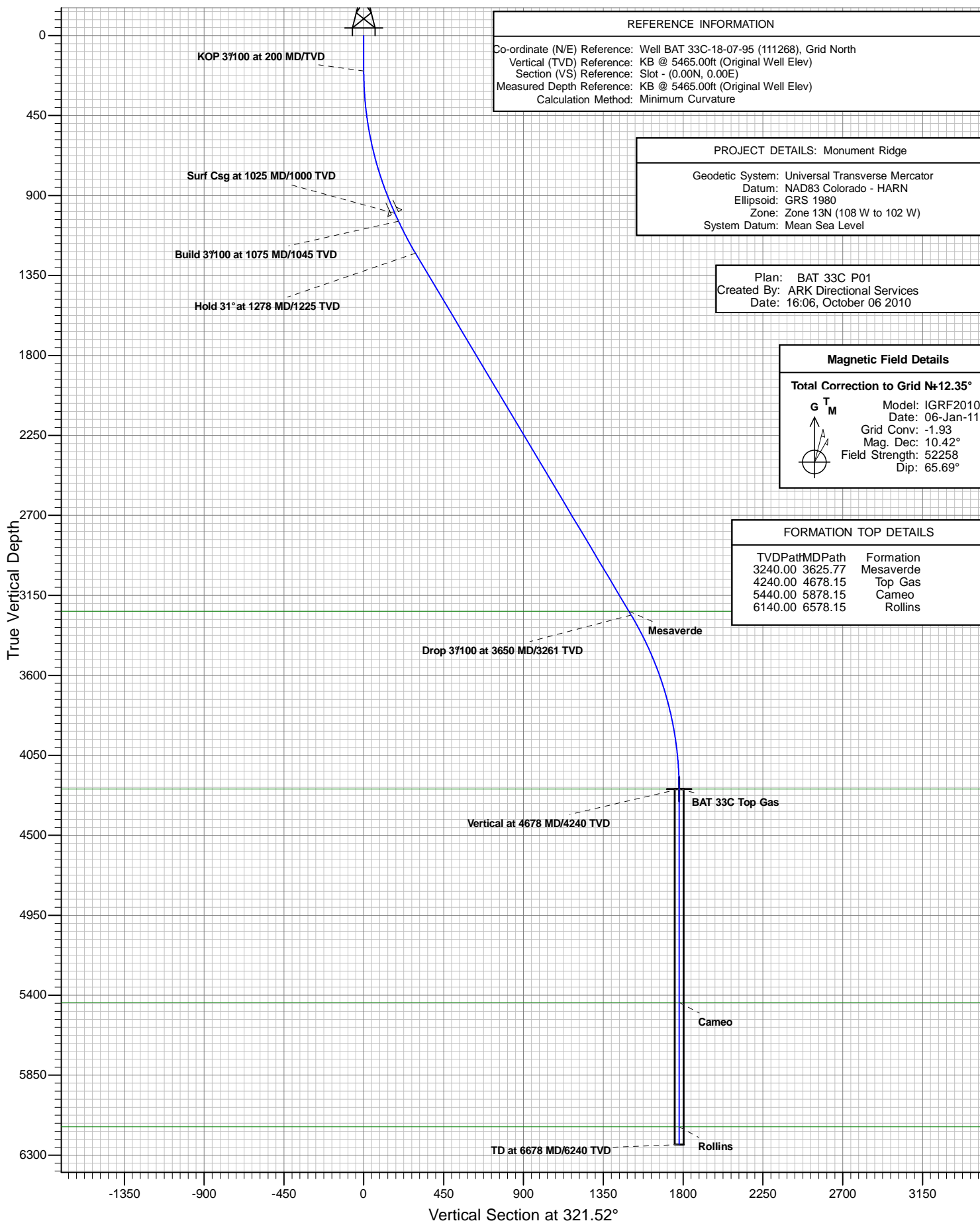




## VERTICAL SECTION VIEW



# **Antero Resources**

**Monument Ridge**

**Monument Ridge Pad**

**BAT 33C-18-07-95 (111268)**

**BAT 33C**

**Plan: BAT 33C P01**

## **Standard Planning Report - Geographic**

**06 October, 2010**

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well BAT 33C-18-07-95 (111268)
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 33C-18-07-95 (111268)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 33C		
<b>Design:</b>	BAT 33C P01		

<b>Project</b>	Monument Ridge		
<b>Map System:</b>	Universal Transverse Mercator	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD83 Colorado - HARN		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

<b>Site</b>	Monument Ridge Pad		
<b>Site Position:</b>		<b>Northing:</b>	14,334,067.020 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	783,868.932 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	39.431305000°N
		<b>Longitude:</b>	108.033251000°W
		<b>Grid Convergence:</b>	-1.93 °

<b>Well</b>	BAT 33C-18-07-95 (111268)		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	
		<b>Latitude:</b>	39.431236000°N
		<b>Longitude:</b>	108.033249000°W
		<b>Ground Level:</b>	5,441.00 ft

<b>Wellbore</b>	BAT 33C				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	2011/01/06	10.42	65.69	52,258

<b>Design</b>	BAT 33C 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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	4,240.00	0.00	0.00	321.52	

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
<b>Depth</b>	<b>(°)</b>	<b>(°)</b>	<b>Depth</b>	<b>(ft)</b>	<b>(ft)</b>	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	<b>(°)</b>	
<b>(ft)</b>			<b>(ft)</b>			<b>(°/100ft)</b>	<b>(°/100ft)</b>	<b>(°/100ft)</b>		
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	
1,025.00	24.75	321.52	999.58	137.33	-109.16	3.00	3.00	0.00	321.52	
1,075.00	24.75	321.52	1,044.99	153.72	-122.19	0.00	0.00	0.00	0.00	
1,278.45	30.85	321.52	1,224.87	227.97	-181.21	3.00	3.00	0.00	0.00	
3,649.69	30.85	321.52	3,260.53	1,179.88	-937.99	0.00	0.00	0.00	0.00	
4,678.15	0.00	0.00	4,240.00	1,391.45	-1,106.19	3.00	-3.00	0.00	180.00	BAT 33C Top Gas
6,678.15	0.00	0.00	6,240.00	1,391.45	-1,106.19	0.00	0.00	0.00	0.00	

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well BAT 33C-18-07-95 (111268)
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 33C-18-07-95 (111268)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 33C		
<b>Design:</b>	BAT 33C P01		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,334,041.871	783,868.651	39.431236000°N	108.033249000°W
100.00	0.00	0.00	100.00	0.00	0.00	14,334,041.871	783,868.651	39.431236000°N	108.033249000°W
200.00	0.00	0.00	200.00	0.00	0.00	14,334,041.871	783,868.651	39.431236000°N	108.033249000°W
<b>KOP 3°/100 at 200 MD/TVD</b>									
300.00	3.00	321.52	299.95	2.05	-1.63	14,334,043.920	783,867.023	39.431241469°N	108.033255004°W
400.00	6.00	321.52	399.63	8.19	-6.51	14,334,050.061	783,862.141	39.431257862°N	108.033272999°W
500.00	9.00	321.52	498.77	18.41	-14.63	14,334,060.278	783,854.020	39.431285133°N	108.033302936°W
600.00	12.00	321.52	597.08	32.67	-25.97	14,334,074.542	783,842.682	39.431323207°N	108.033344732°W
700.00	15.00	321.52	694.31	50.94	-40.49	14,334,092.814	783,828.158	39.431371981°N	108.033398274°W
800.00	18.00	321.52	790.18	73.17	-58.16	14,334,115.045	783,810.487	39.431431320°N	108.033463414°W
900.00	21.00	321.52	884.43	99.30	-78.93	14,334,141.173	783,789.719	39.431501062°N	108.033539974°W
1,000.00	24.00	321.52	976.81	129.26	-102.74	14,334,171.127	783,765.910	39.431581016°N	108.033627744°W
1,025.00	24.75	321.52	999.58	137.33	-109.16	14,334,179.204	783,759.490	39.431602575°N	108.033651411°W
<b>Surf Csg at 1025 MD/1000 TVD</b>									
1,075.00	24.75	321.52	1,044.99	153.72	-122.19	14,334,195.590	783,746.463	39.431646312°N	108.033699432°W
<b>Build 3°/100 at 1075 MD/1045 TVD</b>									
1,100.00	25.50	321.52	1,067.62	162.03	-128.79	14,334,203.899	783,739.857	39.431668490°N	108.033723783°W
1,200.00	28.50	321.52	1,156.71	197.56	-157.04	14,334,239.432	783,711.608	39.431763335°N	108.033827919°W
1,278.45	30.85	321.52	1,224.87	227.96	-181.21	14,334,269.833	783,687.439	39.431844483°N	108.033917017°W
<b>Hold 31° at 1278 MD/1225 TVD</b>									
1,300.00	30.85	321.52	1,243.37	236.61	-188.09	14,334,278.484	783,680.561	39.431867574°N	108.033942371°W
1,400.00	30.85	321.52	1,329.22	276.76	-220.01	14,334,318.628	783,648.646	39.431974727°N	108.034060022°W
1,500.00	30.85	321.52	1,415.06	316.90	-251.92	14,334,358.773	783,616.731	39.432081879°N	108.034177673°W
1,600.00	30.85	321.52	1,500.91	357.05	-283.84	14,334,398.917	783,584.816	39.432189031°N	108.034295324°W
1,700.00	30.85	321.52	1,586.76	397.19	-315.75	14,334,439.061	783,552.902	39.432296184°N	108.034412976°W
1,800.00	30.85	321.52	1,672.61	437.34	-347.67	14,334,479.205	783,520.987	39.432403336°N	108.034530629°W
1,900.00	30.85	321.52	1,758.46	477.48	-379.58	14,334,519.349	783,489.072	39.432510488°N	108.034648281°W
2,000.00	30.85	321.52	1,844.30	517.62	-411.50	14,334,559.493	783,457.157	39.432617640°N	108.034765934°W
2,100.00	30.85	321.52	1,930.15	557.77	-443.41	14,334,599.637	783,425.242	39.432724791°N	108.034883588°W
2,200.00	30.85	321.52	2,016.00	597.91	-475.33	14,334,639.781	783,393.327	39.432831943°N	108.035001241°W
2,300.00	30.85	321.52	2,101.85	638.06	-507.24	14,334,679.925	783,361.412	39.432930904°N	108.035118896°W
2,400.00	30.85	321.52	2,187.70	678.20	-539.16	14,334,720.069	783,329.497	39.433046245°N	108.035236550°W
2,500.00	30.85	321.52	2,273.54	718.34	-571.07	14,334,760.213	783,297.582	39.433153397°N	108.035354205°W
2,600.00	30.85	321.52	2,359.39	758.49	-602.99	14,334,800.358	783,265.667	39.433260548°N	108.035471860°W
2,700.00	30.85	321.52	2,445.24	798.63	-634.90	14,334,840.502	783,233.753	39.433367698°N	108.035589516°W
2,800.00	30.85	321.52	2,531.09	838.78	-666.82	14,334,880.646	783,201.838	39.433474849°N	108.035707171°W
2,900.00	30.85	321.52	2,616.94	878.92	-698.73	14,334,920.790	783,169.923	39.433582000°N	108.035824828°W
3,000.00	30.85	321.52	2,702.78	919.07	-730.65	14,334,960.934	783,138.008	39.433689150°N	108.035942484°W
3,100.00	30.85	321.52	2,788.63	959.21	-762.56	14,335,001.078	783,106.093	39.433796300°N	108.036060141°W
3,200.00	30.85	321.52	2,874.48	999.35	-794.47	14,335,041.222	783,074.178	39.433903451°N	108.036177799°W
3,300.00	30.85	321.52	2,960.33	1,039.50	-826.39	14,335,081.366	783,042.263	39.434010601°N	108.036295457°W
3,400.00	30.85	321.52	3,046.18	1,079.64	-858.30	14,335,121.510	783,010.348	39.434117751°N	108.036413115°W
3,500.00	30.85	321.52	3,132.02	1,119.79	-890.22	14,335,161.654	782,978.433	39.434224900°N	108.036530773°W
3,600.00	30.85	321.52	3,217.87	1,159.93	-922.13	14,335,201.798	782,946.519	39.434332050°N	108.036648432°W
3,625.77	30.85	321.52	3,240.00	1,170.28	-930.36	14,335,212.146	782,938.293	39.434359668°N	108.036678758°W
<b>Mesaverde</b>									
3,649.69	30.85	321.52	3,260.53	1,179.88	-937.99	14,335,221.746	782,930.660	39.434385293°N	108.036706897°W
<b>Drop 3°/100 at 3650 MD/3261 TVD</b>									
3,700.00	29.34	321.52	3,304.06	1,199.63	-953.69	14,335,241.495	782,914.959	39.434438005°N	108.036764780°W
3,800.00	26.34	321.52	3,392.47	1,236.18	-982.76	14,335,278.052	782,885.896	39.434535580°N	108.036871925°W
3,900.00	23.34	321.52	3,483.20	1,269.07	-1,008.90	14,335,310.937	782,859.753	39.434623353°N	108.036968309°W
4,000.00	20.34	321.52	3,576.01	1,298.19	-1,032.05	14,335,340.059	782,836.600	39.434701085°N	108.037053666°W
4,100.00	17.34	321.52	3,670.64	1,323.47	-1,052.15	14,335,365.340	782,816.502	39.434768562°N	108.037127762°W
4,200.00	14.34	321.52	3,766.83	1,344.84	-1,069.14	14,335,386.709	782,799.513	39.434825599°N	108.037190393°W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well BAT 33C-18-07-95 (111268)
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 33C-18-07-95 (111268)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 33C		
<b>Design:</b>	BAT 33C P01		

Planned Survey										
Measured			Vertical			Map	Map			
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)			
4,300.00	11.34	321.52	3,864.32	1,362.24	-1,082.97	14,335,404.109	782,785.680	39.434872040°N	108.037241390°W	
4,400.00	8.34	321.52	3,962.83	1,375.62	-1,093.61	14,335,417.491	782,775.042	39.434907757°N	108.037280612°W	
4,500.00	5.34	321.52	4,062.11	1,384.95	-1,101.03	14,335,426.818	782,767.626	39.434932653°N	108.037307951°W	
4,600.00	2.34	321.52	4,161.87	1,390.20	-1,105.20	14,335,432.066	782,763.454	39.434946660°N	108.037323332°W	
4,678.15	0.00	0.00	4,240.00	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
Vertical at 4678 MD/4240 TVD - Top Gas - BAT 33C Top Gas										
4,700.00	0.00	0.00	4,261.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
4,800.00	0.00	0.00	4,361.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
4,900.00	0.00	0.00	4,461.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,000.00	0.00	0.00	4,561.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,100.00	0.00	0.00	4,661.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,200.00	0.00	0.00	4,761.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,300.00	0.00	0.00	4,861.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,400.00	0.00	0.00	4,961.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,500.00	0.00	0.00	5,061.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,600.00	0.00	0.00	5,161.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,700.00	0.00	0.00	5,261.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,800.00	0.00	0.00	5,361.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
5,878.15	0.00	0.00	5,440.00	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
Cameo										
5,900.00	0.00	0.00	5,461.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,000.00	0.00	0.00	5,561.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,100.00	0.00	0.00	5,661.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,200.00	0.00	0.00	5,761.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,300.00	0.00	0.00	5,861.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,400.00	0.00	0.00	5,961.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,500.00	0.00	0.00	6,061.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,578.15	0.00	0.00	6,140.00	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
Rollins										
6,600.00	0.00	0.00	6,161.85	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
6,678.15	0.00	0.00	6,240.00	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
BAT 33C Top Gas	0.00	0.00	4,240.00	1,391.45	-1,106.19	14,335,433.317	782,762.459	39.434950000°N	108.037327000°W	
- hit/miss target										
- Shape										
- plan hits target center										
- Circle (radius 25.00)										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,025.00	999.58	Surf Csg at 1025 MD/1000 TVD	5.50	6.00	

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<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well BAT 33C-18-07-95 (111268)
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 33C-18-07-95 (111268)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 33C		
<b>Design:</b>	BAT 33C P01		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,625.77	3,240.00	Mesaverde			
4,678.15	4,240.00	Top Gas			
5,878.15	5,440.00	Cameo			
6,578.15	6,140.00	Rollins			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	KOP 3°/100 at 200 MD/TVD
1,075.00	1,044.99	137.33	-109.16	Build 3°/100 at 1075 MD/1045 TVD
1,278.45	1,224.87	153.72	-122.19	Hold 31° at 1278 MD/1225 TVD
3,649.69	3,260.53	227.97	-181.21	Drop 3°/100 at 3650 MD/3261 TVD
4,678.15	4,240.00	1,179.88	-937.99	Vertical at 4678 MD/4240 TVD
6,678.15	6,240.00	1,391.45	-1,106.19	TD at 6678 MD/6240 TVD