

SandRidge Energy

North Park Basin

T7N-R80W-S9

Castle 0780 5-17H20

Wellbore #1

Plan: Design #1

Standard Survey Report

13 September, 2017

SandRidge Energy

Survey Report

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well Castle 0780 5-17H20
Project:	North Park Basin	TVD Reference:	WELL @ 8134.0usft (Original Well Elev)
Site:	T7N-R80W-S9	MD Reference:	WELL @ 8134.0usft (Original Well Elev)
Well:	Castle 0780 5-17H20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDMProd

Project	North Park Basin		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		T7N-R80W-S9				
Site Position:		Northing:	1,457,270.18 usft	Latitude:	40° 35' 6.782 N	
From:	Map	Easting:	2,753,429.57 usft	Longitude:	106° 23' 15.932 W	
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.57 °

Well	Castle 0780 5-17H20					
Well Position	+N/-S	0.0 usft	Northing:	1,457,426.45 usft	Latitude:	40° 35' 8.331 N
	+E/-W	0.0 usft	Easting:	2,753,480.04 usft	Longitude:	106° 23' 15.299 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,118.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.88	66.98	53,192

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	180.00	

Survey Tool Program	Date	9/13/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	18,949.4	Design #1 (Wellbore #1)	Sperry MWD	Fixed:v2:standard declination	

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)	
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

Survey Report

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well Castle 0780 5-17H20
Project:	North Park Basin	TVD Reference:	WELL @ 8134.0usft (Original Well Elev)
Site:	T7N-R80W-S9	MD Reference:	WELL @ 8134.0usft (Original Well Elev)
Well:	Castle 0780 5-17H20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDMPProd

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
Start Build 2.00									
2,600.0	2.00	270.00	2,600.0	0.0	-1.7	0.0	2.00	2.00	0.00
2,700.0	4.00	270.00	2,699.8	0.0	-7.0	0.0	2.00	2.00	0.00
2,800.0	6.00	270.00	2,799.5	0.0	-15.7	0.0	2.00	2.00	0.00
2,900.0	8.00	270.00	2,898.7	0.0	-27.9	0.0	2.00	2.00	0.00
3,000.0	10.00	270.00	2,997.5	0.0	-43.5	0.0	2.00	2.00	0.00
3,100.0	12.00	270.00	3,095.6	0.0	-62.6	0.0	2.00	2.00	0.00
3,200.0	14.00	270.00	3,193.1	0.0	-85.1	0.0	2.00	2.00	0.00
3,300.0	16.00	270.00	3,289.6	0.0	-111.0	0.0	2.00	2.00	0.00
3,400.0	18.00	270.00	3,385.3	0.0	-140.2	0.0	2.00	2.00	0.00
3,500.0	20.00	270.00	3,479.8	0.0	-172.8	0.0	2.00	2.00	0.00
3,600.0	22.00	270.00	3,573.2	0.0	-208.6	0.0	2.00	2.00	0.00
3,700.0	24.00	270.00	3,665.2	0.0	-247.7	0.0	2.00	2.00	0.00
3,713.6	24.27	270.00	3,677.6	0.0	-253.2	0.0	2.00	2.00	0.00
Start 3482.9 hold at 3713.6 MD									
3,800.0	24.27	270.00	3,756.4	0.0	-288.8	0.0	0.00	0.00	0.00
3,900.0	24.27	270.00	3,847.5	0.0	-329.9	0.0	0.00	0.00	0.00
4,000.0	24.27	270.00	3,938.7	0.0	-371.0	0.0	0.00	0.00	0.00
4,100.0	24.27	270.00	4,029.9	0.0	-412.1	0.0	0.00	0.00	0.00
4,200.0	24.27	270.00	4,121.0	0.0	-453.2	0.0	0.00	0.00	0.00
4,300.0	24.27	270.00	4,212.2	0.0	-494.3	0.0	0.00	0.00	0.00
4,400.0	24.27	270.00	4,303.3	0.0	-535.4	0.0	0.00	0.00	0.00
4,500.0	24.27	270.00	4,394.5	0.0	-576.5	0.0	0.00	0.00	0.00
4,600.0	24.27	270.00	4,485.7	0.0	-617.6	0.0	0.00	0.00	0.00
4,700.0	24.27	270.00	4,576.8	0.0	-658.7	0.0	0.00	0.00	0.00
4,800.0	24.27	270.00	4,668.0	0.0	-699.8	0.0	0.00	0.00	0.00
4,900.0	24.27	270.00	4,759.1	0.0	-740.9	0.0	0.00	0.00	0.00
5,000.0	24.27	270.00	4,850.3	0.0	-782.0	0.0	0.00	0.00	0.00

SandRidge Energy

Survey Report

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well Castle 0780 5-17H20
Project:	North Park Basin	TVD Reference:	WELL @ 8134.0usft (Original Well Elev)
Site:	T7N-R80W-S9	MD Reference:	WELL @ 8134.0usft (Original Well Elev)
Well:	Castle 0780 5-17H20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
5,100.0	24.27	270.00	4,941.5	0.0	-823.2	0.0	0.00	0.00	0.00
5,200.0	24.27	270.00	5,032.6	0.0	-864.3	0.0	0.00	0.00	0.00
5,300.0	24.27	270.00	5,123.8	0.0	-905.4	0.0	0.00	0.00	0.00
5,400.0	24.27	270.00	5,214.9	0.0	-946.5	0.0	0.00	0.00	0.00
5,500.0	24.27	270.00	5,306.1	0.0	-987.6	0.0	0.00	0.00	0.00
5,600.0	24.27	270.00	5,397.3	0.0	-1,028.7	0.0	0.00	0.00	0.00
5,700.0	24.27	270.00	5,488.4	0.0	-1,069.8	0.0	0.00	0.00	0.00
5,800.0	24.27	270.00	5,579.6	0.0	-1,110.9	0.0	0.00	0.00	0.00
5,900.0	24.27	270.00	5,670.7	0.0	-1,152.0	0.0	0.00	0.00	0.00
6,000.0	24.27	270.00	5,761.9	0.0	-1,193.1	0.0	0.00	0.00	0.00
6,100.0	24.27	270.00	5,853.1	0.0	-1,234.2	0.0	0.00	0.00	0.00
6,200.0	24.27	270.00	5,944.2	0.0	-1,275.3	0.0	0.00	0.00	0.00
6,300.0	24.27	270.00	6,035.4	0.0	-1,316.4	0.0	0.00	0.00	0.00
6,400.0	24.27	270.00	6,126.6	0.0	-1,357.6	0.0	0.00	0.00	0.00
6,500.0	24.27	270.00	6,217.7	0.0	-1,398.7	0.0	0.00	0.00	0.00
6,600.0	24.27	270.00	6,308.9	0.0	-1,439.8	0.0	0.00	0.00	0.00
6,700.0	24.27	270.00	6,400.0	0.0	-1,480.9	0.0	0.00	0.00	0.00
6,800.0	24.27	270.00	6,491.2	0.0	-1,522.0	0.0	0.00	0.00	0.00
6,900.0	24.27	270.00	6,582.4	0.0	-1,563.1	0.0	0.00	0.00	0.00
7,000.0	24.27	270.00	6,673.5	0.0	-1,604.2	0.0	0.00	0.00	0.00
7,100.0	24.27	270.00	6,764.7	0.0	-1,645.3	0.0	0.00	0.00	0.00
7,196.6	24.27	270.00	6,852.7	0.0	-1,685.0	0.0	0.00	0.00	0.00
Start DLS 8.00 TFO 0.00									
7,200.0	24.55	270.00	6,855.8	0.0	-1,686.4	0.0	8.00	8.00	0.00
7,300.0	32.55	270.00	6,943.6	0.0	-1,734.2	0.0	8.00	8.00	0.00
7,400.0	40.55	270.00	7,023.9	0.0	-1,793.7	0.0	8.00	8.00	0.00
7,500.0	48.55	270.00	7,095.1	0.0	-1,863.8	0.0	8.00	8.00	0.00
7,600.0	56.55	270.00	7,155.8	0.0	-1,943.1	0.0	8.00	8.00	0.00
7,636.2	59.44	270.00	7,175.0	0.0	-1,973.7	0.0	8.00	8.00	0.00
Niobrara									
7,643.2	60.00	270.00	7,178.5	0.0	-1,979.8	0.0	8.00	8.00	0.00
Start 150.0 hold at 7643.2 MD									
7,700.0	60.00	270.00	7,207.0	0.0	-2,029.0	0.0	0.00	0.00	0.00
7,793.2	60.00	270.00	7,253.5	0.0	-2,109.7	0.0	0.00	0.00	0.00
Start DLS 10.00 TFO -90.00									
7,800.0	60.00	269.21	7,257.0	0.0	-2,115.6	0.0	10.00	0.04	-11.55
7,900.0	60.57	257.71	7,306.6	-9.9	-2,201.7	9.9	10.00	0.57	-11.50
8,000.0	62.12	246.45	7,354.7	-36.9	-2,285.0	36.9	10.00	1.54	-11.26
8,100.0	64.54	235.58	7,399.7	-80.2	-2,362.9	80.2	10.00	2.42	-10.86
8,200.0	67.73	225.22	7,440.3	-138.5	-2,433.2	138.5	10.00	3.19	-10.37
8,300.0	71.54	215.35	7,475.1	-209.9	-2,493.6	209.9	10.00	3.81	-9.86
8,400.0	75.84	205.94	7,503.3	-292.4	-2,542.4	292.4	10.00	4.30	-9.41
8,500.0	80.49	196.89	7,523.8	-383.4	-2,578.0	383.4	10.00	4.65	-9.05
8,600.0	85.37	188.09	7,536.1	-480.2	-2,599.4	480.2	10.00	4.88	-8.80

SandRidge Energy

Survey Report

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well Castle 0780 5-17H20
Project:	North Park Basin	TVD Reference:	WELL @ 8134.0usft (Original Well Elev)
Site:	T7N-R80W-S9	MD Reference:	WELL @ 8134.0usft (Original Well Elev)
Well:	Castle 0780 5-17H20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
8,692.9	90.00	180.03	7,539.9	-572.7	-2,606.0	572.7	10.00	4.98	-8.68
8,693.1	90.00	180.03	7,539.9	-572.9	-2,606.0	572.9	0.00	0.00	0.00
Start 10026.1 hold at 8693.1 MD									
8,700.0	90.00	180.03	7,539.9	-579.8	-2,606.0	579.8	0.00	0.00	0.00
8,800.0	90.00	180.03	7,539.9	-679.8	-2,606.0	679.8	0.00	0.00	0.00
8,900.0	90.00	180.03	7,539.9	-779.8	-2,606.1	779.8	0.00	0.00	0.00
9,000.0	90.00	180.03	7,539.9	-879.8	-2,606.1	879.8	0.00	0.00	0.00
9,100.0	90.00	180.03	7,539.9	-979.8	-2,606.2	979.8	0.00	0.00	0.00
9,200.0	90.00	180.03	7,539.9	-1,079.8	-2,606.2	1,079.8	0.00	0.00	0.00
9,300.0	90.00	180.03	7,539.9	-1,179.8	-2,606.3	1,179.8	0.00	0.00	0.00
9,400.0	90.00	180.03	7,539.9	-1,279.8	-2,606.3	1,279.8	0.00	0.00	0.00
9,500.0	90.00	180.03	7,539.9	-1,379.8	-2,606.4	1,379.8	0.00	0.00	0.00
9,600.0	90.00	180.03	7,539.9	-1,479.8	-2,606.4	1,479.8	0.00	0.00	0.00
9,700.0	90.00	180.03	7,539.9	-1,579.8	-2,606.5	1,579.8	0.00	0.00	0.00
9,800.0	90.00	180.03	7,539.9	-1,679.8	-2,606.5	1,679.8	0.00	0.00	0.00
9,900.0	90.00	180.03	7,539.9	-1,779.8	-2,606.6	1,779.8	0.00	0.00	0.00
10,000.0	90.00	180.03	7,539.9	-1,879.8	-2,606.6	1,879.8	0.00	0.00	0.00
10,100.0	90.00	180.03	7,539.9	-1,979.8	-2,606.7	1,979.8	0.00	0.00	0.00
10,200.0	90.00	180.03	7,539.9	-2,079.8	-2,606.7	2,079.8	0.00	0.00	0.00
10,300.0	90.00	180.03	7,539.9	-2,179.8	-2,606.8	2,179.8	0.00	0.00	0.00
10,400.0	90.00	180.03	7,539.9	-2,279.8	-2,606.8	2,279.8	0.00	0.00	0.00
10,500.0	90.00	180.03	7,539.9	-2,379.8	-2,606.9	2,379.8	0.00	0.00	0.00
10,600.0	90.00	180.03	7,539.9	-2,479.8	-2,606.9	2,479.8	0.00	0.00	0.00
10,700.0	90.00	180.03	7,539.9	-2,579.8	-2,607.0	2,579.8	0.00	0.00	0.00
10,800.0	90.00	180.03	7,539.9	-2,679.8	-2,607.0	2,679.8	0.00	0.00	0.00
10,900.0	90.00	180.03	7,539.9	-2,779.8	-2,607.1	2,779.8	0.00	0.00	0.00
11,000.0	90.00	180.03	7,539.9	-2,879.8	-2,607.1	2,879.8	0.00	0.00	0.00
11,100.0	90.00	180.03	7,539.9	-2,979.8	-2,607.2	2,979.8	0.00	0.00	0.00
11,200.0	90.00	180.03	7,539.9	-3,079.8	-2,607.2	3,079.8	0.00	0.00	0.00
11,300.0	90.00	180.03	7,539.9	-3,179.8	-2,607.3	3,179.8	0.00	0.00	0.00
11,400.0	90.00	180.03	7,539.9	-3,279.8	-2,607.3	3,279.8	0.00	0.00	0.00
11,500.0	90.00	180.03	7,539.9	-3,379.8	-2,607.4	3,379.8	0.00	0.00	0.00
11,600.0	90.00	180.03	7,539.9	-3,479.8	-2,607.4	3,479.8	0.00	0.00	0.00
11,700.0	90.00	180.03	7,539.9	-3,579.8	-2,607.5	3,579.8	0.00	0.00	0.00
11,800.0	90.00	180.03	7,539.9	-3,679.8	-2,607.5	3,679.8	0.00	0.00	0.00
11,900.0	90.00	180.03	7,539.9	-3,779.8	-2,607.6	3,779.8	0.00	0.00	0.00
12,000.0	90.00	180.03	7,539.9	-3,879.8	-2,607.6	3,879.8	0.00	0.00	0.00
12,100.0	90.00	180.03	7,539.9	-3,979.8	-2,607.7	3,979.8	0.00	0.00	0.00
12,200.0	90.00	180.03	7,539.9	-4,079.8	-2,607.7	4,079.8	0.00	0.00	0.00
12,300.0	90.00	180.03	7,539.9	-4,179.8	-2,607.8	4,179.8	0.00	0.00	0.00
12,400.0	90.00	180.03	7,539.9	-4,279.8	-2,607.8	4,279.8	0.00	0.00	0.00
12,500.0	90.00	180.03	7,539.9	-4,379.8	-2,607.9	4,379.8	0.00	0.00	0.00
12,600.0	90.00	180.03	7,539.9	-4,479.8	-2,607.9	4,479.8	0.00	0.00	0.00
12,700.0	90.00	180.03	7,539.9	-4,579.8	-2,608.0	4,579.8	0.00	0.00	0.00

SandRidge Energy

Survey Report

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well Castle 0780 5-17H20
Project:	North Park Basin	TVD Reference:	WELL @ 8134.0usft (Original Well Elev)
Site:	T7N-R80W-S9	MD Reference:	WELL @ 8134.0usft (Original Well Elev)
Well:	Castle 0780 5-17H20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
12,800.0	90.00	180.03	7,539.9	-4,679.8	-2,608.0	4,679.8	0.00	0.00	0.00
12,900.0	90.00	180.03	7,539.9	-4,779.8	-2,608.1	4,779.8	0.00	0.00	0.00
13,000.0	90.00	180.03	7,539.9	-4,879.8	-2,608.1	4,879.8	0.00	0.00	0.00
13,100.0	90.00	180.03	7,539.9	-4,979.8	-2,608.2	4,979.8	0.00	0.00	0.00
13,200.0	90.00	180.03	7,539.9	-5,079.8	-2,608.2	5,079.8	0.00	0.00	0.00
13,300.0	90.00	180.03	7,539.9	-5,179.8	-2,608.3	5,179.8	0.00	0.00	0.00
13,400.0	90.00	180.03	7,539.9	-5,279.8	-2,608.4	5,279.8	0.00	0.00	0.00
13,500.0	90.00	180.03	7,539.9	-5,379.8	-2,608.4	5,379.8	0.00	0.00	0.00
13,600.0	90.00	180.03	7,539.9	-5,479.8	-2,608.5	5,479.8	0.00	0.00	0.00
13,700.0	90.00	180.03	7,539.9	-5,579.8	-2,608.5	5,579.8	0.00	0.00	0.00
13,800.0	90.00	180.03	7,539.9	-5,679.8	-2,608.6	5,679.8	0.00	0.00	0.00
13,900.0	90.00	180.03	7,539.9	-5,779.8	-2,608.6	5,779.8	0.00	0.00	0.00
14,000.0	90.00	180.03	7,539.9	-5,879.8	-2,608.7	5,879.8	0.00	0.00	0.00
14,100.0	90.00	180.03	7,539.9	-5,979.8	-2,608.7	5,979.8	0.00	0.00	0.00
14,200.0	90.00	180.03	7,539.9	-6,079.8	-2,608.8	6,079.8	0.00	0.00	0.00
14,300.0	90.00	180.03	7,539.9	-6,179.8	-2,608.8	6,179.8	0.00	0.00	0.00
14,400.0	90.00	180.03	7,539.9	-6,279.8	-2,608.9	6,279.8	0.00	0.00	0.00
14,500.0	90.00	180.03	7,539.9	-6,379.8	-2,608.9	6,379.8	0.00	0.00	0.00
14,600.0	90.00	180.03	7,539.9	-6,479.8	-2,609.0	6,479.8	0.00	0.00	0.00
14,700.0	90.00	180.03	7,539.9	-6,579.8	-2,609.0	6,579.8	0.00	0.00	0.00
14,800.0	90.00	180.03	7,539.9	-6,679.8	-2,609.1	6,679.8	0.00	0.00	0.00
14,900.0	90.00	180.03	7,539.9	-6,779.8	-2,609.1	6,779.8	0.00	0.00	0.00
15,000.0	90.00	180.03	7,539.9	-6,879.8	-2,609.2	6,879.8	0.00	0.00	0.00
15,100.0	90.00	180.03	7,539.9	-6,979.8	-2,609.2	6,979.8	0.00	0.00	0.00
15,200.0	90.00	180.03	7,539.9	-7,079.8	-2,609.3	7,079.8	0.00	0.00	0.00
15,300.0	90.00	180.03	7,539.9	-7,179.8	-2,609.3	7,179.8	0.00	0.00	0.00
15,400.0	90.00	180.03	7,539.9	-7,279.8	-2,609.4	7,279.8	0.00	0.00	0.00
15,500.0	90.00	180.03	7,539.9	-7,379.8	-2,609.4	7,379.8	0.00	0.00	0.00
15,600.0	90.00	180.03	7,539.9	-7,479.8	-2,609.5	7,479.8	0.00	0.00	0.00
15,700.0	90.00	180.03	7,539.9	-7,579.8	-2,609.5	7,579.8	0.00	0.00	0.00
15,800.0	90.00	180.03	7,539.9	-7,679.8	-2,609.6	7,679.8	0.00	0.00	0.00
15,900.0	90.00	180.03	7,539.9	-7,779.8	-2,609.6	7,779.8	0.00	0.00	0.00
16,000.0	90.00	180.03	7,539.9	-7,879.8	-2,609.7	7,879.8	0.00	0.00	0.00
16,100.0	90.00	180.03	7,539.9	-7,979.8	-2,609.7	7,979.8	0.00	0.00	0.00
16,200.0	90.00	180.03	7,539.9	-8,079.8	-2,609.8	8,079.8	0.00	0.00	0.00
16,300.0	90.00	180.03	7,539.9	-8,179.8	-2,609.8	8,179.8	0.00	0.00	0.00
16,400.0	90.00	180.03	7,539.9	-8,279.8	-2,609.9	8,279.8	0.00	0.00	0.00
16,500.0	90.00	180.03	7,539.9	-8,379.8	-2,609.9	8,379.8	0.00	0.00	0.00
16,600.0	90.00	180.03	7,539.9	-8,479.8	-2,610.0	8,479.8	0.00	0.00	0.00
16,700.0	90.00	180.03	7,539.9	-8,579.8	-2,610.0	8,579.8	0.00	0.00	0.00
16,800.0	90.00	180.03	7,539.9	-8,679.8	-2,610.1	8,679.8	0.00	0.00	0.00
16,900.0	90.00	180.03	7,539.9	-8,779.8	-2,610.1	8,779.8	0.00	0.00	0.00
17,000.0	90.00	180.03	7,539.9	-8,879.8	-2,610.2	8,879.8	0.00	0.00	0.00

SandRidge Energy

Survey Report

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well Castle 0780 5-17H20
Project:	North Park Basin	TVD Reference:	WELL @ 8134.0usft (Original Well Elev)
Site:	T7N-R80W-S9	MD Reference:	WELL @ 8134.0usft (Original Well Elev)
Well:	Castle 0780 5-17H20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
17,100.0	90.00	180.03	7,539.9	-8,979.8	-2,610.2	8,979.8	0.00	0.00	0.00
17,200.0	90.00	180.03	7,539.9	-9,079.8	-2,610.3	9,079.8	0.00	0.00	0.00
17,300.0	90.00	180.03	7,539.9	-9,179.8	-2,610.3	9,179.8	0.00	0.00	0.00
17,400.0	90.00	180.03	7,539.9	-9,279.8	-2,610.4	9,279.8	0.00	0.00	0.00
17,500.0	90.00	180.03	7,539.9	-9,379.8	-2,610.4	9,379.8	0.00	0.00	0.00
17,600.0	90.00	180.03	7,539.9	-9,479.8	-2,610.5	9,479.8	0.00	0.00	0.00
17,700.0	90.00	180.03	7,539.9	-9,579.8	-2,610.5	9,579.8	0.00	0.00	0.00
17,800.0	90.00	180.03	7,539.9	-9,679.8	-2,610.6	9,679.8	0.00	0.00	0.00
17,900.0	90.00	180.03	7,539.9	-9,779.8	-2,610.6	9,779.8	0.00	0.00	0.00
18,000.0	90.00	180.03	7,539.9	-9,879.8	-2,610.7	9,879.8	0.00	0.00	0.00
18,100.0	90.00	180.03	7,539.9	-9,979.8	-2,610.7	9,979.8	0.00	0.00	0.00
18,200.0	90.00	180.03	7,539.9	-10,079.8	-2,610.8	10,079.8	0.00	0.00	0.00
18,300.0	90.00	180.03	7,539.9	-10,179.8	-2,610.8	10,179.8	0.00	0.00	0.00
18,400.0	90.00	180.03	7,539.9	-10,279.8	-2,610.9	10,279.8	0.00	0.00	0.00
18,500.0	90.00	180.03	7,539.9	-10,379.8	-2,610.9	10,379.8	0.00	0.00	0.00
18,600.0	90.00	180.03	7,539.9	-10,479.8	-2,611.0	10,479.8	0.00	0.00	0.00
18,700.0	90.00	180.03	7,539.9	-10,579.8	-2,611.0	10,579.8	0.00	0.00	0.00
18,719.3	90.00	180.03	7,539.9	-10,599.1	-2,611.1	10,599.1	0.00	0.00	0.00
TD at 18719.3									
18,800.0	90.00	180.03	7,539.9	-10,679.8	-2,611.1	10,679.8	0.00	0.00	0.00
18,900.0	90.00	180.03	7,539.9	-10,779.8	-2,611.1	10,779.8	0.00	0.00	0.00
18,949.4	90.00	180.03	7,539.9	-10,829.2	-2,611.2	10,829.2	0.00	0.00	0.00

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									
Castle 5	0.00	360.00	7,540.0	-10,829.2	-2,611.2	1,446,597.26	2,750,868.87	40° 33' 21.067 N	106° 23' 47.722 W
- plan misses target center by 0.1usft at 18949.4usft MD (7539.9 TVD, -10829.2 N, -2611.2 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,636.2	7,175.0	Niobrara		0.00	

SandRidge Energy

Survey Report

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well Castle 0780 5-17H20
Project:	North Park Basin	TVD Reference:	WELL @ 8134.0usft (Original Well Elev)
Site:	T7N-R80W-S9	MD Reference:	WELL @ 8134.0usft (Original Well Elev)
Well:	Castle 0780 5-17H20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDMProd

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2500	2500	0	0	Start Build 2.00
3714	3678	0	-253	Start 3482.9 hold at 3713.6 MD
7197	6853	0	-1685	Start DLS 8.00 TFO 0.00
7643	7179	0	-1980	Start 150.0 hold at 7643.2 MD
7793	7254	0	-2110	Start DLS 10.00 TFO -90.00
8693	7540	-573	-2606	Start 10026.1 hold at 8693.1 MD
18,719	7540	-10,599	-2611	TD at 18719.3

Checked By: _____ Approved By: _____ Date: _____