



Ursa Operating Company, LLC

Rockies Region

Valley Farms L

44D-11-06-92

Wellbore #1

Survey: Survey #1

End Of Well Report

22 December, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well 44D-11-06-92
Project:	Rockies Region	TVD Reference:	44D-11-06-92 @ 5592.0usft (Capstar 321)
Site:	Valley Farms L	MD Reference:	44D-11-06-92 @ 5592.0usft (Capstar 321)
Well:	44D-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	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		Valley Farms L			
Site Position:		Northing:		1,627,813.26	usft
From:	Lat/Long	Easting:		2,399,633.86	usft
Position Uncertainty:		Slot Radius:		13-3/16	"
				Grid Convergence:	-1.34 °

Well		44D-11-06-92, SHL LAT: 39.537716535 LONG: -107.629137055				
Well Position	+N-S	0.0 usft	Northing:	1,627,778.13 usft	Latitude:	39° 32' 15.779 N
	+E-W	0.0 usft	Easting:	2,399,567.61 usft	Longitude:	107° 37' 44.893 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,592.0 usft	Ground Level:	5,577.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/25/2013	9.84	65.79	52,116

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	27.6
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		27.6	0.0	0.0	143.04

Survey Program		Date	12/22/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
152.0	7,450.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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Well:	44D-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
152.0	0.93	328.94	152.0	-1.2	1.1	-0.6	0.61	0.61	0.00	
180.0	0.75	343.03	180.0	-1.6	1.4	-0.8	0.97	-0.64	50.32	
210.0	0.83	345.45	210.0	-2.0	1.8	-0.9	0.29	0.27	8.07	
242.0	0.48	6.24	242.0	-2.3	2.2	-1.0	1.30	-1.09	64.97	
272.0	0.31	39.20	272.0	-2.4	2.4	-0.9	0.92	-0.57	109.87	
302.0	0.09	236.51	302.0	-2.5	2.4	-0.9	1.32	-0.73	-542.30	
332.0	0.31	128.71	332.0	-2.4	2.4	-0.8	1.16	0.73	-359.33	
362.0	0.22	190.46	362.0	-2.3	2.2	-0.8	0.94	-0.30	205.83	
392.0	0.46	176.06	392.0	-2.1	2.1	-0.8	0.84	0.80	-48.00	
422.0	0.40	139.17	422.0	-1.9	1.9	-0.7	0.93	-0.20	-122.97	
452.0	0.53	142.64	452.0	-1.7	1.7	-0.5	0.44	0.43	11.57	
482.0	0.57	134.16	482.0	-1.4	1.5	-0.4	0.30	0.13	-28.27	
512.0	0.35	133.37	512.0	-1.1	1.3	-0.2	0.73	-0.73	-2.63	
542.0	0.53	147.30	542.0	-0.9	1.1	0.0	0.69	0.60	46.43	
572.0	0.56	119.61	572.0	-0.6	0.9	0.2	0.87	0.10	-92.30	
602.0	0.70	148.22	602.0	-0.3	0.7	0.4	1.13	0.47	95.37	
632.0	0.57	123.75	632.0	0.0	0.5	0.6	0.99	-0.43	-81.57	
662.0	0.53	130.69	662.0	0.3	0.3	0.8	0.26	-0.13	23.13	
692.0	0.53	134.34	692.0	0.5	0.1	1.0	0.11	0.00	12.17	
722.0	0.75	122.43	722.0	0.9	-0.1	1.3	0.85	0.73	-39.70	
752.0	0.66	125.94	752.0	1.2	-0.3	1.6	0.33	-0.30	11.70	
782.0	0.18	146.11	782.0	1.4	-0.4	1.8	1.65	-1.60	67.23	
812.0	0.48	230.01	812.0	1.5	-0.6	1.7	1.65	1.00	279.67	
842.0	0.37	224.16	842.0	1.5	-0.7	1.5	0.39	-0.37	-19.50	
872.0	0.09	275.71	872.0	1.5	-0.8	1.5	1.07	-0.93	171.83	
902.0	0.13	264.63	902.0	1.5	-0.8	1.4	0.15	0.13	-36.93	

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Well:	44D-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
932.0	0.22	220.38	932.0	1.5	-0.8	1.3	0.52	0.30	-147.50	
962.0	0.26	144.40	962.0	1.5	-0.9	1.3	0.99	0.13	-253.27	
1,079.0	1.60	114.34	1,078.9	3.2	-1.8	3.0	1.18	1.15	-25.69	
1,164.0	3.47	134.78	1,163.9	6.8	-4.1	5.9	2.41	2.20	24.05	
1,250.0	6.28	148.36	1,249.5	14.1	-10.0	10.2	3.51	3.27	15.79	
1,335.0	8.35	149.28	1,333.8	24.9	-19.2	15.8	2.44	2.44	1.08	
1,420.0	10.42	160.62	1,417.7	38.3	-31.8	21.5	3.25	2.44	13.34	
1,506.0	12.96	163.17	1,501.9	54.8	-48.4	26.9	3.01	2.95	2.97	
1,591.0	15.34	163.47	1,584.3	74.3	-68.3	32.8	2.80	2.80	0.35	
1,677.0	17.62	164.57	1,666.8	97.0	-91.7	39.5	2.68	2.65	1.28	
1,762.0	19.78	160.84	1,747.3	122.7	-117.7	47.7	2.90	2.54	-4.39	
1,847.0	22.19	157.67	1,826.7	151.9	-146.1	58.5	3.13	2.84	-3.73	
1,933.0	23.95	158.38	1,905.8	184.5	-177.4	71.1	2.07	2.05	0.83	
2,018.0	23.47	155.83	1,983.6	217.6	-208.9	84.4	1.33	-0.56	-3.00	
2,104.0	23.99	154.95	2,062.3	251.4	-240.3	98.8	0.73	0.60	-1.02	
2,189.0	23.77	153.85	2,140.1	285.2	-271.4	113.7	0.58	-0.26	-1.29	
2,275.0	23.12	155.47	2,219.0	318.7	-302.3	128.3	1.06	-0.76	1.88	
2,360.0	23.65	153.84	2,297.0	351.7	-332.8	142.8	0.98	0.62	-1.92	
2,446.0	23.07	152.75	2,375.9	385.3	-363.2	158.1	0.84	-0.67	-1.27	
2,531.0	23.73	152.69	2,453.9	418.6	-393.2	173.6	0.78	0.78	-0.07	
2,617.0	24.03	151.06	2,532.6	453.0	-423.9	190.0	0.84	0.35	-1.90	
2,702.0	23.82	154.31	2,610.3	486.9	-454.6	205.8	1.57	-0.25	3.82	
2,788.0	24.17	158.59	2,688.9	520.9	-486.6	219.7	2.06	0.41	4.98	
2,873.0	24.16	157.51	2,766.4	554.5	-518.9	232.7	0.52	-0.01	-1.27	
2,958.0	23.86	155.83	2,844.1	588.1	-550.6	246.4	0.88	-0.35	-1.98	
3,044.0	23.64	156.84	2,922.8	621.9	-582.3	260.3	0.54	-0.26	1.17	
3,129.0	22.94	156.49	3,000.8	654.5	-613.2	273.6	0.84	-0.82	-0.41	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
3,215.0	22.06	154.42	3,080.3	686.6	-643.1	287.3	1.38	-1.02	-2.41	
3,300.0	22.76	153.80	3,158.9	718.4	-672.3	301.5	0.87	0.82	-0.73	
3,385.0	23.77	154.33	3,237.0	751.4	-702.5	316.1	1.21	1.19	0.62	
3,471.0	25.09	156.88	3,315.3	786.1	-734.9	330.8	1.96	1.53	2.97	
3,556.0	24.35	156.53	3,392.5	820.6	-767.5	344.9	0.89	-0.87	-0.41	
3,642.0	23.12	155.74	3,471.2	854.4	-799.2	358.9	1.48	-1.43	-0.92	
3,727.0	21.31	158.29	3,549.9	885.5	-828.8	371.4	2.41	-2.13	3.00	
3,812.0	21.88	156.49	3,628.9	915.8	-857.6	383.5	1.03	0.67	-2.12	
3,898.0	22.85	154.86	3,708.5	947.8	-887.4	397.0	1.34	1.13	-1.90	
3,983.0	20.61	157.94	3,787.4	978.4	-916.2	409.6	2.96	-2.64	3.62	
4,069.0	19.05	158.86	3,868.3	1,006.5	-943.4	420.3	1.85	-1.81	1.07	
4,154.0	16.35	159.74	3,949.3	1,031.3	-967.5	429.5	3.19	-3.18	1.04	
4,239.0	13.67	157.80	4,031.4	1,052.5	-988.1	437.4	3.21	-3.15	-2.28	
4,325.0	11.56	158.86	4,115.3	1,070.6	-1,005.5	444.4	2.47	-2.45	1.23	
4,410.0	9.80	160.48	4,198.8	1,085.7	-1,020.3	449.9	2.10	-2.07	1.91	
4,495.0	7.21	164.09	4,282.9	1,097.6	-1,032.2	453.7	3.11	-3.05	4.25	
4,581.0	4.44	162.90	4,368.4	1,105.8	-1,040.6	456.2	3.22	-3.22	-1.38	
4,666.0	1.67	137.02	4,453.3	1,110.1	-1,044.6	458.0	3.56	-3.26	-30.45	
4,745.0	1.82	169.39	4,532.2	1,112.4	-1,046.7	459.0	1.24	0.19	41.00	
44D-11-06-92 TGT										
4,751.0	1.85	171.51	4,538.3	1,112.5	-1,046.9	459.1	1.24	0.54	35.08	
4,836.0	2.11	159.78	4,623.2	1,115.2	-1,049.7	459.8	0.56	0.31	-13.80	
4,922.0	1.93	146.11	4,709.2	1,118.2	-1,052.4	461.2	0.60	-0.21	-15.90	
5,007.0	2.15	140.36	4,794.1	1,121.2	-1,054.8	463.0	0.35	0.26	-6.76	
5,092.0	2.24	130.59	4,879.0	1,124.4	-1,057.1	465.2	0.45	0.11	-11.49	
5,178.0	2.11	120.67	4,965.0	1,127.5	-1,059.0	467.9	0.46	-0.15	-11.53	
5,263.0	2.02	109.55	5,049.9	1,130.2	-1,060.3	470.6	0.48	-0.11	-13.08	

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5,349.0	1.80	109.33	5,135.9	1,132.6	-1,061.3	473.3	0.26	-0.26	-0.26	
5,434.0	1.10	67.36	5,220.9	1,133.9	-1,061.4	475.4	1.44	-0.82	-49.38	
5,520.0	0.57	20.96	5,306.8	1,133.9	-1,060.7	476.3	0.95	-0.62	-53.95	
5,605.0	0.48	6.24	5,391.8	1,133.4	-1,060.0	476.5	0.19	-0.11	-17.32	
5,690.0	0.92	340.88	5,476.8	1,132.5	-1,059.0	476.3	0.62	0.52	-29.84	
5,776.0	1.05	317.41	5,562.8	1,131.1	-1,057.7	475.5	0.49	0.15	-27.29	
5,861.0	0.88	309.02	5,647.8	1,129.7	-1,056.7	474.5	0.26	-0.20	-9.87	
5,947.0	0.66	337.03	5,733.8	1,128.6	-1,055.9	473.8	0.50	-0.26	32.57	
6,032.0	0.62	21.75	5,818.8	1,127.8	-1,055.0	473.8	0.57	-0.05	52.61	
6,118.0	0.15	209.64	5,904.8	1,127.6	-1,054.7	473.9	0.89	-0.55	-200.13	
6,203.0	0.53	166.15	5,989.8	1,128.0	-1,055.1	473.9	0.51	0.45	-51.16	
6,288.0	0.66	138.56	6,074.8	1,128.9	-1,055.9	474.3	0.37	0.15	-32.46	
6,374.0	0.88	203.77	6,160.8	1,129.7	-1,056.9	474.4	0.99	0.26	75.83	
6,459.0	0.83	237.96	6,245.8	1,130.0	-1,057.8	473.6	0.59	-0.06	40.22	
6,545.0	0.48	237.43	6,331.8	1,129.9	-1,058.3	472.8	0.41	-0.41	-0.62	
6,630.0	0.22	59.45	6,416.8	1,129.9	-1,058.4	472.6	0.82	-0.31	-209.39	
6,716.0	0.64	66.54	6,502.8	1,130.0	-1,058.1	473.2	0.49	0.49	8.24	
6,801.0	0.88	64.33	6,587.8	1,130.3	-1,057.7	474.2	0.28	0.28	-2.60	
6,886.0	1.27	66.71	6,672.7	1,130.6	-1,057.0	475.7	0.46	0.46	2.80	
6,972.0	1.76	75.14	6,758.7	1,131.3	-1,056.3	477.8	0.62	0.57	9.80	
7,058.0	1.63	66.80	6,844.7	1,132.1	-1,055.5	480.2	0.32	-0.15	-9.70	
7,143.0	1.80	49.17	6,929.6	1,132.3	-1,054.1	482.3	0.65	0.20	-20.74	
7,229.0	1.98	43.72	7,015.6	1,132.0	-1,052.2	484.4	0.30	0.21	-6.34	
7,314.0	2.15	32.82	7,100.5	1,131.2	-1,049.8	486.3	0.50	0.20	-12.82	
7,393.0	2.29	35.77	7,179.5	1,130.2	-1,047.3	488.0	0.23	0.18	3.73	
7,450.0	2.29	35.77	7,236.4	1,129.5	-1,045.4	489.3	0.00	0.00	0.00	

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Site:	Valley Farms L	MD Reference:	44D-11-06-92 @ 5592.0usft (Capstar 321)
Well:	44D-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Checked By: _____	Approved By: _____	Date: _____
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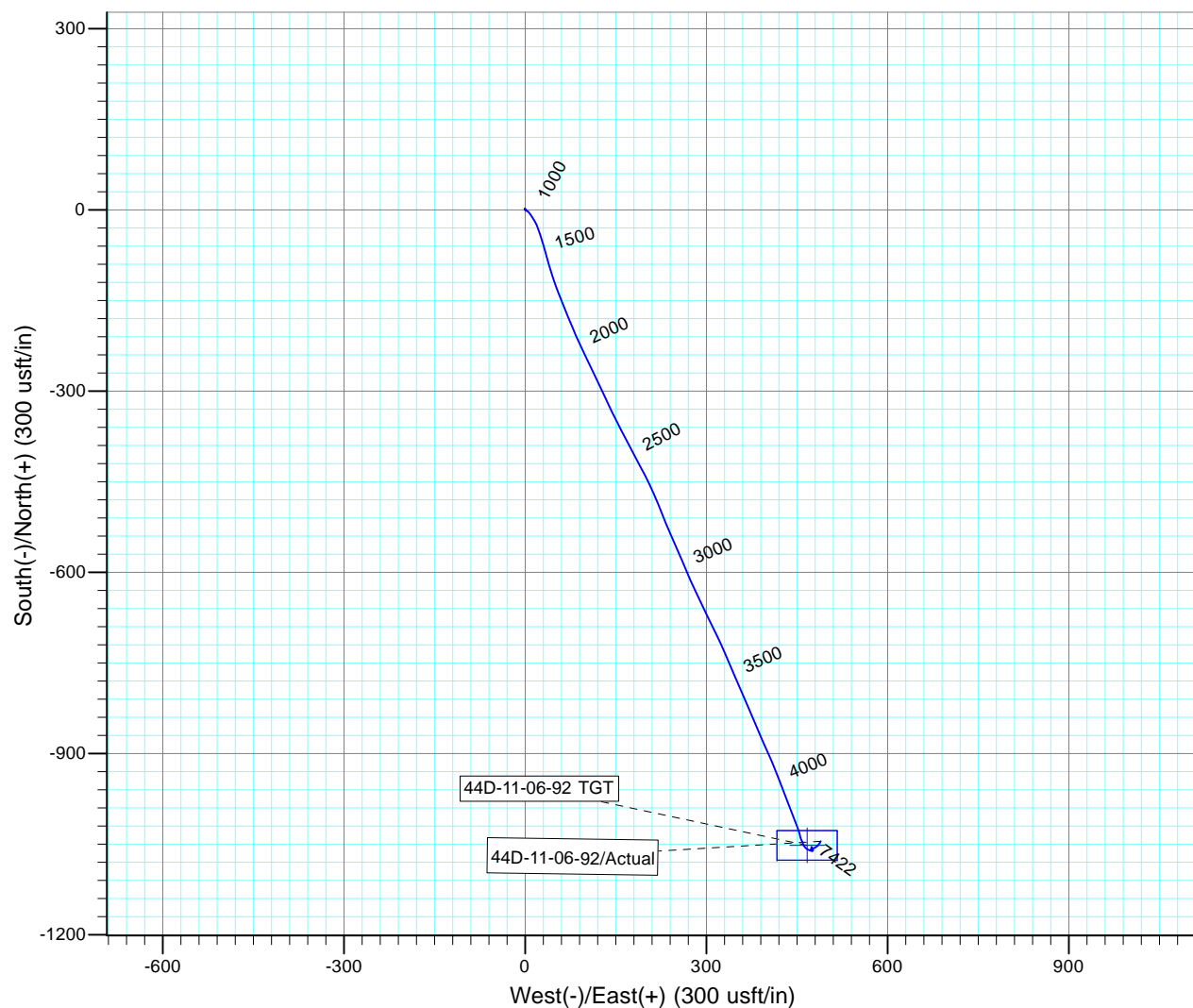
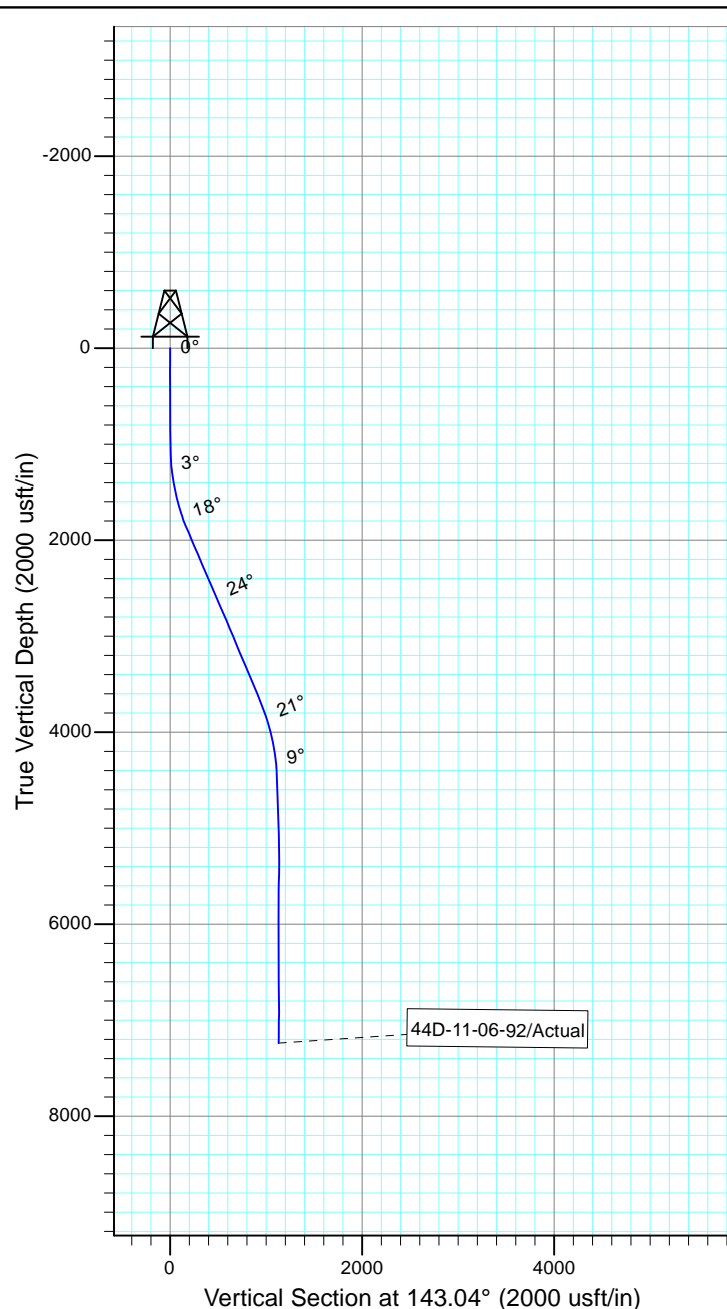
Project: Rockies Region
 Site: Valley Farms L
 Well: 44D-11-06-92
 Wellbore: Wellbore ;
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
 Magnetic North: 9.84°

Magnetic Field
 Strength: 52116.5snT
 Dip Angle: 65.79°
 Date: 11/25/2013
 Model: IGRF200510



Design: Actual (44D-11-06-92/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 11:49, December 22 2014
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.

