

# **Sandridge Energy, INC.(mid-con.)**

**Comanche County (KS27S)**

**Sec 16-T33S-R19W**

**Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**01 April, 2013**

# Archer Survey Report

<b>Company:</b>	Sandridge Energy, INC.(mid-con.)	<b>Local Co-ordinate Reference:</b>	Well Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41
<b>Project:</b>	Comanche County (KS27S)	<b>TVD Reference:</b>	WELL @ 1997.0usft (Original Well Elev)
<b>Site:</b>	Sec 16-T33S-R19W	<b>MD Reference:</b>	WELL @ 1997.0usft (Original Well Elev)
<b>Well:</b>	Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b> Comanche County (KS27S), KS South			
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Kansas South 1502		

<b>Site</b> Sec 16-T33S-R19W			
<b>Site Position:</b>		<b>Northing:</b>	182,272.00 usft
<b>From:</b>	Map	<b>Easting:</b>	1,738,109.00 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	37° 9' 49.625 N
		<b>Longitude:</b>	99° 23' 55.287 W
		<b>Grid Convergence:</b>	-0.55 °

<b>Well</b> Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41			
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>
			182,471.00 usft
			<b>Latitude:</b>
			37° 9' 51.655 N
			<b>Longitude:</b>
			99° 23' 47.183 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>
			usft
			<b>Ground Level:</b>
			1,979.0 usft

<b>Wellbore</b> Wellbore #1					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2013/03/14	5.36	65.11	51,709

<b>Design</b> Wellbore #1					
<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) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0		359.25

<b>Survey Program</b> Date 2013/04/01					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
1,038.0	9,615.0	Archer MWD Surveys (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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	
1,038.0	1.10	67.50	1,037.9	3.8	9.2	3.7	0.11	0.11	0.00	
<b>First Archer MWD Survey</b>										
1,494.0	1.70	67.30	1,493.8	8.1	19.5	7.8	0.13	0.13	-0.04	
1,951.0	1.30	189.30	1,950.7	5.6	24.9	5.3	0.58	-0.09	26.70	
2,408.0	0.70	208.40	2,407.6	-2.0	22.7	-2.3	0.15	-0.13	4.18	
2,864.0	1.20	248.80	2,863.6	-6.2	17.0	-6.4	0.18	0.11	8.86	
3,321.0	1.80	244.10	3,320.4	-11.0	6.0	-11.1	0.13	0.13	-1.03	
3,777.0	2.10	2.10	3,776.3	-5.8	-0.1	-5.8	0.73	0.07	25.88	
4,234.0	0.80	17.80	4,233.1	5.6	1.2	5.6	0.29	-0.28	3.44	

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<b>Site:</b>	Sec 16-T33S-R19W	<b>MD Reference:</b>	WELL @ 1997.0usft (Original Well Elev)
<b>Well:</b>	Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,389.0	0.90	7.20	4,388.1	7.8	1.7	7.8	0.12	0.06	-6.84	
4,415.0	0.80	12.20	4,414.1	8.2	1.7	8.2	0.48	-0.38	19.23	
4,446.0	1.80	7.00	4,445.1	8.9	1.8	8.9	3.24	3.23	-16.77	
4,476.0	3.60	358.30	4,475.1	10.3	1.9	10.3	6.14	6.00	-29.00	
4,507.0	5.50	352.30	4,506.0	12.8	1.6	12.8	6.31	6.13	-19.35	
4,537.0	7.70	347.90	4,535.8	16.2	1.0	16.2	7.52	7.33	-14.67	
4,568.0	10.20	344.90	4,566.4	20.9	-0.1	20.9	8.20	8.06	-9.68	
4,598.0	12.60	346.60	4,595.8	26.6	-1.6	26.6	8.08	8.00	5.67	
4,629.0	15.40	348.00	4,625.9	33.9	-3.2	34.0	9.10	9.03	4.52	
4,659.0	17.40	348.70	4,654.7	42.2	-4.9	42.3	6.70	6.67	2.33	
4,690.0	19.30	351.10	4,684.1	51.8	-6.6	51.9	6.59	6.13	7.74	
4,720.0	21.10	352.60	4,712.2	62.1	-8.1	62.2	6.24	6.00	5.00	
4,750.0	22.90	354.00	4,740.0	73.2	-9.4	73.4	6.25	6.00	4.67	
4,781.0	24.80	355.20	4,768.4	85.7	-10.6	85.8	6.33	6.13	3.87	
4,811.0	26.80	355.60	4,795.4	98.7	-11.6	98.9	6.69	6.67	1.33	
4,842.0	29.30	356.70	4,822.8	113.3	-12.6	113.4	8.24	8.06	3.55	
4,872.0	30.50	358.40	4,848.8	128.2	-13.2	128.4	4.90	4.00	5.67	
4,903.0	31.20	0.40	4,875.4	144.1	-13.4	144.3	4.01	2.26	6.45	
4,933.0	32.50	0.50	4,900.9	159.9	-13.3	160.1	4.34	4.33	0.33	
4,963.0	33.90	359.80	4,926.0	176.4	-13.2	176.5	4.84	4.67	-2.33	
4,994.0	35.00	359.00	4,951.5	193.9	-13.4	194.1	3.84	3.55	-2.58	
5,024.0	36.60	358.40	4,975.9	211.4	-13.8	211.6	5.46	5.33	-2.00	
5,055.0	39.50	357.10	5,000.3	230.5	-14.6	230.7	9.70	9.35	-4.19	
5,085.0	40.70	356.00	5,023.2	249.8	-15.7	250.0	4.65	4.00	-3.67	
5,116.0	42.50	354.90	5,046.4	270.3	-17.4	270.5	6.27	5.81	-3.55	
5,146.0	44.70	355.50	5,068.1	290.9	-19.1	291.2	7.46	7.33	2.00	
5,177.0	47.80	357.60	5,089.6	313.3	-20.4	313.5	11.13	10.00	6.77	
5,207.0	51.30	358.30	5,109.0	336.1	-21.2	336.4	11.80	11.67	2.33	
5,237.0	52.50	358.40	5,127.5	359.7	-21.9	360.0	4.01	4.00	0.33	
5,268.0	52.90	358.30	5,146.3	384.3	-22.6	384.6	1.32	1.29	-0.32	
5,298.0	53.10	357.70	5,164.4	408.3	-23.5	408.6	1.73	0.67	-2.00	
5,329.0	52.70	357.60	5,183.1	433.0	-24.5	433.3	1.32	-1.29	-0.32	
5,360.0	52.70	357.40	5,201.9	457.6	-25.6	457.9	0.51	0.00	-0.65	
5,390.0	52.70	357.60	5,220.0	481.5	-26.6	481.8	0.53	0.00	0.67	
5,421.0	55.20	358.60	5,238.3	506.5	-27.4	506.8	8.48	8.06	3.23	
5,451.0	58.90	359.10	5,254.6	531.7	-27.9	532.0	12.41	12.33	1.67	
5,482.0	61.80	359.70	5,269.9	558.6	-28.2	558.9	9.50	9.35	1.94	
5,512.0	64.40	0.20	5,283.5	585.4	-28.2	585.7	8.79	8.67	1.67	
5,543.0	66.10	0.50	5,296.5	613.5	-28.1	613.8	5.55	5.48	0.97	
5,573.0	66.50	0.80	5,308.5	641.0	-27.7	641.3	1.62	1.33	1.00	
5,604.0	68.70	1.90	5,320.4	669.6	-27.1	669.9	7.82	7.10	3.55	
5,634.0	70.50	2.50	5,330.8	697.7	-26.0	698.0	6.29	6.00	2.00	

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Survey									
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5,665.0	72.90	2.50	5,340.5	727.1	-24.7	727.4	7.74	7.74	0.00
5,695.0	76.40	2.20	5,348.5	756.0	-23.5	756.3	11.71	11.67	-1.00
5,726.0	80.10	2.00	5,354.8	786.4	-22.4	786.6	11.95	11.94	-0.65
5,756.0	84.10	1.20	5,358.9	816.1	-21.6	816.3	13.59	13.33	-2.67
5,856.0	90.00	1.30	5,364.1	915.9	-19.4	916.0	5.90	5.90	0.10
5,887.0	90.50	1.00	5,363.9	946.9	-18.8	947.0	1.88	1.61	-0.97
5,917.0	90.70	1.00	5,363.6	976.9	-18.2	977.0	0.67	0.67	0.00
5,947.0	89.10	1.10	5,363.7	1,006.8	-17.7	1,007.0	5.34	-5.33	0.33
5,977.0	89.40	0.90	5,364.1	1,036.8	-17.2	1,037.0	1.20	1.00	-0.67
6,008.0	90.00	0.70	5,364.2	1,067.8	-16.7	1,068.0	2.04	1.94	-0.65
6,039.0	90.50	0.80	5,364.1	1,098.8	-16.3	1,099.0	1.64	1.61	0.32
6,069.0	91.10	0.60	5,363.7	1,128.8	-16.0	1,128.9	2.11	2.00	-0.67
6,099.0	89.10	1.20	5,363.6	1,158.8	-15.5	1,158.9	6.96	-6.67	2.00
6,130.0	88.80	1.30	5,364.2	1,189.8	-14.8	1,189.9	1.02	-0.97	0.32
6,160.0	89.10	1.20	5,364.7	1,219.8	-14.2	1,219.9	1.05	1.00	-0.33
6,191.0	89.40	1.50	5,365.1	1,250.8	-13.4	1,250.9	1.37	0.97	0.97
6,221.0	89.80	1.10	5,365.3	1,280.8	-12.8	1,280.8	1.89	1.33	-1.33
6,252.0	89.90	1.30	5,365.4	1,311.8	-12.1	1,311.8	0.72	0.32	0.65
6,282.0	88.30	1.90	5,365.9	1,341.8	-11.3	1,341.8	5.70	-5.33	2.00
6,313.0	88.40	2.00	5,366.8	1,372.7	-10.2	1,372.7	0.46	0.32	0.32
6,344.0	89.00	1.80	5,367.5	1,403.7	-9.2	1,403.7	2.04	1.94	-0.65
6,374.0	89.20	2.00	5,368.0	1,433.7	-8.2	1,433.7	0.94	0.67	0.67
6,405.0	89.70	1.70	5,368.3	1,464.7	-7.2	1,464.6	1.88	1.61	-0.97
6,435.0	90.20	1.80	5,368.3	1,494.6	-6.3	1,494.6	1.70	1.67	0.33
6,465.0	90.80	1.30	5,368.0	1,524.6	-5.5	1,524.6	2.60	2.00	-1.67
6,495.0	89.70	0.20	5,367.9	1,554.6	-5.1	1,554.6	5.19	-3.67	-3.67
6,526.0	89.70	0.10	5,368.1	1,585.6	-5.0	1,585.6	0.32	0.00	-0.32
6,557.0	90.40	0.30	5,368.0	1,616.6	-4.9	1,616.6	2.35	2.26	0.65
6,587.0	90.90	0.10	5,367.7	1,646.6	-4.8	1,646.5	1.80	1.67	-0.67
6,618.0	91.50	0.10	5,367.0	1,677.6	-4.7	1,677.5	1.94	1.94	0.00
6,649.0	90.30	359.10	5,366.6	1,708.6	-4.9	1,708.5	5.04	-3.87	-3.23
6,681.0	90.30	359.10	5,366.4	1,740.6	-5.4	1,740.5	0.00	0.00	0.00
6,712.0	90.90	358.80	5,366.1	1,771.6	-6.0	1,771.5	2.16	1.94	-0.97
6,744.0	91.50	358.60	5,365.4	1,803.6	-6.7	1,803.5	1.98	1.88	-0.63
6,775.0	89.80	358.50	5,365.0	1,834.6	-7.5	1,834.5	5.49	-5.48	-0.32
6,807.0	89.80	358.60	5,365.2	1,866.6	-8.3	1,866.5	0.31	0.00	0.31
6,838.0	90.30	358.60	5,365.1	1,897.6	-9.1	1,897.5	1.61	1.61	0.00
6,870.0	90.90	358.60	5,364.8	1,929.5	-9.9	1,929.5	1.88	1.88	0.00
6,901.0	89.40	358.80	5,364.7	1,960.5	-10.6	1,960.5	4.88	-4.84	0.65
6,933.0	89.30	358.90	5,365.1	1,992.5	-11.2	1,992.5	0.44	-0.31	0.31
6,964.0	89.70	358.90	5,365.3	2,023.5	-11.8	2,023.5	1.29	1.29	0.00
6,996.0	90.00	358.60	5,365.4	2,055.5	-12.5	2,055.5	1.33	0.94	-0.94
7,027.0	90.80	358.70	5,365.2	2,086.5	-13.2	2,086.5	2.60	2.58	0.32

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7,059.0	91.10	358.60	5,364.7	2,118.5	-14.0	2,118.5	0.99	0.94	-0.31
7,090.0	89.70	357.20	5,364.5	2,149.5	-15.1	2,149.5	6.39	-4.52	-4.52
7,122.0	89.40	356.80	5,364.7	2,181.4	-16.8	2,181.5	1.56	-0.94	-1.25
7,153.0	90.20	357.10	5,364.8	2,212.4	-18.5	2,212.4	2.76	2.58	0.97
7,185.0	90.60	356.70	5,364.6	2,244.3	-20.2	2,244.4	1.77	1.25	-1.25
7,216.0	91.40	356.90	5,364.1	2,275.3	-21.9	2,275.4	2.66	2.58	0.65
7,248.0	90.00	357.10	5,363.7	2,307.2	-23.6	2,307.3	4.42	-4.38	0.63
7,279.0	90.20	356.90	5,363.6	2,338.2	-25.2	2,338.3	0.91	0.65	-0.65
7,311.0	90.70	356.50	5,363.4	2,370.1	-27.1	2,370.3	2.00	1.56	-1.25
7,342.0	89.40	357.60	5,363.3	2,401.1	-28.7	2,401.3	5.49	-4.19	3.55
7,373.0	89.20	357.70	5,363.7	2,432.1	-29.9	2,432.2	0.72	-0.65	0.32
7,405.0	89.80	357.60	5,364.0	2,464.0	-31.2	2,464.2	1.90	1.88	-0.31
7,436.0	90.30	357.40	5,364.0	2,495.0	-32.6	2,495.2	1.74	1.61	-0.65
7,468.0	89.10	358.00	5,364.1	2,527.0	-33.9	2,527.2	4.19	-3.75	1.88
7,499.0	89.50	358.20	5,364.5	2,558.0	-34.9	2,558.2	1.44	1.29	0.65
7,531.0	90.60	358.40	5,364.5	2,589.9	-35.8	2,590.2	3.49	3.44	0.63
7,562.0	89.80	359.10	5,364.4	2,620.9	-36.5	2,621.2	3.43	-2.58	2.26
7,594.0	90.20	359.30	5,364.4	2,652.9	-37.0	2,653.2	1.40	1.25	0.63
7,625.0	89.40	0.20	5,364.5	2,683.9	-37.1	2,684.2	3.88	-2.58	2.90
7,657.0	89.50	0.50	5,364.8	2,715.9	-36.9	2,716.2	0.99	0.31	0.94
7,688.0	90.30	0.30	5,364.8	2,746.9	-36.7	2,747.2	2.66	2.58	-0.65
7,720.0	91.00	0.20	5,364.5	2,778.9	-36.6	2,779.2	2.21	2.19	-0.31
7,751.0	89.60	0.10	5,364.3	2,809.9	-36.5	2,810.2	4.53	-4.52	-0.32
7,783.0	87.80	0.70	5,365.0	2,841.9	-36.2	2,842.1	5.93	-5.63	1.88
7,814.0	87.90	0.70	5,366.2	2,872.9	-35.9	2,873.1	0.32	0.32	0.00
7,846.0	88.70	0.50	5,367.2	2,904.9	-35.5	2,905.1	2.58	2.50	-0.63
7,877.0	87.30	359.90	5,368.2	2,935.9	-35.4	2,936.1	4.91	-4.52	-1.94
7,909.0	87.60	359.80	5,369.7	2,967.8	-35.5	2,968.0	0.99	0.94	-0.31
7,940.0	88.40	359.80	5,370.7	2,998.8	-35.6	2,999.0	2.58	2.58	0.00
7,972.0	89.10	359.60	5,371.4	3,030.8	-35.8	3,031.0	2.27	2.19	-0.63
8,003.0	87.80	359.80	5,372.3	3,061.8	-35.9	3,062.0	4.24	-4.19	0.65
8,035.0	87.70	359.80	5,373.5	3,093.8	-36.1	3,094.0	0.31	-0.31	0.00
8,066.0	87.80	0.20	5,374.8	3,124.7	-36.1	3,124.9	1.33	0.32	1.29
8,098.0	87.90	0.10	5,376.0	3,156.7	-36.0	3,156.9	0.44	0.31	-0.31
8,129.0	86.30	359.50	5,377.5	3,187.7	-36.1	3,187.9	5.51	-5.16	-1.94
8,161.0	86.20	359.10	5,379.6	3,219.6	-36.5	3,219.8	1.29	-0.31	-1.25
8,192.0	86.70	359.50	5,381.5	3,250.5	-36.9	3,250.7	2.06	1.61	1.29
8,224.0	87.00	359.60	5,383.3	3,282.5	-37.1	3,282.7	0.99	0.94	0.31
8,255.0	87.30	359.70	5,384.8	3,313.4	-37.3	3,313.7	1.02	0.97	0.32
8,287.0	87.60	359.10	5,386.3	3,345.4	-37.6	3,345.6	2.09	0.94	-1.88
8,318.0	87.70	358.80	5,387.5	3,376.4	-38.2	3,376.6	1.02	0.32	-0.97
8,350.0	88.90	359.50	5,388.5	3,408.4	-38.7	3,408.6	4.34	3.75	2.19

# Archer

## Survey Report

<b>Company:</b>	Sandridge Energy, INC.(mid-con.)	<b>Local Co-ordinate Reference:</b>	Well Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41
<b>Project:</b>	Comanche County (KS27S)	<b>TVD Reference:</b>	WELL @ 1997.0usft (Original Well Elev)
<b>Site:</b>	Sec 16-T33S-R19W	<b>MD Reference:</b>	WELL @ 1997.0usft (Original Well Elev)
<b>Well:</b>	Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,381.0	90.10	359.80	5,388.8	3,439.4	-38.9	3,439.6	3.99	3.87	0.97
8,413.0	89.90	359.30	5,388.8	3,471.4	-39.1	3,471.6	1.68	-0.63	-1.56
8,445.0	91.20	359.30	5,388.4	3,503.4	-39.5	3,503.6	4.06	4.06	0.00
8,476.0	93.10	0.60	5,387.3	3,534.3	-39.5	3,534.5	7.42	6.13	4.19
8,507.0	93.50	0.70	5,385.5	3,565.3	-39.2	3,565.5	1.33	1.29	0.32
8,539.0	92.20	0.10	5,383.9	3,597.2	-39.0	3,597.4	4.47	-4.06	-1.88
8,571.0	91.90	359.60	5,382.8	3,629.2	-39.0	3,629.4	1.82	-0.94	-1.56
8,602.0	91.20	0.60	5,381.9	3,660.2	-39.0	3,660.4	3.94	-2.26	3.23
8,634.0	90.10	1.30	5,381.6	3,692.2	-38.5	3,692.4	4.07	-3.44	2.19
8,665.0	91.00	2.70	5,381.3	3,723.2	-37.4	3,723.3	5.37	2.90	4.52
8,697.0	92.40	3.90	5,380.3	3,755.1	-35.5	3,755.2	5.76	4.38	3.75
8,728.0	93.60	5.40	5,378.7	3,786.0	-33.0	3,786.1	6.19	3.87	4.84
8,760.0	92.60	4.10	5,377.0	3,817.8	-30.4	3,817.9	5.12	-3.13	-4.06
8,791.0	89.70	2.10	5,376.3	3,848.7	-28.7	3,848.8	11.36	-9.35	-6.45
8,823.0	88.10	0.10	5,377.0	3,880.7	-28.1	3,880.8	8.00	-5.00	-6.25
8,854.0	88.70	359.90	5,377.8	3,911.7	-28.1	3,911.8	2.04	1.94	-0.65
8,886.0	88.20	359.10	5,378.7	3,943.7	-28.4	3,943.7	2.95	-1.56	-2.50
8,917.0	89.30	359.80	5,379.4	3,974.7	-28.7	3,974.7	4.21	3.55	2.26
8,949.0	91.60	1.00	5,379.1	4,006.7	-28.4	4,006.7	8.11	7.19	3.75
8,980.0	94.50	4.40	5,377.5	4,037.6	-27.0	4,037.6	14.40	9.35	10.97
9,012.0	95.20	4.40	5,374.8	4,069.4	-24.5	4,069.4	2.19	2.19	0.00
9,043.0	93.10	3.10	5,372.5	4,100.2	-22.5	4,100.2	7.96	-6.77	-4.19
9,075.0	90.10	3.10	5,371.6	4,132.2	-20.8	4,132.1	9.38	-9.38	0.00
9,106.0	90.00	2.00	5,371.6	4,163.2	-19.4	4,163.0	3.56	-0.32	-3.55
9,138.0	89.50	1.10	5,371.7	4,195.1	-18.5	4,195.0	3.22	-1.56	-2.81
9,169.0	90.60	1.40	5,371.7	4,226.1	-17.9	4,226.0	3.68	3.55	0.97
9,201.0	89.30	0.50	5,371.7	4,258.1	-17.3	4,258.0	4.94	-4.06	-2.81
9,232.0	87.70	359.00	5,372.5	4,289.1	-17.5	4,289.0	7.07	-5.16	-4.84
9,264.0	86.60	358.10	5,374.1	4,321.1	-18.3	4,320.9	4.44	-3.44	-2.81
9,295.0	86.80	357.60	5,375.9	4,352.0	-19.4	4,351.9	1.73	0.65	-1.61
9,327.0	87.10	357.60	5,377.6	4,383.9	-20.8	4,383.8	0.94	0.94	0.00
9,358.0	87.40	358.40	5,379.1	4,414.9	-21.9	4,414.8	2.75	0.97	2.58
9,390.0	87.60	357.50	5,380.5	4,446.8	-23.0	4,446.7	2.88	0.63	-2.81
9,421.0	88.10	357.30	5,381.7	4,477.8	-24.4	4,477.7	1.74	1.61	-0.65
9,452.0	88.70	356.70	5,382.5	4,508.7	-26.0	4,508.7	2.74	1.94	-1.94
9,484.0	89.10	356.50	5,383.1	4,540.6	-27.9	4,540.6	1.40	1.25	-0.63
9,515.0	89.10	357.10	5,383.6	4,571.6	-29.7	4,571.6	1.94	0.00	1.94
9,547.0	89.40	357.30	5,384.1	4,603.5	-31.2	4,603.6	1.13	0.94	0.63
9,566.0	89.60	357.20	5,384.2	4,622.5	-32.1	4,622.5	1.18	1.05	-0.53
<b>Last Archer MWD Survey</b>									
9,615.0	89.60	357.20	5,384.6	4,671.5	-34.5	4,671.5	0.00	0.00	0.00
<b>Projection to TD - PBHL Rock 1-16H</b>									

# Archer Survey Report

<b>Company:</b>	Sandridge Energy, INC.(mid-con.)	<b>Local Co-ordinate Reference:</b>	Well Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41
<b>Project:</b>	Comanche County (KS27S)	<b>TVD Reference:</b>	WELL @ 1997.0usft (Original Well Elev)
<b>Site:</b>	Sec 16-T33S-R19W	<b>MD Reference:</b>	WELL @ 1997.0usft (Original Well Elev)
<b>Well:</b>	Rock 3319 1-16H/ Job #04150-431-22/ Lariat 41	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

## Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
1,038.0	1,037.9	3.8	9.2	First Archer MWD Survey
9,566.0	5,384.2	4,622.5	-32.1	Last Archer MWD Survey
9,615.0	5,384.6	4,671.5	-34.5	Projection to TD

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