



# **Ursa Operating Company, LLC**

**Rockies Region**

**Tompkins**

**Tompkins 41AWI-08-07-95**

**Wellbore #1**

**Design: Actual**

## **End of Well Report**

**21 November, 2017**



<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 41AWI-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 41AWI-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 41AWI-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 41AWI-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM 5000.1 Single User Db

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		Using geodetic scale factor

Site		Tompkins									
Site Position:		Northing:		1,602,267.16 usft		Latitude:		39.460029400			
From:		Lat/Long		Easting:		2,290,225.27 usft		Longitude:		-108.014179900	
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		-1.59 °	

Well		Tompkins 41AWI-08-07-95, SHL LAT: 39.459959300 LONG: -108.013739500				
Well Position	+N/-S	0.0 usft	Northing:	1,602,238.20 usft	Latitude:	39.459959300
	+E/-W	0.0 usft	Easting:	2,290,348.86 usft	Longitude:	-108.013739500
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,549.0 usft	Ground Level:	5,532.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/21/2017	9.66	65.55	51,463

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)		+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0		0.0	0.0	208.75

Survey Program		Date	11/21/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
141.0	8,130.0	Actual (Wellbore #1)	MWD	MWD - Standard	

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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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
141.0	0.26	55.65	141.0	-0.3	0.2	0.3	0.18	0.18	0.00	
170.0	0.26	38.59	170.0	-0.4	0.3	0.4	0.27	0.00	-58.83	
201.0	0.13	284.42	201.0	-0.5	0.3	0.4	1.08	-0.42	-368.29	
231.0	0.12	291.20	231.0	-0.5	0.4	0.3	0.06	-0.03	22.60	
261.0	0.04	312.98	261.0	-0.5	0.4	0.3	0.28	-0.27	72.60	
291.0	0.31	341.28	291.0	-0.5	0.5	0.2	0.92	0.90	94.33	
322.0	0.00	342.12	322.0	-0.6	0.5	0.2	1.00	-1.00	0.00	
352.0	0.35	0.35	352.0	-0.7	0.6	0.2	1.17	1.17	0.00	
383.0	0.09	16.96	383.0	-0.8	0.7	0.2	0.85	-0.84	53.58	
413.0	0.44	17.84	413.0	-0.9	0.9	0.3	1.17	1.17	2.93	
442.0	0.40	350.77	442.0	-1.1	1.1	0.3	0.69	-0.14	-93.34	
472.0	0.18	31.07	472.0	-1.2	1.2	0.3	0.96	-0.73	134.33	
503.0	0.48	15.34	503.0	-1.4	1.4	0.3	1.00	0.97	-50.74	
533.0	0.44	47.86	533.0	-1.6	1.6	0.5	0.87	-0.13	108.40	
563.0	0.26	9.45	563.0	-1.8	1.7	0.6	0.95	-0.60	-128.03	
592.0	0.53	22.50	592.0	-2.0	1.9	0.6	0.98	0.93	45.00	
623.0	0.70	29.14	623.0	-2.3	2.2	0.8	0.59	0.55	21.42	
653.0	0.40	26.76	653.0	-2.6	2.5	0.9	1.00	-1.00	-7.93	
683.0	0.71	40.48	683.0	-2.9	2.7	1.1	1.12	1.03	45.73	
713.0	0.48	37.62	713.0	-3.2	3.0	1.3	0.77	-0.77	-9.53	
743.0	0.22	18.59	743.0	-3.4	3.1	1.4	0.94	-0.87	-63.43	
772.0	0.31	223.76	772.0	-3.4	3.1	1.3	1.78	0.31	-533.90	
803.0	0.57	216.17	803.0	-3.1	2.9	1.2	0.86	0.84	-24.48	
833.0	0.53	217.09	833.0	-2.8	2.7	1.0	0.14	-0.13	3.07	
875.0	0.53	223.16	875.0	-2.5	2.4	0.8	0.13	0.00	14.45	
917.0	0.53	216.65	917.0	-2.1	2.1	0.5	0.14	0.00	-15.50	

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<b>Well:</b>	Tompkins 41AWI-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
961.0	0.75	207.12	961.0	-1.6	1.7	0.3	0.55	0.50	-21.66	
1,004.0	2.18	206.52	1,004.0	-0.5	0.7	-0.2	3.33	3.33	-1.40	
1,048.0	3.30	199.07	1,047.9	1.6	-1.3	-1.0	2.67	2.55	-16.93	
1,090.0	3.65	207.42	1,089.8	4.1	-3.6	-2.0	1.46	0.83	19.88	
1,132.0	4.31	207.12	1,131.7	7.0	-6.2	-3.4	1.57	1.57	-0.71	
1,176.0	5.60	207.97	1,175.6	10.8	-9.5	-5.1	2.94	2.93	1.93	
1,220.0	7.29	208.74	1,219.3	15.8	-13.9	-7.5	3.85	3.84	1.75	
1,263.0	8.79	209.31	1,261.9	21.8	-19.1	-10.4	3.49	3.49	1.33	
1,307.0	10.42	207.69	1,305.2	29.1	-25.6	-13.9	3.75	3.70	-3.68	
1,349.0	12.22	207.03	1,346.4	37.4	-32.9	-17.7	4.30	4.29	-1.57	
1,391.0	14.02	207.25	1,387.3	46.9	-41.4	-22.0	4.29	4.29	0.52	
1,433.0	15.42	208.61	1,428.0	57.6	-50.8	-27.0	3.43	3.33	3.24	
1,475.0	16.57	209.45	1,468.3	69.1	-60.9	-32.7	2.79	2.74	2.00	
1,518.0	18.28	210.54	1,509.3	82.0	-72.1	-39.1	4.05	3.98	2.53	
1,560.0	19.64	209.93	1,549.1	95.7	-83.9	-46.0	3.27	3.24	-1.45	
1,602.0	20.74	209.80	1,588.5	110.1	-96.5	-53.2	2.62	2.62	-0.31	
1,644.0	21.97	209.53	1,627.6	125.4	-109.7	-60.7	2.94	2.93	-0.64	
1,687.0	23.16	208.17	1,667.3	141.9	-124.2	-68.7	3.02	2.77	-3.16	
Last PZD Surface Survey										
1,754.0	24.79	206.76	1,728.5	169.2	-148.4	-81.3	2.58	2.43	-2.10	
1,838.0	26.32	205.36	1,804.3	205.3	-180.9	-97.2	1.96	1.82	-1.67	
1,922.0	28.14	203.93	1,879.0	243.7	-215.9	-113.2	2.30	2.17	-1.70	
2,008.0	32.70	205.97	1,953.1	287.1	-255.3	-131.6	5.44	5.30	2.37	
2,091.0	33.13	206.98	2,022.8	332.2	-295.7	-151.7	0.84	0.52	1.22	
2,176.0	34.98	208.39	2,093.2	379.8	-337.8	-173.8	2.37	2.18	1.66	
2,260.0	34.98	206.94	2,162.1	427.9	-380.5	-196.2	0.99	0.00	-1.73	
2,344.0	33.88	204.83	2,231.4	475.3	-423.2	-216.9	1.93	-1.31	-2.51	

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
2,428.0	35.46	206.68	2,300.4	523.0	-466.2	-237.7	2.26	1.88	2.20	
2,513.0	34.83	205.34	2,369.9	571.9	-510.2	-259.1	1.17	-0.74	-1.58	
2,597.0	34.69	207.67	2,439.0	619.8	-553.0	-280.5	1.59	-0.17	2.77	
2,681.0	34.41	206.11	2,508.1	667.4	-595.5	-302.1	1.10	-0.33	-1.86	
2,766.0	33.35	210.02	2,578.7	714.7	-637.3	-324.3	2.85	-1.25	4.60	
2,852.0	32.92	208.74	2,650.7	761.7	-678.3	-347.4	0.95	-0.50	-1.49	
2,938.0	31.90	211.39	2,723.3	807.8	-718.2	-370.5	2.03	-1.19	3.08	
3,022.0	31.82	210.02	2,794.7	852.1	-756.3	-393.1	0.87	-0.10	-1.63	
3,111.0	30.98	208.65	2,870.7	898.5	-796.7	-415.8	1.24	-0.94	-1.54	
3,195.0	32.43	209.18	2,942.1	942.6	-835.3	-437.2	1.76	1.73	0.63	
3,279.0	31.75	208.53	3,013.3	987.3	-874.4	-458.7	0.91	-0.81	-0.77	
3,363.0	32.92	207.16	3,084.3	1,032.2	-914.1	-479.7	1.64	1.39	-1.63	
3,448.0	32.17	205.97	3,155.9	1,077.9	-955.0	-500.1	1.16	-0.88	-1.40	
3,532.0	31.82	204.57	3,227.1	1,122.3	-995.3	-519.1	0.98	-0.42	-1.67	
3,616.0	31.25	207.20	3,298.7	1,166.2	-1,034.8	-538.3	1.77	-0.68	3.13	
3,701.0	30.89	207.56	3,371.6	1,210.0	-1,073.8	-558.5	0.48	-0.42	0.42	
3,785.0	29.97	207.00	3,444.0	1,252.5	-1,111.6	-578.0	1.15	-1.10	-0.67	
3,871.0	29.02	206.62	3,518.8	1,294.9	-1,149.4	-597.1	1.13	-1.10	-0.44	
3,955.0	27.50	205.75	3,592.8	1,334.6	-1,185.0	-614.6	1.87	-1.81	-1.04	
4,042.0	25.49	210.76	3,670.7	1,373.4	-1,219.2	-632.9	3.45	-2.31	5.76	
4,126.0	24.35	209.93	3,746.9	1,408.7	-1,249.8	-650.8	1.42	-1.36	-0.99	
4,210.0	22.50	210.59	3,823.9	1,442.1	-1,278.6	-667.6	2.22	-2.20	0.79	
4,295.0	21.36	209.93	3,902.8	1,473.9	-1,306.0	-683.6	1.37	-1.34	-0.78	
4,381.0	20.25	209.08	3,983.2	1,504.4	-1,332.6	-698.7	1.34	-1.29	-0.99	
4,465.0	18.37	208.57	4,062.5	1,532.2	-1,356.9	-712.1	2.25	-2.24	-0.61	
4,550.0	16.66	205.84	4,143.5	1,557.7	-1,379.7	-723.8	2.23	-2.01	-3.21	
4,634.0	15.69	206.50	4,224.2	1,581.1	-1,400.7	-734.1	1.18	-1.15	0.79	

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4,718.0	15.47	204.00	4,305.1	1,603.6	-1,421.1	-743.7	0.84	-0.26	-2.98	
4,803.0	13.79	203.41	4,387.3	1,625.0	-1,440.7	-752.4	1.98	-1.98	-0.69	
4,887.0	12.52	201.45	4,469.1	1,644.0	-1,458.4	-759.7	1.60	-1.51	-2.33	
4,972.0	10.85	198.90	4,552.4	1,661.0	-1,474.5	-765.7	2.06	-1.96	-3.00	
5,055.5	8.58	201.54	4,634.6	1,675.0	-1,487.8	-770.5	2.77	-2.71	3.16	
41AWI-08-07-95 TGT										
5,056.0	8.57	201.56	4,635.2	1,675.0	-1,487.8	-770.5	2.77	-2.70	3.99	
5,140.0	6.46	203.34	4,718.4	1,686.0	-1,498.0	-774.7	2.53	-2.51	2.12	
5,225.0	4.17	195.95	4,803.1	1,693.7	-1,505.4	-777.4	2.81	-2.69	-8.69	
5,309.0	1.57	189.15	4,887.0	1,697.8	-1,509.4	-778.5	3.12	-3.10	-8.10	
5,393.0	0.75	126.96	4,970.9	1,699.0	-1,510.9	-778.2	1.65	-0.98	-74.04	
5,477.0	1.54	13.19	5,054.9	1,697.9	-1,510.1	-777.5	2.34	0.94	-135.44	
5,562.0	2.03	23.13	5,139.9	1,695.3	-1,507.6	-776.6	0.68	0.58	11.69	
5,646.0	2.07	5.06	5,223.8	1,692.5	-1,504.8	-775.9	0.77	0.05	-21.51	
5,730.0	1.54	24.17	5,307.8	1,690.0	-1,502.2	-775.3	0.95	-0.63	22.75	
5,819.0	1.63	29.05	5,396.8	1,687.5	-1,500.0	-774.2	0.18	0.10	5.48	
5,903.0	1.47	37.34	5,480.7	1,685.2	-1,498.1	-773.0	0.33	-0.19	9.87	
5,989.0	1.10	42.41	5,566.7	1,683.4	-1,496.6	-771.8	0.45	-0.43	5.90	
6,074.0	1.32	30.24	5,651.7	1,681.6	-1,495.2	-770.7	0.40	0.26	-14.32	
6,159.0	0.93	38.16	5,736.7	1,679.9	-1,493.8	-769.8	0.49	-0.46	9.32	
6,244.0	1.01	48.43	5,821.7	1,678.5	-1,492.8	-768.8	0.22	0.09	12.08	
6,330.0	0.83	76.29	5,907.6	1,677.4	-1,492.1	-767.7	0.55	-0.21	32.40	
6,414.0	0.00	209.67	5,991.6	1,677.0	-1,492.0	-767.1	0.99	-0.99	0.00	
6,498.0	0.04	181.36	6,075.6	1,677.0	-1,492.0	-767.1	0.05	0.05	0.00	
6,585.0	0.92	167.21	6,162.6	1,677.6	-1,492.7	-766.9	1.01	1.01	-16.26	
6,671.0	0.66	186.62	6,248.6	1,678.5	-1,493.9	-766.8	0.43	-0.30	22.57	
6,758.0	1.20	179.07	6,335.6	1,679.8	-1,495.3	-766.9	0.64	0.62	-8.68	

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6,844.0	0.83	222.19	6,421.6	1,681.2	-1,496.6	-767.3	0.96	-0.43	50.14	
6,928.0	1.14	273.69	6,505.6	1,682.1	-1,497.0	-768.5	1.07	0.37	61.31	
7,014.0	1.05	315.00	6,591.6	1,682.3	-1,496.4	-769.9	0.90	-0.10	48.03	
7,099.0	1.45	306.30	6,676.6	1,681.9	-1,495.2	-771.3	0.52	0.47	-10.24	
7,187.0	1.58	306.26	6,764.5	1,681.6	-1,493.9	-773.2	0.15	0.15	-0.05	
7,271.0	1.45	306.08	6,848.5	1,681.3	-1,492.5	-775.0	0.15	-0.15	-0.21	
7,355.0	1.01	208.83	6,932.5	1,681.9	-1,492.6	-776.2	2.22	-0.52	-115.77	
7,440.0	1.52	209.70	7,017.5	1,683.8	-1,494.2	-777.1	0.60	0.60	1.02	
7,524.0	1.19	228.03	7,101.4	1,685.7	-1,495.8	-778.3	0.64	-0.39	21.82	
7,609.0	1.63	233.66	7,186.4	1,687.7	-1,497.1	-780.0	0.54	0.52	6.62	
7,695.0	1.32	246.71	7,272.4	1,689.6	-1,498.2	-781.9	0.53	-0.36	15.17	
7,780.0	1.51	253.58	7,357.4	1,691.1	-1,498.9	-783.8	0.30	0.22	8.08	
7,864.0	1.54	254.45	7,441.3	1,692.7	-1,499.5	-786.0	0.05	0.04	1.04	
7,950.0	1.45	242.36	7,527.3	1,694.4	-1,500.3	-788.1	0.38	-0.10	-14.06	
8,038.0	1.36	230.36	7,615.3	1,696.3	-1,501.5	-789.8	0.35	-0.10	-13.64	
8,075.0	1.71	236.82	7,652.3	1,697.2	-1,502.1	-790.6	1.05	0.95	17.46	
<b>Last PZD Survey</b>										
8,130.0	1.71	236.82	7,707.2	1,698.7	-1,503.0	-792.0	0.00	0.00	0.00	
<b>Straightline Projection to TD</b>										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,687.0	1,667.3	-124.2	-68.7	Last PZD Surface Survey
8,075.0	7,652.3	-1,502.1	-790.6	Last PZD Survey
8,130.0	7,707.2	-1,503.0	-792.0	Straightline Projection to TD

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 41AWI-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 41AWI-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 41AWI-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 41AWI-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM 5000.1 Single User Db

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



