



# **Samson Resources Company**

La Plata County, C.O.

SEC 36-T33N-R9W

Southern Ute 33-9-36 #4

Original Hole

Design: As Drilled

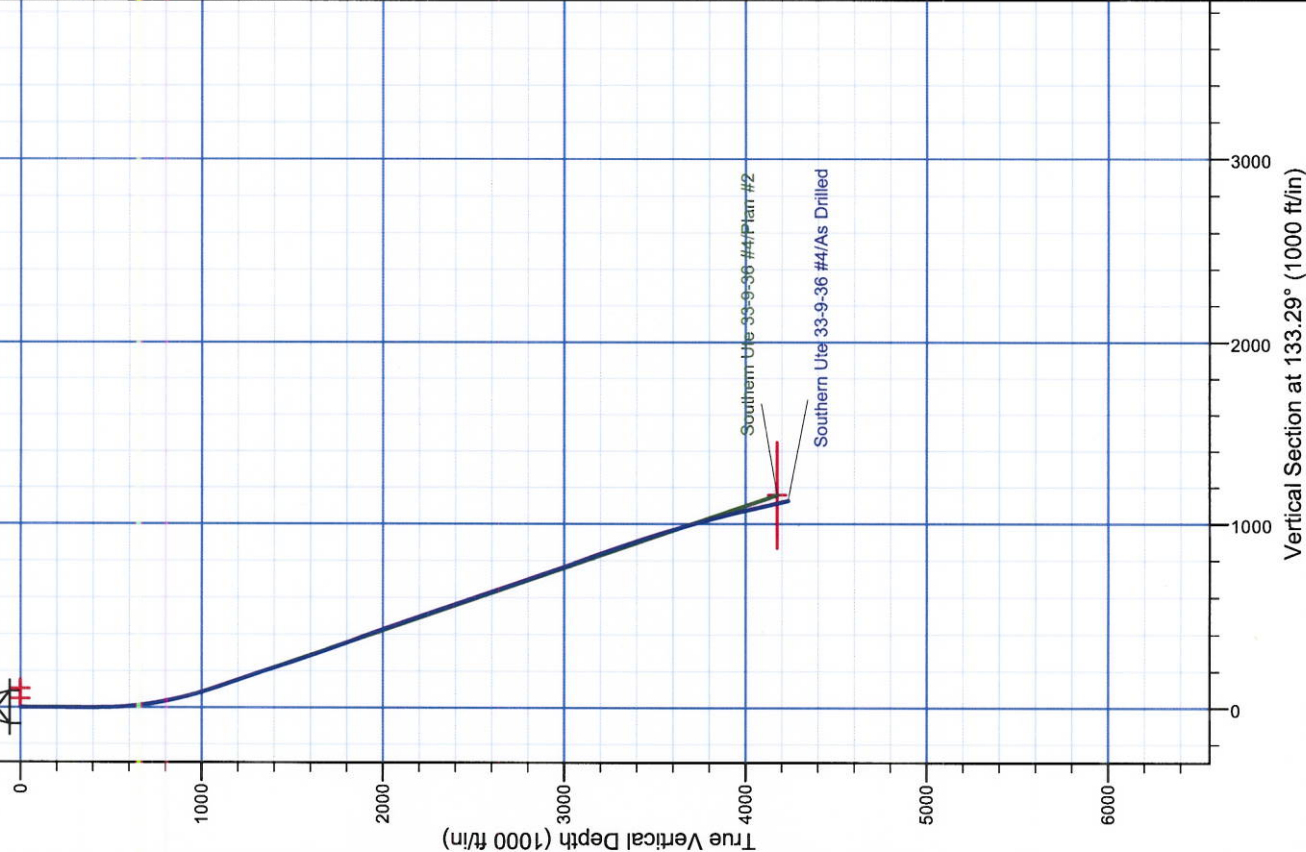
## **Standard Survey Report**

26 October, 2010

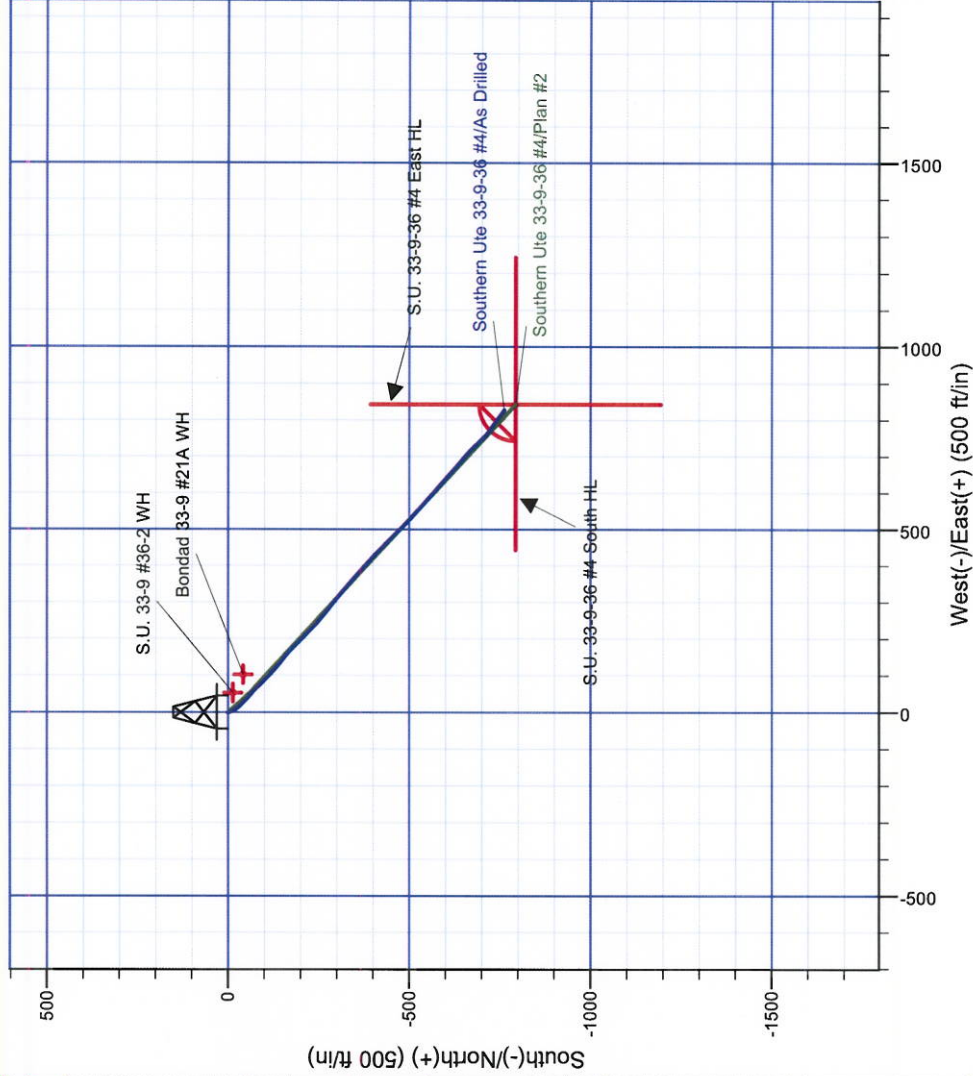




Project: La Plata County, C.O.  
Site: SEC 36-T33N-R9W  
Well: Southern Ute 33-9-36 #4  
Wellbore: Original Hole  
Design: As Drilled



WELL DETAILS: Southern Ute 33-9-36 #4  
AWS 507 @ 7381.0ft (16' KB + 7365' GL)  
Ground Level: 7365.0  
+N/-S +E/-W Northing Easting Longitude Slot  
0.0 0.0 1150355.59 2334082.90 37° 3' 26.100 N 107° 46' 55.704 W



REFERENCE INFORMATION  
Co-ordinate (N/E) Reference: Well Southern Ute 33-9-36 #4, Grid North  
Vertical (TVD) Reference: AWS 507 @ 7381.0ft (16' KB + 7365' GL)  
Section (VS) Reference: Slot - (0.0N, 0.0E)  
Measured Depth Reference: AWS 507 @ 7381.0ft (16' KB + 7365' GL)  
Calculation Method: Minimum Curvature

<b>Company:</b>	Samson Resources Company	<b>Local Co-ordinate Reference:</b>	Well Southern Ute 33-9-36 #4
<b>Project:</b>	La Plata County, C.O.	<b>TVD Reference:</b>	AWS 507 @ 7381.0ft (16' KB + 7365' GL)
<b>Site:</b>	SEC 36-T33N-R9W	<b>MD Reference:</b>	AWS 507 @ 7381.0ft (16' KB + 7365' GL)
<b>Well:</b>	Southern Ute 33-9-36 #4	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<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 36-T33N-R9W		
<b>Site Position:</b>		<b>Northing:</b>	1,150,355.59 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,334,082.90 usft
<b>Position Uncertainty:</b>	3.5 ft	<b>Slot Radius:</b>	6-1/8 "
		<b>Latitude:</b>	37° 3' 26.100 N
		<b>Longitude:</b>	107° 46' 55.704 W
		<b>Grid Convergence:</b>	-1.40 °

<b>Well</b>	Southern Ute 33-9-36 #4, FC Slant Well		
<b>Well Position</b>	+N/-S	0.0 ft	<b>Northing:</b> 1,150,355.59 usft
	+E/-W	0.0 ft	<b>Easting:</b> 2,334,082.90 usft
<b>Position Uncertainty</b>	3.5 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	37° 3' 26.100 N
		<b>Longitude:</b>	107° 46' 55.704 W
		<b>Ground Level:</b>	7,365.0 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>
	IGRF200510	9/21/2010	10.02	63.76	51,012

<b>Design</b>	As Drilled				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	133.29	

<b>Survey Program</b>	Date 10/26/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
419.0	4,410.0	SDI MWD (Original Hole)	MWD SDI	MWD - Standard ver 1.0.1

<b>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	
419.0	0.03	294.64	419.0	0.0	-0.1	-0.1	0.01	0.01	0.00	
542.0	3.78	169.45	541.9	-3.9	0.6	3.1	3.09	3.05	-101.78	
604.0	6.37	157.90	603.7	-9.1	2.3	7.9	4.47	4.18	-18.63	
666.0	7.56	154.75	665.2	-16.0	5.3	14.8	2.02	1.92	-5.08	
728.0	9.38	141.79	726.5	-23.7	10.2	23.6	4.24	2.94	-20.90	
791.0	10.71	136.49	788.6	-31.9	17.4	34.6	2.57	2.11	-8.41	
854.0	11.88	136.76	850.3	-40.9	25.9	46.9	1.86	1.86	0.43	
918.0	14.34	134.13	912.7	-51.2	36.1	61.4	3.95	3.84	-4.11	
980.0	16.23	128.63	972.5	-62.0	48.3	77.7	3.84	3.05	-8.87	



<b>Company:</b>	Samson Resources Company	<b>Local Co-ordinate Reference:</b>	Well Southern Ute 33-9-36 #4
<b>Project:</b>	La Plata County, C.O.	<b>TVD Reference:</b>	AWS 507 @ 7381.0ft (16' KB + 7365' GL)
<b>Site:</b>	SEC 36-T33N-R9W	<b>MD Reference:</b>	AWS 507 @ 7381.0ft (16' KB + 7365' GL)
<b>Well:</b>	Southern Ute 33-9-36 #4	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	EDM 5000.1 Single User Db

**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)
1,043.0	17.14	135.11	1,032.8	-74.1	61.8	95.7	3.29	1.44	10.29
1,106.0	18.95	136.95	1,092.7	-88.1	75.3	115.2	3.01	2.87	2.92
1,169.0	19.13	135.91	1,152.3	-103.0	89.5	135.8	0.61	0.29	-1.65
1,233.0	19.83	132.38	1,212.6	-117.9	104.8	157.1	2.14	1.09	-5.52
1,296.0	18.68	130.64	1,272.1	-131.6	120.3	177.9	2.04	-1.83	-2.76
1,359.0	17.70	129.73	1,332.0	-144.3	135.4	197.5	1.62	-1.56	-1.44
1,422.0	17.22	128.84	1,392.0	-156.3	150.0	216.3	0.87	-0.76	-1.41
1,485.0	17.98	131.90	1,452.1	-168.6	164.5	235.4	1.90	1.21	4.86
1,548.0	18.94	136.46	1,511.9	-182.5	178.8	255.3	2.75	1.52	7.24
1,611.0	18.37	134.36	1,571.6	-196.9	192.9	275.4	1.40	-0.90	-3.33
1,672.0	17.93	133.36	1,629.5	-210.1	206.6	294.4	0.88	-0.72	-1.64
1,736.0	19.65	134.80	1,690.1	-224.4	221.4	315.0	2.78	2.69	2.25
1,798.0	20.09	134.07	1,748.4	-239.2	236.5	336.1	0.81	0.71	-1.18
1,861.0	20.46	130.66	1,807.5	-253.9	252.6	357.9	1.97	0.59	-5.41
1,924.0	20.23	128.86	1,866.6	-267.9	269.4	379.8	1.06	-0.37	-2.86
1,986.0	19.98	127.44	1,924.8	-281.0	286.2	401.0	0.88	-0.40	-2.29
2,050.0	19.62	128.63	1,985.0	-294.4	303.3	422.6	0.84	-0.56	1.86
2,112.0	19.28	130.92	2,043.5	-307.6	319.1	443.2	1.35	-0.55	3.69
2,173.0	18.57	130.79	2,101.2	-320.5	334.1	463.0	1.17	-1.16	-0.21
2,236.0	18.75	130.49	2,160.9	-333.7	349.4	483.1	0.32	0.29	-0.48
2,299.0	18.51	132.05	2,220.6	-346.9	364.5	503.2	0.88	-0.38	2.48
2,362.0	18.01	131.93	2,280.4	-360.1	379.2	522.9	0.80	-0.79	-0.19
2,424.0	17.71	131.38	2,339.4	-372.8	393.4	542.0	0.56	-0.48	-0.89
2,488.0	18.26	132.82	2,400.3	-386.0	408.0	561.7	1.11	0.86	2.25
2,550.0	18.25	132.30	2,459.2	-399.2	422.4	581.1	0.26	-0.02	-0.84
2,613.0	19.07	135.18	2,518.9	-413.1	436.9	601.3	1.96	1.30	4.57
2,676.0	18.79	134.05	2,578.4	-427.5	451.5	621.7	0.73	-0.44	-1.79
2,739.0	18.37	134.49	2,638.2	-441.5	465.8	641.8	0.70	-0.67	0.70
2,801.0	18.81	133.85	2,696.9	-455.2	480.0	661.5	0.78	0.71	-1.03
2,864.0	19.39	134.26	2,756.5	-469.6	494.8	682.2	0.94	0.92	0.65
2,928.0	19.33	135.69	2,816.8	-484.6	509.8	703.4	0.75	-0.09	2.23
2,991.0	19.10	133.39	2,876.3	-499.1	524.6	724.1	1.26	-0.37	-3.65
3,053.0	18.48	132.68	2,935.0	-512.7	539.2	744.1	1.07	-1.00	-1.15
3,115.0	18.13	131.32	2,993.9	-525.8	553.7	763.5	0.89	-0.56	-2.19
3,179.0	19.85	131.15	3,054.4	-539.5	569.3	784.3	2.69	2.69	-0.27
3,243.0	19.22	131.74	3,114.7	-553.7	585.4	805.7	1.03	-0.98	0.92
3,306.0	18.54	131.09	3,174.3	-567.1	600.7	826.1	1.13	-1.08	-1.03
3,368.0	19.49	131.41	3,232.9	-580.5	615.8	846.3	1.54	1.53	0.52
3,430.0	19.53	131.67	3,291.4	-594.2	631.3	867.0	0.15	0.06	0.42
3,494.0	18.93	131.68	3,351.8	-608.2	647.1	888.1	0.94	-0.94	0.02
3,557.0	18.31	131.31	3,411.5	-621.5	662.1	908.2	1.00	-0.98	-0.59
3,620.0	17.74	131.54	3,471.4	-634.4	676.8	927.6	0.91	-0.90	0.37
3,682.0	16.90	130.17	3,530.6	-646.5	690.7	946.1	1.51	-1.35	-2.21
3,745.0	16.22	131.55	3,591.0	-658.3	704.3	964.0	1.25	-1.08	2.19

**Company:** Samson Resources Company  
**Project:** La Plata County, C.O.  
**Site:** SEC 36-T33N-R9W  
**Well:** Southern Ute 33-9-36 #4  
**Wellbore:** Original Hole  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Southern Ute 33-9-36 #4  
**TVD Reference:** AWS 507 @ 7381.0ft (16' KB + 7365' GL)  
**MD Reference:** AWS 507 @ 7381.0ft (16' KB + 7365' GL)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

**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)
3,808.0	15.52	132.22	3,651.6	-669.8	717.1	981.2	1.15	-1.11	1.06
3,871.0	15.75	138.34	3,712.3	-681.8	729.1	998.2	2.64	0.37	9.71
3,943.0	14.83	136.66	3,781.7	-695.8	741.9	1,017.1	1.42	-1.28	-2.33
3,995.0	14.31	134.78	3,832.1	-705.2	751.0	1,030.2	1.35	-1.00	-3.62
4,058.0	14.71	127.53	3,893.0	-715.5	762.9	1,045.9	2.95	0.63	-11.51
4,120.0	13.85	126.02	3,953.1	-724.7	775.1	1,061.1	1.51	-1.39	-2.44
4,183.0	13.24	125.74	4,014.4	-733.3	787.1	1,075.8	0.97	-0.97	-0.44
4,246.0	12.91	126.46	4,075.7	-741.7	798.6	1,089.9	0.58	-0.52	1.14
4,309.0	12.67	125.68	4,137.2	-750.0	809.9	1,103.7	0.47	-0.38	-1.24
4,349.0	12.36	125.69	4,176.2	-755.0	816.9	1,112.3	0.78	-0.78	0.03
4,410.0	12.36	125.69	4,235.8	-762.6	827.5	1,125.3	0.00	0.00	0.00

**Design Targets**
**Target Name**

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
S.U. 33-9 #36-2 WH	0.00	0.00	0.0	-14.2	53.1	1,150,341.38	2,334,136.04	37° 3' 25.972 N	107° 46' 55.044 W
- actual wellpath misses target center by 55.0ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Circle (radius 5.0)									
Bondad 33-9 #21A W	0.00	360.00	0.0	-42.6	102.7	1,150,312.97	2,334,185.62	37° 3' 25.704 N	107° 46' 54.424 W
- actual wellpath misses target center by 111.2ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Circle (radius 5.0)									
S.U. 33-9-36 #4 South	0.00	0.00	4,175.0	-794.0	843.0	1,149,561.56	2,334,925.93	37° 3' 18.455 N	107° 46' 45.068 W
- actual wellpath misses target center by 46.9ft at 4349.0ft MD (4176.2 TVD, -755.0 N, 816.9 E)									
- Polygon									
Point 1			4,175.0	0.0	400.0	1,149,561.56	2,335,325.95		
Point 2			4,175.0	0.0	-400.0	1,149,561.56	2,334,525.92		
S.U. 33-9-36 #4 East	0.00	0.00	4,175.0	-794.0	843.0	1,149,561.56	2,334,925.93	37° 3' 18.455 N	107° 46' 45.068 W
- actual wellpath misses target center by 46.9ft at 4349.0ft MD (4176.2 TVD, -755.0 N, 816.9 E)									
- Polygon									
Point 1			4,175.0	400.0	0.0	1,149,961.58	2,334,925.93		
Point 2			4,175.0	-400.0	0.0	1,149,161.55	2,334,925.93		
S.U. 33-9-36 #4 BHL	0.00	0.00	4,175.0	-794.0	843.0	1,149,561.56	2,334,925.93	37° 3' 18.455 N	107° 46' 45.068 W
- actual wellpath misses target center by 46.9ft at 4349.0ft MD (4176.2 TVD, -755.0 N, 816.9 E)									
- Circle (radius 100.0)									

Checked By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_