



Ursa Operating Company, LLC

Rockies Region

Tompkins

Tompkins 42B-08-07-95

Wellbore #1

Design: Actual

End Of Well Report

22 August, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 42B-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 42B-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 42B-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 42B-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
From:	Lat/Long	Easting:		2,290,225.27	usft
Position Uncertainty:		0.0	usft	Slot Radius:	
				13-3/16	"
				Grid Convergence:	
				-1.59 °	

Well		Tompkins 42B-08-07-95, SHL LAT: 39.459960900 LONG: -108.013827900				
Well Position	+N/-S	0.0 usft	Northing:	1,602,239.44 usft	Latitude:	39° 27' 35.859 N
	+E/-W	0.0 usft	Easting:	2,290,323.92 usft	Longitude:	108° 0' 49.780 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	181.98

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Survey Program		Date 8/22/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
136.0	1,770.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,872.0	7,306.0	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	
136.0	0.48	251.51	136.0	0.2	-0.2	-0.5	0.35	0.35	0.00	
165.0	0.66	255.20	165.0	0.3	-0.3	-0.8	0.63	0.62	12.72	
195.0	0.62	244.30	195.0	0.4	-0.4	-1.1	0.43	-0.13	-36.33	
226.0	0.60	236.15	226.0	0.6	-0.5	-1.4	0.29	-0.06	-26.29	
256.0	0.62	203.26	256.0	0.8	-0.8	-1.6	1.15	0.07	-109.63	
287.0	1.01	179.09	287.0	1.3	-1.2	-1.7	1.65	1.26	-77.97	
318.0	1.10	174.25	318.0	1.8	-1.8	-1.6	0.41	0.29	-15.61	
348.0	0.92	170.87	348.0	2.3	-2.3	-1.6	0.63	-0.60	-11.27	
378.0	0.92	170.87	378.0	2.8	-2.8	-1.5	0.00	0.00	0.00	
409.0	1.01	170.69	409.0	3.3	-3.3	-1.4	0.29	0.29	-0.58	
439.0	1.01	178.21	439.0	3.9	-3.8	-1.4	0.44	0.00	25.07	
470.0	1.32	159.18	470.0	4.5	-4.4	-1.2	1.59	1.00	-61.39	
500.0	1.93	171.31	499.9	5.3	-5.2	-1.0	2.32	2.03	40.43	
531.0	2.72	174.74	530.9	6.5	-6.5	-0.9	2.59	2.55	11.06	
562.0	4.00	176.10	561.9	8.3	-8.3	-0.7	4.14	4.13	4.39	
592.0	5.01	179.53	591.8	10.7	-10.7	-0.7	3.48	3.37	11.43	
622.0	5.98	179.13	621.6	13.5	-13.5	-0.6	3.24	3.23	-1.33	
653.0	6.37	177.86	652.5	16.9	-16.9	-0.5	1.33	1.26	-4.10	
683.0	7.08	185.11	682.3	20.4	-20.4	-0.6	3.68	2.37	24.17	
714.0	7.92	183.95	713.0	24.4	-24.4	-1.0	2.75	2.71	-3.74	

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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)	
745.0	8.92	182.38	743.7	29.0	-28.9	-1.2	3.31	3.23	-5.06	
775.0	10.02	184.05	773.2	33.9	-33.9	-1.5	3.78	3.67	5.57	
806.0	11.38	183.92	803.7	39.6	-39.6	-1.9	4.39	4.39	-0.42	
836.0	12.31	184.59	833.1	45.8	-45.7	-2.3	3.13	3.10	2.23	
879.0	13.54	183.39	875.0	55.4	-55.3	-3.0	2.93	2.86	-2.79	
922.0	14.33	181.64	916.7	65.8	-65.7	-3.5	2.08	1.84	-4.07	
965.0	15.78	182.30	958.2	76.9	-76.8	-3.8	3.40	3.37	1.53	
1,008.0	16.96	183.48	999.5	89.0	-88.9	-4.5	2.85	2.74	2.74	
1,050.0	18.19	183.70	1,039.5	101.7	-101.6	-5.3	2.93	2.93	0.52	
1,093.0	19.56	183.66	1,080.2	115.6	-115.5	-6.1	3.19	3.19	-0.09	
1,136.0	21.18	182.78	1,120.5	130.6	-130.4	-7.0	3.83	3.77	-2.05	
1,178.0	22.81	181.20	1,159.5	146.3	-146.1	-7.5	4.13	3.88	-3.76	
1,221.0	24.35	181.24	1,198.9	163.5	-163.3	-7.9	3.58	3.58	0.09	
1,264.0	25.27	181.59	1,237.9	181.6	-181.4	-8.3	2.17	2.14	0.81	
1,307.0	26.25	181.67	1,276.6	200.2	-200.1	-8.9	2.28	2.28	0.19	
1,349.0	27.20	183.17	1,314.1	219.1	-218.9	-9.7	2.77	2.26	3.57	
1,392.0	28.74	183.92	1,352.1	239.3	-239.1	-10.9	3.67	3.58	1.74	
1,435.0	30.01	183.13	1,389.6	260.4	-260.1	-12.2	3.09	2.95	-1.84	
1,477.0	30.01	182.37	1,426.0	281.4	-281.1	-13.2	0.91	0.00	-1.81	
1,520.0	30.15	181.28	1,463.2	302.9	-302.6	-13.9	1.31	0.33	-2.53	
1,563.0	29.95	179.63	1,500.4	324.5	-324.2	-14.1	1.98	-0.47	-3.84	
1,605.0	30.32	179.39	1,536.7	345.5	-345.2	-13.9	0.93	0.88	-0.57	
1,648.0	31.33	180.76	1,573.6	367.5	-367.3	-13.9	2.86	2.35	3.19	
1,691.0	31.29	180.45	1,610.4	389.9	-389.6	-14.2	0.39	-0.09	-0.72	
1,733.0	31.43	181.57	1,646.2	411.7	-411.5	-14.5	1.43	0.33	2.67	
1,770.0	31.53	181.60	1,677.8	431.1	-430.8	-15.1	0.27	0.27	0.08	
Last PZD Surface Survey										

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Survey									
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1,872.0	31.46	180.85	1,764.8	484.3	-484.1	-16.2	0.39	-0.07	-0.74
1,958.0	30.63	182.43	1,838.5	528.7	-528.4	-17.5	1.35	-0.97	1.84
2,043.0	30.94	183.09	1,911.5	572.2	-571.8	-19.6	0.54	0.36	0.78
2,129.0	32.61	184.40	1,984.6	617.4	-617.0	-22.5	2.10	1.94	1.52
2,214.0	31.97	184.48	2,056.4	662.8	-662.3	-26.1	0.75	-0.75	0.09
2,300.0	31.33	182.43	2,129.6	707.9	-707.3	-28.8	1.46	-0.74	-2.38
2,385.0	31.25	184.36	2,202.3	752.0	-751.4	-31.4	1.18	-0.09	2.27
2,470.0	32.12	183.44	2,274.6	796.7	-795.9	-34.4	1.17	1.02	-1.08
2,556.0	31.82	182.52	2,347.6	842.2	-841.4	-36.8	0.67	-0.35	-1.07
2,641.0	31.46	181.77	2,419.9	886.8	-886.0	-38.5	0.63	-0.42	-0.88
2,727.0	30.85	179.97	2,493.5	931.3	-930.5	-39.2	1.29	-0.71	-2.09
2,812.0	30.85	180.63	2,566.5	974.8	-974.0	-39.4	0.40	0.00	0.78
2,898.0	31.25	183.66	2,640.2	1,019.2	-1,018.4	-41.1	1.88	0.47	3.52
2,983.0	30.81	182.60	2,713.0	1,063.0	-1,062.1	-43.4	0.83	-0.52	-1.25
3,069.0	30.87	182.72	2,786.9	1,107.1	-1,106.1	-45.5	0.10	0.07	0.14
3,154.0	31.25	185.02	2,859.7	1,150.9	-1,149.9	-48.5	1.47	0.45	2.71
3,239.0	30.57	184.01	2,932.6	1,194.5	-1,193.4	-51.9	1.01	-0.80	-1.19
3,324.0	32.47	184.40	3,005.1	1,238.9	-1,237.7	-55.2	2.25	2.24	0.46
3,410.0	31.99	183.88	3,077.8	1,284.7	-1,283.5	-58.5	0.64	-0.56	-0.60
3,495.0	31.55	183.57	3,150.1	1,329.5	-1,328.1	-61.4	0.55	-0.52	-0.36
3,581.0	30.98	182.60	3,223.6	1,374.1	-1,372.7	-63.8	0.88	-0.66	-1.13
3,666.0	30.28	181.15	3,296.7	1,417.4	-1,416.0	-65.2	1.20	-0.82	-1.71
3,751.0	30.06	181.55	3,370.2	1,460.1	-1,458.7	-66.2	0.35	-0.26	0.47
3,837.0	28.96	181.37	3,445.1	1,502.5	-1,501.0	-67.3	1.28	-1.28	-0.21
3,922.0	27.64	180.45	3,519.9	1,542.8	-1,541.3	-67.9	1.64	-1.55	-1.08
4,008.0	25.97	182.12	3,596.7	1,581.5	-1,580.1	-68.8	2.13	-1.94	1.94
4,093.0	24.57	181.81	3,673.5	1,617.8	-1,616.4	-70.0	1.65	-1.65	-0.36

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4,179.0	23.82	183.83	3,752.0	1,653.1	-1,651.6	-71.8	1.30	-0.87	2.35	
4,264.0	22.95	183.71	3,830.0	1,686.8	-1,685.2	-74.0	1.03	-1.02	-0.14	
4,349.0	22.85	183.61	3,908.3	1,719.8	-1,718.2	-76.1	0.13	-0.12	-0.12	
4,435.0	21.97	182.78	3,987.8	1,752.6	-1,751.0	-77.9	1.09	-1.02	-0.97	
4,520.0	21.14	182.60	4,066.8	1,783.8	-1,782.2	-79.4	0.98	-0.98	-0.21	
4,605.0	18.76	182.21	4,146.7	1,812.8	-1,811.1	-80.6	2.80	-2.80	-0.46	
4,691.0	16.46	183.99	4,228.7	1,838.8	-1,837.1	-82.0	2.75	-2.67	2.07	
4,776.0	13.15	187.58	4,310.9	1,860.5	-1,858.7	-84.1	4.04	-3.89	4.22	
4,862.0	9.71	189.41	4,395.2	1,877.4	-1,875.6	-86.6	4.02	-4.00	2.13	
4,947.0	5.98	192.75	4,479.3	1,888.9	-1,887.0	-88.7	4.42	-4.39	3.93	
5,032.0	3.21	200.53	4,564.1	1,895.5	-1,893.5	-90.6	3.33	-3.26	9.15	
5,118.0	0.75	263.90	4,650.0	1,897.9	-1,895.8	-92.0	3.43	-2.86	73.69	
5,203.0	2.42	18.07	4,735.0	1,896.2	-1,894.2	-92.0	3.31	1.96	134.32	
5,288.0	2.59	15.57	4,819.9	1,892.6	-1,890.6	-90.9	0.24	0.20	-2.94	
5,373.0	1.14	29.59	4,904.9	1,890.0	-1,888.0	-89.9	1.78	-1.71	16.49	
5,459.0	0.73	36.78	4,990.8	1,888.8	-1,886.9	-89.2	0.49	-0.48	8.36	
5,544.0	0.73	357.01	5,075.8	1,887.8	-1,885.9	-88.9	0.58	0.00	-46.79	
5,629.0	0.00	119.63	5,160.8	1,887.3	-1,885.3	-88.9	0.86	-0.86	0.00	
5,714.0	0.18	280.69	5,245.8	1,887.3	-1,885.3	-89.1	0.21	0.21	0.00	
5,800.0	0.44	282.53	5,331.8	1,887.2	-1,885.2	-89.5	0.30	0.30	2.14	
5,885.0	0.75	261.84	5,416.8	1,887.2	-1,885.2	-90.4	0.44	0.36	-24.34	
5,971.0	0.48	267.68	5,502.8	1,887.3	-1,885.3	-91.3	0.32	-0.31	6.79	
6,056.0	0.44	225.32	5,587.8	1,887.6	-1,885.6	-91.9	0.39	-0.05	-49.84	
6,141.0	0.58	217.87	5,672.8	1,888.2	-1,886.1	-92.4	0.18	0.16	-8.76	
6,226.0	0.79	210.64	5,757.8	1,889.1	-1,887.0	-92.9	0.27	0.25	-8.51	
6,312.0	0.53	216.70	5,843.8	1,889.9	-1,887.8	-93.5	0.31	-0.30	7.05	
6,397.0	0.66	206.16	5,928.8	1,890.7	-1,888.6	-93.9	0.20	0.15	-12.40	

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6,483.0	1.01	210.20	6,014.8	1,891.8	-1,889.7	-94.5	0.41	0.41	4.70	
6,568.0	1.32	209.91	6,099.8	1,893.3	-1,891.2	-95.4	0.36	0.36	-0.34	
6,653.0	0.97	198.56	6,184.8	1,894.9	-1,892.7	-96.1	0.49	-0.41	-13.35	
6,739.0	0.92	204.22	6,270.8	1,896.2	-1,894.0	-96.6	0.12	-0.06	6.58	
6,824.0	1.36	206.73	6,355.7	1,897.8	-1,895.5	-97.4	0.52	0.52	2.95	
6,909.0	1.45	196.58	6,440.7	1,899.7	-1,897.5	-98.1	0.31	0.11	-11.94	
6,995.0	1.71	217.63	6,526.7	1,901.8	-1,899.5	-99.2	0.73	0.30	24.48	
7,080.0	1.45	224.39	6,611.6	1,903.6	-1,901.3	-100.8	0.38	-0.31	7.95	
7,166.0	1.54	251.69	6,697.6	1,904.8	-1,902.4	-102.6	0.83	0.10	31.74	
7,251.0	1.76	249.31	6,782.6	1,905.7	-1,903.3	-104.9	0.27	0.26	-2.80	
Last PZD Survey										
7,306.0	1.76	249.31	6,837.6	1,906.4	-1,903.9	-106.5	0.00	0.00	0.00	
Straight Line Projection to TD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,770.0	1,677.8	-430.8	-15.1	Last PZD Surface Survey

Checked By: _____ Approved By: _____ Date: _____



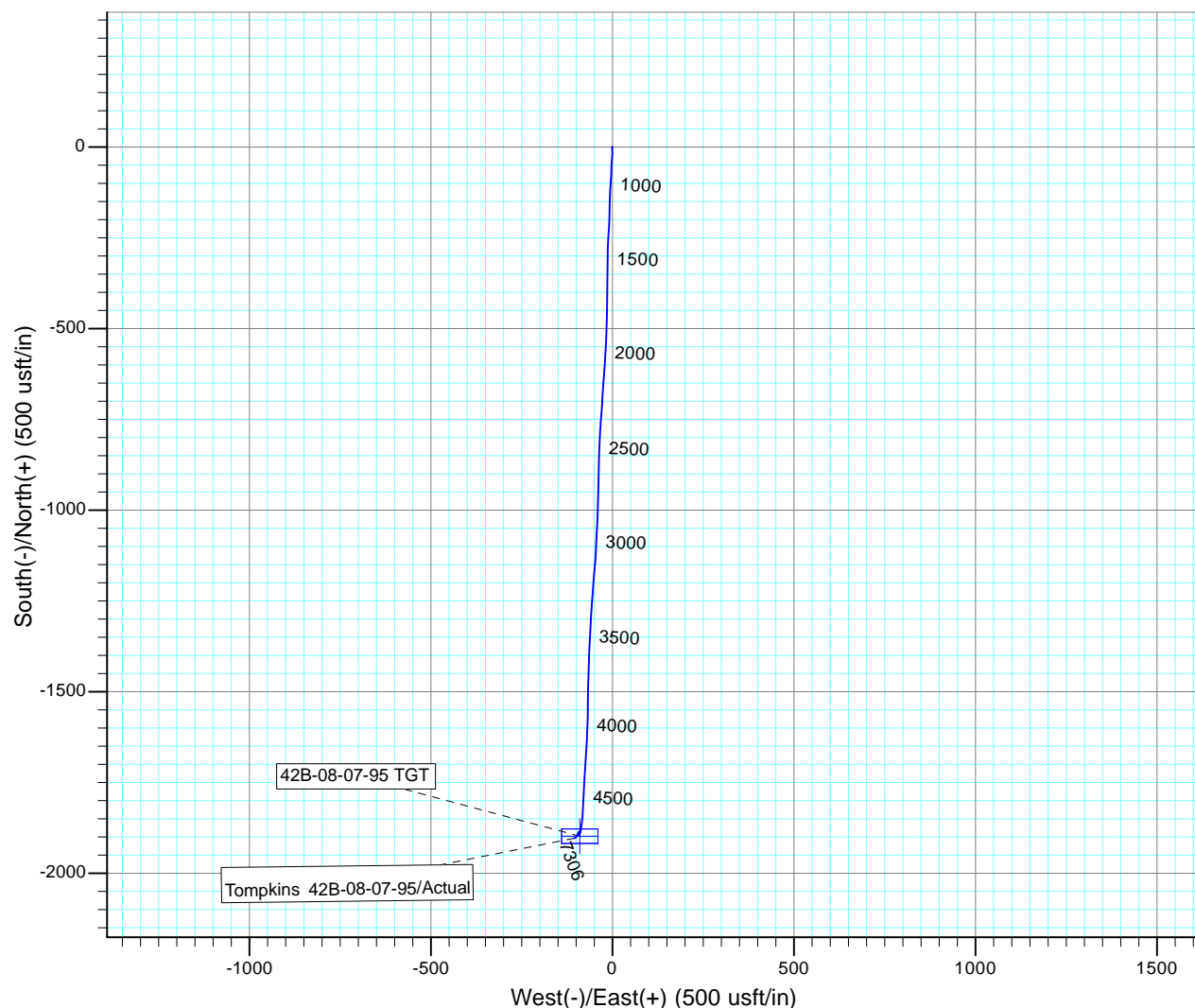
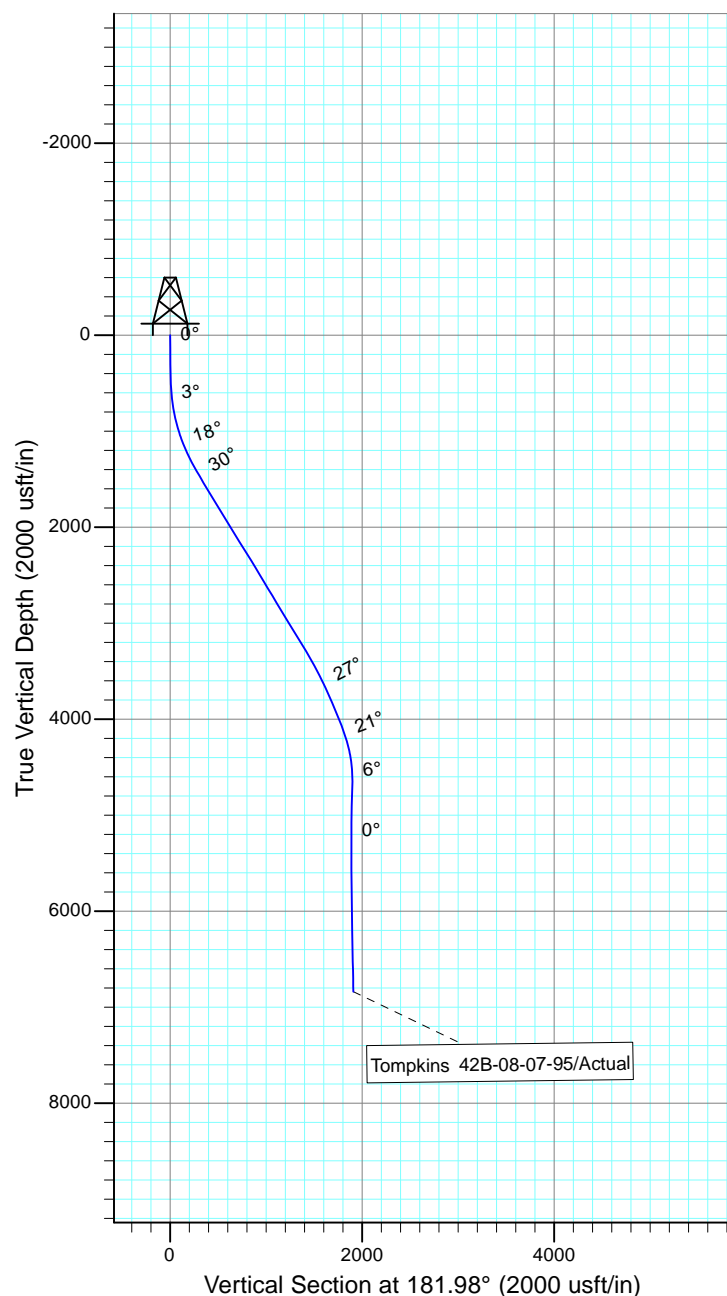
Project: Rockies Region
 Site: Tompkins
 Well: Tompkins 42B-08-07-95
 Wellbore: Wellbore #1
 SURVEY: Actual

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 42B-08-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 18:48, August 22 2016
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.