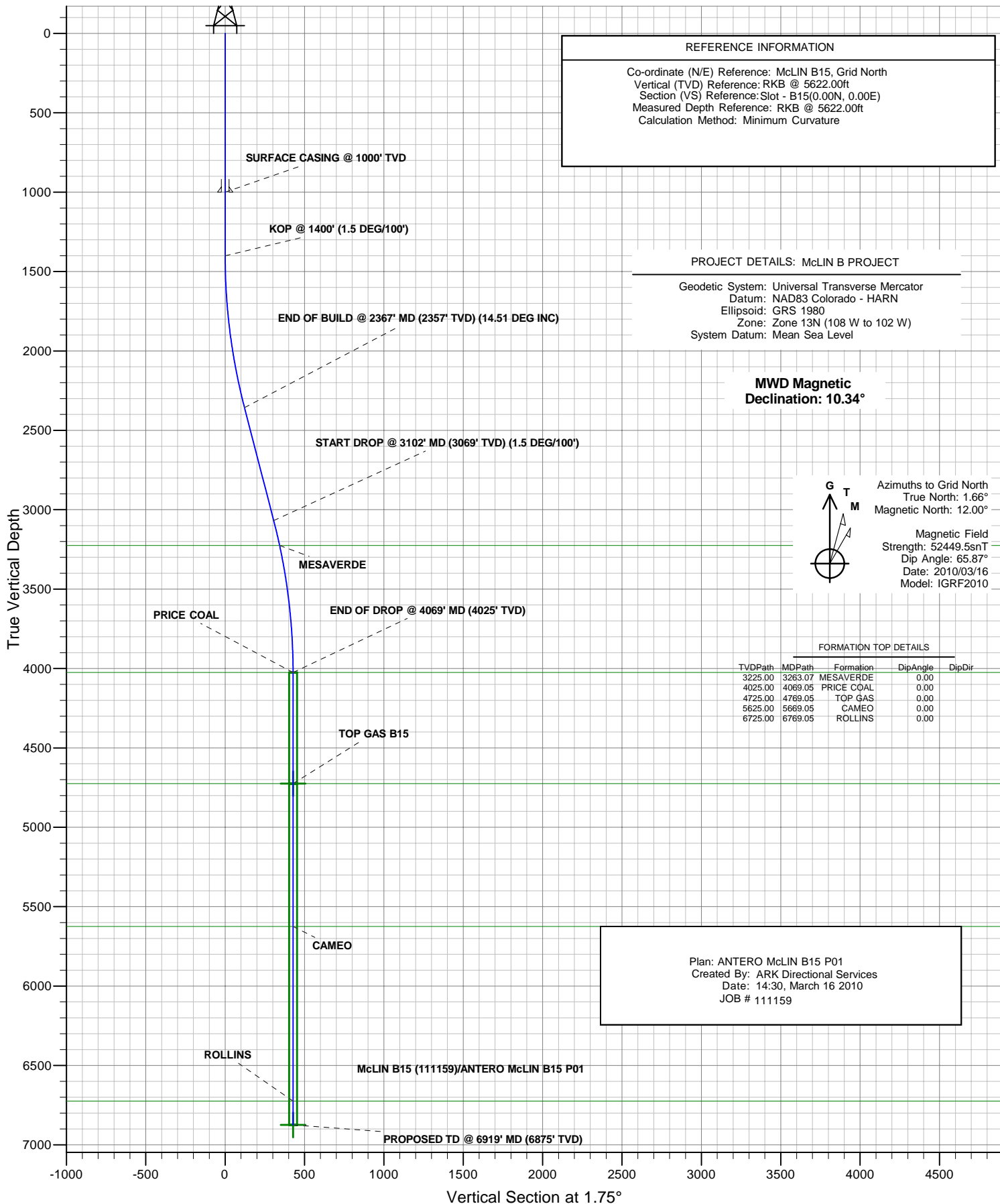




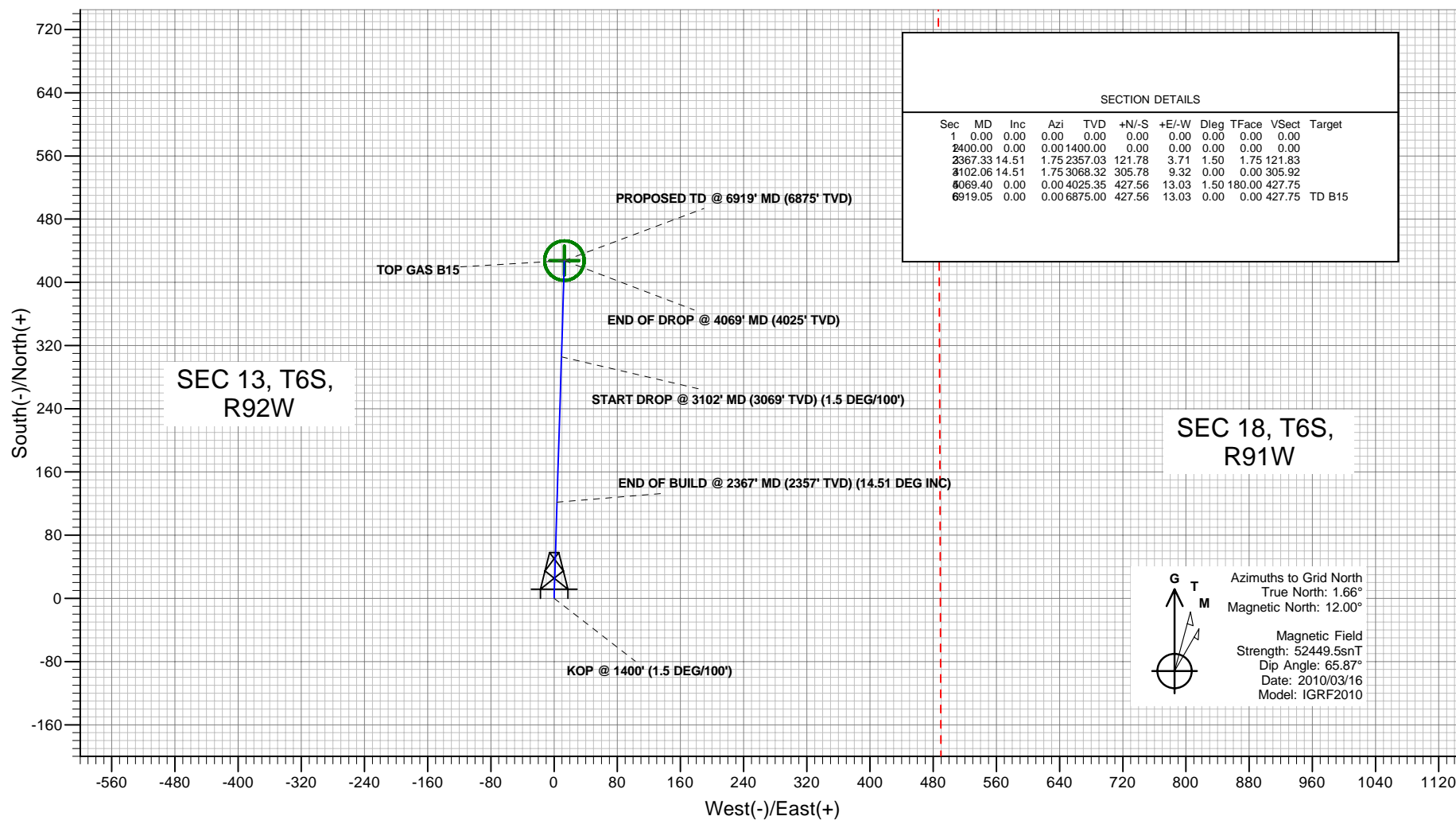
# ANTERO RESOURCES

## ANTERO McLIN B15





Project: McLIN B PROJECT  
Site: FRONTIER 12  
Well: McLIN B15 (111159)  
Wellbore: ANTERO McLIN B15  
Design: ANTERO McLIN B15 P01  
JOB # 111159



Plan: ANTERO McLIN B15 P01  
Created By: ARK Directional Services  
Date: 14:33, March 16 2010

PROJECT DETAILS: McLIN B PROJECT

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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: McLIN B15, Grid North  
Vertical (TVD) Reference: RKB @ 5622.00ft  
Section (VS) Reference: Slot - B15(0.00N, 0.00E)  
Measured Depth Reference: RKB @ 5622.00ft  
Calculation Method: Minimum Curvature

# **ANTERO RESOURCES**

**McLIN B PROJECT  
FRONTIER 12**

**Plan: ANTERO McLIN B15 P01**

## **Standard Planning Report - Geographic**

**16 March, 2010**

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B15 (111159) - Slot B15
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B15 (111159)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B15		
<b>Design:</b>	ANTERO McLIN B15 P01		

<b>Project</b>	McLIN B PROJECT		
<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>	FRONTIER 12		
<b>Site Position:</b>		<b>Northing:</b>	14,366,636.75 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	904,982.97 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	39° 31' 51.798 N
		<b>Longitude:</b>	107° 36' 29.317 W
		<b>Grid Convergence:</b>	-1.66 °

<b>Well</b>	McLIN B15 (111159) - Slot B15		
<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° 31' 51.584 N
		<b>Longitude:</b>	107° 36' 29.395 W
		<b>Ground Level:</b>	5,598.00 ft

<b>Wellbore</b>	ANTERO McLIN B15				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	2010/03/16	10.34	65.87	52,450

<b>Design</b>	ANTERO McLIN B15 P01			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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)	(°)
	0.00	0.00	0.00	1.75

<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>Depth</b>	(ft)	(ft)	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,367.33	14.51	1.75	2,357.03	121.78	3.71	1.50	1.50	0.00	1.75	
3,102.06	14.51	1.75	3,068.32	305.78	9.32	0.00	0.00	0.00	0.00	
4,069.40	0.00	0.00	4,025.35	427.56	13.03	1.50	-1.50	0.00	180.00	
6,919.05	0.00	0.00	6,875.00	427.56	13.03	0.00	0.00	0.00	0.00	TD B15

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B15 (111159) - Slot B15
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B15 (111159)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B15		
<b>Design:</b>	ANTERO McLIN B15 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	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
100.00	0.00	0.00	100.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
200.00	0.00	0.00	200.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
300.00	0.00	0.00	300.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
400.00	0.00	0.00	400.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
500.00	0.00	0.00	500.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
600.00	0.00	0.00	600.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
700.00	0.00	0.00	700.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
800.00	0.00	0.00	800.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
900.00	0.00	0.00	900.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
SURFACE CASING @ 1000' TVD									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,366,615.30	904,976.19	39° 31' 51.584 N	107° 36' 29.395 W
KOP @ 1400' (1.5 DEG/100')									
1,500.00	1.50	1.75	1,499.99	1.31	0.04	14,366,616.61	904,976.23	39° 31' 51.597 N	107° 36' 29.395 W
1,600.00	3.00	1.75	1,599.91	5.23	0.16	14,366,620.53	904,976.35	39° 31' 51.636 N	107° 36' 29.395 W
1,700.00	4.50	1.75	1,699.69	11.77	0.36	14,366,627.07	904,976.55	39° 31' 51.700 N	107° 36' 29.395 W
1,800.00	6.00	1.75	1,799.27	20.92	0.64	14,366,636.22	904,976.83	39° 31' 51.791 N	107° 36' 29.395 W
1,900.00	7.50	1.75	1,898.57	32.66	1.00	14,366,647.96	904,977.19	39° 31' 51.907 N	107° 36' 29.395 W
2,000.00	9.00	1.75	1,997.54	47.01	1.43	14,366,662.31	904,977.62	39° 31' 52.049 N	107° 36' 29.394 W
2,100.00	10.50	1.75	2,096.09	63.93	1.95	14,366,679.23	904,978.14	39° 31' 52.216 N	107° 36' 29.394 W
2,200.00	12.00	1.75	2,194.16	83.43	2.54	14,366,698.73	904,978.73	39° 31' 52.409 N	107° 36' 29.394 W
2,300.00	13.50	1.75	2,291.70	105.49	3.21	14,366,720.79	904,979.41	39° 31' 52.627 N	107° 36' 29.393 W
2,367.33	14.51	1.75	2,357.02	121.78	3.71	14,366,737.08	904,979.90	39° 31' 52.788 N	107° 36' 29.393 W
END OF BUILD @ 2367' MD (2357' TVD) (14.51 DEG INC)									
2,400.00	14.51	1.75	2,388.65	129.96	3.96	14,366,745.26	904,980.15	39° 31' 52.869 N	107° 36' 29.393 W
2,500.00	14.51	1.75	2,485.46	155.00	4.72	14,366,770.30	904,980.91	39° 31' 53.116 N	107° 36' 29.392 W
2,600.00	14.51	1.75	2,582.27	180.04	5.49	14,366,795.35	904,981.68	39° 31' 53.364 N	107° 36' 29.392 W
2,700.00	14.51	1.75	2,679.08	205.09	6.25	14,366,820.39	904,982.44	39° 31' 53.611 N	107° 36' 29.392 W
2,800.00	14.51	1.75	2,775.89	230.13	7.01	14,366,845.43	904,983.20	39° 31' 53.859 N	107° 36' 29.391 W
2,900.00	14.51	1.75	2,872.70	255.17	7.78	14,366,870.48	904,983.97	39° 31' 54.107 N	107° 36' 29.391 W
3,000.00	14.51	1.75	2,969.51	280.22	8.54	14,366,895.52	904,984.73	39° 31' 54.354 N	107° 36' 29.390 W
3,102.06	14.51	1.75	3,068.32	305.78	9.32	14,366,921.08	904,985.51	39° 31' 54.607 N	107° 36' 29.390 W
START DROP @ 3102' MD (3069' TVD) (1.5 DEG/100')									
3,200.00	13.04	1.75	3,163.44	329.09	10.03	14,366,944.39	904,986.22	39° 31' 54.837 N	107° 36' 29.389 W
3,263.07	12.09	1.75	3,225.00	342.80	10.45	14,366,958.11	904,986.64	39° 31' 54.973 N	107° 36' 29.389 W
MESAVERDE									
3,300.00	11.54	1.75	3,261.14	350.36	10.68	14,366,965.66	904,986.87	39° 31' 55.048 N	107° 36' 29.389 W
3,400.00	10.04	1.75	3,359.37	369.08	11.25	14,366,984.38	904,987.44	39° 31' 55.233 N	107° 36' 29.388 W
3,500.00	8.54	1.75	3,458.06	385.21	11.74	14,367,000.51	904,987.93	39° 31' 55.392 N	107° 36' 29.388 W
3,600.00	7.04	1.75	3,557.13	398.76	12.15	14,367,014.06	904,988.34	39° 31' 55.526 N	107° 36' 29.388 W
3,700.00	5.54	1.75	3,656.53	409.72	12.49	14,367,025.02	904,988.68	39° 31' 55.634 N	107° 36' 29.388 W
3,800.00	4.04	1.75	3,756.17	418.06	12.74	14,367,033.36	904,988.93	39° 31' 55.717 N	107° 36' 29.387 W
3,900.00	2.54	1.75	3,856.01	423.80	12.92	14,367,039.10	904,989.11	39° 31' 55.773 N	107° 36' 29.387 W
4,000.00	1.04	1.75	3,955.96	426.93	13.01	14,367,042.23	904,989.20	39° 31' 55.804 N	107° 36' 29.387 W
4,069.05	0.01	1.75	4,025.00	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
PRICE COAL									
4,069.40	0.00	0.00	4,025.35	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
END OF DROP @ 4069' MD (4025' TVD)									
4,100.00	0.00	0.00	4,055.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
4,200.00	0.00	0.00	4,155.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B15 (111159) - Slot B15
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B15 (111159)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B15		
<b>Design:</b>	ANTERO McLIN B15 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
4,300.00	0.00	0.00	4,255.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
4,400.00	0.00	0.00	4,355.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
4,500.00	0.00	0.00	4,455.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
4,600.00	0.00	0.00	4,555.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
4,700.00	0.00	0.00	4,655.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
4,769.05	0.00	0.00	4,725.00	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
TOP GAS - TOP GAS B15									
4,800.00	0.00	0.00	4,755.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
4,900.00	0.00	0.00	4,855.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,000.00	0.00	0.00	4,955.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,100.00	0.00	0.00	5,055.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,200.00	0.00	0.00	5,155.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,300.00	0.00	0.00	5,255.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,400.00	0.00	0.00	5,355.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,500.00	0.00	0.00	5,455.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,600.00	0.00	0.00	5,555.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,669.05	0.00	0.00	5,625.00	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
CAMEO									
5,700.00	0.00	0.00	5,655.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,800.00	0.00	0.00	5,755.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
5,900.00	0.00	0.00	5,855.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,000.00	0.00	0.00	5,955.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,100.00	0.00	0.00	6,055.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,200.00	0.00	0.00	6,155.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,300.00	0.00	0.00	6,255.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,400.00	0.00	0.00	6,355.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,500.00	0.00	0.00	6,455.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,600.00	0.00	0.00	6,555.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,700.00	0.00	0.00	6,655.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,769.05	0.00	0.00	6,725.00	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
ROLLINS									
6,800.00	0.00	0.00	6,755.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,900.00	0.00	0.00	6,855.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
6,919.00	0.00	0.00	6,874.95	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
PROPOSED TD @ 6919' MD (6875' TVD)									
6,919.05	0.00	0.00	6,875.00	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
TD B15									

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
TOP GAS B15 - plan hits target center - Circle (radius 25.00)	0.00	360.00	4,725.00	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W
TD B15 - plan hits target center - Circle (radius 25.00)	0.00	360.00	6,875.00	427.56	13.03	14,367,042.86	904,989.22	39° 31' 55.811 N	107° 36' 29.387 W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B15 (111159) - Slot B15
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B15 (111159)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B15		
<b>Design:</b>	ANTERO McLIN B15 P01		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	SURFACE CASING @ 1000' TVD	9.62	12.25	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,263.07	3,225.00	MESAVERDE		0.00	
4,069.05	4,025.00	PRICE COAL		0.00	
4,769.05	4,725.00	TOP GAS		0.00	
5,669.05	5,625.00	CAMEO		0.00	
6,769.05	6,725.00	ROLLINS		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,400.00	1,400.00	0.00	0.00	KOP @ 1400' (1.5 DEG/100')	
2,367.33	2,357.02	121.78	3.71	END OF BUILD @ 2367' MD (2357' TVD) (14.51 DEG INC)	
3,102.06	3,068.32	305.78	9.32	START DROP @ 3102' MD (3069' TVD) (1.5 DEG/100')	
4,069.40	4,025.35	427.56	13.03	END OF DROP @ 4069' MD (4025' TVD)	
6,919.00	6,874.95	427.56	13.03	PROPOSED TD @ 6919' MD (6875' TVD)	