

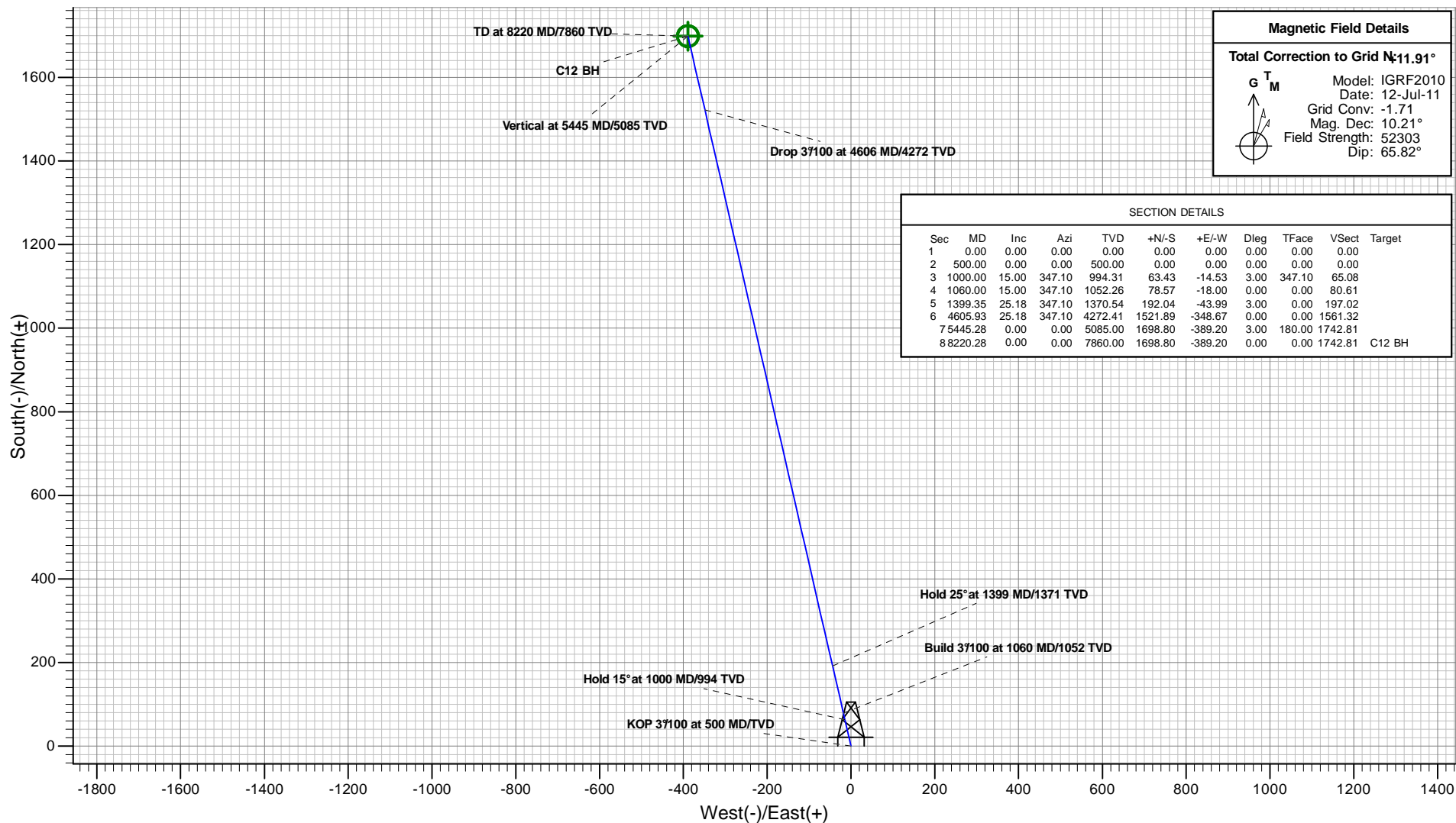


PLAN VIEW

Antero Resources

C12 (111371)

Project: Robinson
Site: Robinson C Pad
Well: C12 (111371)
Wellbore: C12
Design: C12_P01



Plan: C12_P01
Created By: ARK Directional Services
Date: 14:05, April 13 2011

PROJECT DETAILS: Robinson

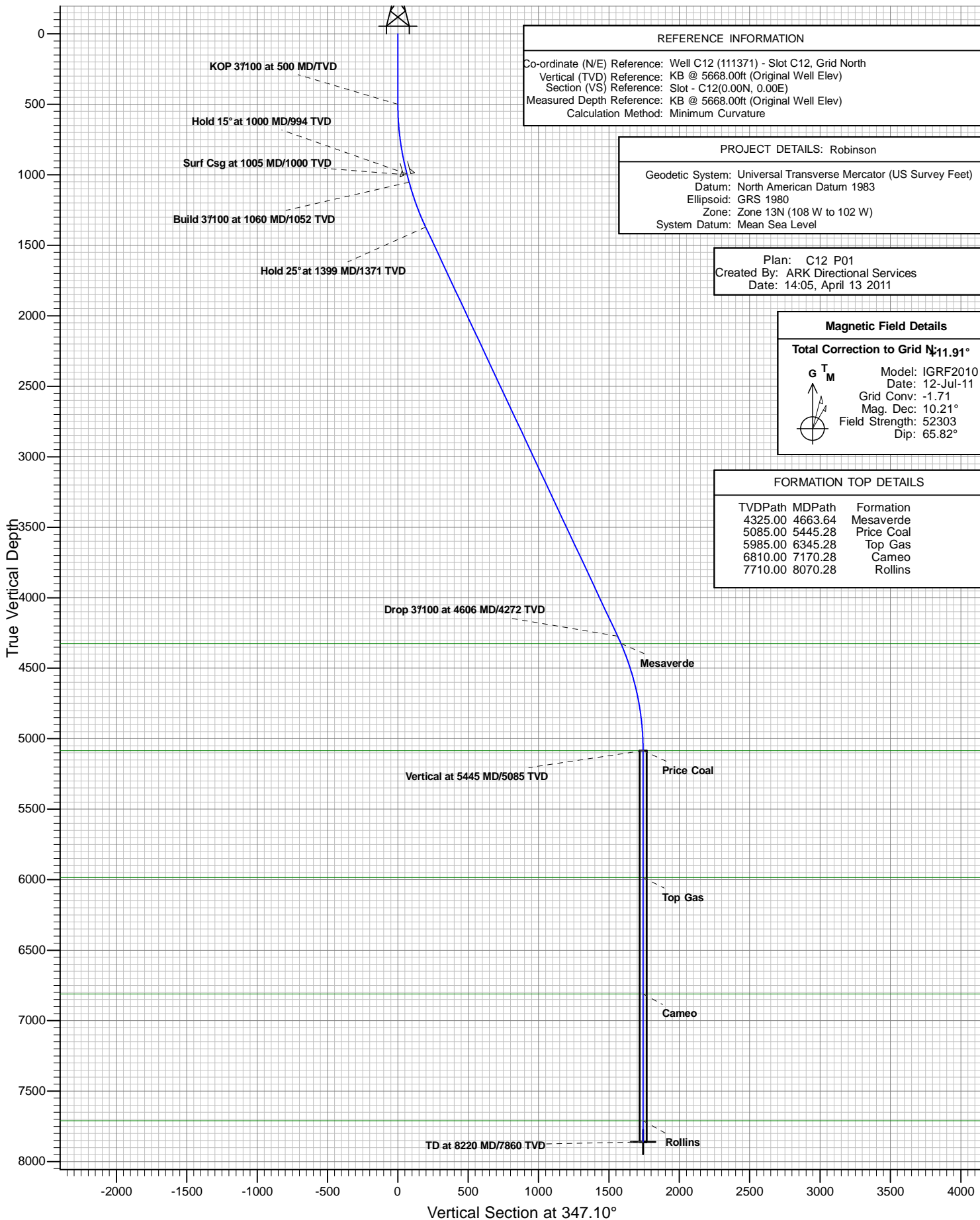
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Zone 13N (108 W to 102 W)
System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well C12 (111371) - Slot C12, Grid North
Vertical (TVD) Reference: KB @ 5668.00ft (Original Well Elev)
Section (VS) Reference: Slot - C12(0.00N, 0.00E)
Measured Depth Reference: KB @ 5668.00ft (Original Well Elev)
Calculation Method: Minimum Curvature

C12 (111371)

VERTICAL SECTION VIEW



Antero Resources

Robinson

Robinson C Pad

C12 (111371) - Slot C12

C12

Plan: C12 P01

Standard Planning Report - Geographic

13 April, 2011

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well C12 (111371) - Slot C12
Company:	Antero Resources	TVD Reference:	KB @ 5668.00ft (Original Well Elev)
Project:	Robinson	MD Reference:	KB @ 5668.00ft (Original Well Elev)
Site:	Robinson C Pad	North Reference:	Grid
Well:	C12 (111371)	Survey Calculation Method:	Minimum Curvature
Wellbore:	C12		
Design:	C12 P01		

Project	Robinson		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Robinson C Pad		
Site Position:		Northing:	14,365,851.290 usft
From:	Map	Easting:	884,005.040 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in
		Latitude:	39.527207654°N
		Longitude:	107.682381321°W
		Grid Convergence:	-1.71 °

Well	C12 (111371) - Slot C12		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	C12				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	2011/07/12	10.21	65.82	52,303

Design	C12 P01				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	347.10	

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	15.00	347.10	994.31	63.43	-14.53	3.00	3.00	0.00	347.10	
1,060.00	15.00	347.10	1,052.26	78.57	-18.00	0.00	0.00	0.00	0.00	
1,399.35	25.18	347.10	1,370.54	192.04	-43.99	3.00	3.00	0.00	0.00	
4,605.93	25.18	347.10	4,272.41	1,521.89	-348.67	0.00	0.00	0.00	0.00	
5,445.28	0.00	0.00	5,085.00	1,698.80	-389.20	3.00	-3.00	0.00	180.00	
8,220.28	0.00	0.00	7,860.00	1,698.80	-389.20	0.00	0.00	0.00	0.00	C12 BH

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well C12 (111371) - Slot C12
Company:	Antero Resources	TVD Reference:	KB @ 5668.00ft (Original Well Elev)
Project:	Robinson	MD Reference:	KB @ 5668.00ft (Original Well Elev)
Site:	Robinson C Pad	North Reference:	Grid
Well:	C12 (111371)	Survey Calculation Method:	Minimum Curvature
Wellbore:	C12		
Design:	C12 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	14,365,861.137	884,099.529	39.527242397°N	107.682047629°W
100.00	0.00	0.00	100.00	0.00	0.00	14,365,861.137	884,099.529	39.527242397°N	107.682047629°W
200.00	0.00	0.00	200.00	0.00	0.00	14,365,861.137	884,099.529	39.527242397°N	107.682047629°W
300.00	0.00	0.00	300.00	0.00	0.00	14,365,861.137	884,099.529	39.527242397°N	107.682047629°W
400.00	0.00	0.00	400.00	0.00	0.00	14,365,861.137	884,099.529	39.527242397°N	107.682047629°W
500.00	0.00	0.00	500.00	0.00	0.00	14,365,861.137	884,099.529	39.527242397°N	107.682047629°W
KOP 3°/100 at 500 MD/TVD									
600.00	3.00	347.10	599.95	2.55	-0.58	14,365,863.688	884,098.945	39.527249348°N	107.682049969°W
700.00	6.00	347.10	699.63	10.20	-2.34	14,365,871.335	884,097.193	39.527270184°N	107.682056981°W
800.00	9.00	347.10	798.77	22.92	-5.25	14,365,884.057	884,094.280	39.527304846°N	107.682068646°W
900.00	12.00	347.10	897.08	40.68	-9.32	14,365,901.818	884,090.212	39.527353241°N	107.682084933°W
1,000.00	15.00	347.10	994.31	63.43	-14.53	14,365,924.571	884,085.001	39.527415234°N	107.682105797°W
Hold 15° at 1000 MD/994 TVD									
1,005.00	15.00	347.10	999.14	64.70	-14.82	14,365,925.832	884,084.712	39.527418671°N	107.682106953°W
Surf Csg at 1005 MD/1000 TVD									
1,060.00	15.00	347.10	1,052.26	78.57	-18.00	14,365,939.708	884,081.533	39.527456477°N	107.682119681°W
Build 3°/100 at 1060 MD/1052 TVD									
1,100.00	16.20	347.10	1,090.79	89.06	-20.40	14,365,950.193	884,079.131	39.527485045°N	107.682129298°W
1,200.00	19.20	347.10	1,186.04	118.69	-27.19	14,365,979.825	884,072.342	39.527565782°N	107.682156478°W
1,300.00	22.20	347.10	1,279.58	153.14	-35.08	14,366,014.276	884,064.449	39.527659649°N	107.682188077°W
1,399.35	25.18	347.10	1,370.54	192.04	-43.99	14,366,053.180	884,055.536	39.527765651°N	107.682223762°W
Hold 25° at 1399 MD/1371 TVD									
1,400.00	25.18	347.10	1,371.13	192.31	-44.06	14,366,053.451	884,055.474	39.527766388°N	107.682224011°W
1,500.00	25.18	347.10	1,461.63	233.79	-53.56	14,366,094.923	884,045.972	39.527879386°N	107.682262051°W
1,600.00	25.18	347.10	1,552.13	275.26	-63.06	14,366,136.396	884,036.471	39.527992384°N	107.682300092°W
1,700.00	25.18	347.10	1,642.63	316.73	-72.56	14,366,177.868	884,026.969	39.528105383°N	107.682338133°W
1,800.00	25.18	347.10	1,733.12	358.20	-82.06	14,366,219.340	884,017.468	39.528218381°N	107.682376173°W
1,900.00	25.18	347.10	1,823.62	399.68	-91.56	14,366,260.813	884,007.966	39.528331379°N	107.682414215°W
2,000.00	25.18	347.10	1,914.12	441.15	-101.06	14,366,302.285	883,998.465	39.528444377°N	107.682452256°W
2,100.00	25.18	347.10	2,004.61	482.62	-110.57	14,366,343.758	883,988.963	39.528557376°N	107.682490297°W
2,200.00	25.18	347.10	2,095.11	524.09	-120.07	14,366,385.230	883,979.462	39.528670374°N	107.682528338°W
2,300.00	25.18	347.10	2,185.61	565.57	-129.57	14,366,426.702	883,969.960	39.528783372°N	107.682566380°W
2,400.00	25.18	347.10	2,276.11	607.04	-139.07	14,366,468.175	883,960.459	39.528896370°N	107.682604422°W
2,500.00	25.18	347.10	2,366.60	648.51	-148.57	14,366,509.647	883,950.957	39.529009368°N	107.682642464°W
2,600.00	25.18	347.10	2,457.10	689.98	-158.07	14,366,551.120	883,941.456	39.529122366°N	107.682680506°W
2,700.00	25.18	347.10	2,547.60	731.46	-167.58	14,366,592.592	883,931.954	39.529235364°N	107.682718548°W
2,800.00	25.18	347.10	2,638.10	772.93	-177.08	14,366,634.065	883,922.453	39.529348362°N	107.682756590°W
2,900.00	25.18	347.10	2,728.59	814.40	-186.58	14,366,675.537	883,912.951	39.529461360°N	107.682794632°W
3,000.00	25.18	347.10	2,819.09	855.87	-196.08	14,366,717.009	883,903.450	39.529574359°N	107.682832675°W
3,100.00	25.18	347.10	2,909.59	897.35	-205.58	14,366,758.482	883,893.948	39.529687357°N	107.682870718°W
3,200.00	25.18	347.10	3,000.08	938.82	-215.08	14,366,799.954	883,884.446	39.529800355°N	107.682908760°W
3,300.00	25.18	347.10	3,090.58	980.29	-224.58	14,366,841.427	883,874.945	39.529913352°N	107.682946803°W
3,400.00	25.18	347.10	3,181.08	1,021.76	-234.09	14,366,882.899	883,865.443	39.530026350°N	107.682984846°W
3,500.00	25.18	347.10	3,271.58	1,063.24	-243.59	14,366,924.372	883,855.942	39.530139348°N	107.683022890°W
3,600.00	25.18	347.10	3,362.07	1,104.71	-253.09	14,366,965.844	883,846.440	39.530252346°N	107.683060933°W
3,700.00	25.18	347.10	3,452.57	1,146.18	-262.59	14,367,007.316	883,836.939	39.530365344°N	107.683098976°W
3,800.00	25.18	347.10	3,543.07	1,187.65	-272.09	14,367,048.789	883,827.437	39.530478342°N	107.683137020°W
3,900.00	25.18	347.10	3,633.57	1,229.13	-281.59	14,367,090.261	883,817.936	39.530591340°N	107.683175064°W
4,000.00	25.18	347.10	3,724.06	1,270.60	-291.10	14,367,131.734	883,808.434	39.530704338°N	107.683213107°W
4,100.00	25.18	347.10	3,814.56	1,312.07	-300.60	14,367,173.206	883,798.933	39.530817336°N	107.683251151°W
4,200.00	25.18	347.10	3,905.06	1,353.54	-310.10	14,367,214.679	883,789.431	39.530930333°N	107.683289196°W
4,300.00	25.18	347.10	3,995.55	1,395.02	-319.60	14,367,256.151	883,779.930	39.531043331°N	107.683327240°W
4,400.00	25.18	347.10	4,086.05	1,436.49	-329.10	14,367,297.623	883,770.428	39.531156329°N	107.683365284°W
4,500.00	25.18	347.10	4,176.55	1,477.96	-338.60	14,367,339.096	883,760.927	39.531269327°N	107.683403329°W

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well C12 (111371) - Slot C12
Company:	Antero Resources	TVD Reference:	KB @ 5668.00ft (Original Well Elev)
Project:	Robinson	MD Reference:	KB @ 5668.00ft (Original Well Elev)
Site:	Robinson C Pad	North Reference:	Grid
Well:	C12 (111371)	Survey Calculation Method:	Minimum Curvature
Wellbore:	C12		
Design:	C12 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)			
4,600.00	25.18	347.10	4,267.05	1,519.43	-348.10	14,367,380.568	883,751.425		39.531382324°N	107.683441373°W
4,605.93	25.18	347.10	4,272.41	1,521.89	-348.67	14,367,383.027	883,750.862		39.531389024°N	107.683443629°W
Drop 3°/100 at 4606 MD/4272 TVD										
4,663.64	23.45	347.10	4,325.00	1,545.05	-353.97	14,367,406.188	883,745.556		39.531452129°N	107.683464876°W
Mesaverde										
4,700.00	22.36	347.10	4,358.49	1,558.85	-357.13	14,367,419.982	883,742.396		39.531489712°N	107.683477529°W
4,800.00	19.36	347.10	4,451.93	1,593.55	-365.08	14,367,454.684	883,734.445		39.531584264°N	107.683509364°W
4,900.00	16.36	347.10	4,547.10	1,623.44	-371.93	14,367,484.573	883,727.597		39.531665700°N	107.683536782°W
5,000.00	13.36	347.10	4,643.75	1,648.43	-377.66	14,367,509.565	883,721.872		39.531733795°N	107.683559709°W
5,100.00	10.36	347.10	4,741.60	1,668.46	-382.25	14,367,529.593	883,717.283		39.531788364°N	107.683578082°W
5,200.00	7.36	347.10	4,840.40	1,683.47	-385.69	14,367,544.602	883,713.845		39.531829257°N	107.683591849°W
5,300.00	4.36	347.10	4,939.86	1,693.42	-387.96	14,367,554.550	883,711.565		39.531856362°N	107.683600975°W
5,400.00	1.36	347.10	5,039.73	1,698.28	-389.08	14,367,559.410	883,710.452		39.531869604°N	107.683605434°W
5,445.28	0.00	0.00	5,085.00	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
Vertical at 5445 MD/5085 TVD - Price Coal										
5,500.00	0.00	0.00	5,139.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
5,600.00	0.00	0.00	5,239.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
5,700.00	0.00	0.00	5,339.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
5,800.00	0.00	0.00	5,439.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
5,900.00	0.00	0.00	5,539.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,000.00	0.00	0.00	5,639.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,100.00	0.00	0.00	5,739.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,200.00	0.00	0.00	5,839.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,300.00	0.00	0.00	5,939.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,345.28	0.00	0.00	5,985.00	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
Top Gas										
6,400.00	0.00	0.00	6,039.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,500.00	0.00	0.00	6,139.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,600.00	0.00	0.00	6,239.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,700.00	0.00	0.00	6,339.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,800.00	0.00	0.00	6,439.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
6,900.00	0.00	0.00	6,539.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,000.00	0.00	0.00	6,639.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,100.00	0.00	0.00	6,739.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,170.28	0.00	0.00	6,810.00	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
Cameo										
7,200.00	0.00	0.00	6,839.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,300.00	0.00	0.00	6,939.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,400.00	0.00	0.00	7,039.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,500.00	0.00	0.00	7,139.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,600.00	0.00	0.00	7,239.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,700.00	0.00	0.00	7,339.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,800.00	0.00	0.00	7,439.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
7,900.00	0.00	0.00	7,539.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
8,000.00	0.00	0.00	7,639.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
8,070.28	0.00	0.00	7,710.00	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
Rollins										
8,100.00	0.00	0.00	7,739.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
8,200.00	0.00	0.00	7,839.72	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
8,220.25	0.00	0.00	7,859.97	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W
TD at 8220 MD/7860 TVD										
8,220.28	0.00	0.00	7,860.00	1,698.80	-389.20	14,367,559.933	883,710.332		39.531871029°N	107.683605914°W

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well C12 (111371) - Slot C12
Company:	Antero Resources	TVD Reference:	KB @ 5668.00ft (Original Well Elev)
Project:	Robinson	MD Reference:	KB @ 5668.00ft (Original Well Elev)
Site:	Robinson C Pad	North Reference:	Grid
Well:	C12 (111371)	Survey Calculation Method:	Minimum Curvature
Wellbore:	C12		
Design:	C12 P01		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
C12 BH	0.00	360.00	7,860.00	1,698.80	-389.20	14,367,559.933	883,710.332	39.531871029°N	107.683605914°W
- plan hits target center									
- Circle (radius 25.00)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,005.00	999.14	Surf Csg at 1005 MD/1000 TVD		5.50	6.00

Formations					
Measured Depth	Vertical Depth	Name		Dip	Dip Direction
(ft)	(ft)			(°)	(°)
4,663.64	4,325.00	Mesaverde			
5,445.28	5,085.00	Price Coal			
6,345.28	5,985.00	Top Gas			
7,170.28	6,810.00	Cameo			
8,070.28	7,710.00	Rollins			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
500.00	500.00	0.00	0.00	KOP 3°/100 at 500 MD/TVD	
1,000.00	994.31	63.43	-14.53	Hold 15° at 1000 MD/994 TVD	
1,060.00	1,052.26	78.57	-18.00	Build 3°/100 at 1060 MD/1052 TVD	
1,399.35	1,370.54	192.04	-43.99	Hold 25° at 1399 MD/1371 TVD	
4,605.93	4,272.41	1,521.89	-348.67	Drop 3°/100 at 4606 MD/4272 TVD	
5,445.28	5,085.00	1,698.80	-389.20	Vertical at 5445 MD/5085 TVD	
8,220.25	7,859.97	1,698.80	-389.20	TD at 8220 MD/7860 TVD	