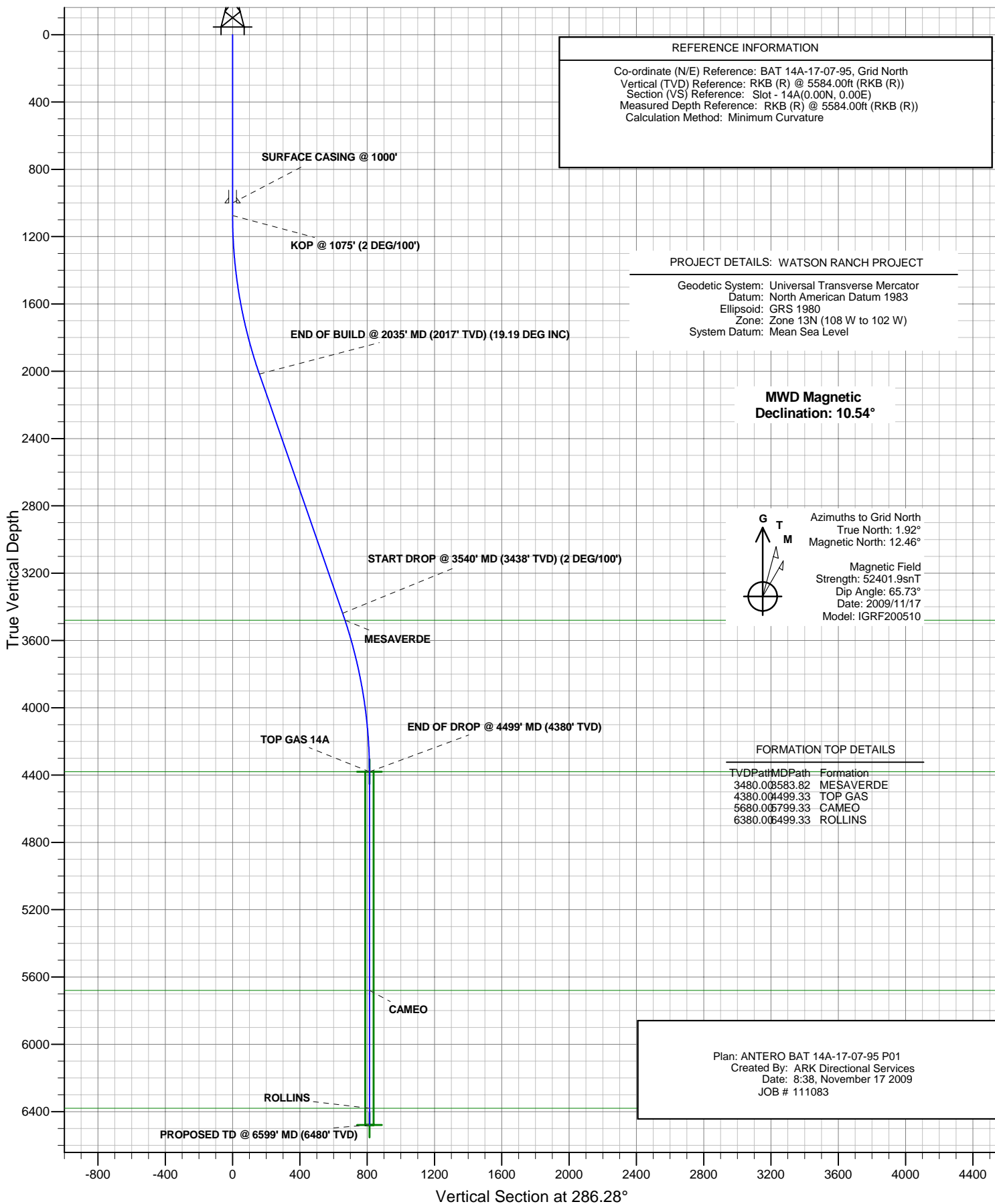




# ANTERO RESOURCES

BAT 14A-17-07-95



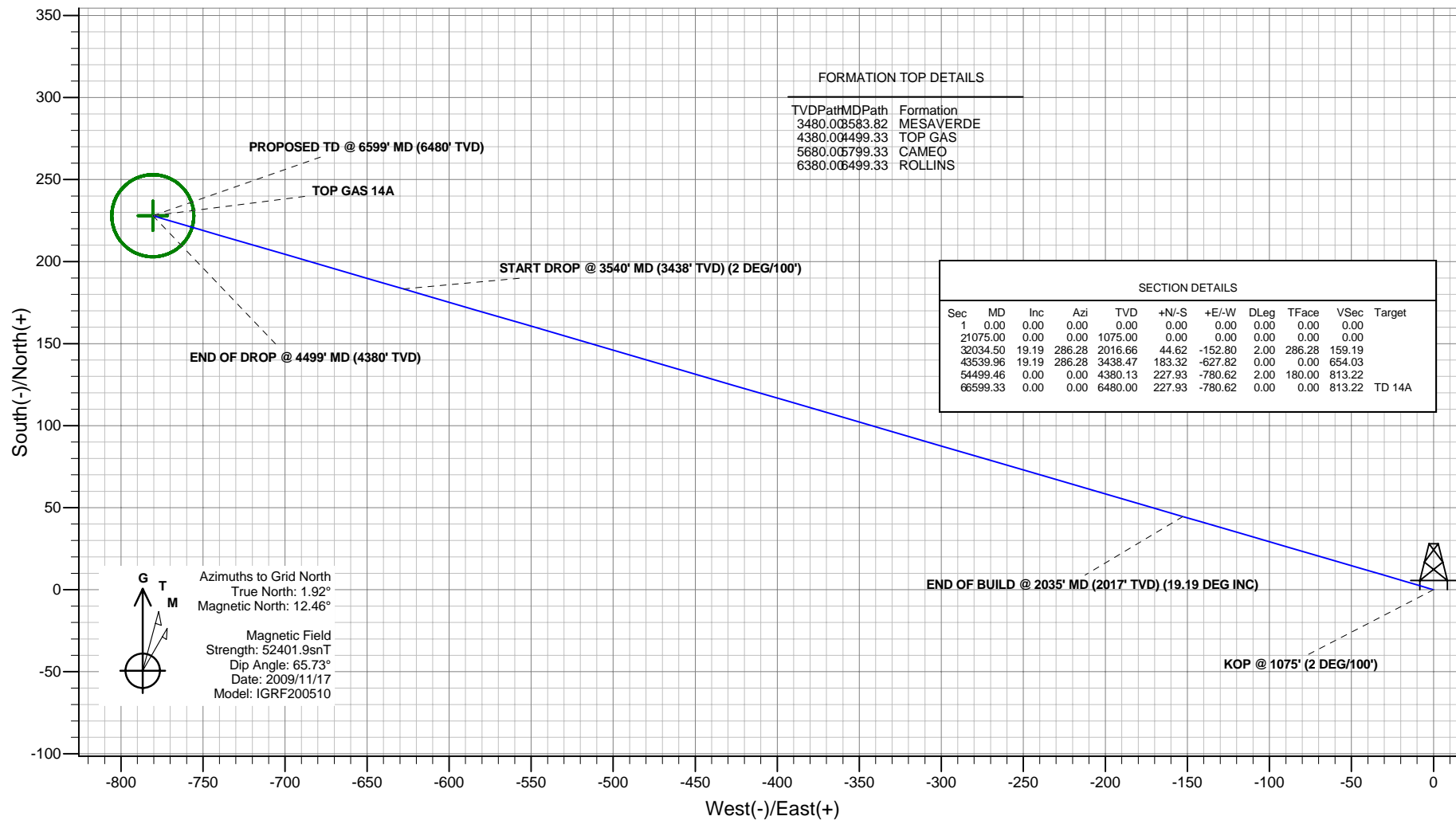


## ANTERO RESOURCES

Project: WATSON RANCH PROJECT  
Site: FRONTIER 12  
Well: BAT 14A-17-07-95 (111083)  
Wellbore: BAT 14A-17-07-95  
Design: ANTERO BAT 14A-17-07-95 P01  
JOB # 111083



### PLAN VIEW



Plan: ANTERO BAT 14A-17-07-95 P01  
Created By: ARK Directional Services  
Date: 9:05, November 17 2009

#### PROJECT DETAILS: WATSON RANCH PROJECT

Geodetic System: Universal Transverse Mercator  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Zone 13N (108 W to 102 W)  
System Datum: Mean Sea Level

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: BAT 14A-17-07-95, Grid North  
Vertical (TVD) Reference: RKB (R) @ 5584.00ft (RKB (R))  
Section (VS) Reference: Slot - 14A(0.00N, 0.00E)  
Measured Depth Reference: RKB (R) @ 5584.00ft (RKB (R))  
Calculation Method: Minimum Curvature

# **ANTERO RESOURCES**

**WATSON RANCH PROJECT  
FRONTIER 12**

**Plan: ANTERO BAT 14A-17-07-95 P01**

## **Standard Planning Report - Geographic**

**17 November, 2009**

# Planning Report - Geographic

<b>Database:</b>	EDMDB	<b>Local Co-ordinate Reference:</b>	Well BAT 14A-17-07-95 (111083) - Slot 14A
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Project:</b>	WATSON RANCH PROJECT	<b>MD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 14A-17-07-95 (111083)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 14A-17-07-95		
<b>Design:</b>	ANTERO BAT 14A-17-07-95 P01		

<b>Project</b>	WATSON RANCH PROJECT		
<b>Map System:</b>	Universal Transverse Mercator	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site		FRONTIER 12			
Site Position:		Northing:	14,334,677.52 ft	Latitude:	39° 25' 59.496 N
From:	Map	Easting:	786,189.76 ft	Longitude:	108° 1' 30.416 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.92 °

Well	BAT 14A-17-07-95 (111083) - Slot 14A					
Well Position	+N/-S	-49.70 ft	Northing:	14,334,627.82 ft	Latitude:	39° 25' 58.992 N
	+E/-W	-39.15 ft	Easting:	786,150.61 ft	Longitude:	108° 1' 30.893 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,560.00 ft

<b>Wellbore</b>	BAT 14A-17-07-95				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	2009/11/17	10.54	65.74	52,402

<b>Design</b>	ANTERO BAT 14A-17-07-95 P01			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	286.28

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,075.00	0.00	0.00	1,075.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,034.50	19.19	286.28	2,016.66	44.62	-152.80	2.00	2.00	0.00	286.28	
3,539.96	19.19	286.28	3,438.47	183.32	-627.82	0.00	0.00	0.00	0.00	
4,499.46	0.00	0.00	4,380.13	227.93	-780.62	2.00	-2.00	0.00	180.00	
6,599.33	0.00	0.00	6,480.00	227.93	-780.62	0.00	0.00	0.00	0.00	TD 14A

# Planning Report - Geographic

<b>Database:</b>	EDMDB	<b>Local Co-ordinate Reference:</b>	Well BAT 14A-17-07-95 (111083) - Slot 14A
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Project:</b>	WATSON RANCH PROJECT	<b>MD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 14A-17-07-95 (111083)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 14A-17-07-95		
<b>Design:</b>	ANTERO BAT 14A-17-07-95 P01		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
100.00	0.00	0.00	100.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
200.00	0.00	0.00	200.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
300.00	0.00	0.00	300.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
400.00	0.00	0.00	400.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
500.00	0.00	0.00	500.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
600.00	0.00	0.00	600.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
700.00	0.00	0.00	700.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
800.00	0.00	0.00	800.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
900.00	0.00	0.00	900.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
<b>SURFACE CASING @ 1000'</b>									
1,075.00	0.00	0.00	1,075.00	0.00	0.00	14,334,627.82	786,150.61	39° 25' 58.992 N	108° 1' 30.893 W
<b>KOP @ 1075' (2 DEG/100')</b>									
1,100.00	0.50	286.28	1,100.00	0.03	-0.10	14,334,627.85	786,150.51	39° 25' 58.993 N	108° 1' 30.895 W
1,200.00	2.50	286.28	1,199.96	0.76	-2.62	14,334,628.58	786,147.99	39° 25' 58.999 N	108° 1' 30.927 W
1,300.00	4.50	286.28	1,299.77	2.48	-8.48	14,334,630.30	786,142.13	39° 25' 59.014 N	108° 1' 31.002 W
1,400.00	6.50	286.28	1,399.30	5.16	-17.68	14,334,632.98	786,132.93	39° 25' 59.037 N	108° 1' 31.121 W
1,500.00	8.50	286.28	1,498.44	8.82	-30.21	14,334,636.64	786,120.40	39° 25' 59.069 N	108° 1' 31.282 W
1,600.00	10.50	286.28	1,597.07	13.45	-46.05	14,334,641.27	786,104.56	39° 25' 59.110 N	108° 1' 31.485 W
1,700.00	12.50	286.28	1,695.05	19.03	-65.19	14,334,646.85	786,085.43	39° 25' 59.159 N	108° 1' 31.731 W
1,800.00	14.50	286.28	1,792.29	25.58	-87.59	14,334,653.40	786,063.02	39° 25' 59.216 N	108° 1' 32.020 W
1,900.00	16.50	286.28	1,888.64	33.07	-113.24	14,334,660.89	786,037.37	39° 25' 59.281 N	108° 1' 32.349 W
2,000.00	18.50	286.28	1,984.01	41.49	-142.11	14,334,669.31	786,008.50	39° 25' 59.355 N	108° 1' 32.720 W
2,034.50	19.19	286.28	2,016.66	44.62	-152.80	14,334,672.44	785,997.81	39° 25' 59.382 N	108° 1' 32.858 W
<b>END OF BUILD @ 2035' MD (2017' TVD) (19.19 DEG INC)</b>									
2,100.00	19.19	286.28	2,078.52	50.65	-173.47	14,334,678.47	785,977.14	39° 25' 59.435 N	108° 1' 33.124 W
2,200.00	19.19	286.28	2,172.97	59.86	-205.02	14,334,687.68	785,945.59	39° 25' 59.515 N	108° 1' 33.529 W
2,300.00	19.19	286.28	2,267.41	69.08	-236.58	14,334,696.90	785,914.03	39° 25' 59.596 N	108° 1' 33.935 W
2,400.00	19.19	286.28	2,361.85	78.29	-268.13	14,334,706.11	785,882.48	39° 25' 59.676 N	108° 1' 34.341 W
2,500.00	19.19	286.28	2,456.30	87.50	-299.68	14,334,715.32	785,850.93	39° 25' 59.757 N	108° 1' 34.746 W
2,600.00	19.19	286.28	2,550.74	96.72	-331.24	14,334,724.54	785,819.38	39° 25' 59.837 N	108° 1' 35.152 W
2,700.00	19.19	286.28	2,645.18	105.93	-362.79	14,334,733.75	785,787.82	39° 25' 59.918 N	108° 1' 35.558 W
2,800.00	19.19	286.28	2,739.63	115.14	-394.34	14,334,742.96	785,756.27	39° 25' 59.998 N	108° 1' 35.963 W
2,900.00	19.19	286.28	2,834.07	124.36	-425.89	14,334,752.18	785,724.72	39° 26' 0.079 N	108° 1' 36.369 W
3,000.00	19.19	286.28	2,928.51	133.57	-457.45	14,334,761.39	785,693.17	39° 26' 0.159 N	108° 1' 36.775 W
3,100.00	19.19	286.28	3,022.96	142.78	-489.00	14,334,770.60	785,661.61	39° 26' 0.240 N	108° 1' 37.180 W
3,200.00	19.19	286.28	3,117.40	151.99	-520.55	14,334,779.81	785,630.06	39° 26' 0.320 N	108° 1' 37.586 W
3,300.00	19.19	286.28	3,211.84	161.21	-552.10	14,334,789.03	785,598.51	39° 26' 0.401 N	108° 1' 37.992 W
3,400.00	19.19	286.28	3,306.29	170.42	-583.66	14,334,798.24	785,566.95	39° 26' 0.481 N	108° 1' 38.397 W
3,500.00	19.19	286.28	3,400.73	179.63	-615.21	14,334,807.45	785,535.40	39° 26' 0.562 N	108° 1' 38.803 W
3,539.96	19.19	286.28	3,438.47	183.32	-627.82	14,334,811.13	785,522.79	39° 26' 0.594 N	108° 1' 38.965 W
<b>START DROP @ 3540' MD (3438' TVD) (2 DEG/100')</b>									
3,583.82	18.31	286.28	3,480.00	187.27	-641.35	14,334,815.09	785,509.26	39° 26' 0.629 N	108° 1' 39.139 W
<b>MESAVERDE</b>									
3,600.00	17.99	286.28	3,495.38	188.68	-646.19	14,334,816.50	785,504.42	39° 26' 0.641 N	108° 1' 39.201 W
3,700.00	15.99	286.28	3,591.01	196.87	-674.24	14,334,824.69	785,476.37	39° 26' 0.712 N	108° 1' 39.562 W
3,800.00	13.99	286.28	3,687.60	204.12	-699.06	14,334,831.94	785,451.55	39° 26' 0.776 N	108° 1' 39.881 W
3,900.00	11.99	286.28	3,785.03	210.42	-720.64	14,334,838.24	785,429.97	39° 26' 0.831 N	108° 1' 40.159 W
4,000.00	9.99	286.28	3,883.20	215.76	-738.93	14,334,843.58	785,411.68	39° 26' 0.878 N	108° 1' 40.394 W
4,100.00	7.99	286.28	3,981.96	220.14	-753.93	14,334,847.96	785,396.68	39° 26' 0.916 N	108° 1' 40.587 W
4,200.00	5.99	286.28	4,081.21	223.55	-765.61	14,334,851.37	785,385.00	39° 26' 0.946 N	108° 1' 40.737 W
4,300.00	3.99	286.28	4,180.83	225.99	-773.96	14,334,853.81	785,376.65	39° 26' 0.967 N	108° 1' 40.844 W
4,400.00	1.99	286.28	4,280.69	227.45	-778.97	14,334,855.27	785,371.65	39° 26' 0.980 N	108° 1' 40.909 W

# Planning Report - Geographic

<b>Database:</b>	EDMDB	<b>Local Co-ordinate Reference:</b>	Well BAT 14A-17-07-95 (111083) - Slot 14A
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Project:</b>	WATSON RANCH PROJECT	<b>MD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 14A-17-07-95 (111083)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 14A-17-07-95		
<b>Design:</b>	ANTERO BAT 14A-17-07-95 P01		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,499.33	0.00	286.28	4,380.00	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
<b>TOP GAS - TOP GAS 14A</b>									
4,499.46	0.00	286.28	4,380.13	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
<b>END OF DROP @ 4499' MD (4380' TVD)</b>									
4,600.00	0.00	0.00	4,480.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
4,700.00	0.00	0.00	4,580.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
4,800.00	0.00	0.00	4,680.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
4,900.00	0.00	0.00	4,780.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,000.00	0.00	0.00	4,880.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,100.00	0.00	0.00	4,980.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,200.00	0.00	0.00	5,080.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,300.00	0.00	0.00	5,180.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,400.00	0.00	0.00	5,280.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,500.00	0.00	0.00	5,380.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,600.00	0.00	0.00	5,480.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,700.00	0.00	0.00	5,580.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,799.33	0.00	0.00	5,680.00	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
<b>CAMEO</b>									
5,800.00	0.00	0.00	5,680.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
5,900.00	0.00	0.00	5,780.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
6,000.00	0.00	0.00	5,880.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
6,100.00	0.00	0.00	5,980.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
6,200.00	0.00	0.00	6,080.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
6,300.00	0.00	0.00	6,180.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
6,400.00	0.00	0.00	6,280.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
6,499.33	0.00	0.00	6,380.00	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
<b>ROLLINS</b>									
6,500.00	0.00	0.00	6,380.67	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
6,599.31	0.00	0.00	6,479.98	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
<b>PROPOSED TD @ 6599' MD (6480' TVD)</b>									
6,599.33	0.00	0.00	6,480.00	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
<b>TD 14A</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TOP GAS 14A		360.00	4,380.00	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
- plan hits target									
- Circle (radius 25.00)									
TD 14A	0.00	0.00	6,480.00	227.93	-780.62	14,334,855.75	785,369.99	39° 26' 0.984 N	108° 1' 40.930 W
- plan hits target									
- Circle (radius 25.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	SURFACE CASING @ 1000'	8.62	12.25	

## Planning Report - Geographic

<b>Database:</b>	EDMDB	<b>Local Co-ordinate Reference:</b>	Well BAT 14A-17-07-95 (111083) - Slot 14A
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Project:</b>	WATSON RANCH PROJECT	<b>MD Reference:</b>	RKB (R) @ 5584.00ft (RKB (R))
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 14A-17-07-95 (111083)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 14A-17-07-95		
<b>Design:</b>	ANTERO BAT 14A-17-07-95 P01		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,583.82	3,480.00	MESAVERDE		0.00	
4,499.33	4,380.00	TOP GAS		0.00	
5,799.33	5,680.00	CAMEO		0.00	
6,499.33	6,380.00	ROLLINS		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,075.00	1,075.00	0.00	0.00	KOP @ 1075' (2 DEG/100')
2,034.50	2,016.66	44.62	-152.80	END OF BUILD @ 2035' MD (2017' TVD) (19.19 DEG INC)
3,539.96	3,438.47	183.32	-627.82	START DROP @ 3540' MD (3438' TVD) (2 DEG/100')
4,499.46	4,380.13	227.93	-780.62	END OF DROP @ 4499' MD (4380' TVD)
6,599.31	6,479.98	227.93	-780.62	PROPOSED TD @ 6599' MD (6480' TVD)