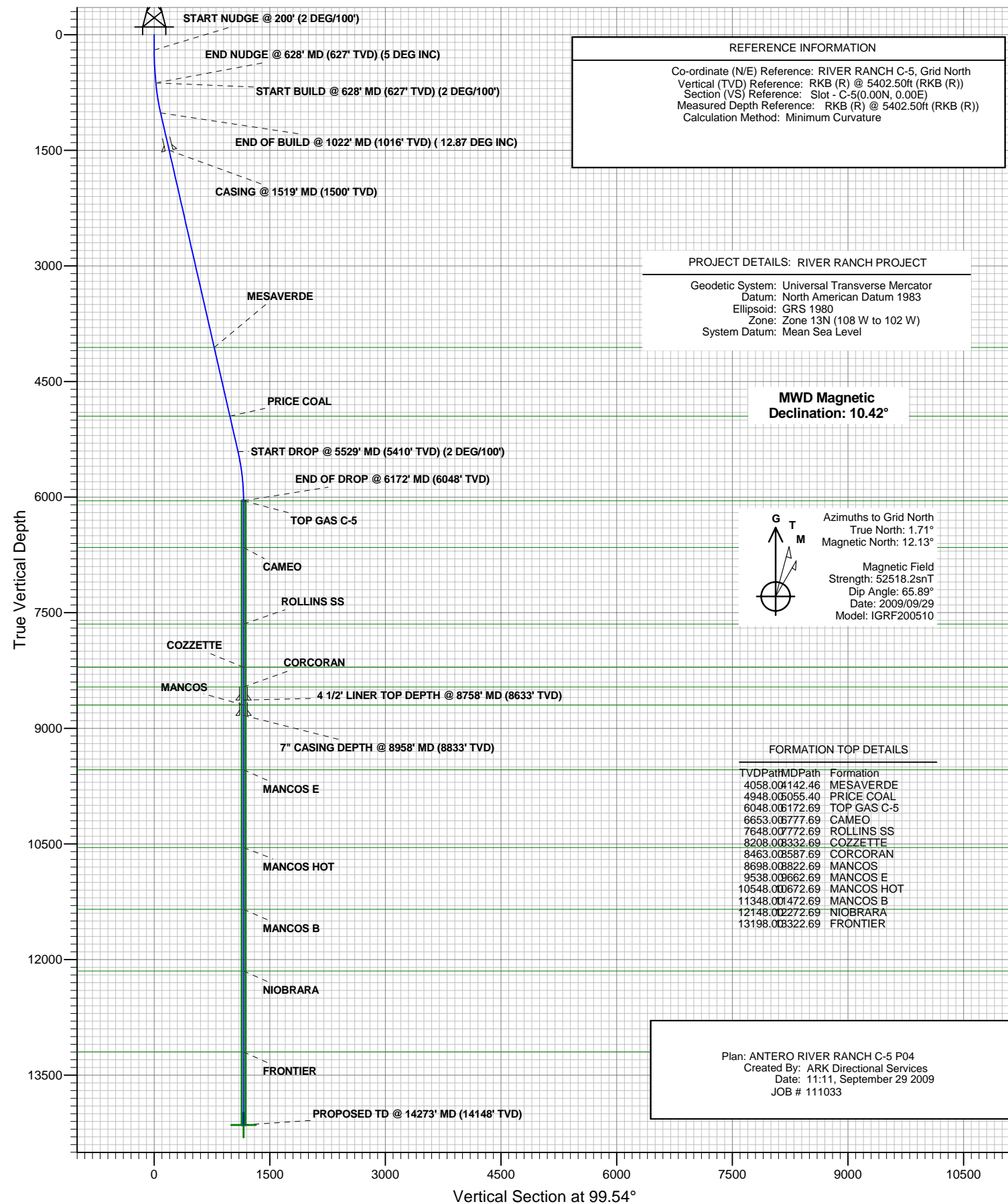




ANTERO RESOURCES

ANTERO RIVER RANCH C-5



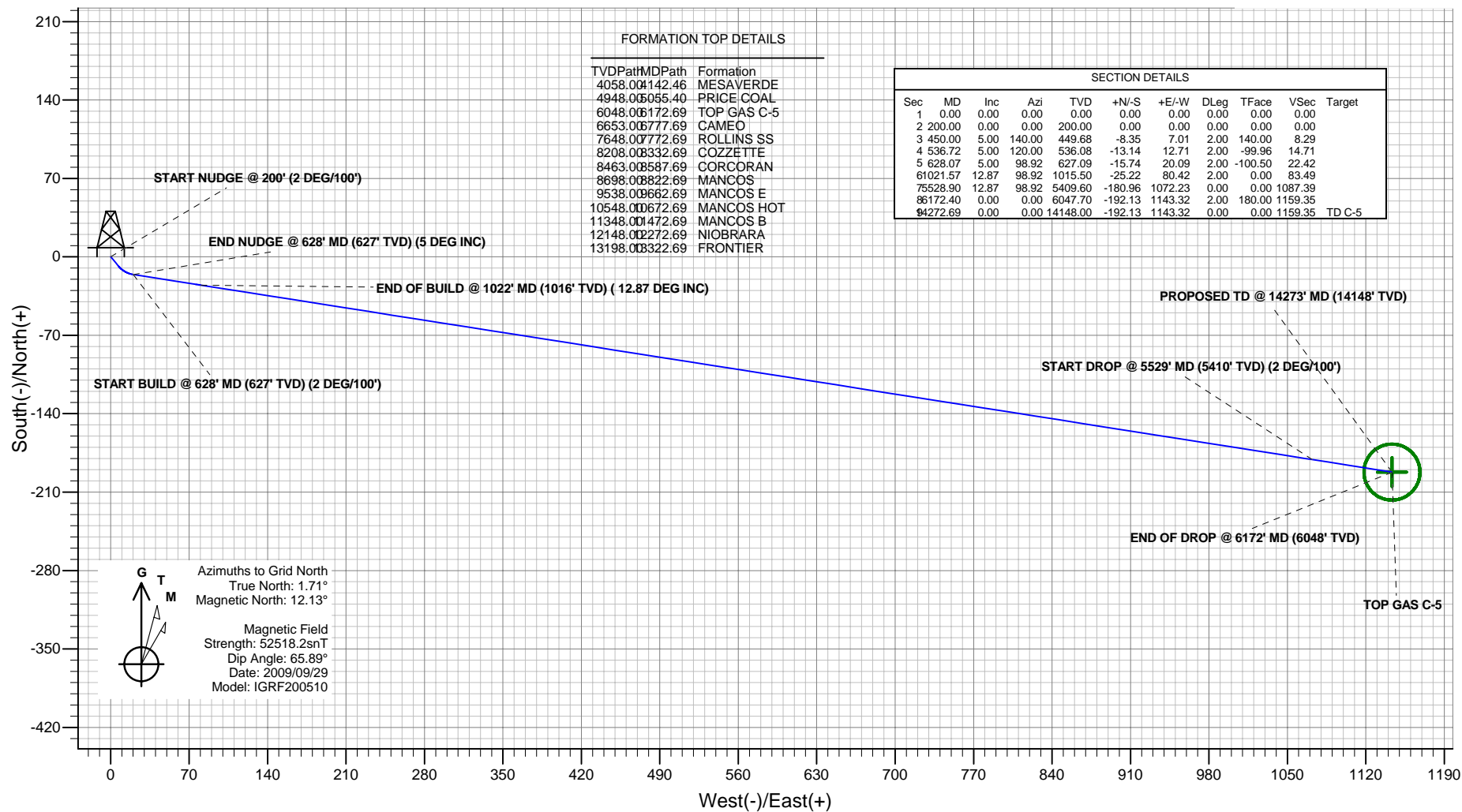


ANTERO RESOURCES

Project: RIVER RANCH PROJECT
Site: FRONTIER 14
Well: RIVER RANCH C-5 (111033)
Wellbore: ANTERO RIVER RANCH C-5
Design: ANTERO RIVER RANCH C-5 P04
JOB # 111033



PLAN VIEW



Plan: ANTERO RIVER RANCH C-5 P04
Created By: ARK Directional Services
Date: 11:14, September 29 2009

PROJECT DETAILS: RIVER 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: RIVER RANCH C-5, Grid North
Vertical (TVD) Reference: RKB (R) @ 5402.50ft (RKB (R))
Section (VS) Reference: Slot - C-5(0.00N, 0.00E)
Measured Depth Reference: RKB (R) @ 5402.50ft (RKB (R))
Calculation Method: Minimum Curvature

ANTERO RESOURCES

**RIVER RANCH PROJECT
FRONTIER 14**

Plan: ANTERO RIVER RANCH C-5 P04

Standard Planning Report - Geographic

29 September, 2009

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well RIVER RANCH C-5 (111033) - Slot C-5
Company:	ANTERO RESOURCES	TVD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Project:	RIVER RANCH PROJECT	MD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Site:	FRONTIER 14	North Reference:	Grid
Well:	RIVER RANCH C-5 (111033)	Survey Calculation Method:	Minimum Curvature
Wellbore:	ANTERO RIVER RANCH C-5		
Design:	ANTERO RIVER RANCH C-5 P04		

Project	RIVER 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 14			
Site Position:		Northing:	14,370,543.45 ft	Latitude:	39° 32' 23.485 N
From:	Map	Easting:	881,282.91 ft	Longitude:	107° 41' 33.080 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.71 °

Well	RIVER RANCH C-5 (111033) - Slot C-5					
Well Position	+N/-S	6.95 ft	Northing:	14,370,550.40 ft	Latitude:	39° 32' 23.567 N
	+E/-W	44.46 ft	Easting:	881,327.37 ft	Longitude:	107° 41' 32.515 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,384.00 ft

Wellbore	ANTERO RIVER RANCH C-5				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009/09/29	10.42	65.89	52,518

Design	ANTERO RIVER RANCH C-5 P04			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	99.54

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	
450.00	5.00	140.00	449.68	-8.35	7.01	2.00	2.00	0.00	140.00	
536.72	5.00	120.00	536.08	-13.14	12.71	2.00	0.00	-23.06	-99.96	
628.07	5.00	98.92	627.09	-15.74	20.09	2.00	0.00	-23.08	-100.50	
1,021.57	12.87	98.92	1,015.50	-25.22	80.42	2.00	2.00	0.00	0.00	
5,528.90	12.87	98.92	5,409.60	-180.96	1,072.23	0.00	0.00	0.00	0.00	
6,172.40	0.00	0.00	6,047.70	-192.13	1,143.32	2.00	-2.00	0.00	180.00	
14,272.69	0.00	0.00	14,148.00	-192.13	1,143.32	0.00	0.00	0.00	0.00	TD C-5

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well RIVER RANCH C-5 (111033) - Slot C-5
Company:	ANTERO RESOURCES	TVD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Project:	RIVER RANCH PROJECT	MD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Site:	FRONTIER 14	North Reference:	Grid
Well:	RIVER RANCH C-5 (111033)	Survey Calculation Method:	Minimum Curvature
Wellbore:	ANTERO RIVER RANCH C-5		
Design:	ANTERO RIVER RANCH C-5 P04		

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	14,370,550.40	881,327.37	39° 32' 23.567 N	107° 41' 32.515 W
100.00	0.00	0.00	100.00	0.00	0.00	14,370,550.40	881,327.37	39° 32' 23.567 N	107° 41' 32.515 W
200.00	0.00	0.00	200.00	0.00	0.00	14,370,550.40	881,327.37	39° 32' 23.567 N	107° 41' 32.515 W
START NUDGE @ 200' (2 DEG/100')									
300.00	2.00	140.00	299.98	-1.34	1.12	14,370,549.07	881,328.49	39° 32' 23.554 N	107° 41' 32.500 W
400.00	4.00	140.00	399.84	-5.35	4.49	14,370,545.06	881,331.86	39° 32' 23.515 N	107° 41' 32.456 W
450.00	5.00	140.00	449.68	-8.35	7.01	14,370,542.05	881,334.38	39° 32' 23.486 N	107° 41' 32.423 W
500.00	4.93	128.45	499.50	-11.36	10.09	14,370,539.05	881,337.46	39° 32' 23.458 N	107° 41' 32.382 W
536.72	5.00	120.00	536.08	-13.14	12.71	14,370,537.27	881,340.08	39° 32' 23.441 N	107° 41' 32.348 W
600.00	4.93	105.36	599.12	-15.23	17.72	14,370,535.17	881,345.09	39° 32' 23.422 N	107° 41' 32.283 W
628.07	5.00	98.92	627.09	-15.74	20.09	14,370,534.66	881,347.46	39° 32' 23.417 N	107° 41' 32.253 W
END NUDGE @ 628' MD (627' TVD) (5 DEG INC) - START BUILD @ 628' MD (627' TVD) (2 DEG/100')									
700.00	6.44	98.92	698.66	-16.85	27.17	14,370,533.55	881,354.54	39° 32' 23.408 N	107° 41' 32.162 W
800.00	8.44	98.92	797.81	-18.86	39.96	14,370,531.54	881,367.33	39° 32' 23.392 N	107° 41' 31.998 W
900.00	10.44	98.92	896.45	-21.40	56.16	14,370,529.00	881,383.53	39° 32' 23.372 N	107° 41' 31.791 W
1,000.00	12.44	98.92	994.46	-24.48	75.75	14,370,525.92	881,403.12	39° 32' 23.347 N	107° 41' 31.540 W
1,021.57	12.87	98.92	1,015.51	-25.22	80.42	14,370,525.19	881,407.79	39° 32' 23.342 N	107° 41' 31.480 W
END OF BUILD @ 1022' MD (1016' TVD) (12.87 DEG INC)									
1,100.00	12.87	98.92	1,091.97	-27.93	97.68	14,370,522.48	881,425.05	39° 32' 23.320 N	107° 41' 31.259 W
1,200.00	12.87	98.92	1,189.46	-31.38	119.68	14,370,519.02	881,447.05	39° 32' 23.292 N	107° 41' 30.977 W
1,300.00	12.87	98.92	1,286.94	-34.84	141.69	14,370,515.56	881,469.06	39° 32' 23.265 N	107° 41' 30.695 W
1,400.00	12.87	98.92	1,384.43	-38.29	163.69	14,370,512.11	881,491.06	39° 32' 23.237 N	107° 41' 30.413 W
1,500.00	12.87	98.92	1,481.92	-41.75	185.70	14,370,508.65	881,513.06	39° 32' 23.209 N	107° 41' 30.131 W
1,518.55	12.87	98.92	1,500.00	-42.39	189.78	14,370,508.01	881,517.15	39° 32' 23.204 N	107° 41' 30.078 W
CASING @ 1522' MD (1500' TVD)									
1,600.00	12.87	98.92	1,579.41	-45.20	207.70	14,370,505.20	881,535.07	39° 32' 23.182 N	107° 41' 29.849 W
1,700.00	12.87	98.92	1,676.90	-48.66	229.70	14,370,501.74	881,557.07	39° 32' 23.154 N	107° 41' 29.567 W
1,800.00	12.87	98.92	1,774.38	-52.11	251.71	14,370,498.29	881,579.08	39° 32' 23.126 N	107° 41' 29.285 W
1,900.00	12.87	98.92	1,871.87	-55.57	273.71	14,370,494.83	881,601.08	39° 32' 23.099 N	107° 41' 29.003 W
2,000.00	12.87	98.92	1,969.36	-59.03	295.72	14,370,491.38	881,623.09	39° 32' 23.071 N	107° 41' 28.721 W
2,100.00	12.87	98.92	2,066.85	-62.48	317.72	14,370,487.92	881,645.09	39° 32' 23.044 N	107° 41' 28.439 W
2,200.00	12.87	98.92	2,164.33	-65.94	339.73	14,370,484.47	881,667.09	39° 32' 23.016 N	107° 41' 28.157 W
2,300.00	12.87	98.92	2,261.82	-69.39	361.73	14,370,481.01	881,689.10	39° 32' 22.988 N	107° 41' 27.875 W
2,400.00	12.87	98.92	2,359.31	-72.85	383.73	14,370,477.56	881,711.10	39° 32' 22.961 N	107° 41' 27.593 W
2,500.00	12.87	98.92	2,456.80	-76.30	405.74	14,370,474.10	881,733.11	39° 32' 22.933 N	107° 41' 27.311 W
2,600.00	12.87	98.92	2,554.29	-79.76	427.74	14,370,470.65	881,755.11	39° 32' 22.906 N	107° 41' 27.029 W
2,700.00	12.87	98.92	2,651.77	-83.21	449.75	14,370,467.19	881,777.12	39° 32' 22.878 N	107° 41' 26.747 W
2,800.00	12.87	98.92	2,749.26	-86.67	471.75	14,370,463.73	881,799.12	39° 32' 22.850 N	107° 41' 26.465 W
2,900.00	12.87	98.92	2,846.75	-90.12	493.76	14,370,460.28	881,821.12	39° 32' 22.823 N	107° 41' 26.183 W
3,000.00	12.87	98.92	2,944.24	-93.58	515.76	14,370,456.82	881,843.13	39° 32' 22.795 N	107° 41' 25.901 W
3,100.00	12.87	98.92	3,041.72	-97.03	537.76	14,370,453.37	881,865.13	39° 32' 22.767 N	107° 41' 25.619 W
3,200.00	12.87	98.92	3,139.21	-100.49	559.77	14,370,449.91	881,887.14	39° 32' 22.740 N	107° 41' 25.337 W
3,300.00	12.87	98.92	3,236.70	-103.94	581.77	14,370,446.46	881,909.14	39° 32' 22.712 N	107° 41' 25.055 W
3,400.00	12.87	98.92	3,334.19	-107.40	603.78	14,370,443.00	881,931.15	39° 32' 22.685 N	107° 41' 24.773 W
3,500.00	12.87	98.92	3,431.68	-110.86	625.78	14,370,439.55	881,953.15	39° 32' 22.657 N	107° 41' 24.491 W
3,600.00	12.87	98.92	3,529.16	-114.31	647.79	14,370,436.09	881,975.15	39° 32' 22.629 N	107° 41' 24.209 W
3,700.00	12.87	98.92	3,626.65	-117.77	669.79	14,370,432.64	881,997.16	39° 32' 22.602 N	107° 41' 23.927 W
3,800.00	12.87	98.92	3,724.14	-121.22	691.79	14,370,429.18	882,019.16	39° 32' 22.574 N	107° 41' 23.645 W
3,900.00	12.87	98.92	3,821.63	-124.68	713.80	14,370,425.73	882,041.17	39° 32' 22.546 N	107° 41' 23.363 W
4,000.00	12.87	98.92	3,919.11	-128.13	735.80	14,370,422.27	882,063.17	39° 32' 22.519 N	107° 41' 23.081 W
4,100.00	12.87	98.92	4,016.60	-131.59	757.81	14,370,418.81	882,085.18	39° 32' 22.491 N	107° 41' 22.799 W
4,142.46	12.87	98.92	4,058.00	-133.06	767.15	14,370,417.35	882,094.52	39° 32' 22.479 N	107° 41' 22.679 W
MESAVERDE									
4,200.00	12.87	98.92	4,114.09	-135.04	779.81	14,370,415.36	882,107.18	39° 32' 22.464 N	107° 41' 22.517 W

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well RIVER RANCH C-5 (111033) - Slot C-5
Company:	ANTERO RESOURCES	TVD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Project:	RIVER RANCH PROJECT	MD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Site:	FRONTIER 14	North Reference:	Grid
Well:	RIVER RANCH C-5 (111033)	Survey Calculation Method:	Minimum Curvature
Wellbore:	ANTERO RIVER RANCH C-5		
Design:	ANTERO RIVER RANCH C-5 P04		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,300.00	12.87	98.92	4,211.58	-138.50	801.82	14,370,411.90	882,129.18	39° 32' 22.436 N	107° 41' 22.235 W
4,400.00	12.87	98.92	4,309.07	-141.95	823.82	14,370,408.45	882,151.19	39° 32' 22.408 N	107° 41' 21.953 W
4,500.00	12.87	98.92	4,406.55	-145.41	845.82	14,370,404.99	882,173.19	39° 32' 22.381 N	107° 41' 21.671 W
4,600.00	12.87	98.92	4,504.04	-148.86	867.83	14,370,401.54	882,195.20	39° 32' 22.353 N	107° 41' 21.389 W
4,700.00	12.87	98.92	4,601.53	-152.32	889.83	14,370,398.08	882,217.20	39° 32' 22.325 N	107° 41' 21.107 W
4,800.00	12.87	98.92	4,699.02	-155.78	911.84	14,370,394.63	882,239.21	39° 32' 22.298 N	107° 41' 20.825 W
4,900.00	12.87	98.92	4,796.50	-159.23	933.84	14,370,391.17	882,261.21	39° 32' 22.270 N	107° 41' 20.543 W
5,000.00	12.87	98.92	4,893.99	-162.69	955.85	14,370,387.72	882,283.21	39° 32' 22.243 N	107° 41' 20.261 W
5,055.40	12.87	98.92	4,948.00	-164.60	968.04	14,370,385.80	882,295.40	39° 32' 22.227 N	107° 41' 20.105 W
PRICE COAL									
5,100.00	12.87	98.92	4,991.48	-166.14	977.85	14,370,384.26	882,305.22	39° 32' 22.215 N	107° 41' 19.979 W
5,200.00	12.87	98.92	5,088.97	-169.60	999.86	14,370,380.81	882,327.22	39° 32' 22.187 N	107° 41' 19.697 W
5,300.00	12.87	98.92	5,186.46	-173.05	1,021.86	14,370,377.35	882,349.23	39° 32' 22.160 N	107° 41' 19.415 W
5,400.00	12.87	98.92	5,283.94	-176.51	1,043.86	14,370,373.90	882,371.23	39° 32' 22.132 N	107° 41' 19.133 W
5,500.00	12.87	98.92	5,381.43	-179.96	1,065.87	14,370,370.44	882,393.24	39° 32' 22.104 N	107° 41' 18.851 W
5,528.90	12.87	98.92	5,409.61	-180.96	1,072.23	14,370,369.44	882,399.59	39° 32' 22.096 N	107° 41' 18.770 W
START DROP @ 5529' MD (5410' TVD) (2 DEG/100')									
5,600.00	11.45	98.92	5,479.11	-183.28	1,087.02	14,370,367.12	882,414.39	39° 32' 22.078 N	107° 41' 18.580 W
5,700.00	9.45	98.92	5,577.45	-186.10	1,104.93	14,370,364.31	882,432.30	39° 32' 22.055 N	107° 41' 18.350 W
5,800.00	7.45	98.92	5,676.36	-188.38	1,119.45	14,370,362.03	882,446.81	39° 32' 22.037 N	107° 41' 18.164 W
5,900.00	5.45	98.92	5,775.72	-190.12	1,130.54	14,370,360.28	882,457.91	39° 32' 22.023 N	107° 41' 18.022 W
6,000.00	3.45	98.92	5,875.41	-191.32	1,138.20	14,370,359.08	882,465.57	39° 32' 22.014 N	107° 41' 17.924 W
6,100.00	1.45	98.92	5,975.32	-191.98	1,142.42	14,370,358.42	882,469.79	39° 32' 22.008 N	107° 41' 17.870 W
6,172.40	0.00	0.00	6,047.71	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
END OF DROP @ 6172' MD (6048' TVD)									
6,172.69	0.00	0.00	6,048.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
TOP GAS C-5 - TOP GAS C-5									
6,200.00	0.00	0.00	6,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
6,300.00	0.00	0.00	6,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
6,400.00	0.00	0.00	6,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
6,500.00	0.00	0.00	6,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
6,600.00	0.00	0.00	6,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
6,700.00	0.00	0.00	6,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
6,777.69	0.00	0.00	6,653.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
CAMEO									
6,800.00	0.00	0.00	6,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
6,900.00	0.00	0.00	6,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,000.00	0.00	0.00	6,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,100.00	0.00	0.00	6,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,200.00	0.00	0.00	7,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,300.00	0.00	0.00	7,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,400.00	0.00	0.00	7,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,500.00	0.00	0.00	7,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,600.00	0.00	0.00	7,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,700.00	0.00	0.00	7,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,772.69	0.00	0.00	7,648.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
ROLLINS SS									
7,800.00	0.00	0.00	7,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
7,900.00	0.00	0.00	7,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
8,000.00	0.00	0.00	7,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
8,100.00	0.00	0.00	7,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
8,200.00	0.00	0.00	8,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
8,300.00	0.00	0.00	8,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well RIVER RANCH C-5 (111033) - Slot C-5
Company:	ANTERO RESOURCES	TVD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Project:	RIVER RANCH PROJECT	MD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Site:	FRONTIER 14	North Reference:	Grid
Well:	RIVER RANCH C-5 (111033)	Survey Calculation Method:	Minimum Curvature
Wellbore:	ANTERO RIVER RANCH C-5		
Design:	ANTERO RIVER RANCH C-5 P04		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
8,332.69	0.00	0.00	8,208.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
COZZETTE										
8,400.00	0.00	0.00	8,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
8,500.00	0.00	0.00	8,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
8,587.69	0.00	0.00	8,463.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
CORCORAN										
8,600.00	0.00	0.00	8,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
8,700.00	0.00	0.00	8,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
8,757.69	0.00	0.00	8,633.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
4 1/2' LINER TOP DEPTH @ 8755' MD (8633' TVD)										
8,800.00	0.00	0.00	8,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
8,822.69	0.00	0.00	8,698.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
MANCOS										
8,900.00	0.00	0.00	8,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
8,957.69	0.00	0.00	8,833.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
7" CASING DEPTH @ 8955' MD (8833' TVD)										
9,000.00	0.00	0.00	8,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,100.00	0.00	0.00	8,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,200.00	0.00	0.00	9,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,300.00	0.00	0.00	9,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,400.00	0.00	0.00	9,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,500.00	0.00	0.00	9,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,600.00	0.00	0.00	9,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,662.69	0.00	0.00	9,538.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
MANCOS E										
9,700.00	0.00	0.00	9,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,800.00	0.00	0.00	9,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
9,900.00	0.00	0.00	9,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,000.00	0.00	0.00	9,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,100.00	0.00	0.00	9,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,200.00	0.00	0.00	10,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,300.00	0.00	0.00	10,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,400.00	0.00	0.00	10,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,500.00	0.00	0.00	10,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,600.00	0.00	0.00	10,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,672.69	0.00	0.00	10,548.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
MANCOS HOT										
10,700.00	0.00	0.00	10,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,800.00	0.00	0.00	10,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
10,900.00	0.00	0.00	10,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,000.00	0.00	0.00	10,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,100.00	0.00	0.00	10,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,200.00	0.00	0.00	11,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,300.00	0.00	0.00	11,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,400.00	0.00	0.00	11,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,472.69	0.00	0.00	11,348.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
MANCOS B										
11,500.00	0.00	0.00	11,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,600.00	0.00	0.00	11,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,700.00	0.00	0.00	11,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,800.00	0.00	0.00	11,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
11,900.00	0.00	0.00	11,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
12,000.00	0.00	0.00	11,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	
12,100.00	0.00	0.00	11,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W	

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well RIVER RANCH C-5 (111033) - Slot C-5
Company:	ANTERO RESOURCES	TVD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Project:	RIVER RANCH PROJECT	MD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Site:	FRONTIER 14	North Reference:	Grid
Well:	RIVER RANCH C-5 (111033)	Survey Calculation Method:	Minimum Curvature
Wellbore:	ANTERO RIVER RANCH C-5		
Design:	ANTERO RIVER RANCH C-5 P04		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
12,200.00	0.00	0.00	12,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
12,272.69	0.00	0.00	12,148.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
NIOBRARA									
12,300.00	0.00	0.00	12,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
12,400.00	0.00	0.00	12,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
12,500.00	0.00	0.00	12,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
12,600.00	0.00	0.00	12,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
12,700.00	0.00	0.00	12,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
12,800.00	0.00	0.00	12,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
12,900.00	0.00	0.00	12,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,000.00	0.00	0.00	12,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,100.00	0.00	0.00	12,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,200.00	0.00	0.00	13,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,300.00	0.00	0.00	13,175.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,322.69	0.00	0.00	13,198.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
FRONTIER									
13,400.00	0.00	0.00	13,275.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,500.00	0.00	0.00	13,375.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,600.00	0.00	0.00	13,475.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,700.00	0.00	0.00	13,575.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,800.00	0.00	0.00	13,675.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
13,900.00	0.00	0.00	13,775.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
14,000.00	0.00	0.00	13,875.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
14,100.00	0.00	0.00	13,975.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
14,200.00	0.00	0.00	14,075.31	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
14,272.67	0.00	0.00	14,147.98	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
PROPOSED TD @ 14273' MD (14148' TVD)									
14,272.69	0.00	0.00	14,148.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
TD C-5									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TOP GAS C-5 - plan hits target - Circle (radius 25.00)		360.00	6,048.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W
TD C-5 - plan hits target - Circle (radius 25.00)	0.00	360.00	14,148.00	-192.13	1,143.32	14,370,358.28	882,470.69	39° 32' 22.007 N	107° 41' 17.858 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
8,957.69	8,833.00	7" CASING DEPTH @ 8955' MD (8833' TVD)	7.00	7.50	
1,518.55	1,500.00	CASING @ 1522' MD (1500' TVD)	9.62	12.25	
8,757.69	8,633.00	4 1/2" LINER TOP DEPTH @ 8755' MD (8633' TVD)	7.00	7.50	

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well RIVER RANCH C-5 (111033) - Slot C-5
Company:	ANTERO RESOURCES	TVD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Project:	RIVER RANCH PROJECT	MD Reference:	RKB (R) @ 5402.50ft (RKB (R))
Site:	FRONTIER 14	North Reference:	Grid
Well:	RIVER RANCH C-5 (111033)	Survey Calculation Method:	Minimum Curvature
Wellbore:	ANTERO RIVER RANCH C-5		
Design:	ANTERO RIVER RANCH C-5 P04		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,142.46	4,058.00	MESAVERDE		0.00		
5,055.40	4,948.00	PRICE COAL		0.00		
6,172.69	6,048.00	TOP GAS C-5		0.00		
6,777.69	6,653.00	CAMEO		0.00		
7,772.69	7,648.00	ROLLINS SS		0.00		
8,332.69	8,208.00	COZZETTE		0.00		
8,587.69	8,463.00	CORCORAN		0.00		
8,822.69	8,698.00	MANCOS		0.00		
9,662.69	9,538.00	MANCOS E		0.00		
10,672.69	10,548.00	MANCOS HOT		0.00		
11,472.69	11,348.00	MANCOS B		0.00		
12,272.69	12,148.00	NIOBRARA		0.00		
13,322.69	13,198.00	FRONTIER		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.00	200.00	0.00	0.00	START NUDGE @ 200' (2 DEG/100')	
628.07	627.09	-15.74	20.09	END NUDGE @ 628' MD (627' TVD) (5 DEG INC)	
628.07	627.09	-15.74	20.09	START BUILD @ 628' MD (627' TVD) (2 DEG/100')	
1,021.57	1,015.51	-25.22	80.42	END OF BUILD @ 1022' MD (1016' TVD) (12.87 DEG INC)	
5,528.90	5,409.61	-180.96	1,072.23	START DROP @ 5529' MD (5410' TVD) (2 DEG/100')	
6,172.40	6,047.71	-192.13	1,143.32	END OF DROP @ 6172' MD (6048' TVD)	
14,272.67	14,147.98	-192.13	1,143.32	PROPOSED TD @ 14273' MD (14148' TVD)	