



Scientific Drilling
Directional Drilling Operations

Samson Resources Company

**La Plata County, C.O.
SEC 24-T34N-R7W
Bonine 34-7-24 #4**

Original Hole

Plan: Plan #1

Standard Planning Report

14 June, 2011





Project: La Plata County, C.O.
Site: SEC 24-T34N-R7W
Well: Bonine 34-7-24 #4
Wellbore: Original Hole
Design: Plan #1



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Bonine 34-7-24 #4, Grid North
Vertical (TVD) Reference: AWS 507 @ 6790.0ft (12' DFE + 6778' GL)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: AWS 507 @ 6790.0ft (12' DFE + 6778' GL)
Calculation Method: Minimum Curvature

PROJECT DETAILS: La Plata County, C.O.

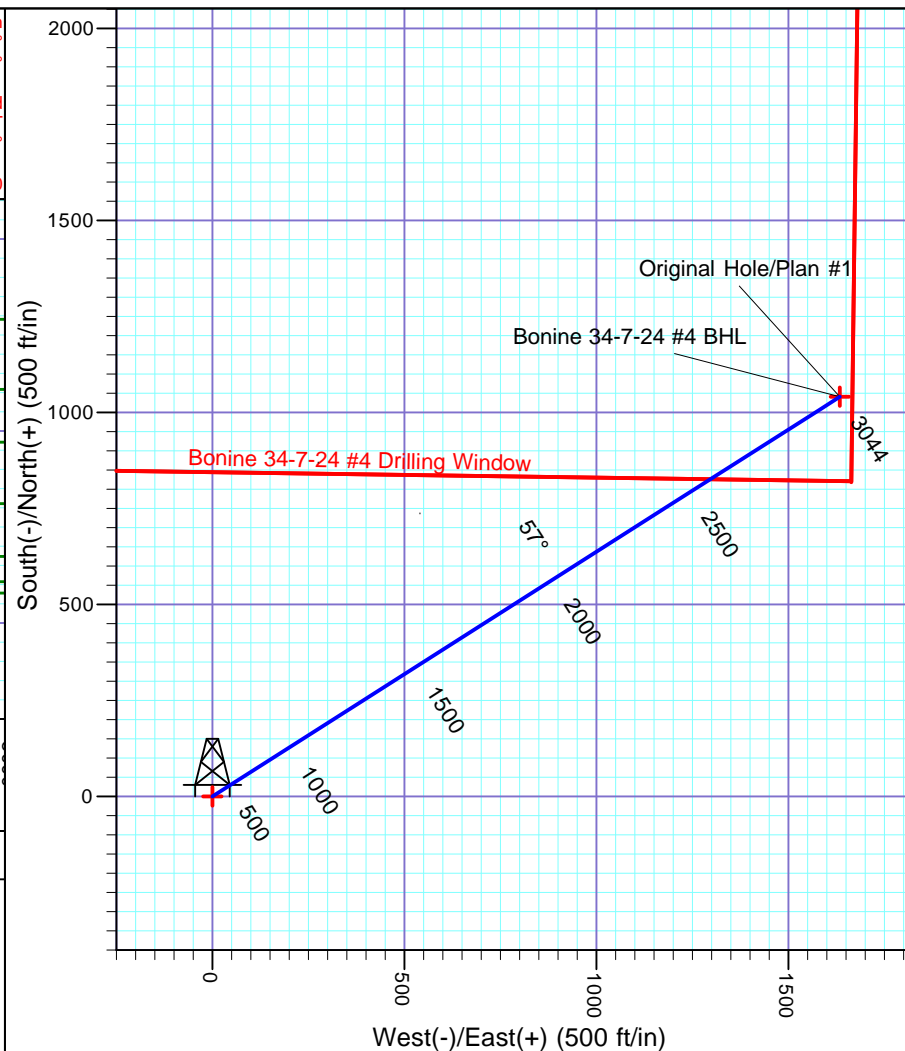
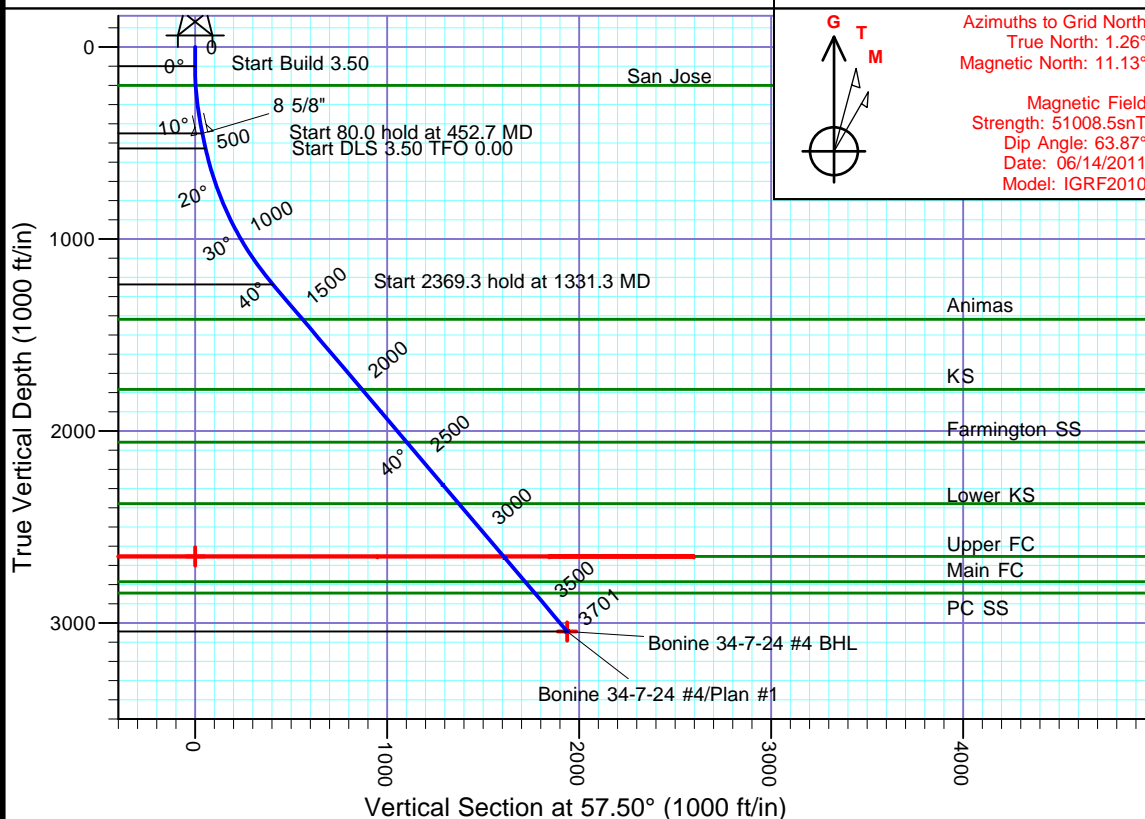
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Southern Zone
System Datum: Mean Sea Level

WELL DETAILS: Bonine 34-7-24 #4

		Ground Level: 6778.0			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1192088.57	2400317.02	37° 10' 33.816 N	107° 33' 30.168 W

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Bonine 34-7-24 #4 Drilling Window	2653.0	0.0	0.0	37° 10' 33.816 N	107° 33' 30.168 W	Polygon
Bonine 34-7-24 #4 BHL	3044.0	1041.3	1634.4	37° 10' 44.464 N	107° 33' 10.261 W	Point



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	100.0	0.00	0.00	100.0	0.0	0.0	0.00	0.00	0.0	
3	452.7	12.35	57.50	450.0	20.3	31.9	3.50	57.50	37.9	
4	532.7	12.35	57.50	528.2	29.5	46.4	0.00	0.00	55.0	
5	1331.3	40.30	57.50	1236.9	217.9	342.1	3.50	0.00	405.6	
6	3700.7	40.30	57.50	3044.0	1041.3	1634.4	0.00	0.00	1937.9	Bonine 34-7-24 #4 BHL

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonine 34-7-24 #4
Company:	Samson Resources Company	TVD Reference:	AWS 507 @ 6790.0ft (12' DFE + 6778' GL)
Project:	La Plata County, C.O.	MD Reference:	AWS 507 @ 6790.0ft (12' DFE + 6778' GL)
Site:	SEC 24-T34N-R7W	North Reference:	Grid
Well:	Bonine 34-7-24 #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Project	La Plata County, C.O.		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		Using geodetic scale factor

Site	SEC 24-T34N-R7W		
Site Position:		Northing:	1,192,063.29 usft
From:	Lat/Long	Easting:	2,400,307.72 usft
Position Uncertainty:	15.0 ft	Slot Radius:	6-1/8 "
		Latitude:	37° 10' 33.564 N
		Longitude:	107° 33' 30.276 W
		Grid Convergence:	-1.26 °

Well	Bonine 34-7-24 #4, FC Slant Well		
Well Position	+N/-S	25.3 ft	Northing: 1,192,088.57 usft
	+E/-W	9.3 ft	Easting: 2,400,317.02 usft
Position Uncertainty		3.5 ft	Wellhead Elevation:
			Ground Level: 6,778.0 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	06/14/11	9.86	63.87	51,009

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	57.50

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.00	0.00	0.00	0.00	
452.7	12.35	57.50	450.0	20.3	31.9	3.50	3.50	0.00	57.50	
532.7	12.35	57.50	528.2	29.5	46.4	0.00	0.00	0.00	0.00	
1,331.3	40.30	57.50	1,236.9	217.9	342.1	3.50	3.50	0.00	0.00	
3,700.7	40.30	57.50	3,044.0	1,041.3	1,634.4	0.00	0.00	0.00	0.00	Bonine 34-7-24 #4 I

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bonine 34-7-24 #4
Company:	Samson Resources Company	TVD Reference:	AWS 507 @ 6790.0ft (12' DFE + 6778' GL)
Project:	La Plata County, C.O.	MD Reference:	AWS 507 @ 6790.0ft (12' DFE + 6778' GL)
Site:	SEC 24-T34N-R7W	North Reference:	Grid
Well:	Bonine 34-7-24 #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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	3.50	57.50	199.9	1.6	2.6	3.1	3.50	3.50	0.00
200.1	3.50	57.50	200.0	1.6	2.6	3.1	0.00	0.00	0.00
San Jose									
300.0	7.00	57.50	299.5	6.6	10.3	12.2	3.50	3.50	0.00
400.0	10.50	57.50	398.3	14.7	23.1	27.4	3.50	3.50	0.00
452.7	12.35	57.50	450.0	20.3	31.9	37.9	3.50	3.50	0.00
8 5/8"									
500.0	12.35	57.50	496.2	25.8	40.4	48.0	0.00	0.00	0.00
532.7	12.35	57.50	528.2	29.5	46.4	55.0	0.00	0.00	0.00
600.0	14.70	57.50	593.6	38.0	59.6	70.7	3.50	3.50	0.00
700.0	18.20	57.50	689.4	53.2	83.5	99.0	3.50	3.50	0.00
800.0	21.70	57.50	783.4	71.5	112.3	133.1	3.50	3.50	0.00
900.0	25.20	57.50	875.2	92.9	145.8	172.9	3.50	3.50	0.00
1,000.0	28.70	57.50	964.3	117.2	184.0	218.2	3.50	3.50	0.00
1,100.0	32.20	57.50	1,050.5	144.5	226.8	268.9	3.50	3.50	0.00
1,200.0	35.70	57.50	1,133.4	174.5	273.9	324.7	3.50	3.50	0.00
1,300.0	39.20	57.50	1,212.8	207.1	325.1	385.5	3.50	3.50	0.00
1,331.3	40.30	57.50	1,236.9	217.9	342.1	405.6	3.50	3.50	0.00
1,400.0	40.30	57.50	1,289.3	241.8	379.5	450.0	0.00	0.00	0.00
1,500.0	40.30	57.50	1,365.5	276.5	434.0	514.6	0.00	0.00	0.00
1,568.8	40.30	57.50	1,418.0	300.4	471.6	559.1	0.00	0.00	0.00
Animas									
1,600.0	40.30	57.50	1,441.8	311.3	488.6	579.3	0.00	0.00	0.00
1,700.0	40.30	57.50	1,518.1	346.0	543.1	644.0	0.00	0.00	0.00
1,800.0	40.30	57.50	1,594.3	380.8	597.7	708.7	0.00	0.00	0.00
1,900.0	40.30	57.50	1,670.6	415.5	652.2	773.3	0.00	0.00	0.00
2,000.0	40.30	57.50	1,746.9	450.3	706.8	838.0	0.00	0.00	0.00
2,047.4	40.30	57.50	1,783.0	466.7	732.6	868.6	0.00	0.00	0.00
KS									
2,100.0	40.30	57.50	1,823.2	485.0	761.3	902.7	0.00	0.00	0.00
2,149.1	40.30	57.50	1,860.6	502.1	788.1	934.5	0.00	0.00	0.00
Bonine 34-7-24 #4 Drilling Window									
2,200.0	40.30	57.50	1,899.4	519.8	815.9	967.4	0.00	0.00	0.00
2,300.0	40.30	57.50	1,975.7	554.5	870.4	1,032.0	0.00	0.00	0.00
2,400.0	40.30	57.50	2,052.0	589.3	925.0	1,096.7	0.00	0.00	0.00
2,407.9	40.30	57.50	2,058.0	592.0	929.3	1,101.8	0.00	0.00	0.00
Farmington SS									
2,500.0	40.30	57.50	2,128.2	624.0	979.5	1,161.4	0.00	0.00	0.00
2,600.0	40.30	57.50	2,204.5	658.8	1,034.1	1,226.1	0.00	0.00	0.00
2,700.0	40.30	57.50	2,280.8	693.5	1,088.6	1,290.7	0.00	0.00	0.00
2,800.0	40.30	57.50	2,357.0	728.3	1,143.1	1,355.4	0.00	0.00	0.00
2,827.5	40.30	57.50	2,378.0	737.8	1,158.1	1,373.2	0.00	0.00	0.00
Lower KS									
2,900.0	40.30	57.50	2,433.3	763.0	1,197.7	1,420.1	0.00	0.00	0.00
3,000.0	40.30	57.50	2,509.6	797.8	1,252.2	1,484.8	0.00	0.00	0.00
3,100.0	40.30	57.50	2,585.9	832.5	1,306.8	1,549.4	0.00	0.00	0.00
3,188.0	40.30	57.50	2,653.0	863.1	1,354.8	1,606.4	0.00	0.00	0.00
Upper FC									
3,200.0	40.30	57.50	2,662.1	867.3	1,361.3	1,614.1	0.00	0.00	0.00
3,300.0	40.30	57.50	2,738.4	902.0	1,415.9	1,678.8	0.00	0.00	0.00
3,361.1	40.30	57.50	2,785.0	923.3	1,449.2	1,718.3	0.00	0.00	0.00

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Project:	La Plata County, C.O.	MD Reference:	AWS 507 @ 6790.0ft (12' DFE + 6778' GL)
Site:	SEC 24-T34N-R7W	North Reference:	Grid
Well:	Bonine 34-7-24 #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Main FC									
3,400.0	40.30	57.50	2,814.7	936.8	1,470.4	1,743.5	0.00	0.00	0.00
3,438.5	40.30	57.50	2,844.0	950.1	1,491.4	1,768.3	0.00	0.00	0.00
PC SS									
3,500.0	40.30	57.50	2,890.9	971.5	1,525.0	1,808.1	0.00	0.00	0.00
3,600.0	40.30	57.50	2,967.2	1,006.3	1,579.5	1,872.8	0.00	0.00	0.00
3,700.7	40.30	57.50	3,044.0	1,041.3	1,634.4	1,937.9	0.00	0.00	0.00
Bonine 34-7-24 #4 BHL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Bonine 34-7-24 #4 Dri	0.00	360.00	2,653.0	0.0	0.0	1,192,088.57	2,400,317.02	37° 10' 33.816 N	107° 33' 30.168 W
- plan misses target center by 1225.2ft at 2149.1ft MD (1860.6 TVD, 502.1 N, 788.1 E)									
- Polygon									
Point 1			2,653.0	876.4	-2,258.3	1,192,964.98	2,398,058.70		
Point 2			2,653.0	2,200.3	-2,253.8	1,194,288.89	2,398,063.20		
Point 3			2,653.0	2,201.9	-276.7	1,194,290.49	2,400,040.32		
Point 4			2,653.0	2,194.7	1,681.7	1,194,283.29	2,401,998.74		
Point 5			2,653.0	821.3	1,664.2	1,192,909.88	2,401,981.24		
Bonine 34-7-24 #4 BL	0.00	360.00	3,044.0	1,041.3	1,634.4	1,193,129.83	2,401,951.48	37° 10' 44.464 N	107° 33' 10.261 W
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
452.7	450.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
200.1	200.0	San Jose		0.00	
1,568.8	1,418.0	Animas		0.00	
2,047.4	1,783.0	KS		0.00	
2,407.9	2,058.0	Farmington SS		0.00	
2,827.5	2,378.0	Lower KS		0.00	
3,188.0	2,653.0	Upper FC		0.00	
3,361.1	2,785.0	Main FC		0.00	
3,438.5	2,844.0	PC SS		0.00	