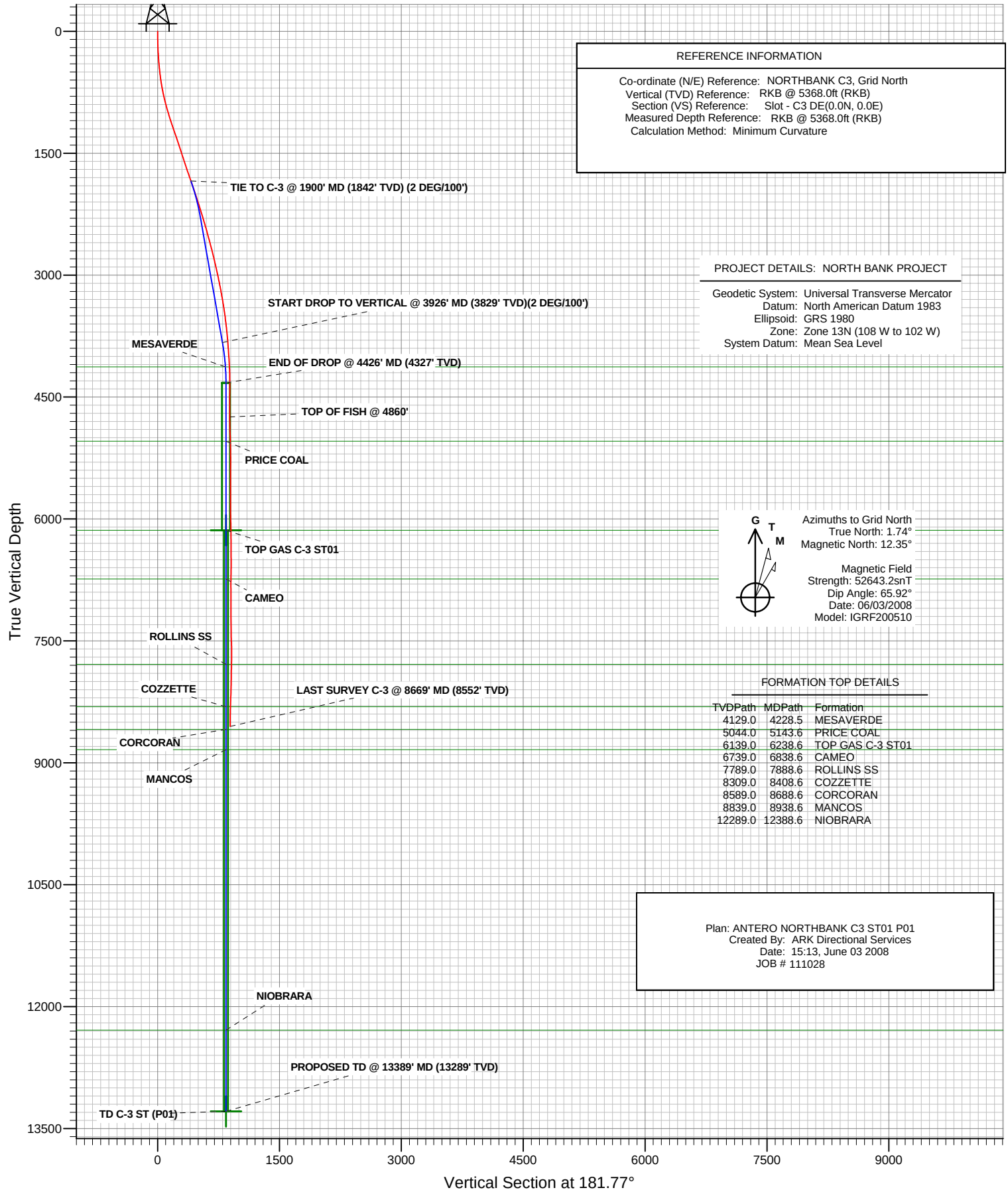
ANTERO RESOURCES

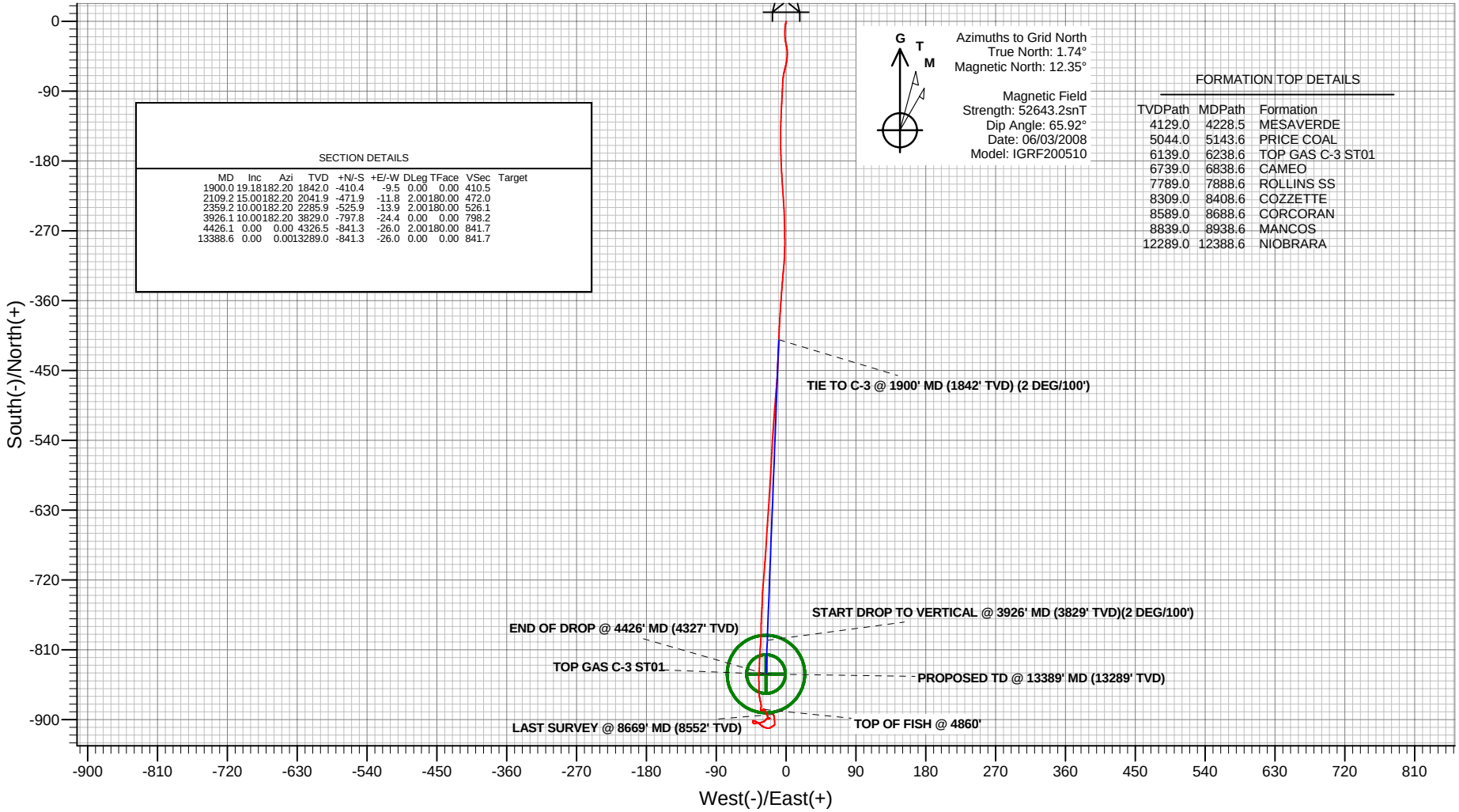
ANTERO NORTHBANK C3 ST01



ANTERO RESOURCES

Project: NORTH BANK PROJECT
Site: BRONCO 27
Well: NORTHBANK C3 (111028)
Wellbore: ANTERO NORTHBANK C3 ST01
Design: ANTERO NORTHBANK C3 ST01 P01
JOB # 111028

PLAN VIEW



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1900.0	19.18	182.20	1842.0	-410.4	-9.5	0.00	0.00	410.5	
2109.2	15.00	182.20	2041.9	-471.9	-11.8	2.00	180.00	472.0	
2359.2	10.00	182.20	2285.9	-525.9	-13.9	2.00	180.00	526.1	
3926.1	10.00	182.20	3829.0	-797.8	-24.4	0.00	0.00	798.2	
4426.1	0.00	0.00	4326.5	-841.3	-26.0	2.00	180.00	841.7	
13388.6	0.00	0.00	13289.0	-841.3	-26.0	0.00	0.00	841.7	

Azimuths to Grid North
True North: 1.74°
Magnetic North: 12.35°

Magnetic Field
Strength: 52643.2snT
Dip Angle: 65.92°
Date: 06/03/2008
Model: IGRF200510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4129.0	4228.5	MESAVERDE
5044.0	5143.6	PRICE COAL
6139.0	6238.6	TOP GAS C-3 ST01
6739.0	6838.6	CAMEO
7789.0	7888.6	ROLLINS SS
8309.0	8408.6	COZZETTE
8589.0	8688.6	CORCORAN
8839.0	8938.6	MANCOS
12289.0	12388.6	NIOBRARA

Plan: ANTERO NORTHBANK C3 ST01 P01
Created By: ARK Directional Services
Date: 15:17, June 03 2008

PROJECT DETAILS: NORTH BANK 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: NORTHBANK C3, Grid North
Vertical (TVD) Reference: RKB @ 5368.0ft (RKB)
Section (VS) Reference: Slot - C3 DE(0.0N, 0.0E)
Measured Depth Reference: RKB @ 5368.0ft (RKB)
Calculation Method: Minimum Curvature

ANTERO RESOURCES

NORTH BANK PROJECT
BRONCO 27
NORTHBANK C3 (111028) - Slot C3 DE

ANTERO NORTHBANK C3 ST01

Plan: ANTERO NORTHBANK C3 ST01 P01

Standard Planning Report

03 June, 2008

Database:	EDMDB	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Company:	ANTERO RESOURCES	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Project:	NORTH BANK PROJECT	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site:	BRONCO 27	**North Reference:**	Grid
Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ANTERO NORTHBANK C3 ST01		
Design:	ANTERO NORTHBANK C3 ST01 P01		

Project NORTH BANK 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 BRONCO 27

Site Position:		**Northing:**	14,370,670.25 ft	**Latitude:**	39° 32' 21.840 N
From:	Map	**Easting:**	871,547.27 ft	**Longitude:**	107° 43' 37.308 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	in	**Grid Convergence:**	-1.74 °

Well NORTHBANK C3 (111028) - Slot C3 DE

Well Position	**+N/-S**	8.6 ft	**Northing:**	14,370,678.89 ft	**Latitude:**	39° 32' 21.924 N
	+E/-W	-5.0 ft	**Easting:**	871,542.23 ft	**Longitude:**	107° 43' 37.376 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,351.4 ft

Wellbore ANTERO NORTHBANK C3 ST01

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	06/03/2008	10.61	65.92	52,643

Design ANTERO NORTHBANK C3 ST01 P01

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	1,900.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	181.77

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
1,900.0	19.18	182.20	1,842.0	-410.4	-9.5	0.00	0.00	0.00	0.00	
2,109.2	15.00	182.20	2,041.9	-471.9	-11.8	2.00	-2.00	0.00	180.00	
2,359.2	10.00	182.20	2,285.9	-525.9	-13.9	2.00	-2.00	0.00	180.00	
3,926.1	10.00	182.20	3,829.0	-797.8	-24.4	0.00	0.00	0.00	0.00	
4,426.1	0.00	0.00	4,326.5	-841.3	-26.0	2.00	-2.00	0.00	180.00	
13,388.6	0.00	0.00	13,289.0	-841.3	-26.0	0.00	0.00	0.00	0.00	

Database:	EDMDB	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Company:	ANTERO RESOURCES	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Project:	NORTH BANK PROJECT	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site:	BRONCO 27	**North Reference:**	Grid
Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ANTERO NORTHBANK C3 ST01		
Design:	ANTERO NORTHBANK C3 ST01 P01		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,900.0	19.18	182.20	1,842.0	-410.4	-9.5	410.5	0.00	0.00	0.00
TIE TO C-3 @ 1900' MD (1842' TVD) (2 DEG/100')									
2,000.0	17.18	182.20	1,937.0	-441.6	-10.7	441.7	2.00	-2.00	0.00
2,109.2	15.00	182.20	2,041.9	-471.9	-11.8	472.0	2.00	-2.00	0.00
2,200.0	13.18	182.20	2,130.0	-494.0	-12.7	494.1	2.00	-2.00	0.00
2,300.0	11.18	182.20	2,227.7	-515.1	-13.5	515.2	2.00	-2.00	0.00
2,359.2	10.00	182.20	2,285.9	-525.9	-13.9	526.1	2.00	-2.00	0.00
2,400.0	10.00	182.20	2,326.1	-533.0	-14.2	533.2	0.00	0.00	0.00
2,500.0	10.00	182.20	2,424.6	-550.4	-14.9	550.6	0.00	0.00	0.00
2,600.0	10.00	182.20	2,523.0	-567.7	-15.5	567.9	0.00	0.00	0.00
2,700.0	10.00	182.20	2,621.5	-585.1	-16.2	585.3	0.00	0.00	0.00
2,800.0	10.00	182.20	2,720.0	-602.4	-16.9	602.6	0.00	0.00	0.00
2,900.0	10.00	182.20	2,818.5	-619.8	-17.5	620.0	0.00	0.00	0.00
3,000.0	10.00	182.20	2,917.0	-637.1	-18.2	637.4	0.00	0.00	0.00
3,100.0	10.00	182.20	3,015.4	-654.5	-18.9	654.7	0.00	0.00	0.00
3,200.0	10.00	182.20	3,113.9	-671.8	-19.5	672.1	0.00	0.00	0.00
3,300.0	10.00	182.20	3,212.4	-689.2	-20.2	689.5	0.00	0.00	0.00
3,400.0	10.00	182.20	3,310.9	-706.5	-20.9	706.8	0.00	0.00	0.00
3,500.0	10.00	182.20	3,409.4	-723.9	-21.5	724.2	0.00	0.00	0.00
3,600.0	10.00	182.20	3,507.8	-741.2	-22.2	741.6	0.00	0.00	0.00
3,700.0	10.00	182.20	3,606.3	-758.6	-22.9	758.9	0.00	0.00	0.00
3,800.0	10.00	182.20	3,704.8	-775.9	-23.5	776.3	0.00	0.00	0.00
3,900.0	10.00	182.20	3,803.3	-793.3	-24.2	793.7	0.00	0.00	0.00
3,926.1	10.00	182.20	3,829.0	-797.8	-24.4	798.2	0.00	0.00	0.00
START DROP TO VERTICAL @ 3926' MD (3829' TVD)(2 DEG/100')									
4,000.0	8.52	182.20	3,901.9	-809.7	-24.8	810.1	2.00	-2.00	0.00
4,100.0	6.52	182.20	4,001.1	-822.8	-25.3	823.2	2.00	-2.00	0.00
4,200.0	4.52	182.20	4,100.6	-832.4	-25.7	832.8	2.00	-2.00	0.00
4,228.5	3.95	182.20	4,129.0	-834.5	-25.8	834.9	2.00	-2.00	0.00
MESAVERDE									
4,300.0	2.52	182.20	4,200.4	-838.5	-25.9	838.9	2.00	-2.00	0.00
4,400.0	0.52	182.20	4,300.4	-841.2	-26.0	841.6	2.00	-2.00	0.00
4,426.1	0.00	182.20	4,326.5	-841.3	-26.0	841.7	2.00	-2.00	0.00
END OF DROP @ 4426' MD (4327' TVD)									
4,500.0	0.00	0.00	4,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
4,600.0	0.00	0.00	4,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
4,700.0	0.00	0.00	4,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
4,800.0	0.00	0.00	4,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
4,900.0	0.00	0.00	4,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,000.0	0.00	0.00	4,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,100.0	0.00	0.00	5,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,143.6	0.00	0.00	5,044.0	-841.3	-26.0	841.7	0.00	0.00	0.00
PRICE COAL									
5,200.0	0.00	0.00	5,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,300.0	0.00	0.00	5,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,500.0	0.00	0.00	5,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,700.0	0.00	0.00	5,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
5,900.0	0.00	0.00	5,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,100.0	0.00	0.00	6,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00

Database:	EDMDB	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Company:	ANTERO RESOURCES	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Project:	NORTH BANK PROJECT	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site:	BRONCO 27	**North Reference:**	Grid
Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ANTERO NORTHBANK C3 ST01		
Design:	ANTERO NORTHBANK C3 ST01 P01		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,238.6	0.00	0.00	6,139.0	-841.3	-26.0	841.7	0.00	0.00	0.00
TOP GAS C-3 ST01 - TOP GAS C-3 ST01									
6,300.0	0.00	0.00	6,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,500.0	0.00	0.00	6,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,700.0	0.00	0.00	6,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
6,838.6	0.00	0.00	6,739.0	-841.3	-26.0	841.7	0.00	0.00	0.00
CAMEO									
6,900.0	0.00	0.00	6,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,100.0	0.00	0.00	7,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,200.0	0.00	0.00	7,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,300.0	0.00	0.00	7,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,400.0	0.00	0.00	7,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,500.0	0.00	0.00	7,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,600.0	0.00	0.00	7,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,700.0	0.00	0.00	7,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,800.0	0.00	0.00	7,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
7,888.6	0.00	0.00	7,789.0	-841.3	-26.0	841.7	0.00	0.00	0.00
ROLLINS SS									
7,900.0	0.00	0.00	7,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,000.0	0.00	0.00	7,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,100.0	0.00	0.00	8,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,200.0	0.00	0.00	8,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,300.0	0.00	0.00	8,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,400.0	0.00	0.00	8,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,408.6	0.00	0.00	8,309.0	-841.3	-26.0	841.7	0.00	0.00	0.00
COZZETTE									
8,500.0	0.00	0.00	8,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,600.0	0.00	0.00	8,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,688.6	0.00	0.00	8,589.0	-841.3	-26.0	841.7	0.00	0.00	0.00
CORCORAN									
8,700.0	0.00	0.00	8,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,800.0	0.00	0.00	8,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,900.0	0.00	0.00	8,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
8,938.6	0.00	0.00	8,839.0	-841.3	-26.0	841.7	0.00	0.00	0.00
MANCOS									
9,000.0	0.00	0.00	8,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,100.0	0.00	0.00	9,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,200.0	0.00	0.00	9,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,300.0	0.00	0.00	9,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,400.0	0.00	0.00	9,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,500.0	0.00	0.00	9,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,600.0	0.00	0.00	9,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,700.0	0.00	0.00	9,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,800.0	0.00	0.00	9,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
9,900.0	0.00	0.00	9,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,000.0	0.00	0.00	9,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,100.0	0.00	0.00	10,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,200.0	0.00	0.00	10,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,300.0	0.00	0.00	10,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00

Database:	EDMDB	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Company:	ANTERO RESOURCES	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Project:	NORTH BANK PROJECT	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site:	BRONCO 27	**North Reference:**	Grid
Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ANTERO NORTHBANK C3 ST01		
Design:	ANTERO NORTHBANK C3 ST01 P01		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,400.0	0.00	0.00	10,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,500.0	0.00	0.00	10,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,600.0	0.00	0.00	10,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,700.0	0.00	0.00	10,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,800.0	0.00	0.00	10,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
10,900.0	0.00	0.00	10,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,000.0	0.00	0.00	10,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,100.0	0.00	0.00	11,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,200.0	0.00	0.00	11,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,300.0	0.00	0.00	11,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,400.0	0.00	0.00	11,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,500.0	0.00	0.00	11,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,600.0	0.00	0.00	11,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,700.0	0.00	0.00	11,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,800.0	0.00	0.00	11,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
11,900.0	0.00	0.00	11,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,000.0	0.00	0.00	11,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,100.0	0.00	0.00	12,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,200.0	0.00	0.00	12,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,300.0	0.00	0.00	12,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,388.6	0.00	0.00	12,289.0	-841.3	-26.0	841.7	0.00	0.00	0.00
NIOBRARA									
12,400.0	0.00	0.00	12,300.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,500.0	0.00	0.00	12,400.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,600.0	0.00	0.00	12,500.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,700.0	0.00	0.00	12,600.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,800.0	0.00	0.00	12,700.4	-841.3	-26.0	841.7	0.00	0.00	0.00
12,900.0	0.00	0.00	12,800.4	-841.3	-26.0	841.7	0.00	0.00	0.00
13,000.0	0.00	0.00	12,900.4	-841.3	-26.0	841.7	0.00	0.00	0.00
13,100.0	0.00	0.00	13,000.4	-841.3	-26.0	841.7	0.00	0.00	0.00
13,200.0	0.00	0.00	13,100.4	-841.3	-26.0	841.7	0.00	0.00	0.00
13,300.0	0.00	0.00	13,200.4	-841.3	-26.0	841.7	0.00	0.00	0.00
13,388.5	0.00	0.00	13,288.9	-841.3	-26.0	841.7	0.00	0.00	0.00
PROPOSED TD @ 13389' MD (13289' TVD)									
13,388.6	0.00	0.00	13,289.0	-841.3	-26.0	841.7	0.00	0.00	0.00
TD C-3 ST (P01)									

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-3 ST01 - plan hits target - Circle (radius 50.0)		0.00	6,139.0	-841.3	-26.0	14,369,837.58	871,516.20	39° 32' 13.608 N	107° 43' 37.382 W
TD C-3 ST (P01) - plan hits target - Circle (radius 25.0)	0.00	0.00	13,289.0	-841.3	-26.0	14,369,837.59	871,516.23	39° 32' 13.608 N	107° 43' 37.382 W

Database:	EDMDB	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Company:	ANTERO RESOURCES	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Project:	NORTH BANK PROJECT	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site:	BRONCO 27	**North Reference:**	Grid
Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ANTERO NORTHBANK C3 ST01		
Design:	ANTERO NORTHBANK C3 ST01 P01		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,228.5	4,129.0	MESAVERDE		0.00	
5,143.6	5,044.0	PRICE COAL		0.00	
6,238.6	6,139.0	TOP GAS C-3 ST01		0.00	
6,838.6	6,739.0	CAMEO		0.00	
7,888.6	7,789.0	ROLLINS SS		0.00	
8,408.6	8,309.0	COZZETTE		0.00	
8,688.6	8,589.0	CORCORAN		0.00	
8,938.6	8,839.0	MANCOS		0.00	
12,388.6	12,289.0	NIOBRARA		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,900.0	1,842.0	-410.4	-9.5	TIE TO C-3 @ 1900' MD (1842' TVD) (2 DEG/100')
3,926.1	3,829.0	-797.8	-24.4	START DROP TO VERTICAL @ 3926' MD (3829' TVD)(2 DEG/100')
4,426.1	4,326.5	-841.3	-26.0	END OF DROP @ 4426' MD (4327' TVD)
13,388.5	13,288.9	-841.3	-26.0	PROPOSED TD @ 13389' MD (13289' TVD)

ANTERO RESOURCES

NORTH BANK PROJECT
BRONCO 27
NORTHBANK C3 (111028)

ANTERO NORTHBANK C3 ST01
ANTERO NORTHBANK C3 ST01 P01

Anticollision Report

03 June, 2008

Anticollision Report

Company:	ANTERO RESOURCES	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Project:	NORTH BANK PROJECT	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Reference Site:	BRONCO 27	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ANTERO NORTHBANK C3 ST01	**Database:**	EDMDB
Reference Design:	ANTERO NORTHBANK C3 ST01 P01	**Offset TVD Reference:**	Offset Datum

Reference ANTERO NORTHBANK C3 ST01 P01

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Travelling Cylinder
Results Limited by:	Maximum ellipse separation of 1,000.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 06/03/2008

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
1,900.0	13,388.6	ANTERO NORTHBANK C3 ST01 P01 (AN	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
BRONCO 27						
C1 EXISTING DIRECTIONAL - C1 EXISTING DIRECTIO	1,982.0	1,992.0	149.5	144.8	31.758	CC, ES
C1 EXISTING DIRECTIONAL - C1 EXISTING DIRECTIO	8,995.2	8,942.0	296.5	262.3	8.681	SF
NORTHBANK C3 (111028) - C3 EXISTING DIRECTIONA	1,992.0	1,992.0	1.1	-23.8	0.044	Level 1, CC, ES, SF

Offset Design BRONCO 27 - C1 EXISTING DIRECTIONAL - C1 EXISTING DIRECTIONAL - C1 EXISTING DIRECTIO

Survey Program: 116-MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,982.0	1,919.8	1,992.0	1,964.7	0.7	6.7	176.28	-293.7	-14.7	149.5	144.8	4.71	31.758	CC, ES
2,081.9	2,015.5	2,087.0	2,058.0	0.9	7.1	176.95	-311.8	-14.1	158.7	153.4	5.26	30.169	
2,182.3	2,112.7	2,182.0	2,151.5	1.3	7.4	176.98	-328.7	-15.1	165.8	160.0	5.77	28.737	
2,283.1	2,211.1	2,277.0	2,245.2	1.8	7.7	176.75	-344.3	-16.6	170.9	164.6	6.27	27.241	
2,382.6	2,308.9	2,372.0	2,338.9	2.2	8.0	176.36	-359.7	-18.5	173.0	166.2	6.76	25.605	
2,477.6	2,402.5	2,467.0	2,432.6	2.5	8.4	175.95	-375.3	-20.4	173.9	166.7	7.20	24.168	
2,572.6	2,496.0	2,562.0	2,526.4	2.8	8.7	175.74	-390.3	-21.7	175.4	167.8	7.64	22.967	
2,667.5	2,589.6	2,657.0	2,620.2	3.1	9.0	175.65	-405.0	-22.7	177.3	169.2	8.08	21.930	
2,762.5	2,683.1	2,752.0	2,714.2	3.4	9.3	175.59	-419.3	-23.6	179.4	170.9	8.53	21.032	
2,857.5	2,776.6	2,847.0	2,808.1	3.7	9.7	175.56	-433.5	-24.4	181.8	172.8	8.99	20.229	
2,952.5	2,870.1	2,942.0	2,902.0	4.1	10.0	175.54	-447.8	-25.2	184.0	174.5	9.45	19.475	
3,048.4	2,964.7	3,038.0	2,996.9	4.4	10.3	175.48	-462.5	-26.1	186.0	176.1	9.91	18.761	
3,142.4	3,057.2	3,132.0	3,089.7	4.8	10.6	175.41	-477.3	-27.1	187.6	177.2	10.38	18.072	
3,237.4	3,150.7	3,227.0	3,183.6	5.2	10.9	175.32	-491.3	-28.1	190.1	179.3	10.84	17.540	
3,333.3	3,245.2	3,323.0	3,278.9	5.5	11.2	175.33	-503.3	-28.9	194.8	183.5	11.30	17.248	
3,428.0	3,338.5	3,418.0	3,373.4	5.9	11.5	175.39	-513.0	-29.6	201.6	189.9	11.74	17.175	
3,522.7	3,431.7	3,513.0	3,468.0	6.3	11.7	175.50	-521.2	-30.2	210.0	197.8	12.18	17.243	
3,617.1	3,524.7	3,608.0	3,562.8	6.6	11.9	175.71	-527.5	-30.4	220.2	207.6	12.61	17.465	
3,711.2	3,617.4	3,703.0	3,657.7	7.0	12.1	176.04	-531.2	-30.2	232.9	219.9	13.03	17.879	
3,805.0	3,709.8	3,798.0	3,752.7	7.4	12.2	176.54	-532.8	-29.1	247.8	234.4	13.44	18.443	
3,898.4	3,801.7	3,893.0	3,847.7	7.7	12.4	177.15	-532.1	-27.3	265.0	251.1	13.84	19.146	
3,999.0	3,900.9	3,988.0	3,942.7	8.1	12.5	177.73	-531.2	-25.3	281.4	267.2	14.24	19.758	
4,103.6	4,004.6	4,083.0	4,037.6	8.4	12.6	178.31	-531.1	-22.8	293.9	279.3	14.62	20.102	
4,209.1	4,109.6	4,178.0	4,132.6	8.6	12.7	179.00	-531.0	-19.4	303.1	288.1	14.98	20.228	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	ANTERO RESOURCES	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Project:	NORTH BANK PROJECT	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Reference Site:	BRONCO 27	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ANTERO NORTHBANK C3 ST01	**Database:**	EDMDB
Reference Design:	ANTERO NORTHBANK C3 ST01 P01	**Offset TVD Reference:**	Offset Datum

Offset Design BRONCO 27 - C1 EXISTING DIRECTIONAL - C1 EXISTING DIRECTIONAL - C1 EXISTING DIRECTIO

Offset Site Error: 0.0 ft

Survey Program: 116-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,315.2	4,215.6	4,273.0	4,227.5	8.8	12.9	179.44	-530.8	-17.1	308.8	293.4	15.32	20.159	
4,421.7	4,322.1	4,368.0	4,322.5	8.9	13.0	179.65	-530.8	-16.0	310.7	295.1	15.63	19.882	
4,517.2	4,417.5	4,463.0	4,417.5	9.1	13.1	2.10	-531.4	-14.7	310.1	294.1	15.98	19.410	
4,612.1	4,512.5	4,558.0	4,512.5	9.2	13.3	2.38	-532.6	-13.2	309.0	292.6	16.33	18.920	
4,707.1	4,607.5	4,653.0	4,607.5	9.3	13.5	2.69	-533.9	-11.6	307.8	291.1	16.69	18.446	
4,802.1	4,702.5	4,748.0	4,702.5	9.4	13.6	2.99	-534.8	-10.0	306.9	289.8	17.04	18.007	
4,897.1	4,797.5	4,843.0	4,797.5	9.5	13.7	3.16	-535.0	-9.1	306.8	289.4	17.40	17.634	
4,992.1	4,892.5	4,938.0	4,892.5	9.7	13.9	3.26	-534.8	-8.6	307.0	289.3	17.76	17.289	
5,087.1	4,987.4	5,033.0	4,987.4	9.8	14.0	3.42	-535.4	-7.8	306.5	288.4	18.12	16.909	
5,182.1	5,082.4	5,128.0	5,082.4	9.9	14.2	3.41	-535.4	-7.8	306.4	287.9	18.49	16.574	
5,277.1	5,177.4	5,223.0	5,177.4	10.0	14.3	3.13	-534.9	-9.3	306.8	288.0	18.85	16.279	
5,372.1	5,272.4	5,318.0	5,272.4	10.2	14.5	2.77	-535.1	-11.2	306.6	287.4	19.21	15.958	
5,467.0	5,367.4	5,413.0	5,367.4	10.3	14.6	2.48	-536.1	-12.8	305.5	285.9	19.59	15.599	
5,562.0	5,462.4	5,508.0	5,462.4	10.5	14.8	2.20	-537.6	-14.4	303.9	284.0	19.96	15.226	
5,657.0	5,557.4	5,603.0	5,557.4	10.6	15.0	1.91	-538.2	-15.9	303.3	282.9	20.33	14.914	
5,752.0	5,652.3	5,698.0	5,652.3	10.7	15.1	1.58	-537.9	-17.6	303.5	282.8	20.71	14.655	
5,847.0	5,747.3	5,793.0	5,747.3	10.9	15.3	1.21	-538.4	-19.6	302.9	281.9	21.09	14.366	
5,941.9	5,842.3	5,888.0	5,842.3	11.0	15.4	0.86	-538.2	-21.5	303.2	281.7	21.47	14.122	
6,036.9	5,937.3	5,983.0	5,937.3	11.2	15.6	0.74	-537.0	-22.1	304.4	282.5	21.84	13.933	
6,132.9	6,033.3	6,079.0	6,033.3	11.4	15.7	0.80	-536.6	-21.8	304.7	282.5	22.23	13.707	
6,226.9	6,127.3	6,173.0	6,127.3	11.5	15.9	0.80	-536.7	-21.8	304.6	282.0	22.61	13.473	
6,321.9	6,222.3	6,268.0	6,222.3	11.7	16.1	0.71	-536.8	-22.2	304.6	281.6	22.99	13.246	
6,416.9	6,317.3	6,363.0	6,317.3	11.8	16.2	0.55	-536.5	-23.1	304.8	281.4	23.38	13.038	
6,511.9	6,412.3	6,458.0	6,412.3	12.0	16.4	0.35	-535.5	-24.1	305.8	282.1	23.76	12.873	
6,606.9	6,507.2	6,553.0	6,507.2	12.2	16.5	0.20	-534.3	-24.9	307.0	282.8	24.14	12.714	
6,701.9	6,602.2	6,648.0	6,602.2	12.3	16.7	0.09	-533.9	-25.5	307.4	282.9	24.53	12.530	
6,796.9	6,697.2	6,743.0	6,697.2	12.5	16.8	0.05	-533.3	-25.8	308.0	283.1	24.92	12.358	
6,891.9	6,792.2	6,838.0	6,792.2	12.7	17.0	0.04	-531.3	-25.8	310.0	284.7	25.31	12.249	
6,986.8	6,887.2	6,933.0	6,887.2	12.8	17.1	-0.06	-528.9	-26.3	312.4	286.7	25.69	12.161	
7,081.8	6,982.2	7,028.0	6,982.2	13.0	17.3	-0.29	-528.4	-27.6	312.9	286.9	26.09	11.997	
7,176.8	7,077.1	7,123.0	7,077.1	13.2	17.5	-0.59	-530.1	-29.2	311.2	284.7	26.49	11.749	
7,271.7	7,172.1	7,218.0	7,172.1	13.3	17.7	-1.07	-532.2	-31.8	309.1	282.3	26.89	11.498	
7,366.7	7,267.0	7,313.0	7,267.0	13.5	17.8	-1.55	-533.3	-34.4	308.1	280.8	27.29	11.291	
7,461.7	7,362.0	7,408.0	7,362.0	13.7	18.0	-1.57	-533.5	-34.5	308.0	280.3	27.68	11.125	
7,556.7	7,457.0	7,503.0	7,457.0	13.9	18.2	-1.19	-533.1	-32.5	308.2	280.2	28.07	10.981	
7,651.6	7,552.0	7,598.0	7,552.0	14.0	18.3	-0.95	-533.0	-31.1	308.3	279.9	28.46	10.833	
7,746.6	7,647.0	7,693.0	7,647.0	14.2	18.5	-0.94	-533.2	-31.1	308.2	279.3	28.86	10.678	
7,841.6	7,742.0	7,788.0	7,742.0	14.4	18.7	-0.97	-532.4	-31.3	308.9	279.7	29.26	10.559	
7,936.6	7,837.0	7,883.0	7,837.0	14.6	18.8	-0.98	-531.2	-31.3	310.2	280.5	29.65	10.461	
8,031.6	7,932.0	7,978.0	7,932.0	14.8	19.0	-1.05	-529.3	-31.8	312.0	282.0	30.04	10.385	
8,126.6	8,026.9	8,073.0	8,026.9	14.9	19.1	-1.22	-526.8	-32.7	314.6	284.1	30.44	10.335	
8,221.6	8,121.9	8,168.0	8,121.9	15.1	19.3	-1.42	-525.5	-33.8	315.9	285.0	30.84	10.243	
8,316.5	8,216.9	8,263.0	8,216.9	15.3	19.5	-1.70	-525.7	-35.4	315.7	284.5	31.24	10.105	
8,411.5	8,311.9	8,358.0	8,311.9	15.5	19.7	-1.95	-526.4	-36.8	315.1	283.5	31.65	9.957	
8,506.5	8,406.9	8,453.0	8,406.9	15.7	19.9	-2.11	-527.5	-37.6	314.0	281.9	32.05	9.797	
8,601.5	8,501.8	8,548.0	8,501.8	15.9	20.1	-2.23	-529.9	-38.1	311.7	279.2	32.46	9.603	
8,696.4	8,596.8	8,643.0	8,596.8	16.0	20.3	-2.37	-533.0	-38.8	308.6	275.7	32.87	9.388	
8,791.4	8,691.7	8,738.0	8,691.7	16.2	20.5	-2.46	-536.5	-39.1	305.1	271.9	33.28	9.170	
8,887.3	8,787.6	8,834.0	8,787.6	16.4	20.7	-2.45	-540.4	-38.9	301.2	267.5	33.69	8.941	
8,945.2	8,845.6	8,892.0	8,845.6	16.5	20.8	-2.42	-542.9	-38.6	298.6	264.7	33.94	8.800	
8,995.2	8,895.5	8,942.0	8,895.5	16.6	20.9	-2.37	-545.1	-38.3	296.5	262.3	34.15	8.681	SF

Anticollision Report

Company:	ANTERO RESOURCES	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Project:	NORTH BANK PROJECT	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Reference Site:	BRONCO 27	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ANTERO NORTHBANK C3 ST01	**Database:**	EDMDB
Reference Design:	ANTERO NORTHBANK C3 ST01 P01	**Offset TVD Reference:**	Offset Datum

Offset Design BRONCO 27 - NORTHBANK C3 (111028) - C3 EXISTING DIRECTIONAL - C3 EXISTING DIRECTIONA

Offset Site Error: 0.0 ft

Survey Program: 115-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,992.0	1,929.3	1,992.0	1,929.0	2.8	8.9	0.00	-440.3	-10.6	1.1	-23.8	24.90	0.044	Level 1, CC, ES, SF
2,086.8	2,020.3	2,087.0	2,019.1	2.9	9.4	8.33	-470.2	-12.4	4.4	-19.6	24.05	0.185	Level 1
2,181.4	2,111.9	2,182.0	2,109.5	3.0	9.9	10.16	-499.5	-14.7	10.3	-12.9	23.19	0.446	Level 1
2,275.6	2,203.8	2,277.0	2,200.1	3.1	10.4	8.71	-528.0	-16.8	18.5	-3.8	22.30	0.828	Level 1
2,370.3	2,296.9	2,373.0	2,291.8	3.3	10.9	6.72	-556.2	-18.5	29.2	7.7	21.42	1.362	Level 3
2,464.7	2,389.8	2,468.0	2,382.8	3.4	11.4	5.48	-583.5	-20.0	40.2	18.5	21.69	1.855	
2,559.2	2,482.8	2,563.0	2,474.2	3.6	11.9	5.06	-609.4	-21.5	49.9	28.0	21.93	2.276	
2,653.8	2,576.0	2,658.0	2,565.9	3.8	12.3	4.99	-634.3	-23.2	58.6	36.5	22.17	2.644	
2,748.4	2,669.2	2,753.0	2,657.7	4.0	12.8	4.98	-658.5	-24.8	66.6	44.2	22.40	2.973	
2,843.2	2,762.5	2,848.0	2,749.8	4.2	13.2	4.95	-681.9	-26.3	73.6	51.0	22.62	3.256	
2,938.0	2,855.9	2,943.0	2,842.1	4.5	13.7	5.12	-704.1	-27.9	79.6	56.7	22.83	3.485	
3,032.9	2,949.3	3,038.0	2,934.7	4.8	14.1	5.45	-725.3	-29.6	84.5	61.5	23.03	3.669	
3,128.8	3,043.8	3,134.0	3,028.5	5.1	14.5	5.49	-745.6	-30.8	88.3	65.0	23.23	3.800	
3,223.8	3,137.3	3,229.0	3,121.6	5.4	14.9	5.44	-764.6	-31.7	90.8	67.4	23.42	3.879	
3,318.7	3,230.9	3,324.0	3,214.9	5.7	15.2	5.28	-782.5	-32.3	92.2	68.6	23.61	3.907	
3,413.7	3,324.4	3,419.0	3,308.4	6.0	15.6	5.17	-799.2	-32.7	92.5	68.7	23.78	3.888	
3,508.7	3,418.0	3,514.0	3,402.2	6.3	15.9	5.49	-814.6	-33.8	91.4	67.5	23.94	3.819	
3,603.7	3,511.5	3,609.0	3,496.2	6.7	16.2	5.73	-828.1	-34.4	88.4	64.4	24.08	3.672	
3,697.6	3,603.9	3,703.0	3,589.4	7.0	16.5	6.10	-840.1	-34.9	84.0	59.8	24.22	3.470	
3,792.4	3,697.3	3,798.0	3,683.9	7.4	16.8	6.45	-850.5	-35.1	77.9	53.6	24.34	3.201	
3,887.1	3,790.6	3,893.0	3,778.4	7.7	17.0	6.73	-859.6	-35.0	70.5	46.1	24.46	2.883	
3,980.5	3,882.6	3,988.0	3,873.1	8.1	17.2	7.17	-867.2	-34.8	62.1	38.4	23.67	2.623	
4,073.4	3,974.6	4,083.0	3,967.9	8.3	17.4	6.74	-873.9	-33.8	55.3	33.3	22.05	2.509	
4,166.6	4,067.3	4,178.0	4,062.6	8.6	17.6	5.49	-880.3	-32.4	51.4	31.3	20.07	2.561	
4,259.9	4,160.3	4,273.0	4,157.5	8.7	17.8	5.65	-884.9	-32.5	48.9	31.6	17.36	2.818	
4,353.3	4,253.7	4,368.0	4,252.5	8.9	17.9	6.27	-887.5	-33.0	47.7	35.3	12.35	3.859	
4,447.1	4,347.5	4,463.0	4,347.5	9.0	18.0	-172.94	-888.5	-31.9	47.5	30.5	17.08	2.784	
4,542.1	4,442.5	4,558.0	4,442.5	9.1	18.1	-174.55	-888.0	-30.5	46.9	29.6	17.32	2.709	
4,637.1	4,537.4	4,653.0	4,537.4	9.2	18.2	-175.42	-887.0	-29.7	45.8	28.2	17.60	2.602	
4,732.1	4,632.4	4,748.0	4,632.4	9.4	18.3	-176.30	-886.5	-28.9	45.2	27.3	17.89	2.528	
4,832.1	4,732.4	4,848.0	4,732.4	9.5	18.4	-177.39	-886.9	-28.1	45.6	27.4	18.21	2.505	
4,927.1	4,827.4	4,943.0	4,827.4	9.6	18.5	-178.48	-888.4	-27.3	47.1	28.6	18.53	2.541	
5,022.0	4,922.4	5,038.0	4,922.4	9.7	18.7	-179.80	-890.9	-26.2	49.6	30.7	18.86	2.629	
5,119.0	5,019.3	5,135.0	5,019.3	9.9	18.8	178.50	-894.3	-24.6	53.0	33.8	19.23	2.756	
5,214.9	5,115.3	5,231.0	5,115.3	10.0	19.0	177.53	-897.1	-23.6	55.8	36.2	19.59	2.849	
5,308.9	5,209.2	5,325.0	5,209.2	10.1	19.1	177.25	-898.7	-23.3	57.4	37.5	19.95	2.878	
5,403.9	5,304.2	5,420.0	5,304.2	10.3	19.2	176.91	-899.0	-22.9	57.7	37.4	20.31	2.842	
5,483.9	5,384.2	5,500.0	5,384.2	10.4	19.3	176.54	-898.4	-22.6	57.2	36.6	20.62	2.774	
5,578.9	5,479.2	5,595.0	5,479.2	10.5	19.4	175.88	-898.1	-21.9	57.0	36.0	20.98	2.715	
5,642.9	5,543.2	5,659.0	5,543.2	10.6	19.5	175.30	-898.3	-21.3	57.2	35.9	21.24	2.692	
5,737.9	5,638.2	5,754.0	5,638.2	10.8	19.6	174.74	-898.6	-20.7	57.6	35.9	21.61	2.663	
5,833.9	5,734.2	5,850.0	5,734.2	10.9	19.7	175.39	-898.2	-21.4	57.1	35.1	21.96	2.600	
5,928.9	5,829.2	5,945.0	5,829.2	11.1	19.9	176.84	-897.8	-22.9	56.6	34.3	22.29	2.537	
6,023.8	5,924.2	6,040.0	5,924.2	11.2	20.0	178.41	-898.5	-24.4	57.2	34.5	22.65	2.525	
6,118.8	6,019.2	6,135.0	6,019.2	11.4	20.1	-179.95	-900.1	-26.1	58.8	35.8	23.02	2.554	
6,214.8	6,115.1	6,231.0	6,115.1	11.5	20.3	-178.32	-901.9	-27.8	60.6	37.2	23.41	2.590	
6,308.7	6,209.1	6,325.0	6,209.1	11.7	20.4	-176.24	-903.1	-30.1	61.9	38.1	23.82	2.598	
6,403.7	6,304.0	6,420.0	6,304.0	11.8	20.6	-173.50	-904.0	-33.2	63.1	38.8	24.28	2.599	
6,497.6	6,398.0	6,514.0	6,398.0	12.0	20.7	-170.79	-904.4	-36.3	63.9	39.2	24.76	2.582	
6,593.6	6,493.9	6,610.0	6,493.9	12.2	20.8	-168.11	-904.9	-39.4	65.0	39.7	25.29	2.569	
6,713.5	6,613.9	6,730.0	6,613.9	12.4	21.0	-165.69	-904.6	-42.2	65.3	39.4	25.92	2.520	
6,808.5	6,708.9	6,825.0	6,708.9	12.5	21.1	-164.47	-902.5	-43.0	63.5	37.1	26.37	2.408	

Company:	ANTERO RESOURCES	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Project:	NORTH BANK PROJECT	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Reference Site:	BRONCO 27	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ANTERO NORTHBANK C3 ST01	**Database:**	EDMDB
Reference Design:	ANTERO NORTHBANK C3 ST01 P01	**Offset TVD Reference:**	Offset Datum

Offset Design BRONCO 27 - NORTHBANK C3 (111028) - C3 EXISTING DIRECTIONAL - C3 EXISTING DIRECTIONA

Offset Site Error: 0.0 ft

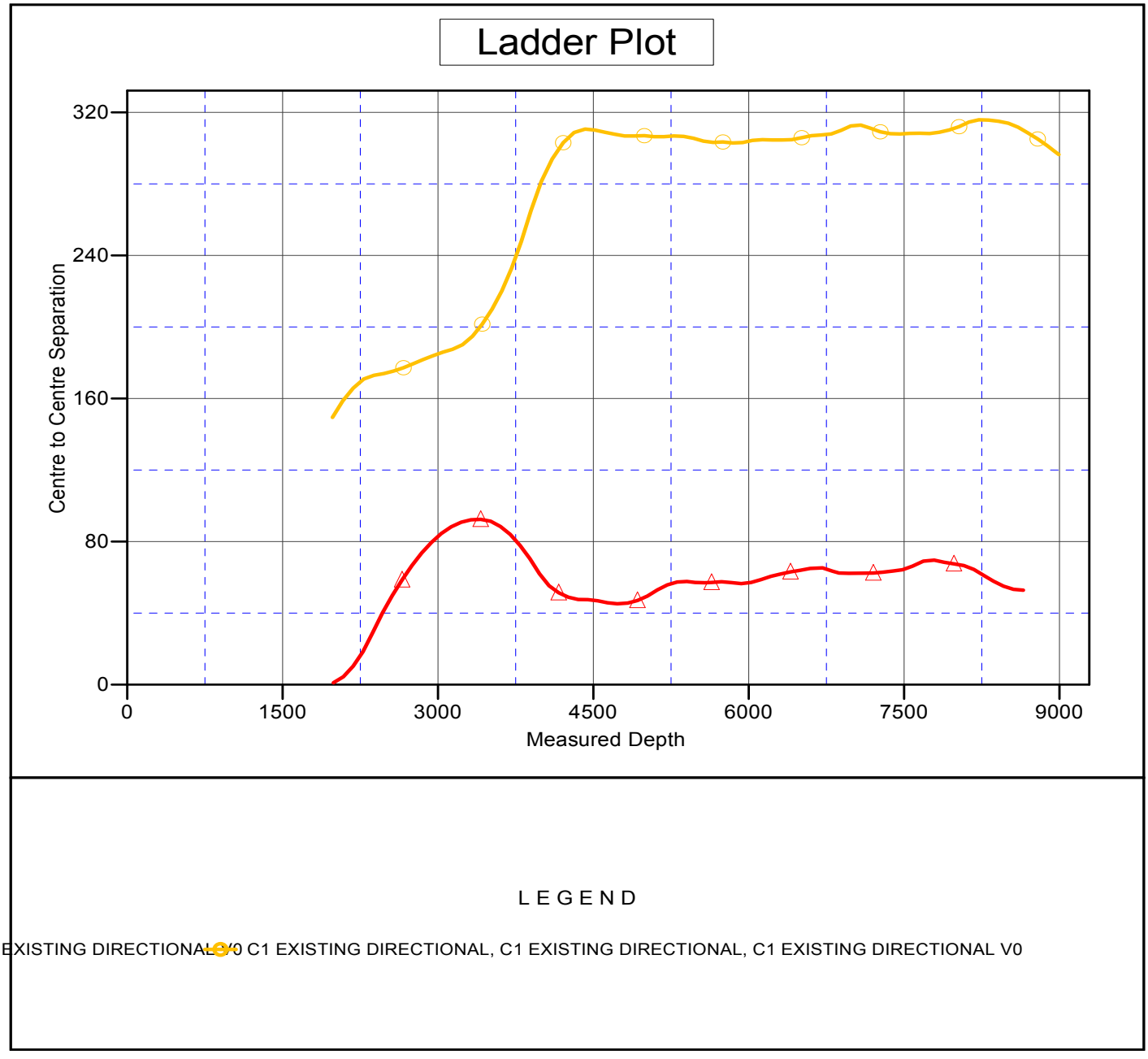
Survey Program: 115-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,872.5	6,772.9	6,889.0	6,772.9	12.6	21.2	-164.36	-901.5	-42.9	62.5	35.8	26.62	2.347	
6,966.5	6,866.9	6,983.0	6,866.9	12.8	21.3	-165.44	-901.6	-41.7	62.3	35.4	26.91	2.315	
7,109.5	7,009.8	7,126.0	7,009.8	13.1	21.5	-166.98	-902.0	-40.1	62.3	35.0	27.37	2.277	
7,203.5	7,103.8	7,220.0	7,103.8	13.2	21.6	-167.59	-902.3	-39.4	62.5	34.8	27.70	2.255	
7,298.5	7,198.8	7,315.0	7,198.8	13.4	21.8	-168.67	-903.0	-38.4	62.9	34.9	28.02	2.246	
7,392.5	7,292.8	7,409.0	7,292.8	13.6	21.9	-170.29	-903.9	-36.7	63.5	35.2	28.32	2.243	
7,486.4	7,386.8	7,503.0	7,386.8	13.8	22.1	-171.91	-905.0	-35.1	64.3	35.7	28.63	2.246	
7,582.4	7,482.7	7,599.0	7,482.7	13.9	22.3	-174.46	-907.3	-32.4	66.3	37.3	28.94	2.289	
7,687.2	7,587.5	7,704.0	7,587.5	14.1	22.4	-179.51	-910.4	-26.6	69.1	39.8	29.29	2.359	
7,792.0	7,692.4	7,809.0	7,692.4	14.3	22.6	176.07	-910.8	-21.3	69.7	39.9	29.75	2.342	
7,888.0	7,788.3	7,905.0	7,788.3	14.5	22.7	173.85	-909.4	-18.7	68.5	38.3	30.18	2.269	
7,982.9	7,883.3	8,000.0	7,883.3	14.7	22.9	172.04	-908.2	-16.7	67.6	37.0	30.61	2.207	
8,077.9	7,978.3	8,095.0	7,978.3	14.9	23.0	170.65	-907.1	-15.2	66.6	35.6	31.04	2.147	
8,173.9	8,074.2	8,191.0	8,074.2	15.1	23.1	169.88	-904.8	-14.7	64.5	33.0	31.45	2.050	
8,270.8	8,171.2	8,288.0	8,171.2	15.2	23.2	169.59	-901.4	-15.0	61.1	29.3	31.85	1.919	
8,363.8	8,264.1	8,381.0	8,264.1	15.4	23.3	169.32	-898.2	-15.3	57.9	25.6	32.23	1.795	
8,460.7	8,361.1	8,478.0	8,361.1	15.6	23.4	169.27	-895.4	-15.8	55.1	22.5	32.62	1.689	
8,556.7	8,457.1	8,574.0	8,457.1	15.8	23.6	169.49	-893.8	-16.3	53.3	20.3	33.00	1.616	
8,651.7	8,552.1	8,669.0	8,552.1	16.0	23.7	170.06	-893.4	-16.9	52.8	19.5	33.37	1.583	

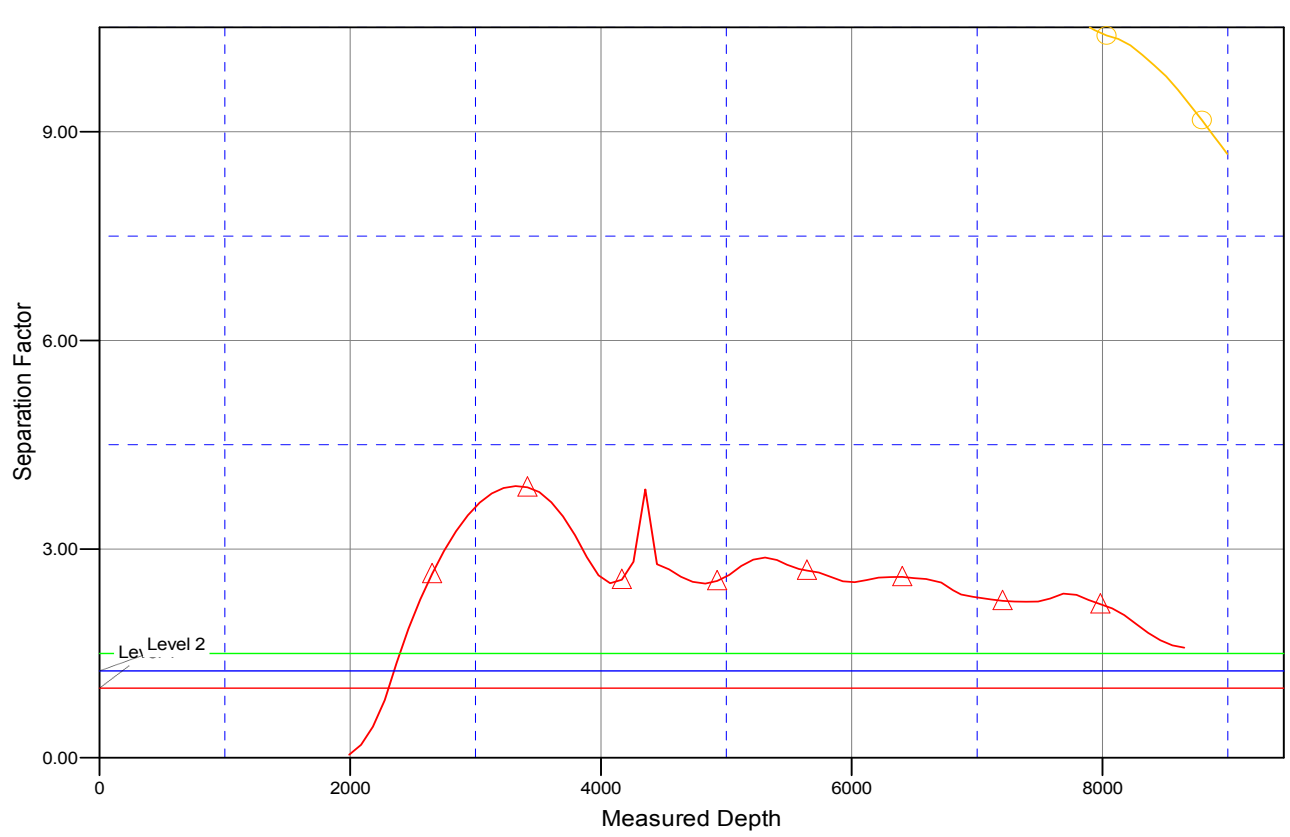
Company:	ANTERO RESOURCES	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Project:	NORTH BANK PROJECT	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Reference Site:	BRONCO 27	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ANTERO NORTHBANK C3 ST01	**Database:**	EDMDB
Reference Design:	ANTERO NORTHBANK C3 ST01 P01	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 5368.0ft (RKB)	Coordinates are relative to: NORTHBANK C3 (111028) - Slot C3 DE
Offset Depths are relative to Offset Datum	Coordinate System is Universal Transverse Mercator, Zone 13N (108 W to 102 W
Central Meridian is 105° 0' 0.000 W °	Grid Convergence at Surface is: -1.74°



Company:	ANTERO RESOURCES	**Local Co-ordinate Reference:**	Well NORTHBANK C3 (111028) - Slot C3 DE
Project:	NORTH BANK PROJECT	**TVD Reference:**	RKB @ 5368.0ft (RKB)
Reference Site:	BRONCO 27	**MD Reference:**	RKB @ 5368.0ft (RKB)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	NORTHBANK C3 (111028)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ANTERO NORTHBANK C3 ST01	**Database:**	EDMDB
Reference Design:	ANTERO NORTHBANK C3 ST01 P01	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 5368.0ft (RKB)	Coordinates are relative to: NORTHBANK C3 (111028) - Slot C3 DE
Offset Depths are relative to Offset Datum	Coordinate System is Universal Transverse Mercator, Zone 13N (108 W to 102 W
Central Meridian is 105° 0' 0.000 W °	Grid Convergence at Surface is: -1.74°



L E G E N D

EXISTING DIRECTIONAL V0 C1 EXISTING DIRECTIONAL, C1 EXISTING DIRECTIONAL, C1 EXISTING DIRECTIONAL V0

ANTERO NORTHBANK C3 ST01