



# **Samson Resources Company**

**La Plata County, C.O.**

**SEC 04-T32N-R7W**

**Colorado 32-7 #10-3**

**Original Hole**

**Plan: Plan #1**

## **Standard Survey Report**

**23 September, 2011**





Project: La Plata County, C.O.  
 Site: SEC 04-T32N-R7W  
 Well: Colorado 32-7 #10-3  
 Wellbore: Original Hole  
 Design: Plan #1



### WELL DETAILS: Colorado 32-7 #10-3

### PROJECT DETAILS: La Plata County, C.O.

Ground Level: 6284.0  
 +N/-S +E/-W Northing Easting Latitude Longitude  
 0.0 0.0 1146868.11 2381778.90 37° 3' 2.736 N 107° 37' 6.492 W

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

### SECTION DETAILS

### REFERENCE INFORMATION

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1454.7	31.64	141.55	1401.9	-222.3	176.5	3.00	141.55	283.9	
4	3455.1	31.64	141.55	3105.0	-1044.2	829.0	0.00	0.00	1333.3	CO 32-7 #10-3 BHL (1967 FNL,2180 FWL)

Co-ordinate (N/E) Reference: Well Colorado 32-7 #10-3, Grid North  
 Vertical (TVD) Reference: AWS 507 @ 6296.0ft (12' DFE + 6284)  
 Section (VS) Reference: Slot - (0.0N, 0.0E)  
 Measured Depth Reference: AWS 507 @ 6296.0ft (12' DFE + 6284)  
 Calculation Method: Minimum Curvature

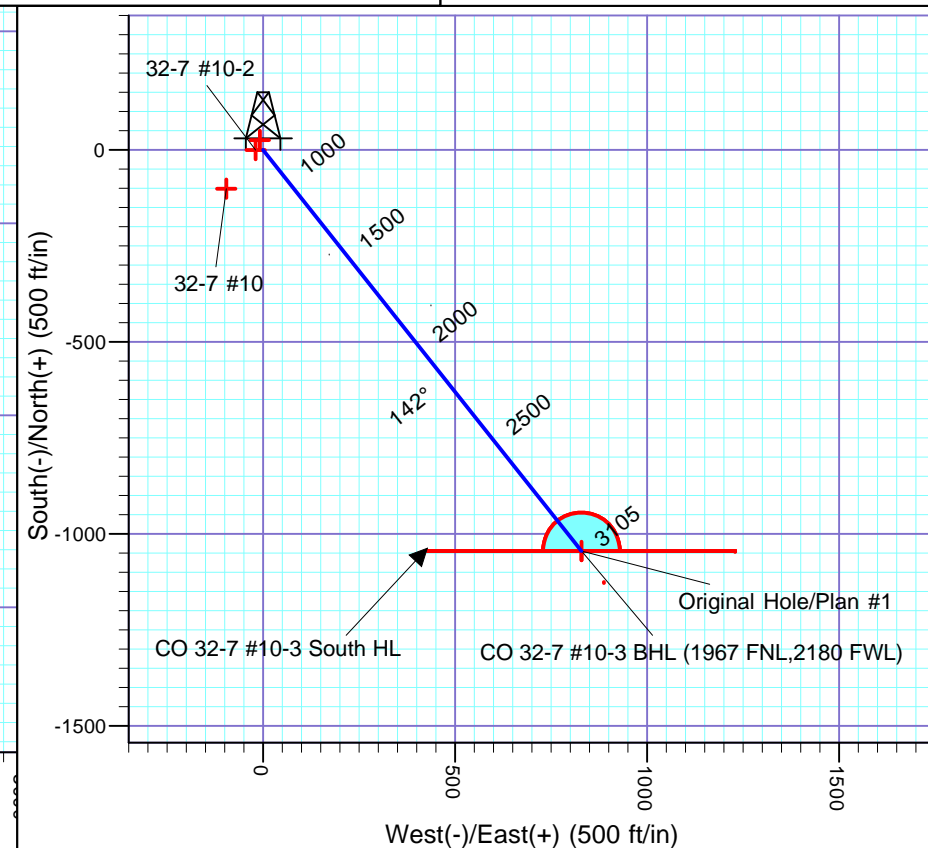
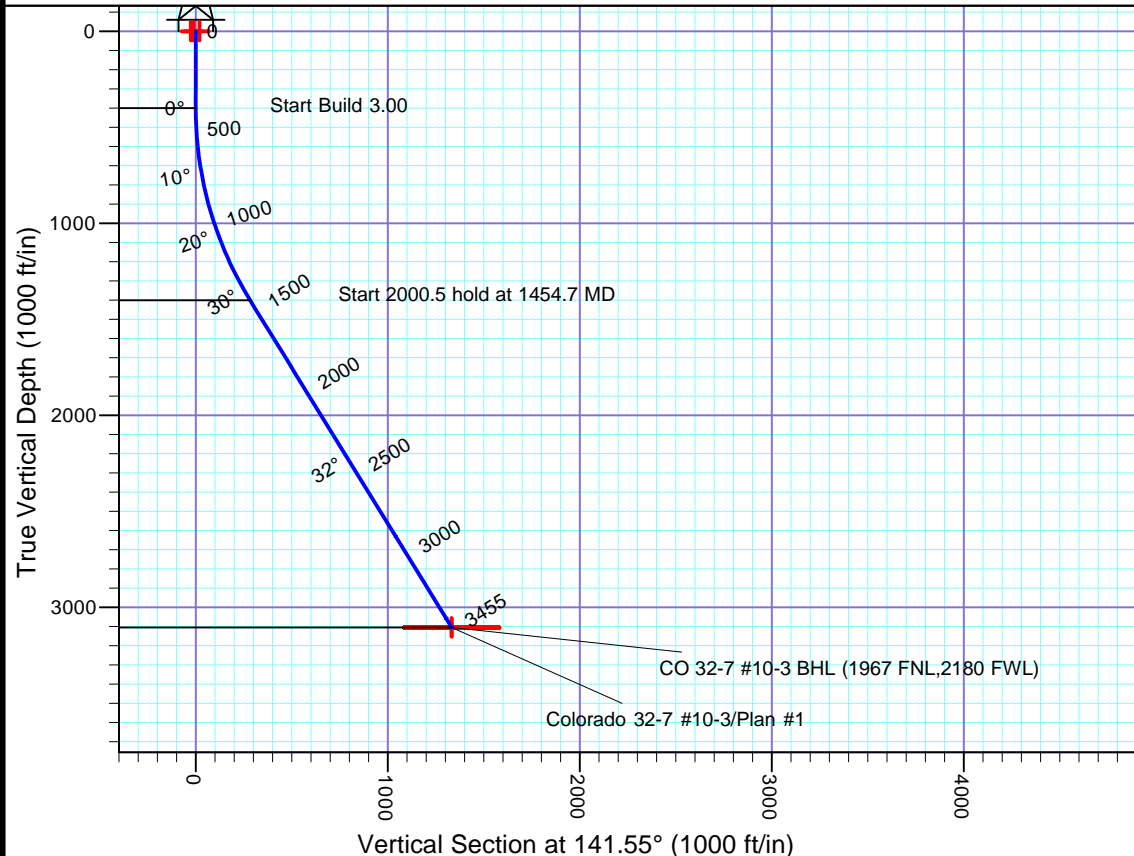
### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
32-7 #10	0.0	-100.7	-96.0	37° 3' 1.719 N	107° 37' 7.648 W	Point
32-7 #10-2	0.0	-0.4	-19.2	37° 3' 2.727 N	107° 37' 6.728 W	Point
32-7 #10-2 Plat	0.0	25.7	-8.2	37° 3' 2.988 N	107° 37' 6.600 W	Point
CO 32-7 #10-3 BHL (1967 FNL,2180 FWL)	3105.0	-1044.2	829.0	37° 2' 52.600 N	107° 36' 55.977 W	Circle (Radius: 100.0)
CO 32-7 #10-3 South HL	3105.0	-1044.2	829.0	37° 2' 52.600 N	107° 36' 55.977 W	Polygon



Azimuths to Grid North  
 True North: 1.30°  
 Magnetic North: 11.14°

Magnetic Field  
 Strength: 50905.7snT  
 Dip Angle: 63.75°  
 Date: 09/22/2011  
 Model: IGRF2010



<b>Company:</b>	Samson Resources Company	<b>Local Co-ordinate Reference:</b>	Well Colorado 32-7 #10-3
<b>Project:</b>	La Plata County, C.O.	<b>TVD Reference:</b>	AWS 507 @ 6296.0ft (12' DFE + 6284)
<b>Site:</b>	SEC 04-T32N-R7W	<b>MD Reference:</b>	AWS 507 @ 6296.0ft (12' DFE + 6284)
<b>Well:</b>	Colorado 32-7 #10-3	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Single User Db

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

<b>Site</b>	SEC 04-T32N-R7W		
<b>Site Position:</b>		<b>Northing:</b>	1,146,893.78 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,381,770.73 usft
<b>Position Uncertainty:</b>	30.0 ft	<b>Slot Radius:</b>	12-1/4 "
		<b>Latitude:</b>	37° 3' 2.988 N
		<b>Longitude:</b>	107° 37' 6.600 W
		<b>Grid Convergence:</b>	-1.30 °

<b>Well</b>	Colorado 32-7 #10-3, FC Slant Well		
<b>Well Position</b>	<b>+N-S</b>	0.0 ft	<b>Northing:</b> 1,146,868.11 usft
	<b>+E-W</b>	0.0 ft	<b>Easting:</b> 2,381,778.90 usft
<b>Position Uncertainty</b>		3.5 ft	<b>Wellhead Elevation:</b> ft
			<b>Latitude:</b> 37° 3' 2.736 N
			<b>Longitude:</b> 107° 37' 6.492 W
			<b>Ground Level:</b> 6,284.0 ft

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	09/22/11	9.84	63.75	50,906

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	141.55	

<b>Survey Tool Program</b>	<b>Date</b>	09/22/11			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.0	3,455.1	Plan #1 (Original Hole)	MWD SDI	MWD - Standard ver 1.0.1	

<b>Planned Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>32-7 #10-2 Plat - 32-7 #10-2 - 32-7 #10</b>									
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	3.00	141.55	500.0	-2.0	1.6	2.6	3.00	3.00	0.00
600.0	6.00	141.55	599.6	-8.2	6.5	10.5	3.00	3.00	0.00
700.0	9.00	141.55	698.8	-18.4	14.6	23.5	3.00	3.00	0.00
800.0	12.00	141.55	797.1	-32.7	25.9	41.7	3.00	3.00	0.00
900.0	15.00	141.55	894.3	-51.0	40.5	65.1	3.00	3.00	0.00

<b>Company:</b>	Samson Resources Company	<b>Local Co-ordinate Reference:</b>	Well Colorado 32-7 #10-3
<b>Project:</b>	La Plata County, C.O.	<b>TVD Reference:</b>	AWS 507 @ 6296.0ft (12' DFE + 6284)
<b>Site:</b>	SEC 04-T32N-R7W	<b>MD Reference:</b>	AWS 507 @ 6296.0ft (12' DFE + 6284)
<b>Well:</b>	Colorado 32-7 #10-3	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Single User Db

**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)
1,000.0	18.00	141.55	990.2	-73.2	58.1	93.5	3.00	3.00	0.00
1,100.0	21.00	141.55	1,084.4	-99.3	78.9	126.9	3.00	3.00	0.00
1,200.0	24.00	141.55	1,176.8	-129.3	102.7	165.1	3.00	3.00	0.00
1,300.0	27.00	141.55	1,267.1	-163.0	129.4	208.2	3.00	3.00	0.00
1,355.3	28.66	141.55	1,316.0	-183.3	145.5	234.0	3.00	3.00	0.00
<b>Animas</b>									
1,400.0	30.00	141.55	1,354.9	-200.4	159.1	255.9	3.00	3.00	0.00
1,454.7	31.64	141.55	1,401.9	-222.3	176.5	283.9	3.00	3.00	0.00
1,500.0	31.64	141.55	1,440.5	-241.0	191.3	307.7	0.00	0.00	0.00
1,600.0	31.64	141.55	1,525.6	-282.0	223.9	360.1	0.00	0.00	0.00
1,700.0	31.64	141.55	1,610.7	-323.1	256.5	412.6	0.00	0.00	0.00
1,782.5	31.64	141.55	1,681.0	-357.0	283.4	455.9	0.00	0.00	0.00
<b>KS</b>									
1,800.0	31.64	141.55	1,695.9	-364.2	289.1	465.0	0.00	0.00	0.00
1,900.0	31.64	141.55	1,781.0	-405.3	321.8	517.5	0.00	0.00	0.00
2,000.0	31.64	141.55	1,866.2	-446.4	354.4	569.9	0.00	0.00	0.00
2,100.0	31.64	141.55	1,951.3	-487.5	387.0	622.4	0.00	0.00	0.00
2,105.5	31.64	141.55	1,956.0	-489.7	388.8	625.3	0.00	0.00	0.00
<b>Farmington SS</b>									
2,200.0	31.64	141.55	2,036.4	-528.6	419.6	674.9	0.00	0.00	0.00
2,300.0	31.64	141.55	2,121.6	-569.6	452.2	727.3	0.00	0.00	0.00
2,400.0	31.64	141.55	2,206.7	-610.7	484.8	779.8	0.00	0.00	0.00
2,481.4	31.64	141.55	2,276.0	-644.2	511.4	822.5	0.00	0.00	0.00
<b>Lower KS</b>									
2,500.0	31.64	141.55	2,291.8	-651.8	517.5	832.2	0.00	0.00	0.00
2,600.0	31.64	141.55	2,377.0	-692.9	550.1	884.7	0.00	0.00	0.00
2,700.0	31.64	141.55	2,462.1	-734.0	582.7	937.2	0.00	0.00	0.00
2,800.0	31.64	141.55	2,547.2	-775.1	615.3	989.6	0.00	0.00	0.00
2,804.4	31.64	141.55	2,551.0	-776.9	616.8	991.9	0.00	0.00	0.00
<b>Upper FC</b>									
2,900.0	31.64	141.55	2,632.4	-816.1	647.9	1,042.1	0.00	0.00	0.00
2,986.5	31.64	141.55	2,706.0	-851.7	676.1	1,087.4	0.00	0.00	0.00
<b>Main FC</b>									
3,000.0	31.64	141.55	2,717.5	-857.2	680.5	1,094.5	0.00	0.00	0.00
3,082.8	31.64	141.55	2,788.0	-891.2	707.6	1,138.0	0.00	0.00	0.00
<b>Basal FC</b>									
3,092.2	31.64	141.55	2,796.0	-895.1	710.6	1,142.9	0.00	0.00	0.00
<b>IT SS</b>									
3,100.0	31.64	141.55	2,802.7	-898.3	713.2	1,147.0	0.00	0.00	0.00
3,200.0	31.64	141.55	2,887.8	-939.4	745.8	1,199.4	0.00	0.00	0.00
3,209.6	31.64	141.55	2,896.0	-943.4	748.9	1,204.5	0.00	0.00	0.00
<b>IT Coal</b>									
3,219.0	31.64	141.55	2,904.0	-947.2	752.0	1,209.4	0.00	0.00	0.00
<b>PC</b>									

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<b>Site:</b>	SEC 04-T32N-R7W	<b>MD Reference:</b>	AWS 507 @ 6296.0ft (12' DFE + 6284)
<b>Well:</b>	Colorado 32-7 #10-3	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Single User Db

**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)
3,300.0	31.64	141.55	2,972.9	-980.5	778.4	1,251.9	0.00	0.00	0.00
3,400.0	31.64	141.55	3,058.1	-1,021.6	811.0	1,304.4	0.00	0.00	0.00
3,455.1	31.64	141.55	3,105.0	-1,044.2	829.0	1,333.3	0.00	0.00	0.00
<b>CO 32-7 #10-3 BHL (1967 FNL,2180 FWL) - CO 32-7 #10-3 South HL</b>									

**Design Targets**

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
32-7 #10-2 Plat	- plan misses target center by 27.0ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)	0.00	360.00	0.0	25.7	-8.2	1,146,893.80	2,381,770.73	37° 3' 2.988 N	107° 37' 6.600 W
32-7 #10-2	- Point	0.00	360.00	0.0	-0.4	-19.2	1,146,867.66	2,381,759.72	37° 3' 2.727 N	107° 37' 6.728 W
32-7 #10	- plan misses target center by 139.1ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)	0.00	360.00	0.0	-100.7	-96.0	1,146,767.44	2,381,682.90	37° 3' 1.719 N	107° 37' 7.648 W
CO 32-7 #10-3 BHL (	- plan hits target center	0.00	0.00	3,105.0	-1,044.2	829.0	1,145,823.85	2,382,607.93	37° 2' 52.600 N	107° 36' 55.977 W
CO 32-7 #10-3 South	- Circle (radius 100.0)	0.00	0.00	3,105.0	-1,044.2	829.0	1,145,823.85	2,382,607.93	37° 2' 52.600 N	107° 36' 55.977 W
	- Polygon									
	Point 1			3,105.0	0.0	-400.0	1,145,823.85	2,382,207.92		
	Point 2			3,105.0	0.0	400.0	1,145,823.85	2,383,007.94		

**Formations**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,355.3	1,318.0	Animas		0.00	
1,782.5	1,683.0	KS		0.00	
2,105.5	1,958.0	Farmington SS		0.00	
2,481.4	2,278.0	Lower KS		0.00	
2,804.4	2,553.0	Upper FC		0.00	
2,986.5	2,708.0	Main FC		0.00	
3,082.8	2,790.0	Basal FC		0.00	
3,092.2	2,798.0	IT SS		0.00	
3,209.6	2,898.0	IT Coal		0.00	
3,219.0	2,906.0	PC		0.00	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_