

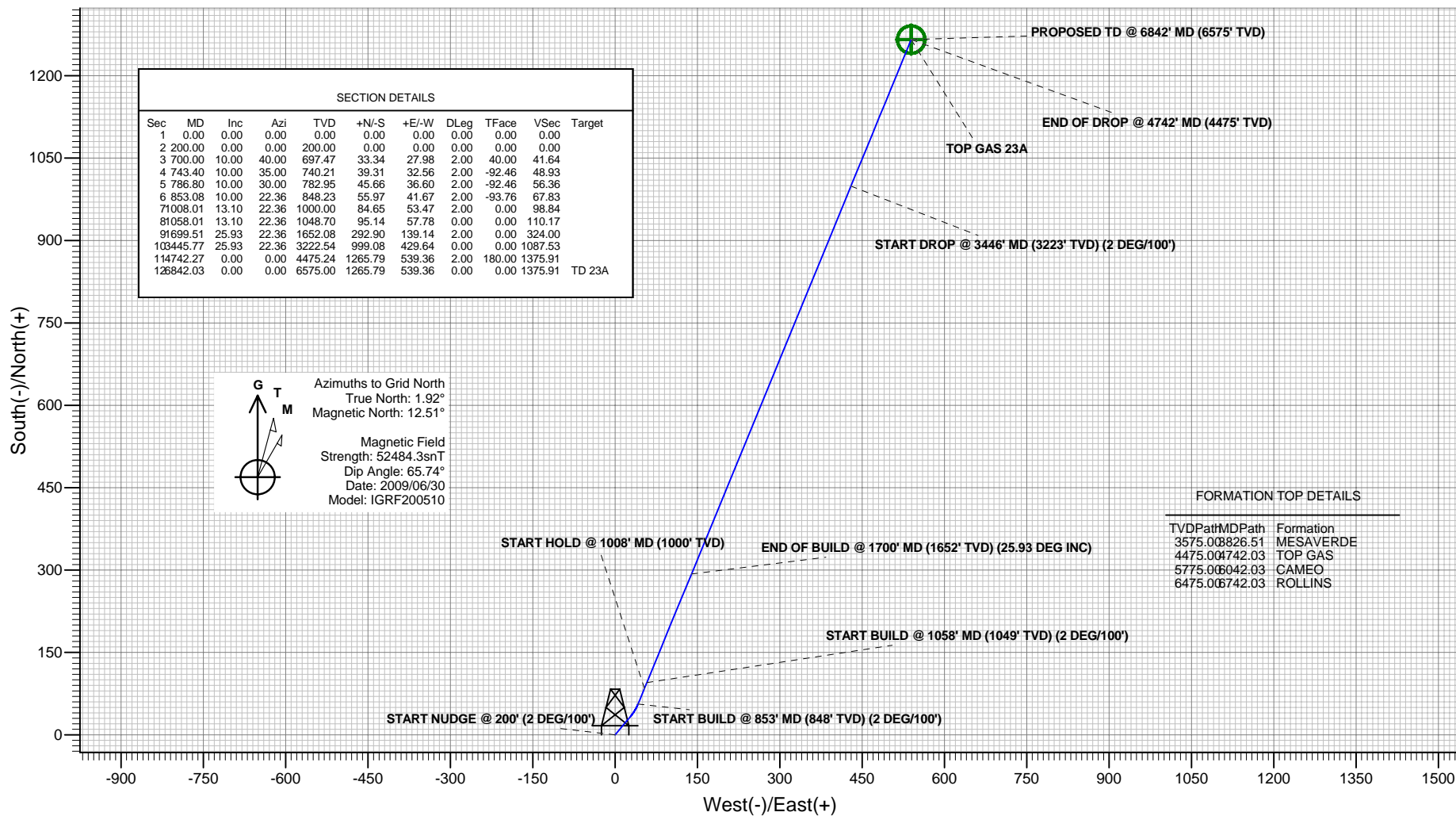


ANTERO RESOURCES

Project: WATSON RANCH PROJECT
Site: FRONTIER 12
Well: BAT 23A-17-07-95 (111085)
Wellbore: BAT 23A-17-07-95
Design: ANTERO BAT 23A-17-07-95 P02
JOB # 111085



PLAN VIEW



Plan: ANTERO BAT 23A-17-07-95 P02
Created By: ARK Directional Services
Date: 10:56, November 23 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

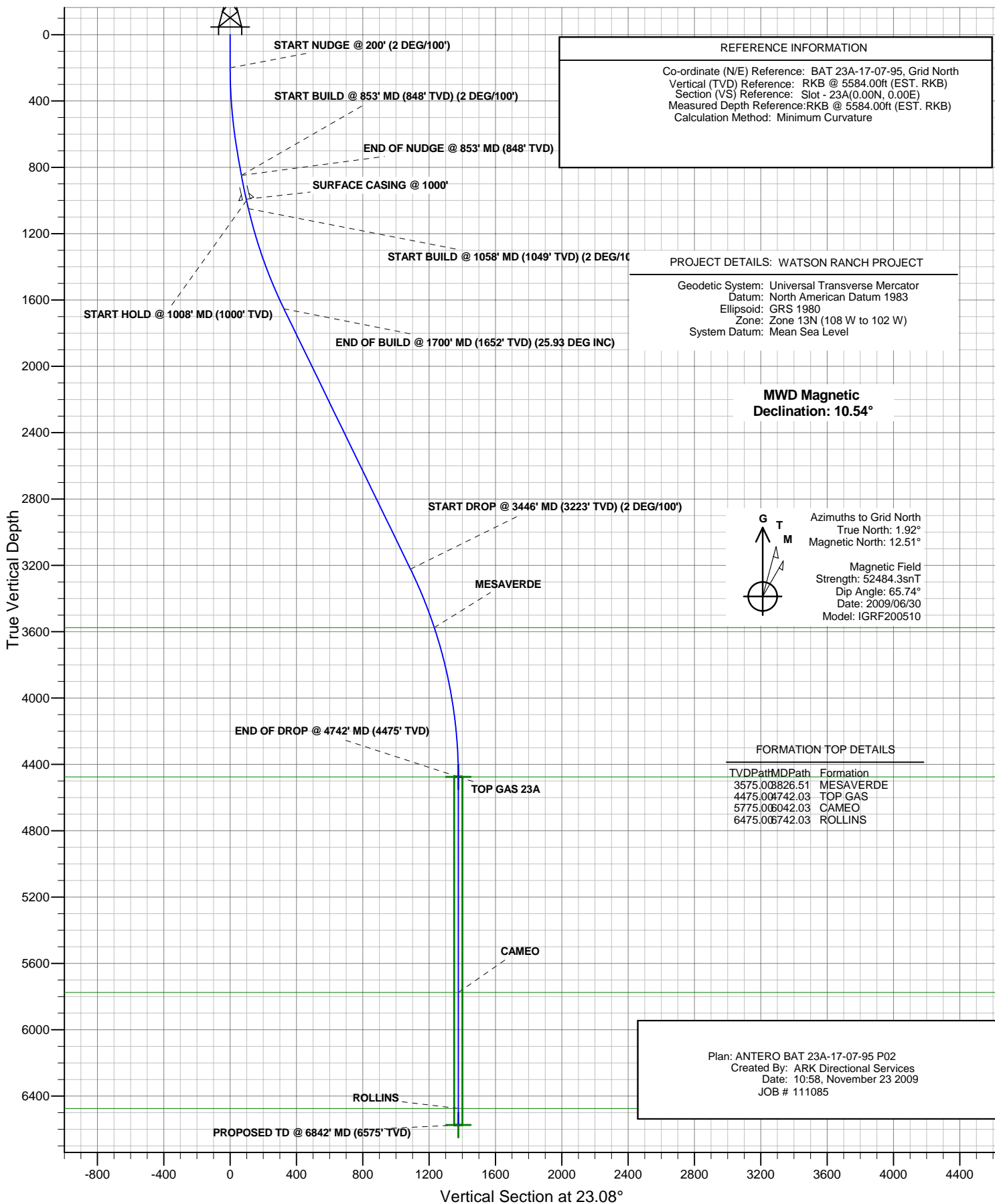
REFERENCE INFORMATION

Co-ordinate (N/E) Reference: BAT 23A-17-07-95, Grid North
Vertical (TVD) Reference: RKB @ 5584.00ft (EST. RKB)
Section (VS) Reference: Slot - 23A(0.00N, 0.00E)
Measured Depth Reference: RKB @ 5584.00ft (EST. RKB)
Calculation Method: Minimum Curvature



ANTERO RESOURCES

BAT 23A-17-07-95



ANTERO RESOURCES

**WATSON RANCH PROJECT
FRONTIER 12**

Plan: ANTERO BAT 23A-17-07-95 P02

Standard Planning Report - Geographic

23 November, 2009

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23A-17-07-95 (111085) - Slot 23A
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23A-17-07-95 (111085)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23A-17-07-95		
Design:	ANTERO BAT 23A-17-07-95 P02		

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

Site		FRONTIER 12			
Site Position:		Northing:	14,334,677.51 ft	Latitude:	39° 25' 59.496 N
From:	Map	Easting:	786,189.73 ft	Longitude:	108° 1' 30.417 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.92 °

Well	BAT 23A-17-07-95 (111085) - Slot 23A					
Well Position	+N/-S	-14.12 ft	Northing:	14,334,663.39 ft	Latitude:	39° 25' 59.355 N
	+E/-W	-5.07 ft	Easting:	786,184.66 ft	Longitude:	108° 1' 30.475 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,560.00 ft

Wellbore	BAT 23A-17-07-95				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009/06/30	10.59	65.74	52,484

Design	ANTERO BAT 23A-17-07-95 P02			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	23.08

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	10.00	40.00	697.47	33.34	27.98	2.00	2.00	0.00	40.00	
743.40	10.00	35.00	740.21	39.31	32.56	2.00	0.00	-11.52	-92.46	
786.80	10.00	30.00	782.95	45.66	36.60	2.00	0.00	-11.52	-92.46	
853.08	10.00	22.36	848.23	55.97	41.67	2.00	0.00	-11.53	-93.76	
1,008.01	13.10	22.36	1,000.00	84.65	53.47	2.00	2.00	0.00	0.00	
1,058.01	13.10	22.36	1,048.70	95.14	57.78	0.00	0.00	0.00	0.00	
1,699.51	25.93	22.36	1,652.08	292.90	139.14	2.00	2.00	0.00	0.00	
3,445.77	25.93	22.36	3,222.54	999.08	429.64	0.00	0.00	0.00	0.00	
4,742.27	0.00	0.00	4,475.24	1,265.79	539.36	2.00	-2.00	0.00	180.00	
6,842.03	0.00	0.00	6,575.00	1,265.79	539.36	0.00	0.00	0.00	0.00	TD 23A

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23A-17-07-95 (111085) - Slot 23A
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23A-17-07-95 (111085)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23A-17-07-95		
Design:	ANTERO BAT 23A-17-07-95 P02		

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	14,334,663.39	786,184.66	39° 25' 59.355 N	108° 1' 30.475 W	
100.00	0.00	0.00	100.00	0.00	0.00	14,334,663.39	786,184.66	39° 25' 59.355 N	108° 1' 30.475 W	
200.00	0.00	0.00	200.00	0.00	0.00	14,334,663.39	786,184.66	39° 25' 59.355 N	108° 1' 30.475 W	
START NUDGE @ 200' (2 DEG/100')										
300.00	2.00	40.00	299.98	1.34	1.12	14,334,664.73	786,185.78	39° 25' 59.368 N	108° 1' 30.461 W	
400.00	4.00	40.00	399.84	5.35	4.49	14,334,668.74	786,189.15	39° 25' 59.409 N	108° 1' 30.420 W	
500.00	6.00	40.00	499.45	12.02	10.09	14,334,675.41	786,194.75	39° 25' 59.477 N	108° 1' 30.352 W	
600.00	8.00	40.00	598.70	21.36	17.92	14,334,684.75	786,202.58	39° 25' 59.572 N	108° 1' 30.256 W	
700.00	10.00	40.00	697.47	33.34	27.98	14,334,696.73	786,212.64	39° 25' 59.693 N	108° 1' 30.133 W	
743.40	10.00	35.00	740.21	39.31	32.56	14,334,702.70	786,217.22	39° 25' 59.754 N	108° 1' 30.077 W	
786.80	10.00	30.00	782.95	45.66	36.60	14,334,709.05	786,221.26	39° 25' 59.818 N	108° 1' 30.028 W	
800.00	9.99	28.48	795.95	47.66	37.72	14,334,711.05	786,222.38	39° 25' 59.838 N	108° 1' 30.015 W	
853.08	10.00	22.36	848.22	55.97	41.67	14,334,719.36	786,226.33	39° 25' 59.921 N	108° 1' 29.968 W	
START BUILD @ 853' MD (848' TVD) (2 DEG/100') - END OF NUDGE @ 853' MD (848' TVD)										
900.00	10.94	22.36	894.36	63.85	44.91	14,334,727.24	786,229.57	39° 26' 0.000 N	108° 1' 29.930 W	
1,000.00	12.94	22.36	992.19	82.99	52.78	14,334,746.38	786,237.44	39° 26' 0.192 N	108° 1' 29.838 W	
SURFACE CASING @ 1000'										
1,008.01	13.10	22.36	1,000.00	84.65	53.47	14,334,748.04	786,238.13	39° 26' 0.208 N	108° 1' 29.830 W	
START HOLD @ 1008' MD (1000' TVD)										
1,058.01	13.10	22.36	1,048.70	95.14	57.78	14,334,758.52	786,242.44	39° 26' 0.313 N	108° 1' 29.780 W	
START BUILD @ 1058' MD (1049' TVD) (2 DEG/100')										
1,100.00	13.94	22.36	1,089.52	104.21	61.52	14,334,767.60	786,246.18	39° 26' 0.404 N	108° 1' 29.736 W	
1,200.00	15.94	22.36	1,186.14	128.05	71.32	14,334,791.44	786,255.98	39° 26' 0.643 N	108° 1' 29.622 W	
1,300.00	17.94	22.36	1,281.79	155.00	82.41	14,334,818.39	786,267.07	39° 26' 0.912 N	108° 1' 29.492 W	
1,400.00	19.94	22.36	1,376.38	185.01	94.75	14,334,848.40	786,279.41	39° 26' 1.213 N	108° 1' 29.348 W	
1,500.00	21.94	22.36	1,469.77	218.06	108.35	14,334,881.45	786,293.01	39° 26' 1.544 N	108° 1' 29.189 W	
1,600.00	23.94	22.36	1,561.85	254.11	123.18	14,334,917.50	786,307.84	39° 26' 1.904 N	108° 1' 29.015 W	
1,699.51	25.93	22.36	1,652.08	292.90	139.14	14,334,956.29	786,323.80	39° 26' 2.293 N	108° 1' 28.829 W	
END OF BUILD @ 1700' MD (1652' TVD) (25.93 DEG INC)										
1,800.00	25.93	22.36	1,742.46	333.54	155.86	14,334,996.93	786,340.52	39° 26' 2.700 N	108° 1' 28.633 W	
1,900.00	25.93	22.36	1,832.39	373.98	172.49	14,335,037.37	786,357.15	39° 26' 3.104 N	108° 1' 28.439 W	
2,000.00	25.93	22.36	1,922.32	414.42	189.13	14,335,077.81	786,373.79	39° 26' 3.509 N	108° 1' 28.244 W	
2,100.00	25.93	22.36	2,012.26	454.86	205.76	14,335,118.25	786,390.42	39° 26' 3.914 N	108° 1' 28.050 W	
2,200.00	25.93	22.36	2,102.19	495.30	222.40	14,335,158.69	786,407.06	39° 26' 4.319 N	108° 1' 27.855 W	
2,300.00	25.93	22.36	2,192.12	535.74	239.03	14,335,199.13	786,423.69	39° 26' 4.724 N	108° 1' 27.661 W	
2,400.00	25.93	22.36	2,282.05	576.18	255.67	14,335,239.56	786,440.33	39° 26' 5.128 N	108° 1' 27.466 W	
2,500.00	25.93	22.36	2,371.99	616.62	272.30	14,335,280.00	786,456.96	39° 26' 5.533 N	108° 1' 27.271 W	
2,600.00	25.93	22.36	2,461.92	657.05	288.94	14,335,320.44	786,473.60	39° 26' 5.938 N	108° 1' 27.077 W	
2,700.00	25.93	22.36	2,551.85	697.49	305.58	14,335,360.88	786,490.24	39° 26' 6.343 N	108° 1' 26.882 W	
2,800.00	25.93	22.36	2,641.79	737.93	322.21	14,335,401.32	786,506.87	39° 26' 6.747 N	108° 1' 26.688 W	
2,900.00	25.93	22.36	2,731.72	778.37	338.85	14,335,441.76	786,523.51	39° 26' 7.152 N	108° 1' 26.493 W	
3,000.00	25.93	22.36	2,821.65	818.81	355.48	14,335,482.20	786,540.14	39° 26' 7.557 N	108° 1' 26.299 W	
3,100.00	25.93	22.36	2,911.58	859.25	372.12	14,335,522.64	786,556.78	39° 26' 7.962 N	108° 1' 26.104 W	
3,200.00	25.93	22.36	3,001.52	899.69	388.75	14,335,563.08	786,573.41	39° 26' 8.367 N	108° 1' 25.910 W	
3,300.00	25.93	22.36	3,091.45	940.13	405.39	14,335,603.52	786,590.05	39° 26' 8.771 N	108° 1' 25.715 W	
3,400.00	25.93	22.36	3,181.38	980.57	422.02	14,335,643.96	786,606.68	39° 26' 9.176 N	108° 1' 25.521 W	
3,445.77	25.93	22.36	3,222.55	999.08	429.64	14,335,662.47	786,614.30	39° 26' 9.361 N	108° 1' 25.432 W	
START DROP @ 3446' MD (3223' TVD) (2 DEG/100')										
3,500.00	24.85	22.36	3,271.54	1,020.58	438.48	14,335,683.97	786,623.14	39° 26' 9.577 N	108° 1' 25.328 W	
3,600.00	22.85	22.36	3,363.00	1,057.96	453.86	14,335,721.35	786,638.52	39° 26' 9.951 N	108° 1' 25.148 W	
3,700.00	20.85	22.36	3,455.81	1,092.37	468.02	14,335,755.76	786,652.68	39° 26' 10.295 N	108° 1' 24.983 W	
3,800.00	18.85	22.36	3,549.87	1,123.77	480.93	14,335,787.16	786,665.59	39° 26' 10.610 N	108° 1' 24.832 W	
3,826.51	18.32	22.36	3,575.00	1,131.58	484.15	14,335,794.97	786,668.81	39° 26' 10.688 N	108° 1' 24.794 W	
MESAVERDE										

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23A-17-07-95 (111085) - Slot 23A
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23A-17-07-95 (111085)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23A-17-07-95		
Design:	ANTERO BAT 23A-17-07-95 P02		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
3,900.00	16.85	22.36	3,645.05	1,152.11	492.59	14,335,815.50	786,677.25	39° 26' 10.893 N	108° 1' 24.695 W
4,000.00	14.85	22.36	3,741.25	1,177.36	502.98	14,335,840.75	786,687.64	39° 26' 11.146 N	108° 1' 24.574 W
4,100.00	12.85	22.36	3,838.34	1,199.49	512.08	14,335,862.88	786,696.74	39° 26' 11.367 N	108° 1' 24.468 W
4,200.00	10.85	22.36	3,936.20	1,218.47	519.89	14,335,881.86	786,704.55	39° 26' 11.557 N	108° 1' 24.376 W
4,300.00	8.85	22.36	4,034.72	1,234.28	526.40	14,335,897.67	786,711.05	39° 26' 11.716 N	108° 1' 24.300 W
4,400.00	6.85	22.36	4,133.78	1,246.91	531.59	14,335,910.29	786,716.25	39° 26' 11.842 N	108° 1' 24.239 W
4,500.00	4.85	22.36	4,233.26	1,256.32	535.46	14,335,919.71	786,720.12	39° 26' 11.936 N	108° 1' 24.194 W
4,600.00	2.85	22.36	4,333.03	1,262.53	538.01	14,335,925.91	786,722.67	39° 26' 11.998 N	108° 1' 24.164 W
4,700.00	0.85	22.36	4,432.97	1,265.50	539.24	14,335,928.89	786,723.90	39° 26' 12.028 N	108° 1' 24.150 W
4,742.03	0.00	22.36	4,475.00	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
TOP GAS - TOP GAS 23A									
4,742.27	0.00	0.00	4,475.24	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
END OF DROP @ 4742' MD (4475' TVD)									
4,800.00	0.00	0.00	4,532.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
4,900.00	0.00	0.00	4,632.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,000.00	0.00	0.00	4,732.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,100.00	0.00	0.00	4,832.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,200.00	0.00	0.00	4,932.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,300.00	0.00	0.00	5,032.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,400.00	0.00	0.00	5,132.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,500.00	0.00	0.00	5,232.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,600.00	0.00	0.00	5,332.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,700.00	0.00	0.00	5,432.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,800.00	0.00	0.00	5,532.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
5,900.00	0.00	0.00	5,632.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,000.00	0.00	0.00	5,732.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,042.03	0.00	0.00	5,775.00	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
CAMEO									
6,100.00	0.00	0.00	5,832.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,200.00	0.00	0.00	5,932.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,300.00	0.00	0.00	6,032.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,400.00	0.00	0.00	6,132.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,500.00	0.00	0.00	6,232.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,600.00	0.00	0.00	6,332.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,700.00	0.00	0.00	6,432.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,742.03	0.00	0.00	6,475.00	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
ROLLINS									
6,800.00	0.00	0.00	6,532.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
6,842.00	0.00	0.00	6,574.97	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
PROPOSED TD @ 6842' MD (6575' TVD)									
6,842.03	0.00	0.00	6,575.00	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
TD 23A									

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23A-17-07-95 (111085) - Slot 23A
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23A-17-07-95 (111085)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23A-17-07-95		
Design:	ANTERO BAT 23A-17-07-95 P02		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
TOP GAS 23A		360.00	4,475.00	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
- plan hits target									
- Circle (radius 25.00)									
TD 23A	0.00	0.00	6,575.00	1,265.79	539.36	14,335,929.18	786,724.02	39° 26' 12.031 N	108° 1' 24.149 W
- plan hits target									
- Circle (radius 25.00)									

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(ft)	(ft)		(in)	(in)	
1,000.00	992.19	SURFACE CASING @ 1000'	8.62	12.25	

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
3,826.51	3,575.00	MESAVERDE		0.00	
4,742.03	4,475.00	TOP GAS		0.00	
6,042.03	5,775.00	CAMEO		0.00	
6,742.03	6,475.00	ROLLINS		0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
200.00	200.00	0.00	0.00	START NUDGE @ 200' (2 DEG/100')	
853.08	848.22	55.97	41.67	START BUILD @ 853' MD (848' TVD) (2 DEG/100')	
853.08	848.22	55.97	41.67	END OF NUDGE @ 853' MD (848' TVD)	
1,008.01	1,000.00	84.65	53.47	START HOLD @ 1008' MD (1000' TVD)	
1,058.01	1,048.70	95.14	57.78	START BUILD @ 1058' MD (1049' TVD) (2 DEG/100')	
1,699.51	1,652.08	292.90	139.14	END OF BUILD @ 1700' MD (1652' TVD) (25.93 DEG INC)	
3,445.77	3,222.55	999.08	429.64	START DROP @ 3446' MD (3223' TVD) (2 DEG/100')	
4,742.27	4,475.24	1,265.79	539.36	END OF DROP @ 4742' MD (4475' TVD)	
6,842.00	6,574.97	1,265.79	539.36	PROPOSED TD @ 6842' MD (6575' TVD)	