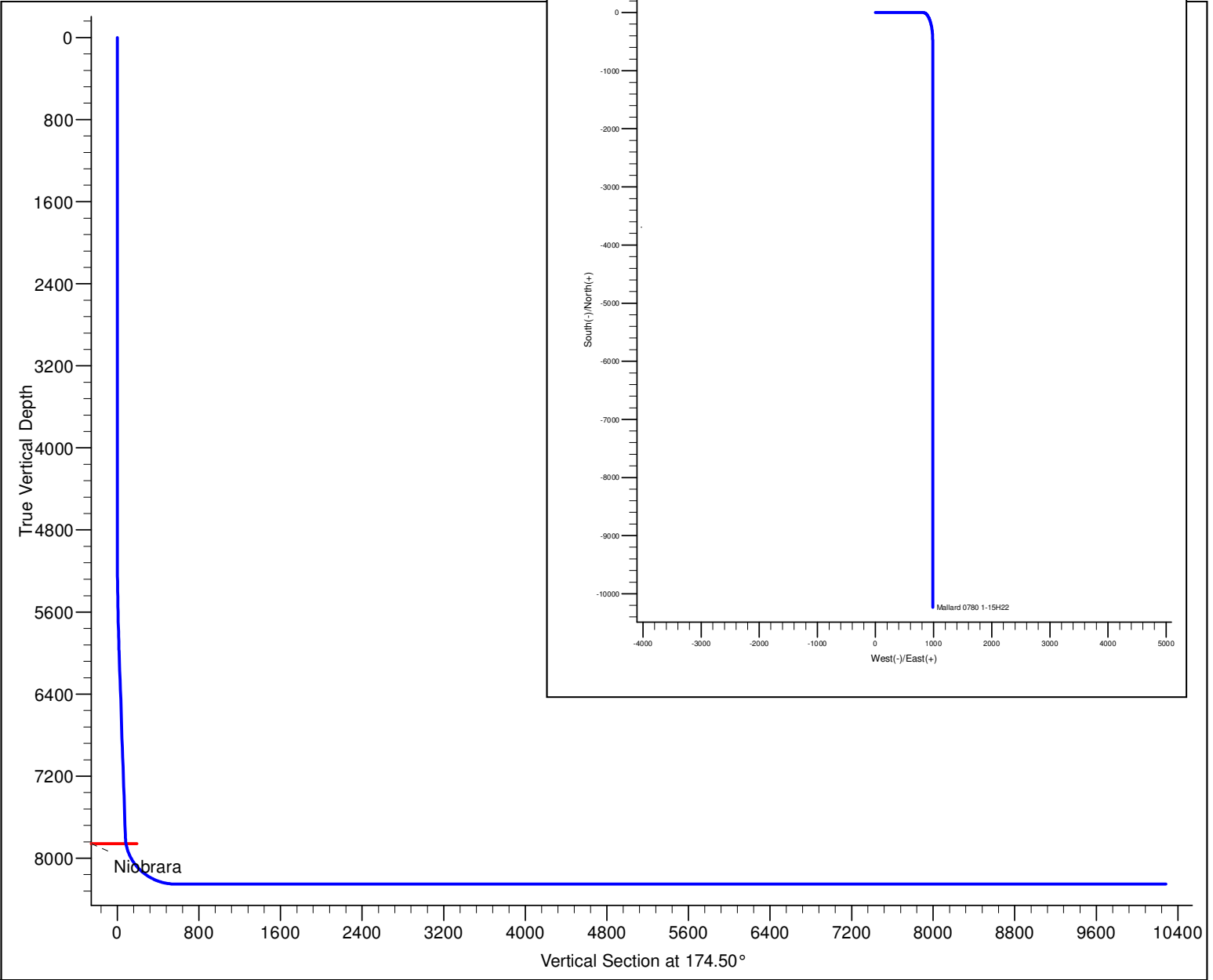


PROJECT DETAILS: North Park Basin										<div><div><div><div><div></div><div>G</div></div><div><div></div><div>T</div></div><div><div></div><div>M</div></div></div><div><div></div></div></div><div><div><div></div><div></div></div></div></div> <div>Azimuths to Grid North True North: 0.56° Magnetic North: 10.44°  Magnetic Field Strength: 53193.1snT Dip Angle: 66.98° Date: 12/31/2009 Model: IGRF200510</div>			
Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Colorado Northern Zone  System Datum: Mean Sea Level													
FORMATION TOP DETAILS										CASING DETAILS			
TVDPath		MDPath		Formation		DipAngle		DipDir		TVD	MD	Name	Size
7858.0		7994.6		Niobrara		0.00				2500.0	2500.0	9 5/8" Surface Casing	5 1/2" Production Casing
DESIGN DETAILS: Design #1										Project: North Park Basin Site: T7N-R80W-S16 Well: Mallard 0780 1-15H22 Wellbore: Wellbore #1 Design: Design #1			
0' Vertical Section coordinates													
Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD					
TD		174.50	Slot		0.0	0.0		0.0					



SECTION DETAILS											
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	5000.0	0.00	0.00	5000.0	0.0	0.0	0.00	0.00	0.0		
3	5983.2	19.66	90.00	5964.0	0.0	167.1	2.00	90.00	16.0		
4	7935.4	19.66	90.00	7802.4	0.0	824.0	0.00	0.00	78.9		
5	8685.4	90.00	180.00	8252.0	-477.4	984.7	12.00	90.00	569.6	Mallard BHL	
6	18443.1	90.00	180.00	8252.0	-10235.1	985.0	0.00	0.00	10282.4	Mallard BHL	

# **SandRidge Energy**

**North Park Basin**

**T7N-R80W-S16**

**Mallard 0780 1-15H22**

**Wellbore #1**

**Plan: Design #1**

## **Standard Survey Report**

**05 June, 2017**

# SandRidge Energy, Inc.

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Mallard 0780 1-15H22
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8136.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8136.0usft
<b>Well:</b>	Mallard 0780 1-15H22	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMPProd

<b>Project</b>	North Park Basin		
<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 Northern Zone		

Site		T7N-R80W-S16			
Site Position:		Northing:	1,453,179.12 usft	Latitude:	40° 34' 26.505 N
From:	Map	Easting:	2,754,928.85 usft	Longitude:	106° 22' 55.973 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.57 °

Well	Mallard 0780 1-15H22					
Well Position	+N/-S	0.0 usft	Northing:	1,456,759.13 usft	Latitude:	40° 35' 2.231 N
	+E/-W	0.0 usft	Easting:	2,758,529.88 usft	Longitude:	106° 22' 9.764 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,112.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	9.87	66.98	53,193

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	174.50	

<b>Survey Tool Program</b>	<b>Date</b>	6/5/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.0	18,442.3	Design #1 (Wellbore #1)	Sperry MWD	Fixed:v2:standard declination	

<b>Planned Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</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	
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	

# SandRidge Energy, Inc.

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Mallard 0780 1-15H22
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8136.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8136.0usft
<b>Well:</b>	Mallard 0780 1-15H22	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
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
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Start Build 2.00</b>									
5,100.0	2.00	90.00	5,100.0	0.0	1.7	0.2	2.00	2.00	0.00
5,200.0	4.00	90.00	5,199.8	0.0	7.0	0.7	2.00	2.00	0.00

# SandRidge Energy, Inc.

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Mallard 0780 1-15H22
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8136.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8136.0usft
<b>Well:</b>	Mallard 0780 1-15H22	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
5,300.0	6.00	90.00	5,299.5	0.0	15.7	1.5	2.00	2.00	0.00
5,400.0	8.00	90.00	5,398.7	0.0	27.9	2.7	2.00	2.00	0.00
5,500.0	10.00	90.00	5,497.5	0.0	43.5	4.2	2.00	2.00	0.00
5,600.0	12.00	90.00	5,595.6	0.0	62.6	6.0	2.00	2.00	0.00
5,700.0	14.00	90.00	5,693.1	0.0	85.1	8.2	2.00	2.00	0.00
5,800.0	16.00	90.00	5,789.6	0.0	111.0	10.6	2.00	2.00	0.00
5,900.0	18.00	90.00	5,885.3	0.0	140.2	13.4	2.00	2.00	0.00
5,983.2	19.66	90.00	5,964.0	0.0	167.1	16.0	2.00	2.00	0.00
<b>Start 1952.2 hold at 5983.2 MD</b>									
6,000.0	19.66	90.00	5,979.8	0.0	172.7	16.5	0.00	0.00	0.00
6,100.0	19.66	90.00	6,074.0	0.0	206.4	19.8	0.00	0.00	0.00
6,200.0	19.66	90.00	6,168.2	0.0	240.0	23.0	0.00	0.00	0.00
6,300.0	19.66	90.00	6,262.3	0.0	273.7	26.2	0.00	0.00	0.00
6,400.0	19.66	90.00	6,356.5	0.0	307.3	29.4	0.00	0.00	0.00
6,500.0	19.66	90.00	6,450.7	0.0	341.0	32.7	0.00	0.00	0.00
6,600.0	19.66	90.00	6,544.8	0.0	374.6	35.9	0.00	0.00	0.00
6,700.0	19.66	90.00	6,639.0	0.0	408.3	39.1	0.00	0.00	0.00
6,800.0	19.66	90.00	6,733.2	0.0	441.9	42.3	0.00	0.00	0.00
6,900.0	19.66	90.00	6,827.3	0.0	475.6	45.6	0.00	0.00	0.00
7,000.0	19.66	90.00	6,921.5	0.0	509.2	48.8	0.00	0.00	0.00
7,100.0	19.66	90.00	7,015.7	0.0	542.9	52.0	0.00	0.00	0.00
7,200.0	19.66	90.00	7,109.9	0.0	576.5	55.2	0.00	0.00	0.00
7,300.0	19.66	90.00	7,204.0	0.0	610.2	58.5	0.00	0.00	0.00
7,400.0	19.66	90.00	7,298.2	0.0	643.8	61.7	0.00	0.00	0.00
7,500.0	19.66	90.00	7,392.4	0.0	677.5	64.9	0.00	0.00	0.00
7,600.0	19.66	90.00	7,486.5	0.0	711.1	68.1	0.00	0.00	0.00
7,700.0	19.66	90.00	7,580.7	0.0	744.8	71.3	0.00	0.00	0.00
7,800.0	19.66	90.00	7,674.9	0.0	778.4	74.6	0.00	0.00	0.00
7,900.0	19.66	90.00	7,769.0	0.0	812.1	77.8	0.00	0.00	0.00
7,935.4	19.66	90.00	7,802.4	0.0	824.0	78.9	0.00	0.00	0.00
<b>Start DLS 12.00 TFO 90.00</b>									
7,950.0	19.74	95.18	7,816.1	-0.2	828.9	79.6	12.00	0.51	35.57
7,975.0	20.21	103.86	7,839.6	-1.6	837.3	81.8	12.00	1.87	34.73
7,994.6	20.86	110.32	7,858.0	-3.7	843.9	84.5	12.00	3.33	32.89
<b>Niobrara</b>									
8,000.0	21.08	112.01	7,863.0	-4.4	845.7	85.3	12.00	4.08	31.53
8,025.0	22.31	119.43	7,886.2	-8.4	854.0	90.1	12.00	4.91	29.65
8,050.0	23.84	126.02	7,909.2	-13.7	862.2	96.2	12.00	6.12	26.37
8,075.0	25.61	131.80	7,932.0	-20.3	870.3	103.5	12.00	7.11	23.14
8,100.0	27.59	136.85	7,954.3	-28.1	878.3	112.1	12.00	7.90	20.19
8,125.0	29.72	141.25	7,976.3	-37.1	886.1	121.9	12.00	8.54	17.60
8,150.0	31.99	145.09	7,997.7	-47.4	893.8	132.8	12.00	9.05	15.38
8,175.0	34.35	148.47	8,018.6	-58.8	901.3	144.9	12.00	9.46	13.51
8,200.0	36.80	151.46	8,039.0	-71.4	908.5	158.1	12.00	9.78	11.95

# SandRidge Energy, Inc.

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Mallard 0780 1-15H22
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8136.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8136.0usft
<b>Well:</b>	Mallard 0780 1-15H22	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
8,225.0	39.31	154.12	8,058.7	-85.1	915.6	172.5	12.00	10.05	10.64
8,250.0	41.88	156.51	8,077.6	-99.9	922.4	187.8	12.00	10.27	9.55
8,275.0	44.49	158.66	8,095.9	-115.7	928.9	204.2	12.00	10.45	8.63
8,300.0	47.14	160.63	8,113.3	-132.5	935.1	221.5	12.00	10.60	7.86
8,325.0	49.82	162.43	8,129.9	-150.3	941.0	239.8	12.00	10.72	7.21
8,350.0	52.52	164.10	8,145.6	-168.9	946.6	258.9	12.00	10.82	6.66
8,375.0	55.25	165.64	8,160.3	-188.4	951.9	278.8	12.00	10.91	6.19
8,400.0	57.99	167.09	8,174.0	-208.7	956.8	299.4	12.00	10.98	5.79
8,425.0	60.75	168.46	8,186.8	-229.8	961.4	320.8	12.00	11.04	5.46
8,450.0	63.53	169.75	8,198.5	-251.5	965.5	342.8	12.00	11.10	5.17
8,475.0	66.31	170.98	8,209.1	-273.8	969.3	365.4	12.00	11.14	4.92
8,500.0	69.11	172.16	8,218.5	-296.7	972.7	388.5	12.00	11.18	4.72
8,525.0	71.91	173.30	8,226.9	-320.0	975.7	412.0	12.00	11.21	4.55
8,550.0	74.72	174.40	8,234.0	-343.8	978.3	436.0	12.00	11.23	4.40
8,575.0	77.53	175.47	8,240.0	-368.0	980.4	460.2	12.00	11.26	4.29
8,600.0	80.35	176.52	8,244.8	-392.5	982.1	484.8	12.00	11.27	4.19
8,625.0	83.17	177.55	8,248.4	-417.2	983.4	509.5	12.00	11.28	4.12
8,650.0	86.00	178.57	8,250.8	-442.1	984.2	534.3	12.00	11.29	4.08
8,675.0	88.82	179.58	8,251.9	-467.0	984.6	559.2	12.00	11.30	4.05
8,685.4	90.00	180.00	8,252.0	-477.4	984.7	569.6	12.02	11.31	4.04
<b>Start 9757.6 hold at 8685.4 MD</b>									
8,700.0	90.00	180.00	8,252.0	-492.0	984.7	584.1	0.00	0.00	0.00
8,800.0	90.00	180.00	8,252.0	-592.0	984.7	683.6	0.00	0.00	0.00
8,900.0	90.00	180.00	8,252.0	-692.0	984.7	783.2	0.00	0.00	0.00
9,000.0	90.00	180.00	8,252.0	-792.0	984.7	882.7	0.00	0.00	0.00
9,100.0	90.00	180.00	8,252.0	-892.0	984.7	982.3	0.00	0.00	0.00
9,200.0	90.00	180.00	8,252.0	-992.0	984.7	1,081.8	0.00	0.00	0.00
9,300.0	90.00	180.00	8,252.0	-1,092.0	984.7	1,181.3	0.00	0.00	0.00
9,400.0	90.00	180.00	8,252.0	-1,192.0	984.7	1,280.9	0.00	0.00	0.00
9,500.0	90.00	180.00	8,252.0	-1,292.0	984.7	1,380.4	0.00	0.00	0.00
9,600.0	90.00	180.00	8,252.0	-1,392.0	984.7	1,480.0	0.00	0.00	0.00
9,700.0	90.00	180.00	8,252.0	-1,492.0	984.7	1,579.5	0.00	0.00	0.00
9,800.0	90.00	180.00	8,252.0	-1,592.0	984.7	1,679.0	0.00	0.00	0.00
9,900.0	90.00	180.00	8,252.0	-1,692.0	984.7	1,778.6	0.00	0.00	0.00
10,000.0	90.00	180.00	8,252.0	-1,792.0	984.7	1,878.1	0.00	0.00	0.00
10,100.0	90.00	180.00	8,252.0	-1,892.0	984.7	1,977.7	0.00	0.00	0.00
10,200.0	90.00	180.00	8,252.0	-1,992.0	984.7	2,077.2	0.00	0.00	0.00
10,300.0	90.00	180.00	8,252.0	-2,092.0	984.7	2,176.7	0.00	0.00	0.00
10,400.0	90.00	180.00	8,252.0	-2,192.0	984.7	2,276.3	0.00	0.00	0.00
10,500.0	90.00	180.00	8,252.0	-2,292.0	984.7	2,375.8	0.00	0.00	0.00
10,600.0	90.00	180.00	8,252.0	-2,392.0	984.7	2,475.4	0.00	0.00	0.00
10,700.0	90.00	180.00	8,252.0	-2,492.0	984.7	2,574.9	0.00	0.00	0.00
10,800.0	90.00	180.00	8,252.0	-2,592.0	984.7	2,674.4	0.00	0.00	0.00

# SandRidge Energy, Inc.

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Mallard 0780 1-15H22
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8136.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8136.0usft
<b>Well:</b>	Mallard 0780 1-15H22	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
10,900.0	90.00	180.00	8,252.0	-2,692.0	984.7	2,774.0	0.00	0.00	0.00
11,000.0	90.00	180.00	8,252.0	-2,792.0	984.8	2,873.5	0.00	0.00	0.00
11,100.0	90.00	180.00	8,252.0	-2,892.0	984.8	2,973.1	0.00	0.00	0.00
11,200.0	90.00	180.00	8,252.0	-2,992.0	984.8	3,072.6	0.00	0.00	0.00
11,300.0	90.00	180.00	8,252.0	-3,092.0	984.8	3,172.1	0.00	0.00	0.00
11,400.0	90.00	180.00	8,252.0	-3,192.0	984.8	3,271.7	0.00	0.00	0.00
11,500.0	90.00	180.00	8,252.0	-3,292.0	984.8	3,371.2	0.00	0.00	0.00
11,600.0	90.00	180.00	8,252.0	-3,392.0	984.8	3,470.8	0.00	0.00	0.00
11,700.0	90.00	180.00	8,252.0	-3,492.0	984.8	3,570.3	0.00	0.00	0.00
11,800.0	90.00	180.00	8,252.0	-3,592.0	984.8	3,669.8	0.00	0.00	0.00
11,900.0	90.00	180.00	8,252.0	-3,692.0	984.8	3,769.4	0.00	0.00	0.00
12,000.0	90.00	180.00	8,252.0	-3,792.0	984.8	3,868.9	0.00	0.00	0.00
12,100.0	90.00	180.00	8,252.0	-3,892.0	984.8	3,968.5	0.00	0.00	0.00
12,200.0	90.00	180.00	8,252.0	-3,992.0	984.8	4,068.0	0.00	0.00	0.00
12,300.0	90.00	180.00	8,252.0	-4,092.0	984.8	4,167.5	0.00	0.00	0.00
12,400.0	90.00	180.00	8,252.0	-4,192.0	984.8	4,267.1	0.00	0.00	0.00
12,500.0	90.00	180.00	8,252.0	-4,292.0	984.8	4,366.6	0.00	0.00	0.00
12,600.0	90.00	180.00	8,252.0	-4,392.0	984.8	4,466.2	0.00	0.00	0.00
12,700.0	90.00	180.00	8,252.0	-4,492.0	984.8	4,565.7	0.00	0.00	0.00
12,800.0	90.00	180.00	8,252.0	-4,592.0	984.8	4,665.2	0.00	0.00	0.00
12,900.0	90.00	180.00	8,252.0	-4,692.0	984.8	4,764.8	0.00	0.00	0.00
13,000.0	90.00	180.00	8,252.0	-4,792.0	984.8	4,864.3	0.00	0.00	0.00
13,100.0	90.00	180.00	8,252.0	-4,892.0	984.8	4,963.9	0.00	0.00	0.00
13,200.0	90.00	180.00	8,252.0	-4,992.0	984.8	5,063.4	0.00	0.00	0.00
13,300.0	90.00	180.00	8,252.0	-5,092.0	984.8	5,163.0	0.00	0.00	0.00
13,400.0	90.00	180.00	8,252.0	-5,192.0	984.8	5,262.5	0.00	0.00	0.00
13,500.0	90.00	180.00	8,252.0	-5,292.0	984.8	5,362.0	0.00	0.00	0.00
13,600.0	90.00	180.00	8,252.0	-5,392.0	984.8	5,461.6	0.00	0.00	0.00
13,700.0	90.00	180.00	8,252.0	-5,492.0	984.8	5,561.1	0.00	0.00	0.00
13,800.0	90.00	180.00	8,252.0	-5,592.0	984.8	5,660.7	0.00	0.00	0.00
13,900.0	90.00	180.00	8,252.0	-5,692.0	984.8	5,760.2	0.00	0.00	0.00
14,000.0	90.00	180.00	8,252.0	-5,792.0	984.8	5,859.7	0.00	0.00	0.00
14,100.0	90.00	180.00	8,252.0	-5,892.0	984.9	5,959.3	0.00	0.00	0.00
14,200.0	90.00	180.00	8,252.0	-5,992.0	984.9	6,058.8	0.00	0.00	0.00
14,300.0	90.00	180.00	8,252.0	-6,092.0	984.9	6,158.4	0.00	0.00	0.00
14,400.0	90.00	180.00	8,252.0	-6,192.0	984.9	6,257.9	0.00	0.00	0.00
14,500.0	90.00	180.00	8,252.0	-6,292.0	984.9	6,357.4	0.00	0.00	0.00
14,600.0	90.00	180.00	8,252.0	-6,392.0	984.9	6,457.0	0.00	0.00	0.00
14,700.0	90.00	180.00	8,252.0	-6,492.0	984.9	6,556.5	0.00	0.00	0.00
14,800.0	90.00	180.00	8,252.0	-6,592.0	984.9	6,656.1	0.00	0.00	0.00
14,900.0	90.00	180.00	8,252.0	-6,692.0	984.9	6,755.6	0.00	0.00	0.00
15,000.0	90.00	180.00	8,252.0	-6,792.0	984.9	6,855.1	0.00	0.00	0.00
15,100.0	90.00	180.00	8,252.0	-6,892.0	984.9	6,954.7	0.00	0.00	0.00
15,200.0	90.00	180.00	8,252.0	-6,992.0	984.9	7,054.2	0.00	0.00	0.00

# SandRidge Energy, Inc.

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Mallard 0780 1-15H22
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8136.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8136.0usft
<b>Well:</b>	Mallard 0780 1-15H22	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
15,300.0	90.00	180.00	8,252.0	-7,092.0	984.9	7,153.8	0.00	0.00	0.00
15,400.0	90.00	180.00	8,252.0	-7,192.0	984.9	7,253.3	0.00	0.00	0.00
15,500.0	90.00	180.00	8,252.0	-7,292.0	984.9	7,352.8	0.00	0.00	0.00
15,600.0	90.00	180.00	8,252.0	-7,392.0	984.9	7,452.4	0.00	0.00	0.00
15,700.0	90.00	180.00	8,252.0	-7,492.0	984.9	7,551.9	0.00	0.00	0.00
15,800.0	90.00	180.00	8,252.0	-7,592.0	984.9	7,651.5	0.00	0.00	0.00
15,900.0	90.00	180.00	8,252.0	-7,692.0	984.9	7,751.0	0.00	0.00	0.00
16,000.0	90.00	180.00	8,252.0	-7,792.0	984.9	7,850.5	0.00	0.00	0.00
16,100.0	90.00	180.00	8,252.0	-7,892.0	984.9	7,950.1	0.00	0.00	0.00
16,200.0	90.00	180.00	8,252.0	-7,992.0	984.9	8,049.6	0.00	0.00	0.00
16,300.0	90.00	180.00	8,252.0	-8,092.0	984.9	8,149.2	0.00	0.00	0.00
16,400.0	90.00	180.00	8,252.0	-8,192.0	984.9	8,248.7	0.00	0.00	0.00
16,500.0	90.00	180.00	8,252.0	-8,292.0	984.9	8,348.2	0.00	0.00	0.00
16,600.0	90.00	180.00	8,252.0	-8,392.0	984.9	8,447.8	0.00	0.00	0.00
16,700.0	90.00	180.00	8,252.0	-8,492.0	984.9	8,547.3	0.00	0.00	0.00
16,800.0	90.00	180.00	8,252.0	-8,592.0	984.9	8,646.9	0.00	0.00	0.00
16,900.0	90.00	180.00	8,252.0	-8,692.0	984.9	8,746.4	0.00	0.00	0.00
17,000.0	90.00	180.00	8,252.0	-8,792.0	984.9	8,845.9	0.00	0.00	0.00
17,100.0	90.00	180.00	8,252.0	-8,892.0	984.9	8,945.5	0.00	0.00	0.00
17,200.0	90.00	180.00	8,252.0	-8,992.0	985.0	9,045.0	0.00	0.00	0.00
17,300.0	90.00	180.00	8,252.0	-9,092.0	985.0	9,144.6	0.00	0.00	0.00
17,400.0	90.00	180.00	8,252.0	-9,192.0	985.0	9,244.1	0.00	0.00	0.00
17,500.0	90.00	180.00	8,252.0	-9,292.0	985.0	9,343.6	0.00	0.00	0.00
17,600.0	90.00	180.00	8,252.0	-9,392.0	985.0	9,443.2	0.00	0.00	0.00
17,700.0	90.00	180.00	8,252.0	-9,492.0	985.0	9,542.7	0.00	0.00	0.00
17,800.0	90.00	180.00	8,252.0	-9,592.0	985.0	9,642.3	0.00	0.00	0.00
17,900.0	90.00	180.00	8,252.0	-9,692.0	985.0	9,741.8	0.00	0.00	0.00
18,000.0	90.00	180.00	8,252.0	-9,792.0	985.0	9,841.4	0.00	0.00	0.00
18,100.0	90.00	180.00	8,252.0	-9,892.0	985.0	9,940.9	0.00	0.00	0.00
18,200.0	90.00	180.00	8,252.0	-9,992.0	985.0	10,040.4	0.00	0.00	0.00
18,300.0	90.00	180.00	8,252.0	-10,092.0	985.0	10,140.0	0.00	0.00	0.00
18,400.0	90.00	180.00	8,252.0	-10,192.0	985.0	10,239.5	0.00	0.00	0.00
18,443.1	90.00	180.00	8,252.0	-10,235.1	985.0	10,282.4	0.00	0.00	0.00
TD at 18443.1									

### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Mallard BHL	0.00	360.00	8,252.0	-10,235.1	985.0	1,446,524.04	2,759,514.87	40° 33' 21.192 N	106° 21' 55.703 W
- plan hits target center									
- Point									



# SandRidge Energy, Inc.

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Mallard 0780 1-15H22
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8136.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8136.0usft
<b>Well:</b>	Mallard 0780 1-15H22	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,994.6	7,858.0	Niobrara		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5000	5000	0	0	Start Build 2.00	
5983	5964	0	167	Start 1952.2 hold at 5983.2 MD	
7935	7802	0	824	Start DLS 12.00 TFO 90.00	
8685	8252	-477	985	Start 9757.6 hold at 8685.4 MD	
18,443	8252	-10,235	985	TD at 18443.1	

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