



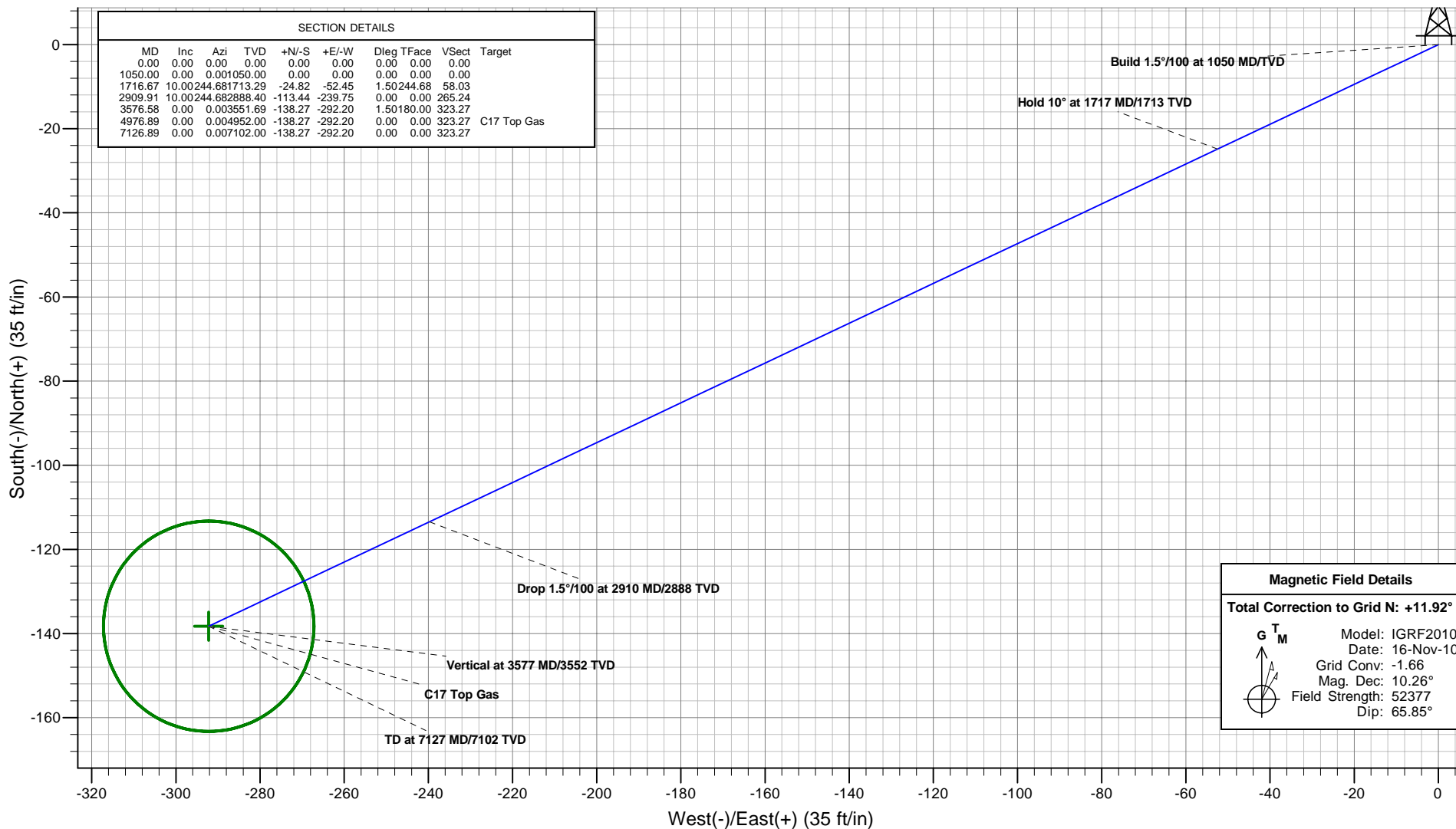
# Antero Resources

## McLin C17 (111235)



### PLAN VIEW

Project: McLin  
Site: McLin C  
Well: McLin C17 (111235)  
Wellbore: McLin C17  
Design: McLin C17 P01



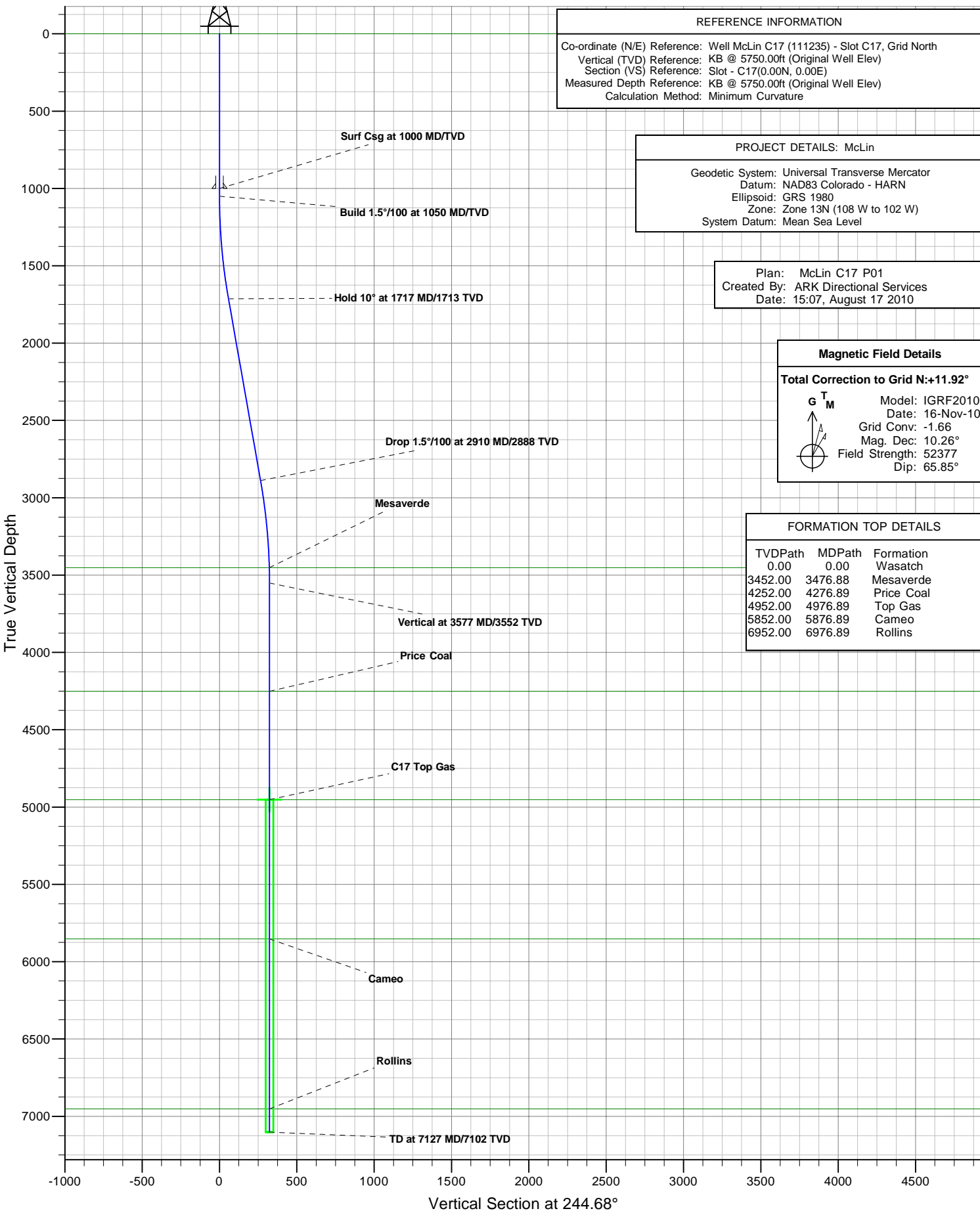
Magnetic Field Details	
Total Correction to Grid N: +11.92°	
	Model: IGRF2010
	Date: 16-Nov-10
	Grid Conv: -1.66
	Mag. Dec: 10.26°
	Field Strength: 52377
Dip: 65.85°	

Plan: McLin C17 P01  
Created By: ARK Directional Services  
Date: 15:06, August 17 2010

PROJECT DETAILS: McLin  
Geodetic System: Universal Transverse Mercator  
Datum: NAD83 Colorado - HARN  
Ellipsoid: GRS 1980  
Zone: Zone 13N (108 W to 102 W)  
System Datum: Mean Sea Level

REFERENCE INFORMATION  
Co-ordinate (N/E) Reference: Well McLin C17 (111235) - Slot C17, Grid North  
Vertical (TVD) Reference: KB @ 5750.00ft (Original Well Elev)  
Section (VS) Reference: Slot - C17(0.00N, 0.00E)  
Measured Depth Reference: KB @ 5750.00ft (Original Well Elev)  
Calculation Method: Minimum Curvature

### VERTICAL SECTION VIEW



# **Antero Resources**

**McLin**

**McLin C**

**McLin C17 (111235) - Slot C17**

**McLin C17**

**Plan: McLin C17 P01**

## **Standard Planning Report - Geographic**

**17 August, 2010**

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLin C17 (111235) - Slot C17
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C17 (111235)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C17		
<b>Design:</b>	McLin C17 P01		

<b>Project</b>	McLin		
<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>	McLin C		
<b>Site Position:</b>		<b>Northing:</b>	14,364,522.752 usft
<b>From:</b>	Map	<b>Easting:</b>	905,235.880 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	39.525275157°N
		<b>Longitude:</b>	107.607030464°W
		<b>Grid Convergence:</b>	-1.66 °

<b>Well</b>	McLin C17 (111235) - Slot C17		
<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>	39.525113184°N
		<b>Longitude:</b>	107.607212871°W
		<b>Ground Level:</b>	5,726.00 ft

<b>Wellbore</b>	McLin C17				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2010/11/16	10.26	65.85	52,377

<b>Design</b>	McLin C17 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	244.68

<b>Plan Sections</b>										
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	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,716.67	10.00	244.68	1,713.29	-24.82	-52.45	1.50	1.50	0.00	244.68	
2,909.91	10.00	244.68	2,888.40	-113.44	-239.75	0.00	0.00	0.00	0.00	
3,576.58	0.00	0.00	3,551.69	-138.27	-292.20	1.50	-1.50	0.00	180.00	
4,976.89	0.00	0.00	4,952.00	-138.27	-292.20	0.00	0.00	0.00	0.00	C17 Top Gas
7,126.89	0.00	0.00	7,102.00	-138.27	-292.20	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 McLin C17 (111235) - Slot C17
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C17 (111235)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C17		
<b>Design:</b>	McLin C17 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	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
<b>Wasatch</b>									
100.00	0.00	0.00	100.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
200.00	0.00	0.00	200.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
300.00	0.00	0.00	300.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
400.00	0.00	0.00	400.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
500.00	0.00	0.00	500.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
600.00	0.00	0.00	600.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
700.00	0.00	0.00	700.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
800.00	0.00	0.00	800.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
900.00	0.00	0.00	900.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
<b>Surf Csg at 1000 MD/TVD</b>									
1,050.00	0.00	0.00	1,050.00	0.00	0.00	14,364,465.255	905,182.725	39.525113184°N	107.607212871°W
<b>Build 1.5°/100 at 1050 MD/TVD</b>									
1,100.00	0.75	244.68	1,100.00	-0.14	-0.30	14,364,465.115	905,182.429	39.525112777°N	107.607213905°W
1,200.00	2.25	244.68	1,199.96	-1.26	-2.66	14,364,463.995	905,180.063	39.525109517°N	107.607222172°W
1,300.00	3.75	244.68	1,299.82	-3.50	-7.39	14,364,461.757	905,175.333	39.525103000°N	107.607238701°W
1,400.00	5.25	244.68	1,399.51	-6.85	-14.48	14,364,458.401	905,168.241	39.525093229°N	107.607263480°W
1,500.00	6.75	244.68	1,498.96	-11.32	-23.93	14,364,453.930	905,158.793	39.525080212°N	107.607296493°W
1,600.00	8.25	244.68	1,598.10	-16.91	-35.73	14,364,448.348	905,146.994	39.525063958°N	107.607337716°W
1,700.00	9.75	244.68	1,696.87	-23.60	-49.87	14,364,441.657	905,132.855	39.525044477°N	107.607387122°W
1,716.67	10.00	244.68	1,713.29	-24.82	-52.45	14,364,440.434	905,130.271	39.525040917°N	107.607396150°W
<b>Hold 10° at 1717 MD/1713 TVD</b>									
1,800.00	10.00	244.68	1,795.35	-31.01	-65.53	14,364,434.245	905,117.191	39.525022897°N	107.607441853°W
1,900.00	10.00	244.68	1,893.84	-38.44	-81.23	14,364,426.818	905,101.494	39.525001271°N	107.607496697°W
2,000.00	10.00	244.68	1,992.32	-45.86	-96.93	14,364,419.391	905,085.798	39.524979646°N	107.607551540°W
2,100.00	10.00	244.68	2,090.80	-53.29	-112.62	14,364,411.964	905,070.102	39.524958021°N	107.607606384°W
2,200.00	10.00	244.68	2,189.28	-60.72	-128.32	14,364,404.536	905,054.406	39.524936396°N	107.607661228°W
2,300.00	10.00	244.68	2,287.76	-68.15	-144.02	14,364,397.109	905,038.709	39.524914771°N	107.607716071°W
2,400.00	10.00	244.68	2,386.24	-75.57	-159.71	14,364,389.682	905,023.013	39.524893146°N	107.607770915°W
2,500.00	10.00	244.68	2,484.72	-83.00	-175.41	14,364,382.255	905,007.317	39.524871521°N	107.607825759°W
2,600.00	10.00	244.68	2,583.20	-90.43	-191.10	14,364,374.828	904,991.621	39.524849895°N	107.607880602°W
2,700.00	10.00	244.68	2,681.68	-97.85	-206.80	14,364,367.401	904,975.924	39.524828270°N	107.607935446°W
2,800.00	10.00	244.68	2,780.16	-105.28	-222.50	14,364,359.973	904,960.228	39.524806645°N	107.607990289°W
2,900.00	10.00	244.68	2,878.64	-112.71	-238.19	14,364,352.546	904,944.532	39.524785019°N	107.608045133°W
2,909.91	10.00	244.68	2,888.40	-113.44	-239.75	14,364,351.810	904,942.976	39.524782876°N	107.608050569°W
<b>Drop 1.5°/100 at 2910 MD/2888 TVD</b>									
3,000.00	8.65	244.68	2,977.30	-119.69	-252.94	14,364,345.567	904,929.782	39.524764699°N	107.608096667°W
3,100.00	7.15	244.68	3,076.35	-125.57	-265.36	14,364,339.690	904,917.361	39.524747585°N	107.608140068°W
3,200.00	5.65	244.68	3,175.72	-130.33	-275.44	14,364,334.923	904,907.288	39.524733707°N	107.608175265°W
3,300.00	4.15	244.68	3,275.35	-133.98	-283.16	14,364,331.271	904,899.569	39.524723073°N	107.608202234°W
3,400.00	2.65	244.68	3,375.18	-136.52	-288.52	14,364,328.735	904,894.210	39.524715690°N	107.608220957°W
3,476.88	1.50	244.68	3,452.00	-137.71	-291.03	14,364,327.546	904,891.698	39.524712228°N	107.608229736°W
<b>Mesaverde</b>									
3,500.00	1.15	244.68	3,475.12	-137.94	-291.51	14,364,327.318	904,891.216	39.524711564°N	107.608231421°W
3,576.58	0.00	0.00	3,551.69	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W
<b>Vertical at 3577 MD/3552 TVD</b>									
3,600.00	0.00	0.00	3,575.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W
3,700.00	0.00	0.00	3,675.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W
3,800.00	0.00	0.00	3,775.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W
3,900.00	0.00	0.00	3,875.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W
4,000.00	0.00	0.00	3,975.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W
4,100.00	0.00	0.00	4,075.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLin C17 (111235) - Slot C17
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C17 (111235)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C17		
<b>Design:</b>	McLin C17 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	
4,200.00	0.00	0.00	4,175.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,276.89	0.00	0.00	4,252.00	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
Price Coal										
4,300.00	0.00	0.00	4,275.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,400.00	0.00	0.00	4,375.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,500.00	0.00	0.00	4,475.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,600.00	0.00	0.00	4,575.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,700.00	0.00	0.00	4,675.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,800.00	0.00	0.00	4,775.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,900.00	0.00	0.00	4,875.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
4,976.89	0.00	0.00	4,952.00	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
Top Gas										
5,000.00	0.00	0.00	4,975.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,100.00	0.00	0.00	5,075.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,200.00	0.00	0.00	5,175.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,300.00	0.00	0.00	5,275.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,400.00	0.00	0.00	5,375.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,500.00	0.00	0.00	5,475.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,600.00	0.00	0.00	5,575.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,700.00	0.00	0.00	5,675.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,800.00	0.00	0.00	5,775.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
5,876.89	0.00	0.00	5,852.00	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
Cameo										
5,900.00	0.00	0.00	5,875.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,000.00	0.00	0.00	5,975.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,100.00	0.00	0.00	6,075.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,200.00	0.00	0.00	6,175.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,300.00	0.00	0.00	6,275.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,400.00	0.00	0.00	6,375.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,500.00	0.00	0.00	6,475.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,600.00	0.00	0.00	6,575.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,700.00	0.00	0.00	6,675.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,800.00	0.00	0.00	6,775.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,900.00	0.00	0.00	6,875.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
6,976.89	0.00	0.00	6,952.00	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
Rollins										
7,000.00	0.00	0.00	6,975.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
7,100.00	0.00	0.00	7,075.11	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	
7,126.89	0.00	0.00	7,102.00	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
C17 Top Gas - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,952.00	-138.27	-292.20	14,364,326.990	904,890.522	39.524710608°N	107.608233845°W	

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLin C17 (111235) - Slot C17
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C17 (111235)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C17		
<b>Design:</b>	McLin C17 P01		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	Surf Csg at 1000 MD/TVD	5.50	6.00	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
0.00	0.00	Wasatch			
3,476.88	3,452.00	Mesaverde			
4,276.89	4,252.00	Price Coal			
4,976.89	4,952.00	Top Gas			
5,876.89	5,852.00	Cameo			
6,976.89	6,952.00	Rollins			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,050.00	1,050.00	0.00	0.00	Build 1.5°/100 at 1050 MD/TVD	
1,716.67	1,713.29	-24.82	-52.45	Hold 10° at 1717 MD/1713 TVD	
2,909.91	2,888.40	-113.44	-239.75	Drop 1.5°/100 at 2910 MD/2888 TVD	
3,576.58	3,551.69	-138.27	-292.20	Vertical at 3577 MD/3552 TVD	
7,126.89	7,102.00	-138.27	-292.20	TD at 7127 MD/7102 TVD	