



ConocoPhillips

LA PLATA COUNTY, CO

SEC 16-T32N-R7W

Southern Ute #704

Lateral B

Plan: Plan #8

Standard Planning Report

09 April, 2010



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Southern Ute #704, True North
Vertical (TVD) Reference: DFE @ 6363.0ft (AWS 730)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: DFE @ 6363.0ft (AWS 730)
Calculation Method: Minimum Curvature

PROJECT DETAILS

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Southern Zone
System Datum: Mean Sea Level

WELL DETAILS: Southern Ute #704

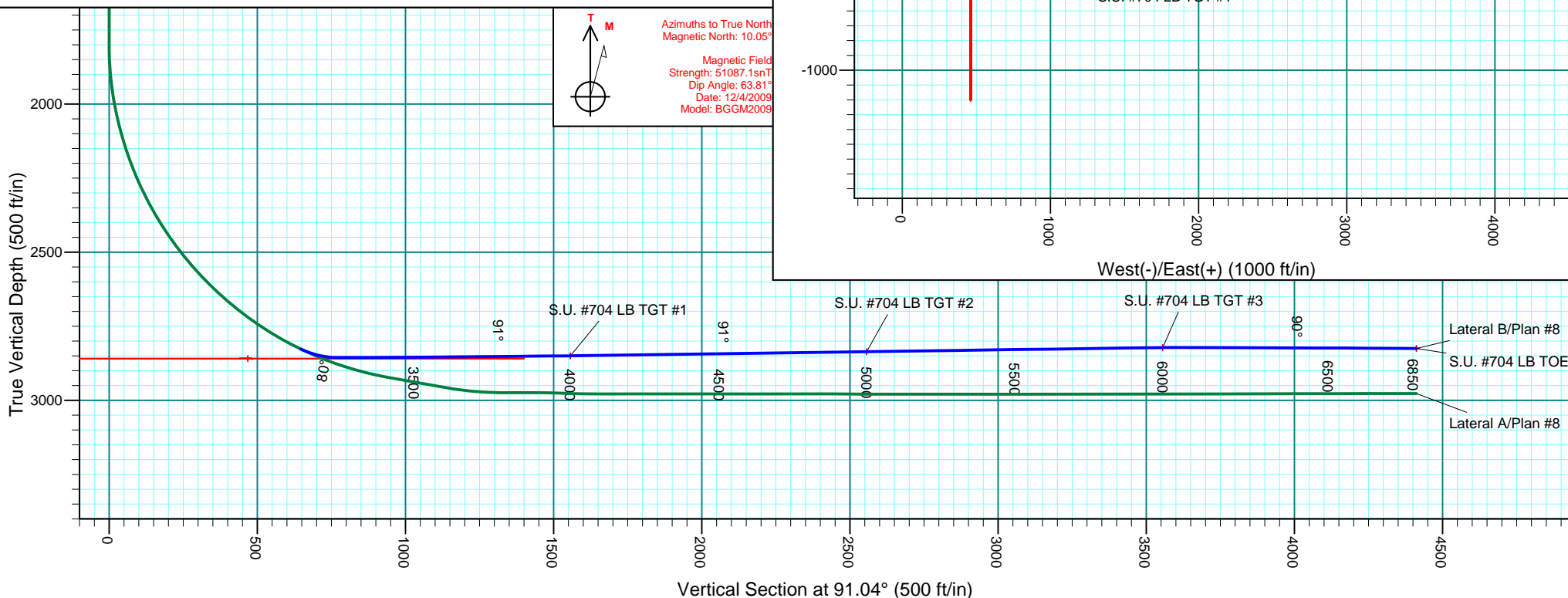
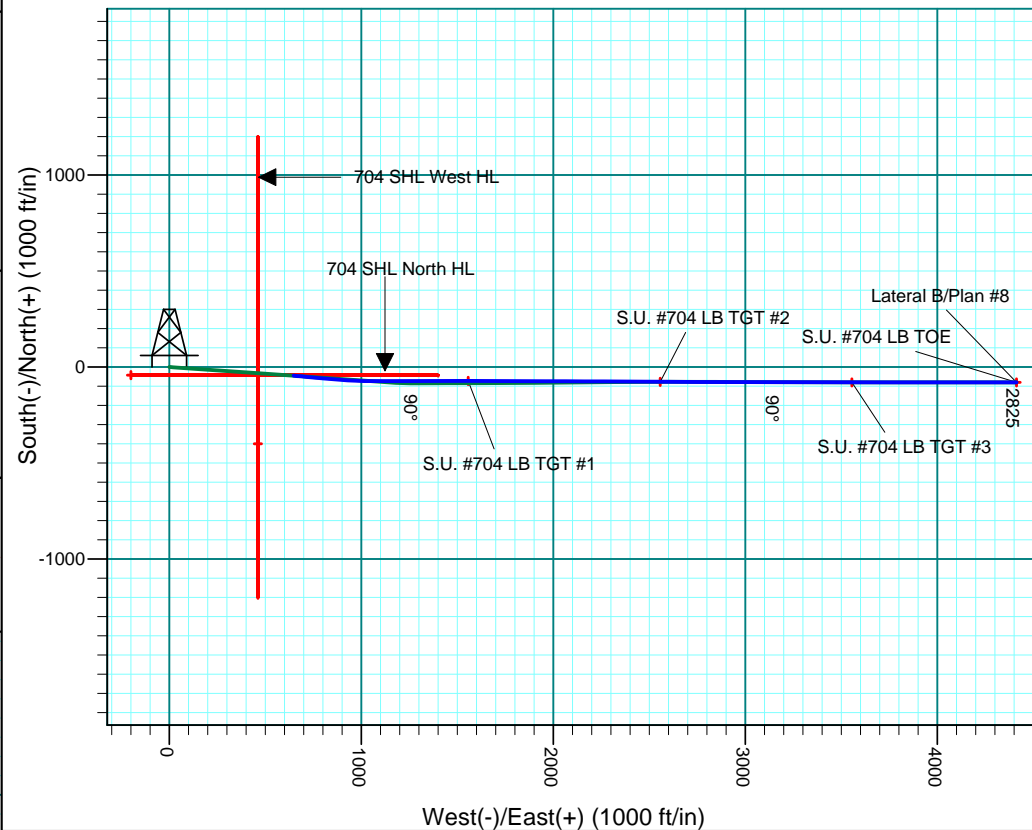
+N/-S	+E/-W	Northing	Easting	Ground Level: 6348.0	Latitude	Longitude
0.0	0.0	1136600.58	2380354.50		37° 1' 20.928 N	107° 37' 21.180 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	3080.0	64.25	94.00	2827.1	-45.2	646.5	0.00	0.00	647.2	
2	3209.2	90.00	96.18	2855.7	-56.4	770.9	20.00	5.00	771.8	
3	3524.1	90.52	89.90	2854.2	-73.1	1085.2	2.00	-85.28	1086.4	
4	3994.4	90.52	89.90	2850.0	-72.3	1555.5	0.00	0.00	1555.5	S.U. #704 LB TGT #1
5	4017.1	90.81	90.25	2849.7	-72.3	1578.1	2.00	50.59	1579.2	
6	4994.8	90.81	90.25	2836.0	-76.5	2555.8	0.00	0.00	2555.8	S.U. #704 LB TGT #2
7	5994.2	90.80	90.13	2822.0	-79.8	3555.1	0.01	-92.33	3555.9	S.U. #704 LB TGT #3
8	6046.3	89.77	89.99	2821.7	-79.9	3607.2	2.00	-172.32	3608.0	
9	6850.5	89.77	89.99	2825.0	-79.7	4411.3	0.00	0.00	4412.1	S.U. #704 LB TOE

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
S.U. #704 LB TGT #3	2822.0	-79.8	3555.1	37° 1' 20.136 N	107° 36' 37.342 W	Point
S.U. #704 LB TOE	2825.0	-79.7	4411.3	37° 1' 20.136 N	107° 36' 26.784 W	Point
S.U. #704 LB TGT #2	2836.0	-76.5	2555.8	37° 1' 20.170 N	107° 36' 49.665 W	Point
S.U. #704 LB TGT #1	2850.0	-72.3	1555.5	37° 1' 20.213 N	107° 37' 1.999 W	Point
704 SHL North HL	2859.0	-42.0	-200.0	37° 1' 20.513 N	107° 37' 23.646 W	Polygon
704 SHL West HL	2859.0	-400.0	461.0	37° 1' 16.973 N	107° 37' 15.495 W	Polygon



Azimuths to True North
Magnetic North: 10.05°
Magnetic Field
Strength: 51087.1snT
Dip Angle: 63.81°
Date: 12/4/2009
Model: BGGM2009

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Southern Ute #704
Company:	ConocoPhillips	TVD Reference:	DFE @ 6363.0ft (AWS 730)
Project:	LA PLATA COUNTY, CO	MD Reference:	DFE @ 6363.0ft (AWS 730)
Site:	SEC 16-T32N-R7W	North Reference:	True
Well:	Southern Ute #704	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral B		
Design:	Plan #8		

Project	LA PLATA COUNTY, CO, SOUTHERN COLORADO, S-Type Fruitland		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Southern Zone		Using geodetic scale factor

Site						SEC 16-T32N-R7W							
Site Position: From: Position Uncertainty:			Lat/Long 0.0 ft			Northing:		1,136,600.59 ft		Latitude:		37° 1' 20.928 N	
						Easting:		2,380,354.50 ft		Longitude:		107° 37' 21.180 W	
						Slot Radius:		6-1/8"		Grid Convergence:		-1.30 °	

Well	Southern Ute #704					
Well Position	+N/-S	0.0 ft	Northing:	1,136,600.58 ft	Latitude:	37° 1' 20.928 N
	+E/-W	0.0 ft	Easting:	2,380,354.50 ft	Longitude:	107° 37' 21.180 W
Position Uncertainty		3.5 ft	Wellhead Elevation:	ft	Ground Level:	6,348.0 ft

Wellbore	Lateral B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2009	12/4/2009	10.05	63.81	51,087

Design	Plan #8				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	3,080.0	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	91.04	

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
3,080.0	64.25	94.00	2,827.1	-45.2	646.5	0.00	0.00	0.00	0.00	
3,209.2	90.00	96.18	2,855.7	-56.4	770.9	20.00	19.93	1.69	5.00	
3,524.1	90.52	89.90	2,854.2	-73.1	1,085.2	2.00	0.16	-1.99	-85.28	
3,994.4	90.52	89.90	2,850.0	-72.3	1,555.5	0.00	0.00	0.00	0.00	S.U. #704 LB TGT ;
4,017.1	90.81	90.25	2,849.7	-72.3	1,578.1	2.00	1.27	1.55	50.59	
4,994.8	90.81	90.25	2,836.0	-76.5	2,555.8	0.00	0.00	0.00	0.00	S.U. #704 LB TGT ;
5,994.2	90.80	90.13	2,822.0	-79.8	3,555.1	0.01	0.00	-0.01	-92.33	S.U. #704 LB TGT ;
6,046.3	89.77	89.99	2,821.7	-79.9	3,607.2	2.00	-1.98	-0.27	-172.32	
6,850.5	89.77	89.99	2,825.0	-79.7	4,411.3	0.00	0.00	0.00	0.00	S.U. #704 LB TOE

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Southern Ute #704
Company:	ConocoPhillips	TVD Reference:	DFE @ 6363.0ft (AWS 730)
Project:	LA PLATA COUNTY, CO	MD Reference:	DFE @ 6363.0ft (AWS 730)
Site:	SEC 16-T32N-R7W	North Reference:	True
Well:	Southern Ute #704	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral B		
Design:	Plan #8		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,795.0	0.00	0.00	1,795.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.25	94.00	1,800.0	0.0	0.0	0.0	5.00	5.00	0.00
1,900.0	5.25	94.00	1,899.9	-0.3	4.8	4.8	5.00	5.00	0.00
2,000.0	10.25	94.00	1,998.9	-1.3	18.2	18.3	5.00	5.00	0.00
2,100.0	15.25	94.00	2,096.4	-2.8	40.3	40.3	5.00	5.00	0.00
2,200.0	20.25	94.00	2,191.6	-4.9	70.7	70.7	5.00	5.00	0.00
2,300.0	25.25	94.00	2,283.8	-7.6	109.2	109.3	5.00	5.00	0.00
2,400.0	30.25	94.00	2,372.3	-10.9	155.7	155.8	5.00	5.00	0.00
2,500.0	35.25	94.00	2,456.4	-14.7	209.6	209.8	5.00	5.00	0.00
2,569.4	38.72	94.00	2,511.8	-17.6	251.2	251.5	5.00	5.00	0.00
704 SHL North HL									
2,600.0	40.25	94.00	2,535.4	-18.9	270.7	271.0	5.00	5.00	0.00
2,657.9	43.14	94.00	2,578.6	-21.6	309.1	309.4	5.00	5.00	0.00
S.U. #704 LB TGT Line									
2,700.0	45.25	94.00	2,608.8	-23.7	338.3	338.7	5.00	5.00	0.00
2,800.0	50.25	94.00	2,676.0	-28.8	412.2	412.6	5.00	5.00	0.00
2,900.0	55.25	94.00	2,736.5	-34.4	491.5	492.1	5.00	5.00	0.00
2,961.2	58.31	94.00	2,770.0	-37.9	542.6	543.2	5.00	5.00	0.00
704 SHL West HL									
3,000.0	60.25	94.00	2,789.9	-40.3	575.9	576.5	5.00	5.00	0.00
3,080.0	64.25	94.00	2,827.1	-45.2	646.5	647.2	5.00	5.00	0.00
3,100.0	68.24	94.38	2,835.2	-46.5	664.8	665.5	20.00	19.93	1.88
3,125.0	73.22	94.82	2,843.4	-48.4	688.3	689.0	20.00	19.93	1.76
3,150.0	78.20	95.23	2,849.6	-50.6	712.4	713.2	20.00	19.93	1.67
3,175.0	83.19	95.64	2,853.6	-52.9	736.9	737.8	20.00	19.94	1.61
3,200.0	88.17	96.03	2,855.5	-55.4	761.7	762.6	20.00	19.94	1.58
3,209.2	90.00	96.18	2,855.7	-56.4	770.9	771.8	20.00	19.94	1.57
3,300.0	90.15	94.37	2,855.6	-64.7	861.3	862.3	2.00	0.16	-1.99
3,400.0	90.31	92.37	2,855.1	-70.6	961.1	962.2	2.00	0.16	-1.99
3,500.0	90.48	90.38	2,854.5	-73.0	1,061.1	1,062.2	2.00	0.16	-1.99
3,524.1	90.52	89.90	2,854.2	-73.1	1,085.2	1,086.4	2.00	0.16	-1.99
3,600.0	90.52	89.90	2,853.6	-73.0	1,161.1	1,162.2	0.00	0.00	0.00
3,700.0	90.52	89.90	2,852.7	-72.8	1,261.1	1,262.2	0.00	0.00	0.00
3,800.0	90.52	89.90	2,851.8	-72.6	1,361.1	1,362.2	0.00	0.00	0.00
3,900.0	90.52	89.90	2,850.9	-72.4	1,461.1	1,462.1	0.00	0.00	0.00

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Company:	ConocoPhillips	TVD Reference:	DFE @ 6363.0ft (AWS 730)
Project:	LA PLATA COUNTY, CO	MD Reference:	DFE @ 6363.0ft (AWS 730)
Site:	SEC 16-T32N-R7W	North Reference:	True
Well:	Southern Ute #704	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral B		
Design:	Plan #8		

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)
3,994.4	90.52	89.90	2,850.0	-72.3	1,555.5	1,556.5	0.00	0.00	0.00
S.U. #704 LB TGT #1									
4,000.0	90.59	89.98	2,849.9	-72.3	1,561.1	1,562.1	2.00	1.27	1.55
4,017.1	90.81	90.25	2,849.7	-72.3	1,578.1	1,579.2	2.00	1.27	1.55
4,100.0	90.81	90.25	2,848.6	-72.6	1,661.0	1,662.1	0.00	0.00	0.00
4,200.0	90.81	90.25	2,847.2	-73.1	1,761.0	1,762.1	0.00	0.00	0.00
4,300.0	90.81	90.25	2,845.8	-73.5	1,861.0	1,862.1	0.00	0.00	0.00
4,400.0	90.81	90.25	2,844.4	-73.9	1,961.0	1,962.0	0.00	0.00	0.00
4,500.0	90.81	90.25	2,843.0	-74.4	2,061.0	2,062.0	0.00	0.00	0.00
4,600.0	90.81	90.25	2,841.5	-74.8	2,161.0	2,162.0	0.00	0.00	0.00
4,700.0	90.81	90.25	2,840.1	-75.2	2,261.0	2,262.0	0.00	0.00	0.00
4,800.0	90.81	90.25	2,838.7	-75.7	2,361.0	2,362.0	0.00	0.00	0.00
4,900.0	90.81	90.25	2,837.3	-76.1	2,461.0	2,461.9	0.00	0.00	0.00
4,994.8	90.81	90.25	2,836.0	-76.5	2,555.8	2,556.8	0.00	0.00	0.00
S.U. #704 LB TGT #2									
5,000.0	90.81	90.25	2,835.9	-76.5	2,561.0	2,561.9	0.01	0.00	-0.01
5,100.0	90.80	90.24	2,834.5	-77.0	2,660.9	2,661.9	0.01	0.00	-0.01
5,200.0	90.80	90.22	2,833.1	-77.4	2,760.9	2,761.9	0.01	0.00	-0.01
5,300.0	90.80	90.21	2,831.7	-77.8	2,860.9	2,861.9	0.01	0.00	-0.01
5,400.0	90.80	90.20	2,830.3	-78.1	2,960.9	2,961.8	0.01	0.00	-0.01
5,500.0	90.80	90.19	2,828.9	-78.5	3,060.9	3,061.8	0.01	0.00	-0.01
5,600.0	90.80	90.18	2,827.5	-78.8	3,160.9	3,161.8	0.01	0.00	-0.01
5,700.0	90.80	90.16	2,826.1	-79.1	3,260.9	3,261.8	0.01	0.00	-0.01
5,800.0	90.80	90.15	2,824.7	-79.3	3,360.9	3,361.8	0.01	0.00	-0.01
5,900.0	90.80	90.14	2,823.3	-79.6	3,460.9	3,461.7	0.01	0.00	-0.01
5,994.2	90.80	90.13	2,822.0	-79.8	3,555.1	3,555.9	0.01	0.00	-0.01
S.U. #704 LB TGT #3									
6,000.0	90.69	90.11	2,821.9	-79.8	3,560.8	3,561.7	2.00	-1.98	-0.27
6,046.3	89.77	89.99	2,821.7	-79.9	3,607.2	3,608.0	2.00	-1.98	-0.27
6,100.0	89.77	89.99	2,822.0	-79.9	3,660.8	3,661.7	0.00	0.00	0.00
6,200.0	89.77	89.99	2,822.4	-79.8	3,760.8	3,761.7	0.00	0.00	0.00
6,300.0	89.77	89.99	2,822.8	-79.8	3,860.8	3,861.7	0.00	0.00	0.00
6,400.0	89.77	89.99	2,823.2	-79.8	3,960.8	3,961.6	0.00	0.00	0.00
6,500.0	89.77	89.99	2,823.6	-79.8	4,060.8	4,061.6	0.00	0.00	0.00
6,600.0	89.77	89.99	2,824.0	-79.8	4,160.8	4,161.6	0.00	0.00	0.00
6,700.0	89.77	89.99	2,824.4	-79.8	4,260.8	4,261.6	0.00	0.00	0.00
6,800.0	89.77	89.99	2,824.8	-79.7	4,360.8	4,361.6	0.00	0.00	0.00
6,850.5	89.77	89.99	2,825.0	-79.7	4,411.3	4,412.1	0.00	0.00	0.00
S.U. #704 LB TOE - S.U. #704 UL TOE wrong									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Southern Ute #704
Company:	ConocoPhillips	TVD Reference:	DFE @ 6363.0ft (AWS 730)
Project:	LA PLATA COUNTY, CO	MD Reference:	DFE @ 6363.0ft (AWS 730)
Site:	SEC 16-T32N-R7W	North Reference:	True
Well:	Southern Ute #704	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral B		
Design:	Plan #8		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
S.U. #704 LB TGT #3	0.00	0.00	2,822.0	-79.8	3,555.1	1,136,440.00	2,383,907.00	37° 1' 20.136 N	107° 36' 37.342 W
- plan hits target center									
- Point									
S.U. #704 LB TOE	0.00	0.00	2,825.0	-79.7	4,411.3	1,136,420.63	2,384,763.07	37° 1' 20.136 N	107° 36' 26.784 W
- plan hits target center									
- Point									
S.U. #704 LB TGT #2	0.00	0.00	2,836.0	-76.5	2,555.8	1,136,466.00	2,382,908.00	37° 1' 20.170 N	107° 36' 49.665 W
- plan hits target center									
- Point									
S.U. #704 LB TGT #1	0.00	0.00	2,850.0	-72.3	1,555.5	1,136,493.00	2,381,908.00	37° 1' 20.213 N	107° 37' 1.999 W
- plan hits target center									
- Point									
704 SHL North HL	0.00	0.00	2,859.0	-42.0	-200.0	1,136,563.15	2,380,153.59	37° 1' 20.513 N	107° 37' 23.646 W
- plan misses target center by 569.9ft at 2569.4ft MD (2511.8 TVD, -17.6 N, 251.2 E)									
- Polygon									
Point 1			2,859.0	0.0	0.0	1,136,563.15	2,380,153.59		
Point 2			2,859.0	0.0	1,600.0	1,136,526.79	2,381,753.24		
704 SHL West HL	0.00	0.00	2,859.0	-400.0	461.0	1,136,190.21	2,380,806.31	37° 1' 16.973 N	107° 37' 15.495 W
- plan misses target center by 381.6ft at 2961.2ft MD (2770.0 TVD, -37.9 N, 542.6 E)									
- Polygon									
Point 1			2,859.0	1,600.0	0.0	1,137,789.86	2,380,842.67		
Point 2			2,859.0	-800.0	0.0	1,135,390.38	2,380,788.13		