



Ursa Operating Company, LLC

Rockies Region

Tompkins

Tompkins 41D-08-07-95

Wellbore #1

Design: Actual

End Of Well Report

23 June, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 41D-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 41D-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 41D-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 41D-08-07-95	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		Tompkins									
Site Position:		Northing:		1,602,267.16 usft		Latitude:		39° 27' 36.106 N			
From:		Lat/Long		Easting:		2,290,225.27 usft		Longitude:		108° 0' 51.048 W	
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		-1.59 °	

Well		Tompkins 41D-08-07-95, SHL LAT: 39.460023500 LONG: -108.013870200				
Well Position	+N/-S	0.0 usft	Northing:	1,602,262.56 usft	Latitude:	39° 27' 36.084 N
	+E/-W	0.0 usft	Easting:	2,290,312.61 usft	Longitude:	108° 0' 49.933 W
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	6/8/2016	9.81	65.57	51,625

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	185.11

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Survey Program		Date 6/23/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
139.0	1,705.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,828.0	7,092.0	Production (Wellbore #1)	MWD	MWD - Standard

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	
139.0	0.31	286.58	139.0	-0.1	0.1	-0.4	0.22	0.22	0.00	
170.0	0.48	278.10	170.0	-0.1	0.1	-0.6	0.58	0.55	-27.35	
201.0	0.35	300.07	201.0	-0.1	0.2	-0.8	0.66	-0.42	70.87	
230.0	0.48	300.90	230.0	-0.2	0.3	-1.0	0.45	0.45	2.86	
261.0	0.57	296.11	261.0	-0.3	0.5	-1.2	0.32	0.29	-15.45	
291.0	0.57	289.26	291.0	-0.4	0.6	-1.5	0.23	0.00	-22.83	
322.0	0.52	320.34	322.0	-0.6	0.7	-1.7	0.95	-0.16	100.26	
353.0	0.39	317.66	353.0	-0.7	0.9	-1.9	0.42	-0.42	-8.65	
383.0	0.44	3.35	383.0	-0.9	1.1	-1.9	1.09	0.17	152.30	
414.0	0.62	21.02	414.0	-1.2	1.4	-1.9	0.78	0.58	57.00	
445.0	0.44	55.60	445.0	-1.4	1.6	-1.7	1.16	-0.58	111.55	
475.0	0.70	76.69	475.0	-1.6	1.7	-1.4	1.10	0.87	70.30	
506.0	0.83	93.57	506.0	-1.6	1.7	-1.0	0.83	0.42	54.45	
536.0	1.10	107.81	536.0	-1.6	1.6	-0.5	1.20	0.90	47.47	
567.0	1.30	102.63	567.0	-1.5	1.5	0.1	0.73	0.65	-16.71	
597.0	1.27	101.08	597.0	-1.4	1.3	0.7	0.15	-0.10	-5.17	
627.0	1.41	117.39	627.0	-1.2	1.1	1.4	1.35	0.47	54.37	
657.0	1.05	129.60	657.0	-0.9	0.8	1.9	1.48	-1.20	40.70	
688.0	1.10	149.51	687.9	-0.5	0.3	2.3	1.21	0.16	64.23	
718.0	1.19	180.05	717.9	0.0	-0.2	2.4	2.03	0.30	101.80	

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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)	
749.0	2.02	188.76	748.9	0.9	-1.1	2.4	2.78	2.68	28.10	
780.0	2.72	189.94	779.9	2.2	-2.4	2.2	2.26	2.26	3.81	
810.0	3.52	189.75	809.9	3.8	-4.0	1.9	2.67	2.67	-0.63	
840.0	4.57	190.56	839.8	5.9	-6.1	1.5	3.51	3.50	2.70	
925.0	7.09	182.21	924.3	14.5	-14.6	0.7	3.12	2.96	-9.82	
1,010.0	9.89	185.77	1,008.4	27.1	-27.1	-0.3	3.35	3.29	4.19	
1,096.0	14.06	184.80	1,092.5	44.9	-44.9	-1.9	4.85	4.85	-1.13	
1,181.0	17.23	183.26	1,174.3	67.8	-67.8	-3.5	3.76	3.73	-1.81	
1,266.0	20.26	184.54	1,254.8	95.1	-95.0	-5.3	3.60	3.56	1.51	
1,351.0	22.28	187.96	1,334.0	125.9	-125.6	-8.7	2.79	2.38	4.02	
1,437.0	22.75	187.10	1,413.5	158.8	-158.3	-13.0	0.67	0.55	-1.00	
1,523.0	21.67	185.99	1,493.1	191.3	-190.6	-16.8	1.35	-1.26	-1.29	
1,608.0	21.09	185.15	1,572.3	222.3	-221.4	-19.8	0.77	-0.68	-0.99	
1,705.0	21.23	185.11	1,662.7	257.3	-256.3	-22.9	0.15	0.14	-0.04	
Last Surface Survey										
1,828.0	20.08	183.75	1,777.8	300.7	-299.6	-26.3	1.01	-0.93	-1.11	
1,913.0	20.83	185.55	1,857.4	330.4	-329.2	-28.7	1.15	0.88	2.12	
1,998.0	21.76	184.81	1,936.6	361.3	-359.9	-31.5	1.14	1.09	-0.87	
2,084.0	21.45	183.44	2,016.6	392.9	-391.5	-33.7	0.69	-0.36	-1.59	
2,169.0	21.80	182.65	2,095.6	424.2	-422.8	-35.4	0.54	0.41	-0.93	
2,254.0	22.10	181.46	2,174.5	456.0	-454.5	-36.5	0.63	0.35	-1.40	
2,339.0	22.06	181.50	2,253.2	487.8	-486.5	-37.4	0.05	-0.05	0.05	
2,425.0	21.59	181.55	2,333.1	519.8	-518.4	-38.2	0.55	-0.55	0.06	
2,510.0	21.45	180.19	2,412.1	550.8	-549.6	-38.7	0.61	-0.16	-1.60	
2,596.0	22.02	181.59	2,492.0	582.6	-581.4	-39.2	0.90	0.66	1.63	
2,681.0	21.40	181.02	2,571.0	614.0	-612.9	-39.9	0.77	-0.73	-0.67	
2,766.0	20.61	180.67	2,650.3	644.4	-643.3	-40.4	0.94	-0.93	-0.41	

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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)	
2,852.0	20.04	181.59	2,731.0	674.2	-673.2	-40.9	0.76	-0.66	1.07	
2,937.0	19.60	182.38	2,811.0	702.9	-702.0	-41.9	0.61	-0.52	0.93	
3,023.0	19.95	184.23	2,891.9	732.0	-731.0	-43.6	0.83	0.41	2.15	
3,108.0	19.91	186.06	2,971.8	761.0	-759.9	-46.2	0.74	-0.05	2.15	
3,193.0	20.17	188.98	3,051.6	790.1	-788.8	-50.0	1.22	0.31	3.44	
3,278.0	19.33	188.23	3,131.6	818.8	-817.2	-54.3	1.03	-0.99	-0.88	
3,364.0	20.30	188.49	3,212.6	847.9	-846.0	-58.6	1.13	1.13	0.30	
3,449.0	20.87	186.87	3,292.1	877.7	-875.6	-62.6	0.95	0.67	-1.91	
3,534.0	20.87	183.61	3,371.6	908.0	-905.8	-65.3	1.37	0.00	-3.84	
3,620.0	21.51	183.06	3,451.7	939.0	-936.8	-67.1	0.78	0.74	-0.64	
3,705.0	21.80	182.73	3,530.7	970.4	-968.1	-68.7	0.37	0.34	-0.39	
3,790.0	19.70	181.42	3,610.2	1,000.5	-998.2	-69.8	2.53	-2.47	-1.54	
3,876.0	19.64	183.22	3,691.2	1,029.4	-1,027.1	-71.0	0.71	-0.07	2.09	
3,961.0	19.78	184.01	3,771.2	1,058.0	-1,055.7	-72.8	0.35	0.16	0.93	
4,047.0	20.17	186.03	3,852.0	1,087.4	-1,085.0	-75.4	0.92	0.45	2.35	
4,133.0	19.42	184.79	3,933.0	1,116.5	-1,114.0	-78.1	1.00	-0.87	-1.44	
4,218.0	17.71	184.40	4,013.5	1,143.6	-1,141.0	-80.3	2.02	-2.01	-0.46	
4,303.0	16.13	183.66	4,094.9	1,168.3	-1,165.6	-82.1	1.88	-1.86	-0.87	
4,389.0	14.33	183.44	4,177.8	1,190.9	-1,188.2	-83.5	2.09	-2.09	-0.26	
4,474.0	12.13	185.20	4,260.6	1,210.3	-1,207.6	-84.9	2.63	-2.59	2.07	
4,559.0	10.11	180.71	4,344.0	1,226.7	-1,223.9	-85.8	2.58	-2.38	-5.28	
4,645.0	7.56	180.10	4,428.9	1,239.9	-1,237.1	-85.9	2.97	-2.97	-0.71	
4,731.0	5.01	179.18	4,514.4	1,249.3	-1,246.6	-85.9	2.97	-2.97	-1.07	
4,816.0	3.12	195.39	4,599.2	1,255.2	-1,252.5	-86.4	2.58	-2.22	19.07	
4,902.0	0.61	172.07	4,685.2	1,258.0	-1,255.2	-87.0	2.99	-2.92	-27.12	
4,987.0	0.56	173.57	4,770.2	1,258.8	-1,256.1	-86.9	0.06	-0.06	1.76	
5,072.0	0.62	171.57	4,855.1	1,259.7	-1,256.9	-86.8	0.07	0.07	-2.35	

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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)	
5,157.0	0.62	160.28	4,940.1	1,260.5	-1,257.8	-86.5	0.14	0.00	-13.28	
5,243.0	0.88	170.69	5,026.1	1,261.6	-1,258.9	-86.3	0.34	0.30	12.10	
5,328.0	1.05	168.10	5,111.1	1,263.0	-1,260.3	-86.0	0.21	0.20	-3.05	
5,414.0	0.53	231.65	5,197.1	1,264.0	-1,261.3	-86.1	1.10	-0.60	73.90	
5,499.0	1.10	25.98	5,282.1	1,263.5	-1,260.9	-86.1	1.88	0.67	181.56	
5,585.0	1.05	38.54	5,368.1	1,262.1	-1,259.5	-85.2	0.28	-0.06	14.60	
5,670.0	0.84	41.02	5,453.1	1,260.9	-1,258.4	-84.4	0.25	-0.25	2.92	
5,755.0	0.83	19.39	5,538.1	1,259.8	-1,257.4	-83.7	0.37	-0.01	-25.45	
5,841.0	0.97	342.48	5,624.1	1,258.6	-1,256.1	-83.8	0.68	0.16	-42.92	
5,926.0	0.57	341.25	5,709.1	1,257.5	-1,255.0	-84.1	0.47	-0.47	-1.45	
6,012.0	0.79	311.76	5,795.1	1,256.8	-1,254.2	-84.7	0.47	0.26	-34.29	
6,097.0	0.62	333.99	5,880.0	1,256.0	-1,253.4	-85.3	0.38	-0.20	26.15	
6,182.0	0.66	331.89	5,965.0	1,255.2	-1,252.5	-85.8	0.05	0.05	-2.47	
6,268.0	0.91	331.93	6,051.0	1,254.2	-1,251.5	-86.3	0.29	0.29	0.05	
6,353.0	0.62	331.36	6,136.0	1,253.3	-1,250.5	-86.8	0.34	-0.34	-0.67	
6,439.0	0.75	344.63	6,222.0	1,252.4	-1,249.6	-87.2	0.24	0.15	15.43	
6,524.0	1.14	334.96	6,307.0	1,251.1	-1,248.3	-87.7	0.49	0.46	-11.38	
6,609.0	1.01	338.30	6,392.0	1,249.7	-1,246.8	-88.4	0.17	-0.15	3.93	
6,695.0	0.44	74.26	6,478.0	1,248.9	-1,246.0	-88.3	1.33	-0.66	111.58	
6,780.0	0.18	67.29	6,563.0	1,248.7	-1,245.9	-87.9	0.31	-0.31	-8.20	
6,866.0	0.22	299.72	6,649.0	1,248.6	-1,245.7	-87.9	0.42	0.05	-148.34	
6,951.0	0.47	321.63	6,734.0	1,248.3	-1,245.4	-88.3	0.33	0.29	25.78	
7,037.0	0.62	317.52	6,820.0	1,247.7	-1,244.8	-88.8	0.18	0.17	-4.78	
7,092.0	0.62	317.52	6,875.0	1,247.3	-1,244.3	-89.2	0.00	0.00	0.00	
Straight Line Projection to TD										

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Well:	Tompkins 41D-08-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,705.0	1,662.7	-256.3	-22.9	Last Surface Survey	
7,092.0	6,875.0	-1,244.3	-89.2	Straight Line Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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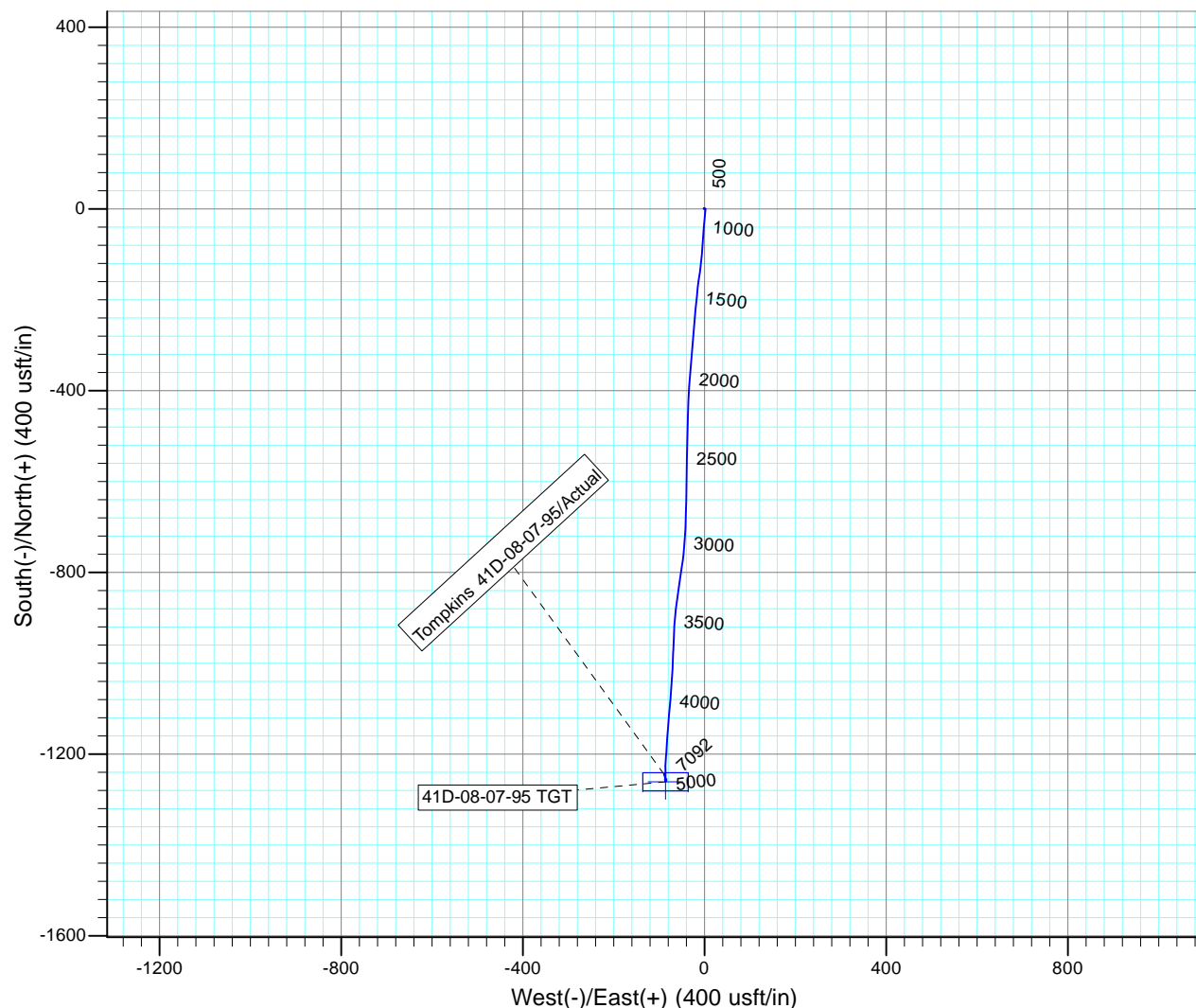
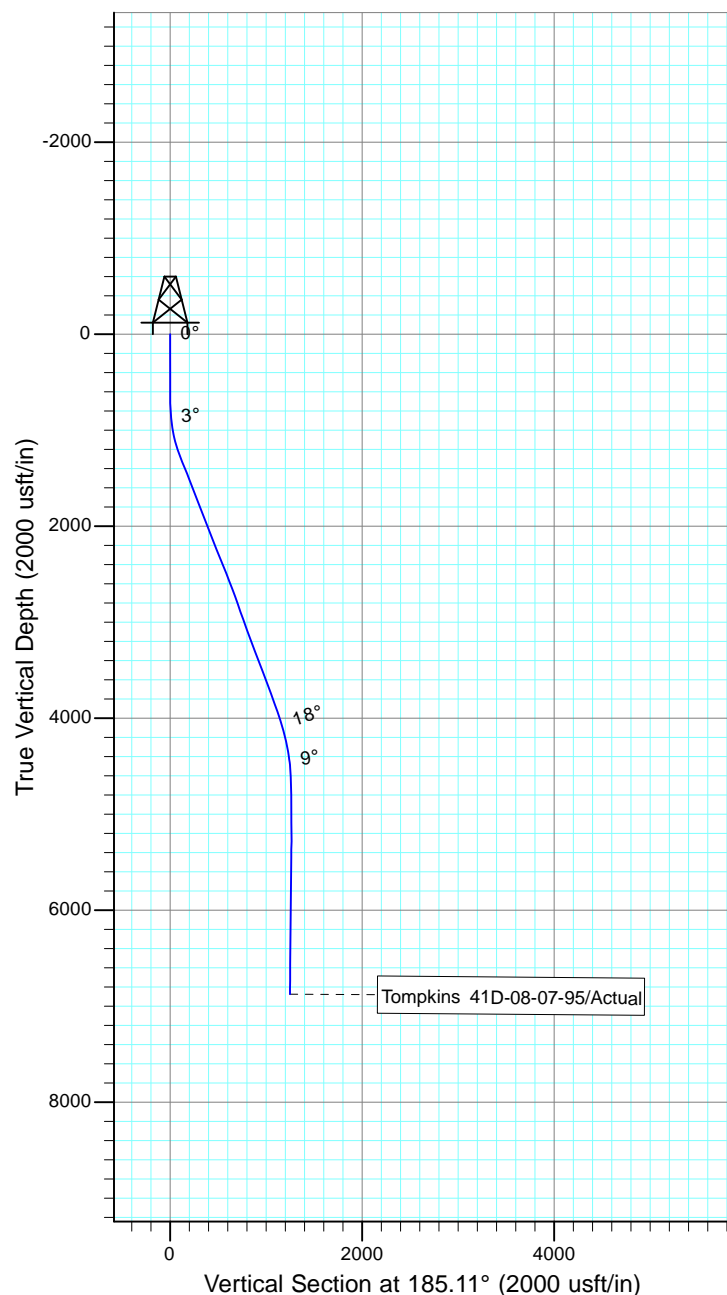
Project: Rockies Region
 Site: Tompkins
 Well: Tompkins 41D-08-07-95
 Wellbore: Wellbore #1
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
 Magnetic North: 9.81°

Magnetic Field
 Strength: 51624.6snT
 Dip Angle: 65.57°
 Date: 6/8/2016
 Model: IGRF2015



Design: Actual (Tompkins 41D-08-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 6:48, June 23 2016
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.