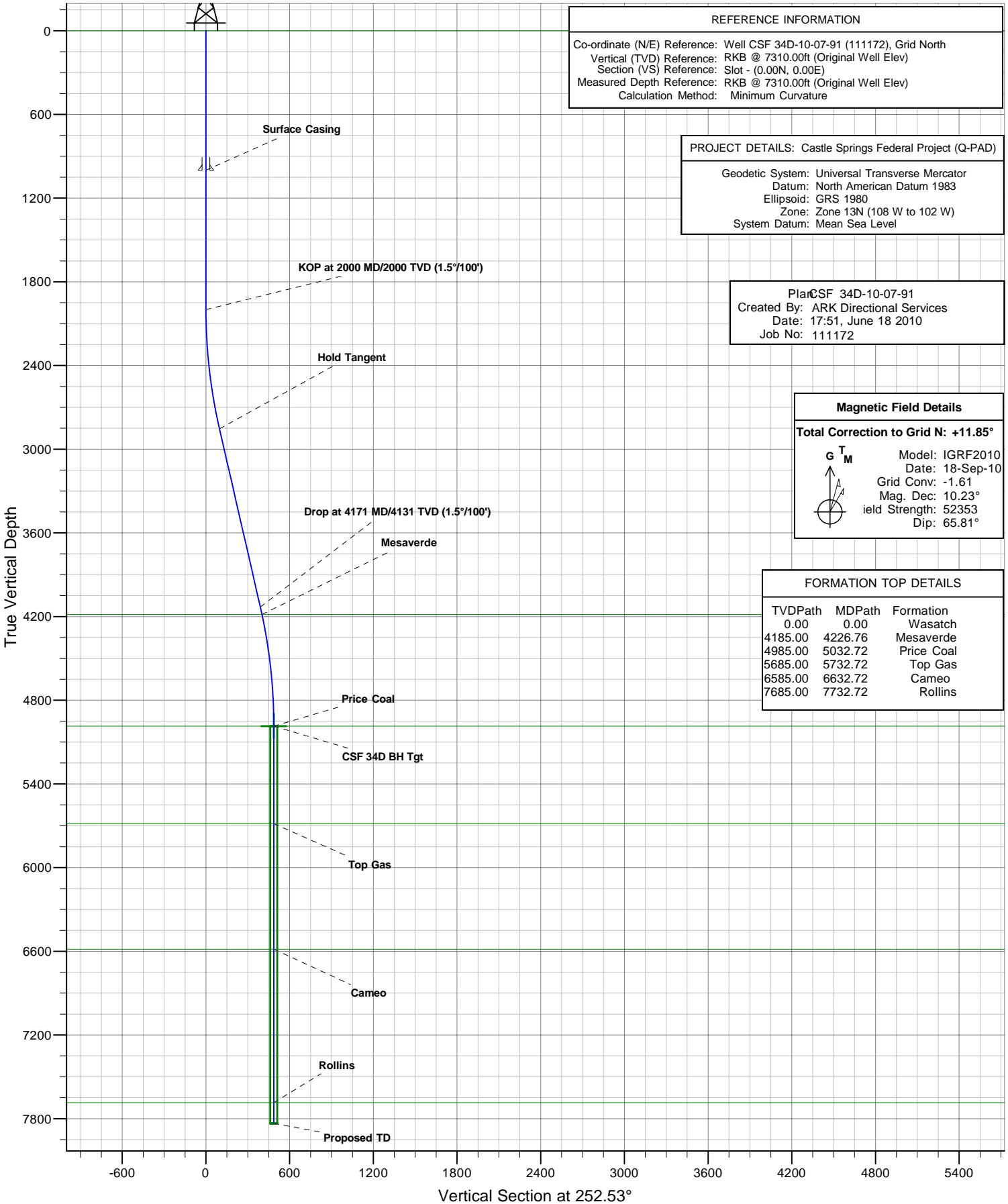




ANTERO RESOURCES

CSF 34D



REFERENCE INFORMATION
Co-ordinate (N/E) Reference: Well CSF 34D-10-07-91 (111172), Grid North
Vertical (TVD) Reference: RKB @ 7310.00ft (Original Well Elev)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: RKB @ 7310.00ft (Original Well Elev)
Calculation Method: Minimum Curvature

PROJECT DETAILS: Castle Springs Federal Project (Q-PAD)
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

Plan: CSF 34D-10-07-91
Created By: ARK Directional Services
Date: 17:51, June 18 2010
Job No: 111172

Magnetic Field Details		
Total Correction to Grid N: +11.85°		
<table border="0"> <tr> <td style="text-align: center;"> </td> <td> Model: IGRF2010 Date: 18-Sep-10 Grid Conv: -1.61 Mag. Dec: 10.23° Field Strength: 52353 Dip: 65.81° </td> </tr> </table>		Model: IGRF2010 Date: 18-Sep-10 Grid Conv: -1.61 Mag. Dec: 10.23° Field Strength: 52353 Dip: 65.81°
	Model: IGRF2010 Date: 18-Sep-10 Grid Conv: -1.61 Mag. Dec: 10.23° Field Strength: 52353 Dip: 65.81°	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
0.00	0.00	Wasatch
4185.00	4226.76	Mesaverde
4985.00	5032.72	Price Coal
5685.00	5732.72	Top Gas
6585.00	6632.72	Cameo
7685.00	7732.72	Rollins

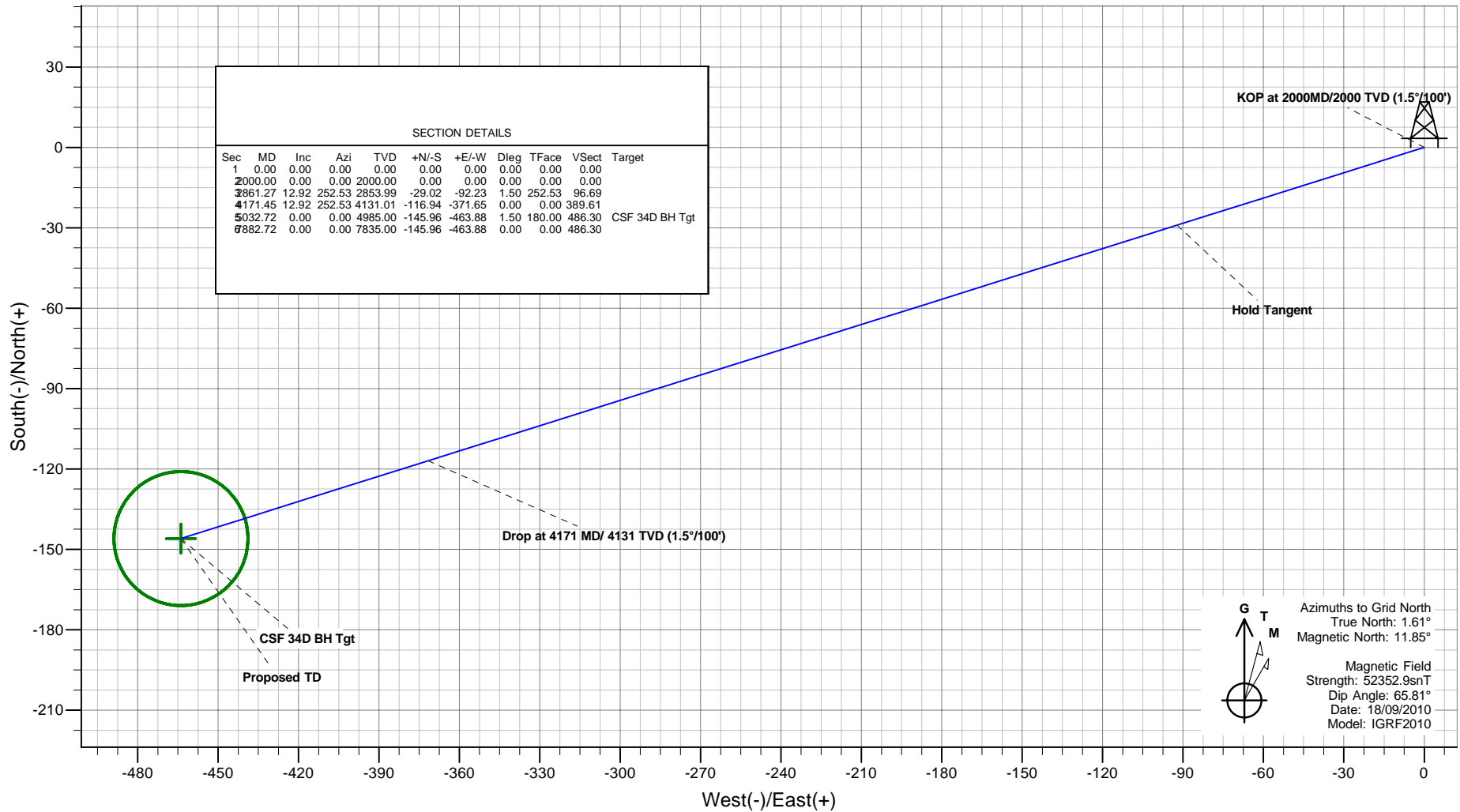


ANTERO RESOURCES



PLAN VIEW

Project: Castle Springs Federal Project (Q-PAD)
 Site: FRONTIER 12
 Well: CSF 34D-10-07-91 (111172)
 Wellbore: CSF 34D
 Design: CSF 34D-10-07-91 P01
 JOB # 111172



SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-/S	+E-/W	Dleg	TFace	VSec	Target	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00		
3	3861.27	12.92	252.53	2853.99	-29.02	-92.23	1.50	252.53	96.69		
4	4171.45	12.92	252.53	4131.01	-116.94	-371.65	0.00	0.00	389.61		
5	5032.72	0.00	0.00	4985.00	-145.96	-463.88	1.50	180.00	486.30	CSF 34D BH Tgt	
6	7882.72	0.00	0.00	7835.00	-145.96	-463.88	0.00	0.00	486.30		

G T M
 Azimuths to Grid North
 True North: 1.61°
 Magnetic North: 11.85°
 Magnetic Field
 Strength: 52352.9snT
 Dip Angle: 65.81°
 Date: 18/09/2010
 Model: IGRF2010

Plan: CSF 34D-10-07-91 P01
 Created By: ARK Directional Services
 Date: 17:46, June 18 2010

PROJECT DETAILS: Castle Springs Federal Project (Q-PAD)
 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: Well CSF 34D-10-07-91 (111172), Grid North
 Vertical (TVD) Reference: RKB @ 7310.00ft (Original Well Elev)
 Section (VS) Reference: Slot - (0.00N, 0.00E)
 Measured Depth Reference: RKB @ 7310.00ft (Original Well Elev)
 Calculation Method: Minimum Curvature

ANTERO RESOURCES

Castle Springs Federal Project (Q-PAD)

FRONTIER 12

CSF 34D-10-07-91 (111172)

CSF 34D

Plan: CSF 34D-10-07-91

Standard Planning Report - Geographic

18 June, 2010

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well CSF 34D-10-07-91 (111172)
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 7310.00ft (Original Well Elev)
Project:	Castle Springs Federal Project (Q-PAD)	MD Reference:	RKB @ 7310.00ft (Original Well Elev)
Site:	FRONTIER 12	North Reference:	Grid
Well:	CSF 34D-10-07-91 (111172)	Survey Calculation Method:	Minimum Curvature
Wellbore:	CSF 34D		
Design:	CSF 34D-10-07-91		

Project	Castle Springs Federal Project (Q-PAD)		
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 12				
Site Position:		Northing:	14,338,814.56 usft	Latitude:	39° 27' 22.523 N
From:	Lat/Long	Easting:	924,580.87 usft	Longitude:	107° 32' 9.346 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in	Grid Convergence:	-1.61 °

Well	CSF 34D-10-07-91 (111172)					
Well Position	+N/-S	0.00 ft	Northing:	14,338,826.98 usft	Latitude:	39° 27' 22.638 N
	+E/-W	0.00 ft	Easting:	924,553.56 usft	Longitude:	107° 32' 9.699 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	7,285.00 ft

Wellbore	CSF 34D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	18/09/2010	10.23	65.81	52,353

Design	CSF 34D-10-07-91				
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	252.53	

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,861.27	12.92	252.53	2,853.99	-29.02	-92.23	1.50	1.50	0.00	252.53	
4,171.45	12.92	252.53	4,131.01	-116.94	-371.65	0.00	0.00	0.00	0.00	
5,032.72	0.00	0.00	4,985.00	-145.96	-463.88	1.50	-1.50	0.00	180.00	CSF 34D BH Tgt
7,882.72	0.00	0.00	7,835.00	-145.96	-463.88	0.00	0.00	0.00	0.00	

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well CSF 34D-10-07-91 (111172)
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 7310.00ft (Original Well Elev)
Project:	Castle Springs Federal Project (Q-PAD)	MD Reference:	RKB @ 7310.00ft (Original Well Elev)
Site:	FRONTIER 12	North Reference:	Grid
Well:	CSF 34D-10-07-91 (111172)	Survey Calculation Method:	Minimum Curvature
Wellbore:	CSF 34D		
Design:	CSF 34D-10-07-91		

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	14,338,826.98	924,553.56	39° 27' 22.638 N	107° 32' 9.699 W	
Wasatch										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,338,826.98	924,553.56	39° 27' 22.638 N	107° 32' 9.699 W	
Surface Casing										
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,338,826.98	924,553.56	39° 27' 22.638 N	107° 32' 9.699 W	
KOP at 2000 MD/2000 TVD (1.5°/100')										
2,861.27	12.92	252.53	2,853.99	-29.02	-92.23	14,338,797.96	924,461.33	39° 27' 22.326 N	107° 32' 10.864 W	
Hold Tangent										
4,171.45	12.92	252.53	4,131.01	-116.94	-371.65	14,338,710.04	924,181.92	39° 27' 21.380 N	107° 32' 14.392 W	
Drop at 4171 MD/4131 TVD (1.5°/100')										
4,226.76	12.09	252.53	4,185.00	-120.54	-383.07	14,338,706.44	924,170.50	39° 27' 21.341 N	107° 32' 14.537 W	
Mesaverde										
5,032.72	0.00	0.00	4,985.00	-145.96	-463.88	14,338,681.01	924,089.69	39° 27' 21.068 N	107° 32' 15.557 W	
Price Coal										
5,732.72	0.00	0.00	5,685.00	-145.96	-463.88	14,338,681.01	924,089.69	39° 27' 21.068 N	107° 32' 15.557 W	
Top Gas										
6,632.72	0.00	0.00	6,585.00	-145.96	-463.88	14,338,681.01	924,089.69	39° 27' 21.068 N	107° 32' 15.557 W	
Cameo										
7,732.72	0.00	0.00	7,685.00	-145.96	-463.88	14,338,681.01	924,089.69	39° 27' 21.068 N	107° 32' 15.557 W	
Rollins										
7,882.72	0.00	0.00	7,835.00	-145.96	-463.88	14,338,681.01	924,089.69	39° 27' 21.068 N	107° 32' 15.557 W	
Proposed TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
CSF 34D BH Tgt	0.00	360.00	4,985.00	-145.96	-463.88	14,338,681.01	924,089.69	39° 27' 21.068 N	107° 32' 15.557 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Circle (radius 25.00)										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,000.00	1,000.00	Surface Casing	9.62	12.25		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	Wasatch		0.00		
4,226.76	4,185.00	Mesaverde				
5,032.72	4,985.00	Price Coal				
5,732.72	5,685.00	Top Gas				
6,632.72	6,585.00	Cameo				
7,732.72	7,685.00	Rollins				

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well CSF 34D-10-07-91 (111172)
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 7310.00ft (Original Well Elev)
Project:	Castle Springs Federal Project (Q-PAD)	MD Reference:	RKB @ 7310.00ft (Original Well Elev)
Site:	FRONTIER 12	North Reference:	Grid
Well:	CSF 34D-10-07-91 (111172)	Survey Calculation Method:	Minimum Curvature
Wellbore:	CSF 34D		
Design:	CSF 34D-10-07-91		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,000.00	2,000.00	0.00	0.00	KOP at 2000 MD/2000 TVD (1.5°/100')	
2,861.27	2,853.99	-29.02	-92.23	Hold Tangent	
4,171.45	4,131.01	-116.94	-371.65	Drop at 4171 MD/4131 TVD (1.5°/100')	
7,882.72	7,835.00	-145.96	-463.88	Proposed TD	