

Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 32A-24-07-96

Wellbore #1

Plan: Design #1

Standard Planning Report

15 June, 2013



Payzone Directional

Planning Report



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well BAT 32A-24-07-96
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 32A-24-07-96 @ 5197.9ft (Original Well Elev)
Project:	Rockies Region	MD Reference:	BAT 32A-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 32A-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 32A-24-07-96, SHL LAT: 39.420711356 LONG: -108.060087863					
Well Position	+N/-S	-111.5 ft	Northing:	484,119.02 m	Latitude:	39° 25' 14.561 N
	+E/-W	133.4 ft	Easting:	693,989.82 m	Longitude:	108° 3' 36.316 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	6/15/2013	10.08	65.63	52,046

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	30.66

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	
1,510.9	45.88	30.66	1,375.3	427.9	253.7	3.50	3.50	0.00	30.66	
3,361.9	45.88	30.66	2,663.7	1,570.9	931.4	0.00	0.00	0.00	0.00	
4,672.8	0.00	0.00	3,839.0	1,998.8	1,185.1	3.50	-3.50	0.00	180.00	BAT 32A-24-07-96 TC
6,777.8	0.00	0.00	5,944.0	1,998.8	1,185.1	0.00	0.00	0.00	0.00	BAT 32A-24-07-96 Bf

Payzone Directional Planning Report



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Project:	Rockies Region	MD Reference:	BAT 32A-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 32A-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	30.66	299.9	2.6	1.6	3.1	3.50	3.50	0.00
400.0	7.00	30.66	399.5	10.5	6.2	12.2	3.50	3.50	0.00
500.0	10.50	30.66	498.3	23.6	14.0	27.4	3.50	3.50	0.00
600.0	14.00	30.66	596.0	41.8	24.8	48.6	3.50	3.50	0.00
700.0	17.50	30.66	692.3	65.2	38.6	75.8	3.50	3.50	0.00
800.0	21.00	30.66	786.7	93.5	55.5	108.7	3.50	3.50	0.00
900.0	24.50	30.66	878.9	126.8	75.2	147.4	3.50	3.50	0.00
1,000.0	28.00	30.66	968.5	164.8	97.7	191.6	3.50	3.50	0.00
1,100.0	31.50	30.66	1,055.3	207.5	123.0	241.2	3.50	3.50	0.00
1,200.0	35.00	30.66	1,139.0	254.7	151.0	296.1	3.50	3.50	0.00
1,300.0	38.50	30.66	1,219.1	306.1	181.5	355.9	3.50	3.50	0.00
1,400.0	42.00	30.66	1,295.4	361.7	214.4	420.5	3.50	3.50	0.00
1,500.0	45.50	30.66	1,367.6	421.2	249.7	489.6	3.50	3.50	0.00
1,510.9	45.88	30.66	1,375.3	427.9	253.7	497.4	3.50	3.50	0.00
Start 1851.0 hold at 1510.9 MD									
1,600.0	45.88	30.66	1,437.2	482.9	286.3	561.4	0.00	0.00	0.00
1,700.0	45.88	30.66	1,506.9	544.6	322.9	633.2	0.00	0.00	0.00
1,800.0	45.88	30.66	1,576.5	606.4	359.5	705.0	0.00	0.00	0.00
1,900.0	45.88	30.66	1,646.1	668.2	396.1	776.8	0.00	0.00	0.00
2,000.0	45.88	30.66	1,715.7	729.9	432.7	848.6	0.00	0.00	0.00
2,100.0	45.88	30.66	1,785.3	791.7	469.4	920.3	0.00	0.00	0.00
2,200.0	45.88	30.66	1,854.9	853.4	506.0	992.1	0.00	0.00	0.00
2,300.0	45.88	30.66	1,924.5	915.2	542.6	1,063.9	0.00	0.00	0.00
2,400.0	45.88	30.66	1,994.1	976.9	579.2	1,135.7	0.00	0.00	0.00
2,500.0	45.88	30.66	2,063.8	1,038.7	615.8	1,207.5	0.00	0.00	0.00
2,600.0	45.88	30.66	2,133.4	1,100.4	652.4	1,279.3	0.00	0.00	0.00
2,700.0	45.88	30.66	2,203.0	1,162.2	689.0	1,351.1	0.00	0.00	0.00
2,800.0	45.88	30.66	2,272.6	1,223.9	725.7	1,422.9	0.00	0.00	0.00
2,900.0	45.88	30.66	2,342.2	1,285.7	762.3	1,494.7	0.00	0.00	0.00
3,000.0	45.88	30.66	2,411.8	1,347.5	798.9	1,566.5	0.00	0.00	0.00
3,100.0	45.88	30.66	2,481.4	1,409.2	835.5	1,638.3	0.00	0.00	0.00
3,200.0	45.88	30.66	2,551.0	1,471.0	872.1	1,710.1	0.00	0.00	0.00
3,300.0	45.88	30.66	2,620.7	1,532.7	908.7	1,781.8	0.00	0.00	0.00
3,361.9	45.88	30.66	2,663.7	1,570.9	931.4	1,826.3	0.00	0.00	0.00
Start Drop -3.50									
3,400.0	44.55	30.66	2,690.6	1,594.2	945.2	1,853.3	3.50	-3.50	0.00
3,473.4	41.98	30.66	2,744.0	1,637.4	970.8	1,903.6	3.50	-3.50	0.00
WF									
3,500.0	41.05	30.66	2,763.9	1,652.6	979.8	1,921.3	3.50	-3.50	0.00
3,600.0	37.55	30.66	2,841.3	1,707.1	1,012.1	1,984.6	3.50	-3.50	0.00
3,700.0	34.05	30.66	2,922.4	1,757.4	1,041.9	2,043.1	3.50	-3.50	0.00
3,800.0	30.55	30.66	3,006.9	1,803.4	1,069.2	2,096.5	3.50	-3.50	0.00
3,900.0	27.05	30.66	3,094.5	1,844.8	1,093.7	2,144.7	3.50	-3.50	0.00
4,000.0	23.55	30.66	3,184.9	1,881.6	1,115.5	2,187.4	3.50	-3.50	0.00
4,100.0	20.05	30.66	3,277.8	1,913.5	1,134.5	2,224.5	3.50	-3.50	0.00
4,200.0	16.55	30.66	3,372.7	1,940.5	1,150.5	2,255.9	3.50	-3.50	0.00
4,300.0	13.05	30.66	3,469.4	1,962.5	1,163.5	2,281.5	3.50	-3.50	0.00
4,400.0	9.55	30.66	3,567.4	1,979.3	1,173.5	2,301.1	3.50	-3.50	0.00

Payzone Directional

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Site:	Speakman A	North Reference:	True
Well:	BAT 32A-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)
4,500.0	6.05	30.66	3,666.5	1,991.0	1,180.4	2,314.6	3.50	-3.50	0.00
4,600.0	2.55	30.66	3,766.2	1,997.4	1,184.2	2,322.1	3.50	-3.50	0.00
4,672.8	0.00	0.00	3,839.0	1,998.8	1,185.1	2,323.7	3.50	-3.50	0.00
Start 2105.0 hold at 4672.8 MD - Top of Perf									
4,700.0	0.00	0.00	3,866.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
4,800.0	0.00	0.00	3,966.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
4,900.0	0.00	0.00	4,066.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,000.0	0.00	0.00	4,166.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,100.0	0.00	0.00	4,266.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,200.0	0.00	0.00	4,366.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,300.0	0.00	0.00	4,466.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,400.0	0.00	0.00	4,566.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,500.0	0.00	0.00	4,666.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,600.0	0.00	0.00	4,766.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,700.0	0.00	0.00	4,866.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,800.0	0.00	0.00	4,966.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,900.0	0.00	0.00	5,066.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
5,956.8	0.00	0.00	5,123.0	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
Cameo									
6,000.0	0.00	0.00	5,166.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,100.0	0.00	0.00	5,266.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,200.0	0.00	0.00	5,366.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,300.0	0.00	0.00	5,466.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,400.0	0.00	0.00	5,566.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,477.8	0.00	0.00	5,644.0	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
Rollins									
6,500.0	0.00	0.00	5,666.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,600.0	0.00	0.00	5,766.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,700.0	0.00	0.00	5,866.2	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
6,777.8	0.00	0.00	5,944.0	1,998.8	1,185.1	2,323.7	0.00	0.00	0.00
TD at 6777.8									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,473.4	2,744.0	WF		0.00	
4,672.8	3,839.0	Top of Perf		0.00	
5,956.8	5,123.0	Cameo		0.00	
6,477.8	5,644.0	Rollins		0.00	

Payzone Directional

Planning Report



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Project:	Rockies Region	MD Reference:	BAT 32A-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 32A-24-07-96	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	Start Build 3.50
1,510.9	1,375.3	427.9	253.7	Start 1851.0 hold at 1510.9 MD
3,361.9	2,663.7	1,570.9	931.4	Start Drop -3.50
4,672.8	3,839.0	1,998.8	1,185.1	Start 2105.0 hold at 4672.8 MD
6,777.8	5,944.0	1,998.8	1,185.1	TD at 6777.8



Well Name: BAT 32A-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 484119.02 693989.82 39° 25' 14.561 N 108° 3' 36.316 W
Original Well Elev BAT 32A-24-07-96 @ 5197.9ft (Original Well Elev)



Azimuths to True North
Magnetic North: 10.08°
Magnetic Field
Strength: 52046.2snT
Dip Angle: 65.63°
Date: 6/15/2013
Model: IGRF200510

Speakman A
BAT 32A-24-07-96
Design #1
18:59, June 15 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BAT 32A-24-07-96 TGT	3839.0	1998.8	1185.1	484717.85	694368.05	39° 25' 34.317 N	108° 3' 21.214 W	Point
BAT 32A-24-07-96 BHL	5944.0	1998.8	1185.1	484717.85	694368.05	39° 25' 34.317 N	108° 3' 21.214 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	1510.9	45.88	30.66	1375.3	427.9	253.7	3.50	30.66	497.4	
4	3361.9	45.88	30.66	2663.7	1570.9	931.4	0.00	0.00	1826.3	
5	4672.8	0.00	0.00	3839.0	1998.8	1185.1	3.50	180.00	2323.7	BAT 32A-24-07-96 TGT
6	6777.8	0.00	0.00	5944.0	1998.8	1185.1	0.00	0.00	2323.7	BAT 32A-24-07-96 BHL

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1375.3	1510.9	Start 1851.0 hold at 1510.9 MD
2663.7	3361.9	Start Drop -3.50
3839.0	4672.8	Start 2105.0 hold at 4672.8 MD
5944.0	6777.8	TD at 6777.8

FORMATION TOP DETAILS

TVDP	PathMD	Path	Formation
2744.0	3473.4	WF	WF
3839.0	4672.8	Top of Perf	Top of Perf
5123.0	5956.8	Cameo	Cameo
5644.0	6477.8	Rollins	Rollins

