1	0.00	0.00	0.00
TD at 6594.8									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,290.8	2,733.0	WF		0.00	
4,489.8	3,828.0	Top Perf		0.00	
5,773.8	5,112.0	Cameo		0.00	
6,294.8	5,633.0	Rollins		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
200.0	200.0	0.0	0.0	Start Build 3.50
1,357.8	1,263.7	302.6	250.3	Start 1974.2 hold at 1357.8 MD
3,332.0	2,764.3	1,290.9	1,068.0	Start Drop -3.50
4,489.8	3,828.0	1,593.5	1,318.3	Start 2105.0 hold at 4489.8 MD
6,594.8	5,933.0	1,593.5	1,318.3	TD at 6594.8



Well Name: BAT 32B-24-07-96
Surface Location: Speakman A
North American Datum 1983 , US State Plane 1983, Colorado Central Zone
Ground Elevation: 5182.5
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 484151.27 693952.63 39° 25' 15.572 N 108° 3' 37.908 W
EST KB BAT 32B-24-07-96 @ 5197.9ft (EST KB)



Azimuths to True North
Magnetic North: 10.09°
Magnetic Field
Strength: 52049.2snT
Dip Angle: 65.63°
Date: 6/4/2013
Model: IGRF200510

Speakman A
BAT 32B-24-07-96
Design #1
16:48, June 06 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BAT 32B-24-07-96 TGT	3828.0	1593.5	1318.3	484625.45	694367.97	39° 25' 31.321 N	108° 3' 21.108 W	Point
BAT 32B-24-07-96 BHL	5933.0	1593.5	1318.3	484625.45	694367.97	39° 25' 31.321 N	108° 3' 21.108 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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1357.8	40.52	39.60	1263.7	302.6	250.3	3.50	39.60	392.7	
4	3332.0	40.52	39.60	2764.3	1290.9	1068.0	0.00	0.00	1675.4	
5	4489.8	0.00	0.00	3828.0	1593.5	1318.3	3.50	180.00	2068.1	BAT 32B-24-07-96 TGT
6	6594.8	0.00	0.00	5933.0	1593.5	1318.3	0.00	0.00	2068.1	BAT 32B-24-07-96 BHL

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1263.7	1357.8	Start 1974.2 hold at 1357.8 MD
2764.3	3332.0	Start Drop -3.50
3828.0	4489.8	Start 2105.0 hold at 4489.8 MD
5933.0	6594.8	TD at 6594.8

FORMATION TOP DETAILS

TVDPathMDPath	Formation
2733.0 3290.8	WF
3828.0 4489.8	Top Perf
5112.0 5773.8	Cameo
5633.0 6294.8	Rollins

