



Ursa Operating Company, LLC

Rockies Region

Watson Ranch B

WATSON RANCH B 32D-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 32D-17-07-95
Project:	Rockies Region	TVD Reference:	WATSON RANCH B 32D-17-07-95 @ 5598.0usft (PAD
Site:	Watson Ranch B	MD Reference:	WATSON RANCH B 32D-17-07-95 @ 5598.0usft (PAD
Well:	WATSON RANCH B 32D-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	Latitude:	39° 26' 0.219 N
From:	Lat/Long	Easting:	2,287,301.12 usft	Longitude:	108° 1' 24.909 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.59 °

Well		WATSON RANCH B 32D-17-07-95, SHL LAT: 39.433396438 LONG: -108.023408900				
Well Position	+N/-S	0.0 usft	Northing:	1,592,642.48 usft	Latitude:	39° 26' 0.227 N
	+E/-W	0.0 usft	Easting:	2,287,351.09 usft	Longitude:	108° 1' 24.272 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,598.0 usft	Ground Level:	5,585.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/19/2014	9.92	65.59	51,870

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	38.63

Survey Tool Program		Date	11/20/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	7,418.1	Design #1 (Wellbore #1)	MWD	MWD - Standard	

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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)
0.0	0.00	0.00	0.0	-5,598.0	0.0	0.0	0.0	0.00	1,592,642.48	2,287,351.09
100.0	0.00	0.00	100.0	-5,498.0	0.0	0.0	0.0	0.00	1,592,642.48	2,287,351.09
200.0	0.00	0.00	200.0	-5,398.0	0.0	0.0	0.0	0.00	1,592,642.48	2,287,351.09
300.0	0.00	0.00	300.0	-5,298.0	0.0	0.0	0.0	0.00	1,592,642.48	2,287,351.09
Start Build 3.00										
400.0	3.00	38.63	400.0	-5,198.0	2.0	1.6	2.6	3.00	1,592,644.48	2,287,352.78
500.0	6.00	38.63	499.6	-5,098.4	8.2	6.5	10.5	3.00	1,592,650.47	2,287,357.85
600.0	9.00	38.63	598.8	-4,999.2	18.4	14.7	23.5	3.00	1,592,660.44	2,287,366.27
700.0	12.00	38.63	697.1	-4,900.9	32.6	26.1	41.7	3.00	1,592,674.35	2,287,378.04
800.0	15.00	38.63	794.3	-4,803.7	50.8	40.6	65.1	3.00	1,592,692.18	2,287,393.11
900.0	18.00	38.63	890.2	-4,707.8	73.0	58.4	93.5	3.00	1,592,713.86	2,287,411.45
1,000.0	21.00	38.63	984.4	-4,613.6	99.1	79.2	126.9	3.00	1,592,739.35	2,287,433.00
1,100.0	24.00	38.63	1,076.8	-4,521.2	129.0	103.1	165.1	3.00	1,592,768.57	2,287,457.70
1,200.0	27.00	38.63	1,167.1	-4,430.9	162.6	129.9	208.2	3.00	1,592,801.44	2,287,485.50
1,300.0	30.00	38.63	1,254.9	-4,343.1	199.9	159.7	255.9	3.00	1,592,837.87	2,287,516.31
1,400.0	33.00	38.63	1,340.2	-4,257.8	240.7	192.3	308.1	3.00	1,592,877.76	2,287,550.04
1,474.2	35.22	38.63	1,401.6	-4,196.4	273.2	218.3	349.7	3.00	1,592,909.51	2,287,576.89
Start 2511.8 hold at 1474.2 MD										
1,500.0	35.22	38.63	1,422.7	-4,175.3	284.8	227.6	364.6	0.00	1,592,920.90	2,287,586.52
1,600.0	35.22	38.63	1,504.4	-4,093.6	329.9	263.6	422.3	0.00	1,592,964.94	2,287,623.76
1,700.0	35.22	38.63	1,586.1	-4,011.9	375.0	299.6	480.0	0.00	1,593,008.98	2,287,661.00
1,800.0	35.22	38.63	1,667.8	-3,930.2	420.0	335.6	537.6	0.00	1,593,053.03	2,287,698.24
1,839.5	35.22	38.63	1,700.0	-3,898.0	437.8	349.8	560.4	0.00	1,593,070.41	2,287,712.94
Surface Casing										
1,900.0	35.22	38.63	1,749.4	-3,848.6	465.1	371.6	595.3	0.00	1,593,097.07	2,287,735.49
2,000.0	35.22	38.63	1,831.1	-3,766.9	510.1	407.6	653.0	0.00	1,593,141.11	2,287,772.73
2,100.0	35.22	38.63	1,912.8	-3,685.2	555.2	443.6	710.7	0.00	1,593,185.15	2,287,809.97
2,200.0	35.22	38.63	1,994.5	-3,603.5	600.3	479.6	768.4	0.00	1,593,229.20	2,287,847.21

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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)
2,300.0	35.22	38.63	2,076.2	-3,521.8	645.3	515.6	826.0	0.00	1,593,273.24	2,287,884.46
2,400.0	35.22	38.63	2,157.9	-3,440.1	690.4	551.6	883.7	0.00	1,593,317.28	2,287,921.70
2,500.0	35.22	38.63	2,239.6	-3,358.4	735.4	587.7	941.4	0.00	1,593,361.33	2,287,958.94
2,600.0	35.22	38.63	2,321.3	-3,276.7	780.5	623.7	999.1	0.00	1,593,405.37	2,287,996.19
2,700.0	35.22	38.63	2,403.0	-3,195.0	825.6	659.7	1,056.7	0.00	1,593,449.41	2,288,033.43
2,800.0	35.22	38.63	2,484.7	-3,113.3	870.6	695.7	1,114.4	0.00	1,593,493.45	2,288,070.67
2,900.0	35.22	38.63	2,566.3	-3,031.7	915.7	731.7	1,172.1	0.00	1,593,537.50	2,288,107.91
3,000.0	35.22	38.63	2,648.0	-2,950.0	960.7	767.7	1,229.8	0.00	1,593,581.54	2,288,145.16
3,100.0	35.22	38.63	2,729.7	-2,868.3	1,005.8	803.7	1,287.5	0.00	1,593,625.58	2,288,182.40
3,200.0	35.22	38.63	2,811.4	-2,786.6	1,050.9	839.7	1,345.1	0.00	1,593,669.63	2,288,219.64
3,300.0	35.22	38.63	2,893.1	-2,704.9	1,095.9	875.7	1,402.8	0.00	1,593,713.67	2,288,256.88
3,400.0	35.22	38.63	2,974.8	-2,623.2	1,141.0	911.7	1,460.5	0.00	1,593,757.71	2,288,294.13
3,500.0	35.22	38.63	3,056.5	-2,541.5	1,186.0	947.7	1,518.2	0.00	1,593,801.75	2,288,331.37
3,600.0	35.22	38.63	3,138.2	-2,459.8	1,231.1	983.7	1,575.9	0.00	1,593,845.80	2,288,368.61
3,700.0	35.22	38.63	3,219.9	-2,378.1	1,276.2	1,019.7	1,633.5	0.00	1,593,889.84	2,288,405.85
3,800.0	35.22	38.63	3,301.6	-2,296.4	1,321.2	1,055.7	1,691.2	0.00	1,593,933.88	2,288,443.10
3,900.0	35.22	38.63	3,383.2	-2,214.8	1,366.3	1,091.7	1,748.9	0.00	1,593,977.93	2,288,480.34
3,985.9	35.22	38.63	3,453.4	-2,144.6	1,405.0	1,122.7	1,798.4	0.00	1,594,015.77	2,288,512.34
Start Drop -3.00										
4,000.0	34.80	38.63	3,465.0	-2,133.0	1,411.3	1,127.7	1,806.5	3.00	1,594,021.94	2,288,517.56
4,100.0	31.80	38.63	3,548.5	-2,049.5	1,454.2	1,162.0	1,861.4	3.00	1,594,063.86	2,288,553.00
4,125.2	31.05	38.63	3,570.0	-2,028.0	1,464.5	1,170.2	1,874.5	3.00	1,594,073.87	2,288,561.47
Williams Fork										
4,200.0	28.80	38.63	3,634.9	-1,963.1	1,493.6	1,193.5	1,911.9	3.00	1,594,102.38	2,288,585.58
4,300.0	25.80	38.63	3,723.7	-1,874.3	1,529.4	1,222.1	1,957.7	3.00	1,594,137.40	2,288,615.19
4,400.0	22.80	38.63	3,814.8	-1,783.2	1,561.6	1,247.8	1,998.9	3.00	1,594,168.82	2,288,641.76
4,500.0	19.80	38.63	3,908.0	-1,690.0	1,590.0	1,270.5	2,035.2	3.00	1,594,196.56	2,288,665.22

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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)
4,600.0	16.80	38.63	4,002.9	-1,595.1	1,614.5	1,290.1	2,066.6	3.00	1,594,220.54	2,288,685.49
4,700.0	13.80	38.63	4,099.4	-1,498.6	1,635.1	1,306.5	2,093.0	3.00	1,594,240.69	2,288,702.53
4,800.0	10.80	38.63	4,197.1	-1,400.9	1,651.8	1,319.8	2,114.3	3.00	1,594,256.95	2,288,716.29
4,900.0	7.80	38.63	4,295.7	-1,302.3	1,664.4	1,329.9	2,130.5	3.00	1,594,269.30	2,288,726.72
5,000.0	4.80	38.63	4,395.1	-1,202.9	1,673.0	1,336.8	2,141.4	3.00	1,594,277.68	2,288,733.81
5,100.0	1.80	38.63	4,494.9	-1,103.1	1,677.5	1,340.4	2,147.2	3.00	1,594,282.07	2,288,737.53
5,160.1	0.00	0.00	4,555.0	-1,043.0	1,678.2	1,341.0	2,148.1	3.00	1,594,282.80	2,288,738.14
Back to Vertical - Start 2258.0 hold at 5160.1 MD - Top of Gas - 32D-17-07-95 TGT										
5,200.0	0.00	0.00	4,594.9	-1,003.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
5,300.0	0.00	0.00	4,694.9	-903.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
5,400.0	0.00	0.00	4,794.9	-803.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
5,500.0	0.00	0.00	4,894.9	-703.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
5,600.0	0.00	0.00	4,994.9	-603.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
5,700.0	0.00	0.00	5,094.9	-503.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
5,800.0	0.00	0.00	5,194.9	-403.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
5,900.0	0.00	0.00	5,294.9	-303.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,000.0	0.00	0.00	5,394.9	-203.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,100.0	0.00	0.00	5,494.9	-103.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,200.0	0.00	0.00	5,594.9	-3.1	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,300.0	0.00	0.00	5,694.9	96.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,400.0	0.00	0.00	5,794.9	196.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,500.0	0.00	0.00	5,894.9	296.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,600.0	0.00	0.00	5,994.9	396.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,607.1	0.00	0.00	6,002.0	404.0	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
Cameo										
6,700.0	0.00	0.00	6,094.9	496.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
6,800.0	0.00	0.00	6,194.9	596.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14

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6,900.0	0.00	0.00	6,294.9	696.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
7,000.0	0.00	0.00	6,394.9	796.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
7,100.0	0.00	0.00	6,494.9	896.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
7,118.1	0.00	0.00	6,513.0	915.0	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
Rollins										
7,200.0	0.00	0.00	6,594.9	996.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
7,300.0	0.00	0.00	6,694.9	1,096.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
7,400.0	0.00	0.00	6,794.9	1,196.9	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
7,418.1	0.00	0.00	6,813.0	1,215.0	1,678.2	1,341.0	2,148.1	0.00	1,594,282.80	2,288,738.14
TD at 7418.1										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,118.1	6,513.0	Rollins		0.00		
6,607.1	6,002.0	Cameo		0.00		
5,160.1	4,555.0	Top of Gas		0.00		
4,125.2	3,570.0	Williams Fork		0.00		

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Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.0	300.0	0.0	0.0	Start Build 3.00	
1,474.2	1,401.6	273.2	218.3	Start 2511.8 hold at 1474.2 MD	
1,839.5	1,700.0	437.8	349.8	Surface Casing	
3,985.9	3,453.4	1,405.0	1,122.7	Start Drop -3.00	
5,160.1	4,555.0	1,678.2	1,341.0	Back to Vertical	
5,160.1	4,555.0	1,678.2	1,341.0	Start 2258.0 hold at 5160.1 MD	
7,418.1	6,813.0	1,678.2	1,341.0	TD at 7418.1	

Checked By: _____ Approved By: _____ Date: _____

