



Ursa Operating Company, LLC

Rockies Region

Watson Ranch B

WATSON RANCH B 33C-17-07-95

Wellbore #1

Plan: Design #1

Ursa Operating Company LLC Planning Report

20 November, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well WATSON RANCH B 33C-17-07-95
Project:	Rockies Region	TVD Reference:	WATSON RANCH B 33C-17-07-95 @ 5598.0usft (PAD
Site:	Watson Ranch B	MD Reference:	WATSON RANCH B 33C-17-07-95 @ 5598.0usft (PAD
Well:	WATSON RANCH B 33C-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	MasterDB

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	Watson Ranch B		
Site Position:		Northing:	1,592,643.01 usft
From:	Lat/Long	Easting:	2,287,301.12 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	39° 26' 0.219 N
		Longitude:	108° 1' 24.909 W
		Grid Convergence:	-1.59 °

Well	WATSON RANCH B 33C-17-07-95, SHL LAT: 39.433392854 LONG: -108.023674264		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			5,598.0 usft
			Latitude:
			39° 26' 0.214 N
			Longitude:
			108° 1' 25.227 W
			Ground Level:
			5,585.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	11/20/2014	9.91
			Dip Angle (°)
			65.59
			Field Strength (nT)
			51,869

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)
	0.0	0.0	0.0
			Direction (°)
			61.29

Survey Tool Program	Date 11/20/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0.0	7,108.0	Design #1 (Wellbore #1)	MWD
			Description
			MWD - Standard

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	MasterDB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-5,598.0	0.0	0.0	0.0	0.00	1,592,643.26	2,287,276.13
100.0	0.00	0.00	100.0	-5,498.0	0.0	0.0	0.0	0.00	1,592,643.26	2,287,276.13
200.0	0.00	0.00	200.0	-5,398.0	0.0	0.0	0.0	0.00	1,592,643.26	2,287,276.13
300.0	0.00	0.00	300.0	-5,298.0	0.0	0.0	0.0	0.00	1,592,643.26	2,287,276.13
Start Build 3.00										
400.0	3.00	61.29	400.0	-5,198.0	1.3	2.3	2.6	3.00	1,592,644.45	2,287,278.46
500.0	6.00	61.29	499.6	-5,098.4	5.0	9.2	10.5	3.00	1,592,648.03	2,287,285.44
600.0	9.00	61.29	598.8	-4,999.2	11.3	20.6	23.5	3.00	1,592,653.97	2,287,297.06
700.0	12.00	61.29	697.1	-4,900.9	20.0	36.6	41.7	3.00	1,592,662.28	2,287,313.28
800.0	15.00	61.29	794.3	-4,803.7	31.3	57.1	65.1	3.00	1,592,672.92	2,287,334.05
900.0	18.00	61.29	890.2	-4,707.8	44.9	82.0	93.5	3.00	1,592,685.87	2,287,359.33
1,000.0	21.00	61.29	984.4	-4,613.6	60.9	111.3	126.9	3.00	1,592,701.08	2,287,389.04
1,100.0	24.00	61.29	1,076.8	-4,521.2	79.3	144.8	165.1	3.00	1,592,718.52	2,287,423.09
1,148.1	25.44	61.29	1,120.5	-4,477.5	89.0	162.5	185.2	3.00	1,592,727.69	2,287,441.00
Start 2853.8 hold at 1148.1 MD										
1,200.0	25.44	61.29	1,167.4	-4,430.6	99.7	182.0	207.5	0.00	1,592,737.85	2,287,460.84
1,300.0	25.44	61.29	1,257.7	-4,340.3	120.3	219.7	250.5	0.00	1,592,757.44	2,287,499.08
1,400.0	25.44	61.29	1,348.0	-4,250.0	141.0	257.4	293.5	0.00	1,592,777.02	2,287,537.32
1,500.0	25.44	61.29	1,438.3	-4,159.7	161.6	295.1	336.4	0.00	1,592,796.60	2,287,575.56
1,600.0	25.44	61.29	1,528.6	-4,069.4	182.2	332.7	379.4	0.00	1,592,816.19	2,287,613.80
1,700.0	25.44	61.29	1,618.9	-3,979.1	202.9	370.4	422.3	0.00	1,592,835.77	2,287,652.04
1,789.8	25.44	61.29	1,700.0	-3,898.0	221.4	404.3	460.9	0.00	1,592,853.37	2,287,686.39
Surface Casing										
1,800.0	25.44	61.29	1,709.2	-3,888.8	223.5	408.1	465.3	0.00	1,592,855.35	2,287,690.28
1,900.0	25.44	61.29	1,799.5	-3,798.5	244.2	445.8	508.3	0.00	1,592,874.94	2,287,728.52
2,000.0	25.44	61.29	1,889.8	-3,708.2	264.8	483.5	551.2	0.00	1,592,894.52	2,287,766.75
2,100.0	25.44	61.29	1,980.1	-3,617.9	285.4	521.1	594.2	0.00	1,592,914.10	2,287,804.99
2,200.0	25.44	61.29	2,070.4	-3,527.6	306.1	558.8	637.1	0.00	1,592,933.69	2,287,843.23

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Site:	Watson Ranch B	MD Reference:	WATSON RANCH B 33C-17-07-95 @ 5598.0usft (PAD
Well:	WATSON RANCH B 33C-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	MasterDB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,300.0	25.44	61.29	2,160.7	-3,437.3	326.7	596.5	680.1	0.00	1,592,953.27	2,287,881.47
2,400.0	25.44	61.29	2,251.0	-3,347.0	347.3	634.2	723.1	0.00	1,592,972.85	2,287,919.71
2,500.0	25.44	61.29	2,341.3	-3,256.7	368.0	671.9	766.0	0.00	1,592,992.44	2,287,957.95
2,600.0	25.44	61.29	2,431.6	-3,166.4	388.6	709.5	809.0	0.00	1,593,012.02	2,287,996.19
2,700.0	25.44	61.29	2,521.9	-3,076.1	409.3	747.2	852.0	0.00	1,593,031.61	2,288,034.43
2,800.0	25.44	61.29	2,612.2	-2,985.8	429.9	784.9	894.9	0.00	1,593,051.19	2,288,072.67
2,900.0	25.44	61.29	2,702.5	-2,895.5	450.5	822.6	937.9	0.00	1,593,070.77	2,288,110.90
3,000.0	25.44	61.29	2,792.8	-2,805.2	471.2	860.3	980.8	0.00	1,593,090.36	2,288,149.14
3,100.0	25.44	61.29	2,883.1	-2,714.9	491.8	897.9	1,023.8	0.00	1,593,109.94	2,288,187.38
3,200.0	25.44	61.29	2,973.4	-2,624.6	512.5	935.6	1,066.8	0.00	1,593,129.52	2,288,225.62
3,300.0	25.44	61.29	3,063.7	-2,534.3	533.1	973.3	1,109.7	0.00	1,593,149.11	2,288,263.86
3,400.0	25.44	61.29	3,154.0	-2,444.0	553.7	1,011.0	1,152.7	0.00	1,593,168.69	2,288,302.10
3,500.0	25.44	61.29	3,244.3	-2,353.7	574.4	1,048.7	1,195.7	0.00	1,593,188.27	2,288,340.34
3,600.0	25.44	61.29	3,334.6	-2,263.4	595.0	1,086.3	1,238.6	0.00	1,593,207.86	2,288,378.58
3,700.0	25.44	61.29	3,424.9	-2,173.1	615.6	1,124.0	1,281.6	0.00	1,593,227.44	2,288,416.82
3,800.0	25.44	61.29	3,515.2	-2,082.8	636.3	1,161.7	1,324.5	0.00	1,593,247.02	2,288,455.05
3,819.7	25.44	61.29	3,533.0	-2,065.0	640.3	1,169.1	1,333.0	0.00	1,593,250.88	2,288,462.59
Williams Fork										
3,900.0	25.44	61.29	3,605.5	-1,992.5	656.9	1,199.4	1,367.5	0.00	1,593,266.61	2,288,493.29
4,001.9	25.44	61.29	3,697.5	-1,900.5	677.9	1,237.8	1,411.3	0.00	1,593,286.56	2,288,532.25
Start Drop -3.00										
4,100.0	22.50	61.29	3,787.1	-1,810.9	697.1	1,272.7	1,451.1	3.00	1,593,304.73	2,288,567.73
4,200.0	19.50	61.29	3,880.5	-1,717.5	714.3	1,304.2	1,487.0	3.00	1,593,321.06	2,288,599.62
4,300.0	16.50	61.29	3,975.6	-1,622.4	729.1	1,331.3	1,517.9	3.00	1,593,335.14	2,288,627.12
4,400.0	13.50	61.29	4,072.2	-1,525.8	741.6	1,354.0	1,543.7	3.00	1,593,346.94	2,288,650.16
4,500.0	10.50	61.29	4,170.0	-1,428.0	751.6	1,372.2	1,564.5	3.00	1,593,356.42	2,288,668.66
4,600.0	7.50	61.29	4,268.7	-1,329.3	759.1	1,385.9	1,580.2	3.00	1,593,363.55	2,288,682.58

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Site:	Watson Ranch B	MD Reference:	WATSON RANCH B 33C-17-07-95 @ 5598.0usft (PAD
Well:	WATSON RANCH B 33C-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
4,700.0	4.50	61.29	4,368.2	-1,229.8	764.1	1,395.1	1,590.6	3.00	1,593,368.31	2,288,691.88
4,800.0	1.50	61.29	4,468.0	-1,130.0	766.6	1,399.7	1,595.8	3.00	1,593,370.69	2,288,696.54
4,850.0	0.00	0.00	4,518.0	-1,080.0	766.9	1,400.2	1,596.5	3.00	1,593,370.99	2,288,697.12
Back to Vertical - Start 2258.0 hold at 4850.0 MD - Top of Gas - 33C-17-07-95 TGT										
4,900.0	0.00	0.00	4,568.0	-1,030.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,000.0	0.00	0.00	4,668.0	-930.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,100.0	0.00	0.00	4,768.0	-830.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,200.0	0.00	0.00	4,868.0	-730.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,300.0	0.00	0.00	4,968.0	-630.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,400.0	0.00	0.00	5,068.0	-530.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,500.0	0.00	0.00	5,168.0	-430.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,600.0	0.00	0.00	5,268.0	-330.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,700.0	0.00	0.00	5,368.0	-230.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,800.0	0.00	0.00	5,468.0	-130.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
5,900.0	0.00	0.00	5,568.0	-30.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,000.0	0.00	0.00	5,668.0	70.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,100.0	0.00	0.00	5,768.0	170.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,200.0	0.00	0.00	5,868.0	270.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,297.0	0.00	0.00	5,965.0	367.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
Cameo										
6,300.0	0.00	0.00	5,968.0	370.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,400.0	0.00	0.00	6,068.0	470.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,500.0	0.00	0.00	6,168.0	570.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,600.0	0.00	0.00	6,268.0	670.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,700.0	0.00	0.00	6,368.0	770.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,800.0	0.00	0.00	6,468.0	870.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
6,808.0	0.00	0.00	6,476.0	878.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
Rollins										

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Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
6,900.0	0.00	0.00	6,568.0	970.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
7,000.0	0.00	0.00	6,668.0	1,070.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
7,108.0	0.00	0.00	6,776.0	1,178.0	766.9	1,400.2	1,596.5	0.00	1,593,370.99	2,288,697.12
TD at 7108.0										

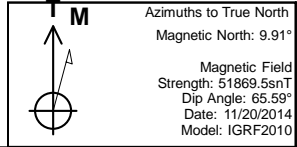
Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,850.0	4,518.0	Top of Gas		0.00		
6,297.0	5,965.0	Cameo		0.00		
6,808.0	6,476.0	Rollins		0.00		
3,819.7	3,533.0	Williams Fork		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.0	300.0	0.0	0.0	Start Build 3.00	
1,148.1	1,120.5	89.0	162.5	Start 2853.8 hold at 1148.1 MD	
1,789.8	1,700.0	221.4	404.3	Surface Casing	
4,001.9	3,697.5	677.9	1,237.8	Start Drop -3.00	
4,850.0	4,518.0	766.9	1,400.2	Back to Vertical	
4,850.0	4,518.0	766.9	1,400.2	Start 2258.0 hold at 4850.0 MD	
7,108.0	6,776.0	766.9	1,400.2	TD at 7108.0	

Checked By: _____ Approved By: _____ Date: _____



Well Name: WATSON RANCH B 33C-17-07-95
 Surface Location: Watson Ranch B
 North American Datum 1983, US State Plane 1983, Colorado Central Zone
 Ground Elevation: 5585.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1592643.26 2287276.13 39° 26' 0.214 N 108° 1' 25.227 W
 PAD Est KB WATSON RANCH B 33C-17-07-95 @ 5598.0usft (PAD Est KB)



Watson Ranch B
 WATSON RANCH B 33C-17-07-95
 Design #1
 18:57, November 20 2014

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
33C-17-07-95 TGT4518.0		766.9	1400.2	1593370.99	2288697.12	39° 26' 7.794 N	108° 1' 7.380 W	Rectangle (Sides: L40.0 W100.0)	

ANNOTATIONS		
TVD	MD	Annotation
300.0	300.0	Start Build 3.00
1120.5	1148.1	Start 2853.8 hold at 1148.1 MD
1700.0	1789.8	Surface Casing
3697.5	4001.9	Start Drop -3.00
4518.0	4850.0	Back to Vertical
4518.0	4850.0	Start 2258.0 hold at 4850.0 MD
6776.0	7108.0	TD at 7108.0

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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	1148.1	25.44	61.29	1120.5	89.0	162.5	3.00	61.29	185.2	
4	4001.9	25.44	61.29	3697.5	677.9	1237.8	0.00	0.00	1411.3	
5	4850.0	0.00	0.00	4518.0	766.9	1400.2	3.00	180.00	1596.5	33C-17-07-95 TGT
6	7108.0	0.00	0.00	6776.0	766.9	1400.2	0.00	0.00	1596.5	

FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipAngle	DipDir
3533.0	3819.7	Williams Fork	0.00	
4518.0	4850.0	Top of Gas	0.00	
5965.0	6297.0	Cameo	0.00	
6476.0	6808.0	Rollins	0.00	

